

Best Pneumatics 5 (1-3)

All Air System Equipment

| | |
|--|-----------|
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| |
|-----|
| S□A |
| V□A |
| S□A |
| V□A |
| VM |
| VR |
| VH |
| VHS |



Mechanical Valves

Series VM

| | | | |
|-----------------|--|--|--------------|
| Model | VM1000 | VM100 | VM200 |
| Dimensions (mm) | Side ported 11 x 36 x 16 Bottom ported 11 x 28 x 25 | Side ported 17 x 44 x 25 Bottom ported 17 x 44 x 30 | 25 x 40 x 52 |

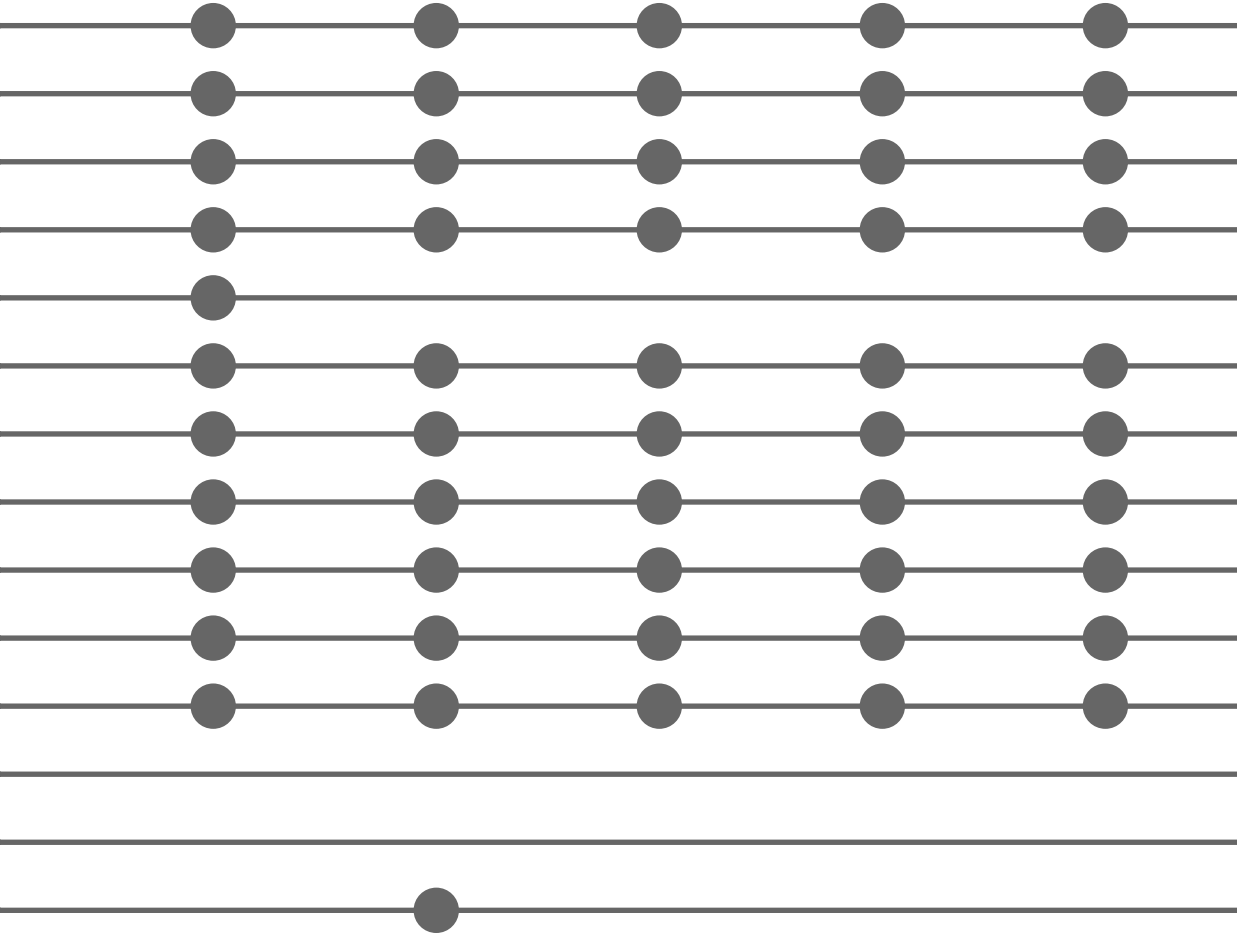
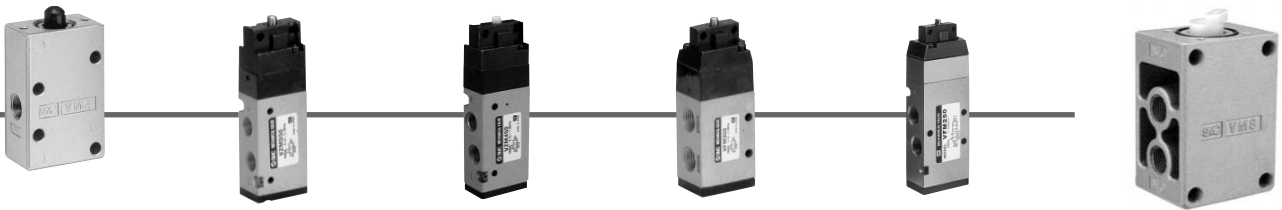
| | | | |
|-----------------------------|--|---|---|
| Basic | | | |
| Roller lever | | ● | ● |
| One way roller lever | | ● | ● |
| Straight plunger | | ● | ● |
| Roller plunger | | ● | ● |
| Cross roller plunger | | ● | ● |
| Toggle lever | | ● | ● |
| Push button (Mushroom) | | ● | ● |
| Push button (Extended) | | ● | ● |
| Push button (Flush) | | ● | ● |
| Twist selector (2 position) | | ● | ● |
| Key selector (2 position) | | ● | ● |
| Twist selector (3 position) | | ● | ● |
| Foot pedal | | ● | ● |
| Push-pull | | ● | ● |

| | | | |
|-----------------------------------|----------|-----------|-----------|
| | P. 5-6-8 | P. 5-6-12 | P. 5-6-20 |
| Effective area (mm ²) | 1 | 2.5 | 19 |
| Number of ports | 2, 3 | 2, 3 | 2, 3 |
| | Poppet | Poppet | Poppet |
| Function | | | |

Mechanical Valves


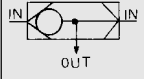


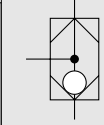

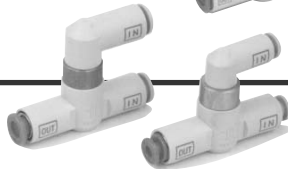
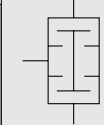

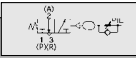





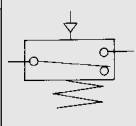


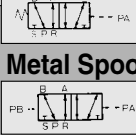

- A
- A
- A
- A
- VM**
- VR
- VH
- VHS

| | | | | | |
|--------------|---------------|---------------|---------------|---------------|--------------|
| VM400 | VZM500 | VZM400 | VFM300 | VFM200 | VM800 |
| 21 x 35 x 53 | 18 x 28 x 87 | 18 x 30 x 91 | 26 x 35 x 94 | 23 x 40 x 115 | 30 x 40 x 57 |



| | | | | | |
|-----------------|-----------------------------|-------------------------------|-----------------------------|-------------------------------|-----------------|
| P. 5-6-26 | P. 5-6-41 | P. 5-6-35 | P. 5-6-48 | P. 5-6-54 | P. 5-6-32 |
| 7 | 10.8 | 9.9 | 18 | 18 | 6 |
| 3 | 5 | 5 | 5 | 5 | 3 |
| Balanced poppet | Rubber spool | Metal spool | Rubber spool | Metal spool | Balanced poppet |
| | | | | | |
| NO NC | 4(A) 2(B) 5(R)1(P) 3(R2) | * 2(B) 4(A) 3(EB)1(P)5(EA) | 2(B) 4(A) 3(EB)1(P)5(EA) | * 2(B) 4(A) 3(EB)1(P)5(EA) | NO NC |

Transmitters

| | | | Effective area (mm ²) | Number of ports | Function |
|---|----------------|--|-----------------------------------|-----------------|---|
| Shuttle valve Dimensions VR1210: 17.2 x 38 x 29 VR1220: 21.2 x 50 x 38 | VR1210 |  | 7 | 3 |  |
| | VR1220 |  | 15 | 3 | |
| Shuttle valve Dimensions 71.6 x 44.8 | VR1210F |  | 7.3 | 3 |  |
| | VR1220F |  | 15.2 | 3 | |
| AND valve | VR1211F |  | 2.6 | 3 |  |
| Time delay valve Dimensions 70 x 68 x 66 | VR2110 |  | 2.5 | 3 |  |
| Pneumatic indicator Dimensions ø26 x 66 | VR3100 |  | — | — |  |
| Miniature pneumatic indicator Dimensions ø12 x 17 | VR3110 |  | — | — |  |
| Pneumatic-electric relay Dimensions VR3200: 17 x 49 x 71 VR3201: 25 x 86 x 89 | VR3200 |  | — | — |  |
| | VR3201 |  | — | — | |
| Relay valve Dimensions Side piping: 30 x 53 x 91 Bottom piping: 30 x 48 x 91 | VR4151 |  | 7 | 5 |  |
| | VR4152 |  | — | — | |

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Mechanical Valves

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Transmitters

| | |
|---|---------------|
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| AND Valve with One-touch Fitting..... | P. 5-7-7 |
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| Pneumatic Indicator..... | P. 5-7-12 |

⚠ Precautions

Be sure to read before handling. Refer to pages 5-12-2 to 6 for Safety Instructions and Solenoid Valve Precautions.

Mounting

⚠ Warning

1. Conditions for mechanical operation

Do not move the mechanical operation beyond the operating limit position, as this could damage the mechanical valve itself and lead to equipment malfunction.

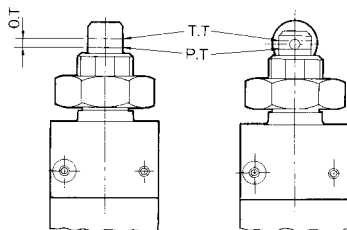
• Actuator stroke

Operate the mechanism within the stroke range that has been obtained through the formula given below. (Do not move beyond the operating limit position.)

Operating stroke: (P.T. + 0.5 x O.T.) to (P.T. + O.T. - 0.1)

| Series | Actuator | | Actuator stroke (mm) |
|--------------------------------------|----------------------|----------------------------------|----------------------------|
| VM1000 | Basic | T.T. = 4.8 mm (T.T. = 2.5 mm) | 3.7 to 4.7 (2.2 to 2.4) |
| | Roller lever | | 3.5 to 4.4 |
| | One way roller lever | | 3.5 to 4.4 |
| VM100 | Basic | | 2.2 to 2.9 |
| | Roller lever | | 4.3 to 5.3 |
| | One way roller lever | | 4.3 to 5.3 |
| | Straight plunger | | 2.7 to 3.4 |
| | Roller plunger | | 2.7 to 3.4 |
| | Cross roller plunger | | 2.7 to 3.4 |
| | Basic | | 4.0 to 4.9 |
| VM200 | Roller lever | | 8.7 to 10.7 |
| | One way roller lever | | 9.5 to 11.7 |
| | Straight plunger | | 4.5 to 5.4 |
| | Roller plunger | | 4.5 to 5.4 |
| | Cross roller plunger | | 4.5 to 5.4 |
| VM400 | Basic | | 2.5 to 3.4 |
| | Roller lever | | 6.2 to 8.2 |
| | One way roller lever | | 6.5 to 8.7 |
| | Straight plunger | | 4.5 to 5.4 |
| | Roller plunger | | 4.5 to 5.4 |
| VZM500 VZM400 VFM300 VFM200 | Basic | | 2.0 to 2.9 |
| | Roller lever | | 4.2 to 6.0 |
| | One way roller lever | | 4.7 to 6.7 |
| | Straight plunger | | 2.5 to 3.4 |
| | Roller plunger | | 2.5 to 3.4 |

For straight and roller plunger types, there is a groove indicating P.T. and T.T. for stroke adjustment.



Pressure Source

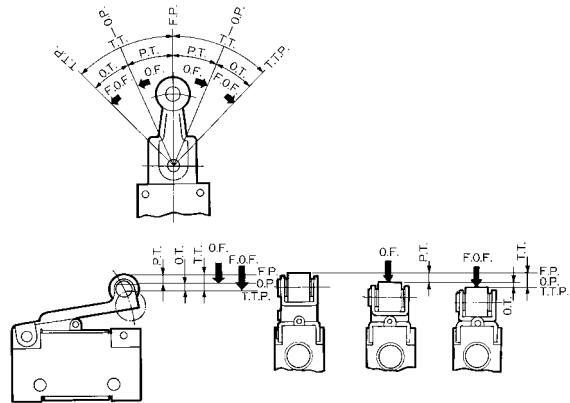
⚠ Warning

Operable fluid is either air or inert gas only. It cannot be used for corrosive gas and fluid.

⚠ Caution

When using vacuum pressure for VM100, supply vacuum pressure to P port.

Definition of Symbol



- F.P. (Free Position) No external force applied.
- O.P. (Operating Position) Internal valve opening position.
- T.T.P. (Total Travel Position)..... Includes over travel.
- O.F. (Operating Force)..... Operating force required to initial valve opening position.
- F.O.F. (Full Operating Force) .. Required force to total travel position.
- P.T. (Pre-travel) From free position to initial valve opening position.
- O.T. (Over Travel)..... From initial valve operating position to total travel position.
- T.T. (Total Travel)..... From free position to total travel position.

Caution

This product cannot be used for applications in which the pressure must be sealed because there will be a slight leakage. Please consult with SMC for this type of application.

□A

□A

□A

□A

VM

VR

VH

VHS

⚠️ Precautions

Be sure to read before handling. Refer to pages 5-12-2 to 6 for Safety Instructions and Solenoid Valve Precautions.

Mounting

⚠️ Warning

2. Conditions for mechanical operation

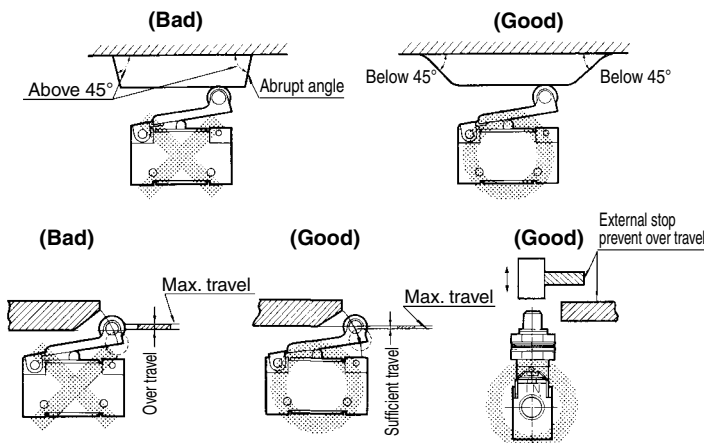
- Cam and dog angle and maximum speed

Select the angle and the maximum speed of the operating cam and the dog of the mechanism from within the selection range given in the table below.

If they are operated beyond the selection range, the cam and the dog could apply impact shocks to the actuator, leading to damage.

| Series | Actuator | Angle limit switch actuator | Max. speed limit switch actuator (m/s) |
|--------------------------------------|-------------------------|-----------------------------|--|
| VM1000 | Roller lever | 30° | 0.7 |
| | | 45° | 0.3 |
| | One way roller lever | 30° | 0.7 |
| | | 45° | 0.3 |
| VM100 VM200 VM400 | Roller lever | 30° | 0.7 |
| | | 45° | 0.3 |
| | One way roller lever | 30° | 0.7 |
| | | 45° | 0.3 |
| | | — | 0.2 |
| | Roller plunger | 30° | 0.3 |
| | Cross roller plunger | 30° | 0.3 |
| VZM500 VZM400 VFM300 VFM200 | Roller lever | 30° | 1.5 |
| | | 45° | 0.7 |
| | One way roller lever | 30° | 0.7 |
| | | 45° | 0.3 |
| | Straight plunger | — | 0.4 |
| | Roller plunger | 30° | 0.7 |
| VM800 | Roller lever | 30° | 0.5 |
| | | 45° | 0.2 |
| | Adjustable roller lever | 30° | 0.2 |
| | | 45° | 0.1 |
| | Adjustable rod lever | — | 0.2 |

Avoid abrupt angles on limit switch actuator.



Cam and Dog Material

| Roller material | Plunger material | Plunger surface finish |
|-----------------|------------------|------------------------|
| Polyacetal | Steel | ▽▽▽ |
| Steel | Steel, Resin | ▽▽ |

3. Never perform additional machining such as enlarging the body mounting holes.

As doing so could lead to abnormal conditions such as air leakage.

4. Operate all manual valves such as the push pin types, the selector types, and the flip toggle types with your finger.

If a hammer or other tools are used, or it is operated mechanically through the use of a cylinder or the like, damage could result.

Environments

⚠️ Caution

1. Do not operate it in an area in which fluids such as oil, coolant, or water splash on it or dust comes in contact with it. Because it does not have a waterproof or dustproof construction, fluids or dust could enter the valve, leading to malfunction. Therefore, take measures such as providing a protective cover to prevent direct exposure.

Maintenance

⚠️ Warning

1. Perform inspections on a regular basis as necessary, such as at the beginning of an operation, to make sure that the mechanical valve operates properly.

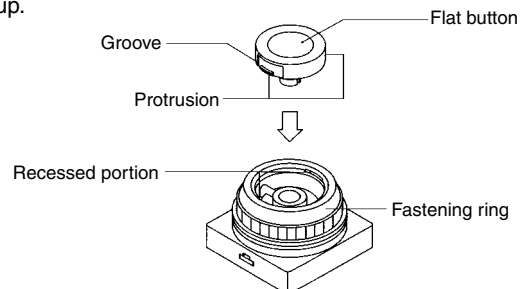
Failure to observe this precaution could lead to unsafe operation, such as unintended operation or malfunction.

How to Change the Buttons

Replace the button in the following manner to change color of the button.

1. Push button (Flush type)

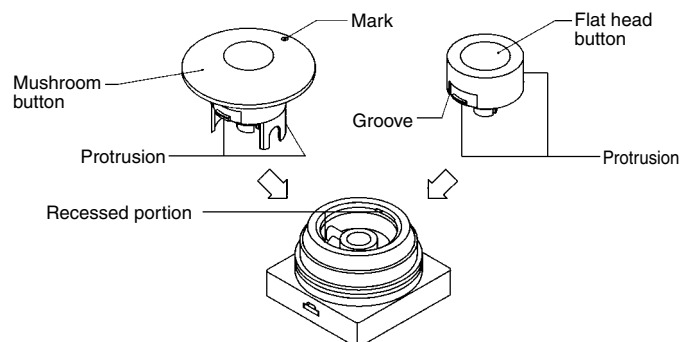
- Installation Of the four colors, red, green, black, and yellow, select and align the protruding portion of the button with the recessed portion of the body and push in.
- Removal Remove the fastening ring and insert the tip of a small flat screwdriver into the groove of the button to pry it up.



2. Push button (Mushroom and extended types)

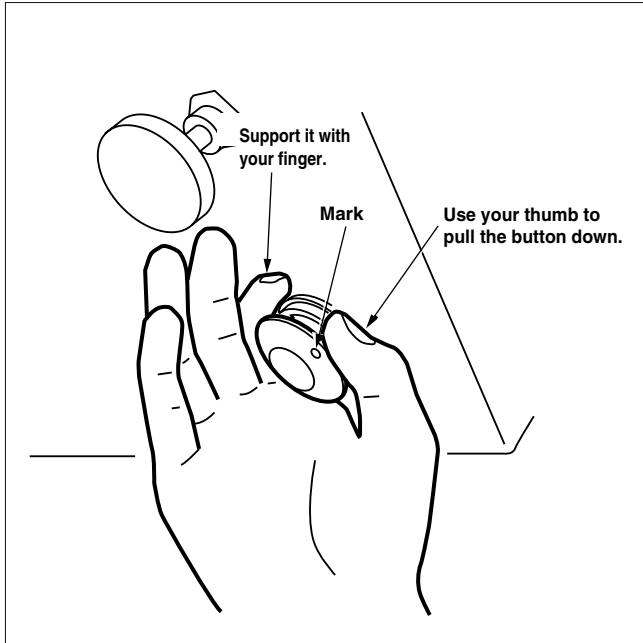
At the time of shipment, only 1 button of the color that you specified is attached to the body.

| | Mushroom type | Extended type |
|----------|---|--|
| Mounting | Align the protruding portion of the button with the recessed portion of the body and push in. (Use the mark on the button as a reference to align the protruding part.) | Align the protruding portion of the button with the recessed portion of the body and push in. |
| Removal | Placing your finger under the collar of the button on the side of the mark, tilt it upward. | Remove the fastening ring and insert the tip of a small flat screwdriver into the groove of the button to pry it up. |



How to remove a mushroom button

How to remove at panel mount



Replacement parts

1. Use the part numbers listed below to order individual mushroom head or flat head buttons.

| Color | Mushroom button | Extended button |
|--------|-----------------|-----------------|
| Red | 3402186R | 3402187R |
| Black | 3402186B | 3402187B |
| Green | 3402186G | 3402187G |
| Yellow | 3402186Y | 3402187Y |

| Color | Push button (Flush) |
|--------|---------------------|
| Red | 3402188R |
| Black | 3402188B |
| Green | 3402188G |
| Yellow | 3402188Y |

2. To order single fastening ring, use the part number below.
Fastening ring: 3402184

3. To order a single push button for series VM1000 and a single cover use the part number below.

| Color | Push button | Cover for push button |
|-------|-------------|-------------------------|
| Red | 3410701-R | 3410703 (White only) |
| Black | 3410701-B | |
| Green | 3410701-G | |

S□A

V□A

S□A

V□A

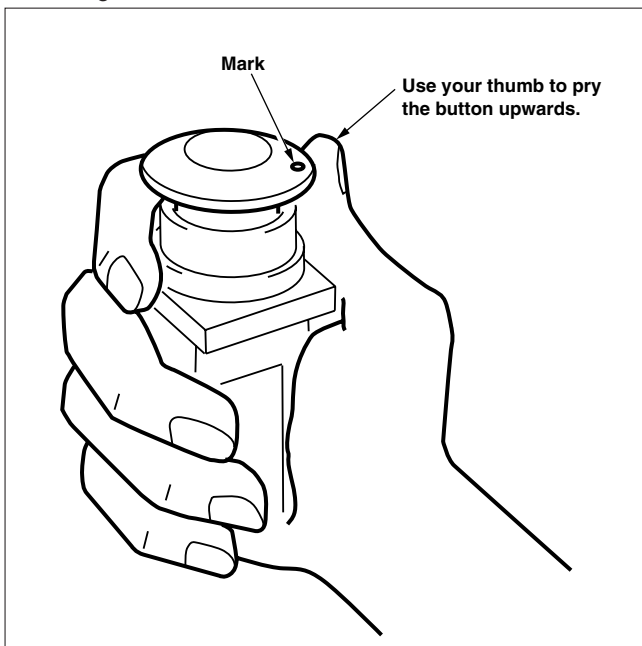
VM

VR

VH

VHS

Removing the valve as a unit



Micro Mechanical Valve

Series VM1000

Miniature structure requires little mounting space.

Built-in hose nipple connection.

Piping options:
Side piping, Bottom piping
Over Travel after actuation
(mechanical operated types)



Specifications

| | |
|-------------------------------|---|
| Valve type | N.C. poppet |
| Number of ports | 2 or 3 |
| Piping | Side or bottom ported |
| Fluid | Air/Inert gas |
| Operating pressure | 0 to 0.8 MPa |
| Ambient and fluid temperature | -5 to 60°C (No freezing) |
| Effective area | 1 mm ² |
| Lubrication | Not required (Use turbine oil Class 1 ISO VG32, if lubricated.) |
| Fitting | With hose nipple |
| Weight (Basic) | 6 g |

Option

| | |
|---------------------|----------------|
| Total travel (T.T.) | 2.5 mm (Basic) |
|---------------------|----------------|

- A commercially available actuator for the V microswitch can be installed.
- However, be aware that there are different microswitches, such as the P.T./O.T. or F.O.F. types.
- T.T. 2.5 mm is available for basic style only.

Model

| | Actuator | Piping | Number of ports | Applicable tubing | | Note | |
|----------------------|----------------------|---------------|-----------------|-------------------|----------------|----------------|-------|
| | | | | T0425 | TU0425/ET0403 | | |
| Mechanical operation | Basic | Side ported | 3 port | VM1000-4N-00 | VM1000-4NU-00 | | |
| | | | 2 port | VM1100-4N-00 | VM1100-4NU-00 | | |
| | | Bottom ported | 3 port | VM1010-4N-00 | VM1010-4NU-00 | | |
| | | | 2 port | VM1110-4N-00 | VM1110-4NU-00 | | |
| | Roller lever | Side ported | 3 port | VM1000-4N-01 | VM1000-4NU-01 | | |
| | | | 2 port | VM1100-4N-01 | VM1100-4NU-01 | | |
| | | Bottom ported | 3 port | VM1010-4N-01 | VM1010-4NU-01 | | |
| | | | 2 port | VM1110-4N-01 | VM1110-4NU-01 | | |
| | One way roller lever | Side ported | 3 port | VM1000-4N-02 | VM1000-4NU-02 | | |
| | | | 2 port | VM1100-4N-02 | VM1100-4NU-02 | | |
| Bottom ported | | 3 port | VM1010-4N-02 | VM1010-4NU-02 | | | |
| | | 2 port | VM1110-4N-02 | VM1110-4NU-02 | | | |
| Manual operation | Toggle lever | Side ported | 3 port | VM1000-4N-08 | VM1000-4NU-08 | | |
| | | | 2 port | VM1100-4N-08 | VM1100-4NU-08 | | |
| | | Bottom ported | 3 port | VM1010-4N-08 | VM1010-4NU-08 | | |
| | | | 2 port | VM1110-4N-08 | VM1110-4NU-08 | | |
| | Push button | Side ported | 3 port | VM1000-4N-32R | VM1000-4NU-32R | Red | |
| | | | 2 port | VM1100-4N-32R | VM1100-4NU-32R | Red | |
| | | | Bottom ported | 3 port | VM1010-4N-32R | VM1010-4NU-32R | Red |
| | | | | 2 port | VM1110-4N-32R | VM1110-4NU-32R | Red |
| | | Side ported | 3 port | VM1000-4N-32B | VM1000-4NU-32B | Black | |
| | | | 2 port | VM1100-4N-32B | VM1100-4NU-32B | Black | |
| | | | Bottom ported | 3 port | VM1010-4N-32B | VM1010-4NU-32B | Black |
| | | | | 2 port | VM1110-4N-32B | VM1110-4NU-32B | Black |
| | | Side ported | 3 port | VM1000-4N-32G | VM1000-4NU-32G | Green | |
| | | | 2 port | VM1100-4N-32G | VM1100-4NU-32G | Green | |
| | | | Bottom ported | 3 port | VM1010-4N-32G | VM1010-4NU-32G | Green |
| | | | | 2 port | VM1110-4N-32G | VM1110-4NU-32G | Green |

Note) To replace the push button and push button cover alone, refer to page 5-6-7. Other parts and actuator cannot be replaced.

How to Order

VM1 0 0 0 4N 00 R

| • Applicable tubing (Material/Size) | | • Actuator type | | • Color of push button | |
|-------------------------------------|------------------------------|-----------------|----------------------|------------------------|-------|
| 4N | Nylon ø4/2.5 (T0425) | 00 | Basic | R | Red |
| | Nylon ø4/3 (T0403) | 01 | Roller lever | G | Green |
| 4NU | Soft Nylon ø4/2.5 (TS0425) | 02 | One way roller lever | B | Black |
| | Polyurethane ø4/2.5 (TU0425) | 08 | Toggle lever | | |
| | | 32 | Push button | | |

| • Total travel/Basic (T.T.) | |
|-----------------------------|------------------|
| 0 | 4.8 mm |
| 1 | 2.5 mm (Option)* |

* Basic only.

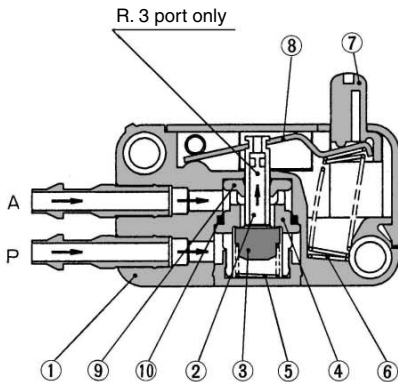
| • Piping | |
|----------|---------------|
| 0 | Side ported |
| 1 | Bottom ported |

| • Number of ports | |
|-------------------|--------|
| 0 | 3 port |
| 1 | 2 port |

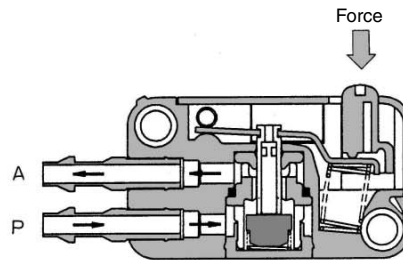
- A
- A
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Construction

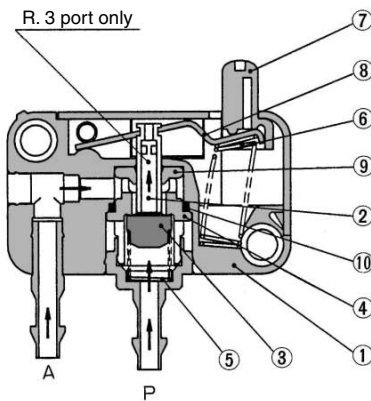
Side ported/Non-actuated



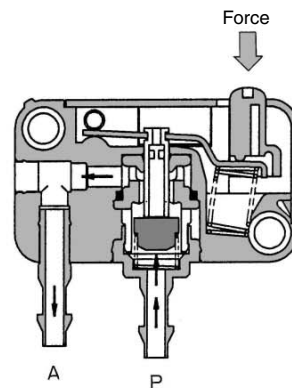
Side ported/Actuated



Bottom ported/Non-actuated



Bottom ported/Actuated



Component Parts

| No. | Description | Material | Note |
|-----|-------------|-----------------|------|
| ① | Body | PBT | |
| ② | Valve | POM | |
| ③ | Valve | NBR | |
| ④ | Retainer | POM | |
| ⑤ | Spring | Stainless steel | |

| No. | Description | Material | Note |
|-----|-------------|-----------------|-------------------------------|
| ⑥ | Spring | Stainless steel | |
| ⑦ | Plunger | POM | T.T. = 2.5 mm only, w/threads |
| ⑧ | Lever | Stainless steel | |
| ⑨ | Packing | NBR | |
| ⑩ | O-ring | NBR | |

Series VM1000

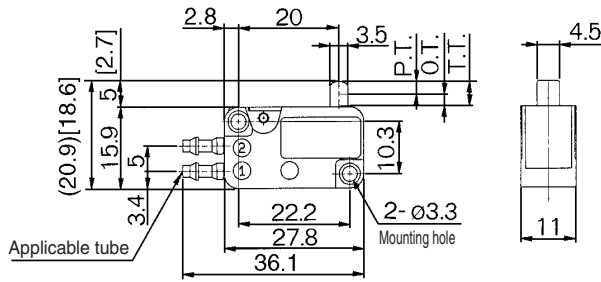
Series VM1000/Side Ported

Basic

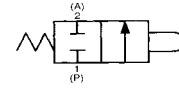
VM1000-4N-00
VM1000-4NU-00
VM1100-4N-00
VM1100-4NU-00



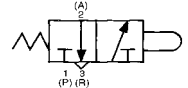
Ⓜ: T.T. = 2.5 mm



JIS Symbol/2 port



3 port

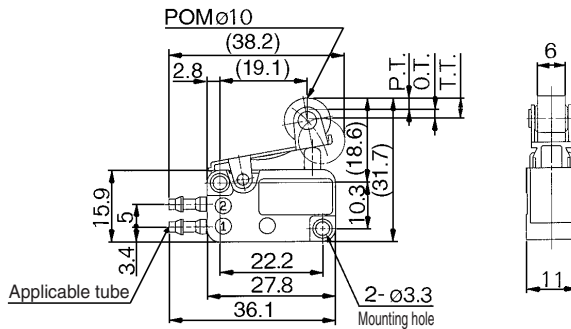


* 0.5 MPa supply

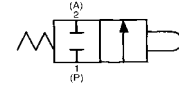
| | | Applicable tubing | |
|-------------|--------|-------------------|-----------------------|
| | | T0425 | TU0425, T0403, TS0425 |
| Side ported | 3 port | VM1000-4N-00 | VM1000-4NU-00 |
| | 2 port | VM1100-4N-00 | VM1100-4NU-00 |
| F.O.F. * | | 6 N | |
| P.T. | | 2.5 mm [2.0 mm] | |
| O.T. | | 2.3 mm [0.5 mm] | |
| T.T. | | 4.8 mm [2.5 mm] | |

Roller lever

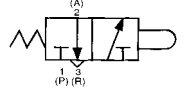
VM1000-4N-01
VM1000-4NU-01
VM1100-4N-01
VM1100-4NU-01



JIS Symbol/2 port



3 port

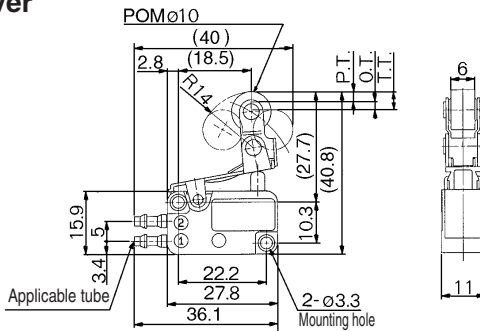


* 0.5 MPa supply

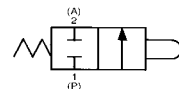
| | | Applicable tubing | |
|-------------|--------|-------------------|-----------------------|
| | | T0425 | TU0425, T0403, TS0425 |
| Side ported | 3 port | VM1000-4N-01 | VM1000-4NU-01 |
| | 2 port | VM1100-4N-01 | VM1100-4NU-01 |
| F.O.F. * | | 6 N | |
| P.T. | | 2.5 mm | |
| O.T. | | 2.0 mm | |
| T.T. | | 4.5 mm | |

One way roller lever

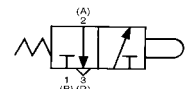
VM1000-4N-02
VM1000-4NU-02
VM1100-4N-02
VM1100-4NU-02



JIS Symbol/2 port



3 port

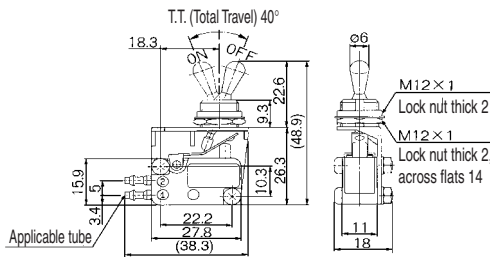


* 0.5 MPa supply

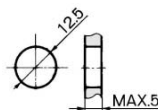
| | | Applicable tubing | |
|-------------|--------|-------------------|-----------------------|
| | | T0425 | TU0425, T0403, TS0425 |
| Side ported | 3 port | VM1000-4N-02 | VM1000-4NU-02 |
| | 2 port | VM1100-4N-02 | VM1100-4NU-02 |
| F.O.F. * | | 6 N | |
| P.T. | | 2.5 mm | |
| O.T. | | 2.0 mm | |
| T.T. | | 4.5 mm | |

Toggle lever

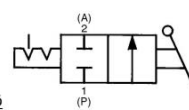
VM1000-4N-08
VM1000-4NU-08
VM1100-4N-08
VM1100-4NU-08



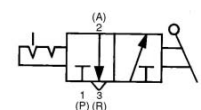
Panel mounting hole



JIS Symbol/2 port



3 port

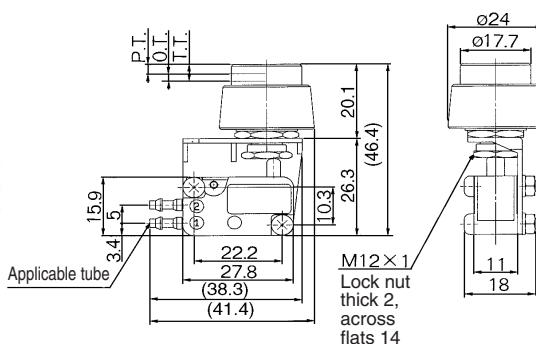


* 0.5 MPa supply

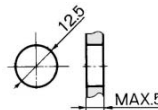
| | | Applicable tubing | |
|-------------|--------|-------------------|-----------------------|
| | | T0425 | TU0425, T0403, TS0425 |
| Side ported | 3 port | VM1000-4N-08 | VM1000-4NU-08 |
| | 2 port | VM1100-4N-08 | VM1100-4NU-08 |
| F.O.F. * | | 4 N | |
| P.T. | | 40° | |

Push button

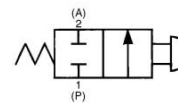
VM1000-4N-32
VM1000-4NU-32
VM1100-4N-32
VM1100-4NU-32



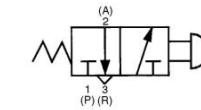
Panel mounting hole



JIS Symbol/2 port



3 port



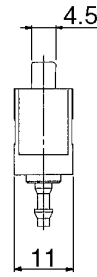
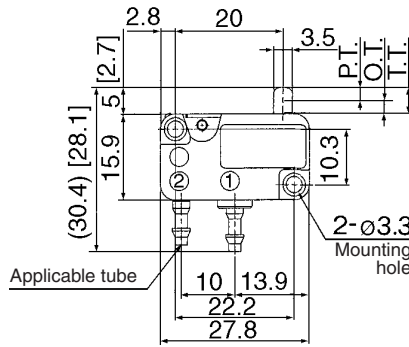
* 0.5 MPa supply

| | | Applicable tubing | |
|-------------|--------|-------------------|-----------------------|
| | | T0425 | TU0425, T0403, TS0425 |
| Side ported | 3 port | VM1000-4N-32 | VM1000-4NU-32 |
| | 2 port | VM1100-4N-32 | VM1100-4NU-32 |
| F.O.F. * | | 6 N | |
| P.T. | | 2.5 mm | |
| O.T. | | 2.0 mm | |
| T.T. | | 4.5 mm | |

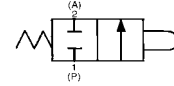
Series VM1000/Bottom Ported

Basic

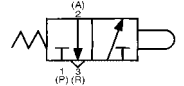
VM1010-4N-00
VM1010-4NU-00
VM1110-4N-00
VM1110-4NU-00



JIS Symbol/2 port



3 port

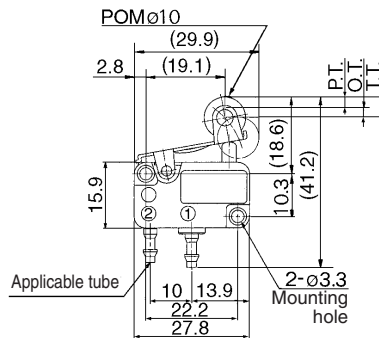


* 0.5 MPa supply

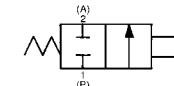
| | | Applicable tubing | |
|---------------|--------|-------------------|-----------------------|
| | | T0425 | TU0425, T0403, TS0425 |
| Bottom ported | 3 port | VM1010-4N-00 | VM1010-4NU-00 |
| | 2 port | VM1110-4N-00 | VM1110-4NU-00 |
| F.O.F. * | | 6 N | |
| P.T. | | 2.5 mm | |
| O.T. | | 2.3 mm [0.5 mm] | |
| T.T. | | 4.8 mm [2.5 mm] | |

Roller lever

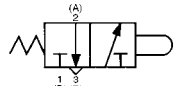
VM1010-4N-01
VM1010-4NU-01
VM1110-4N-01
VM1110-4NU-01



JIS Symbol/2 port



3 port

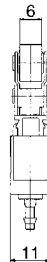
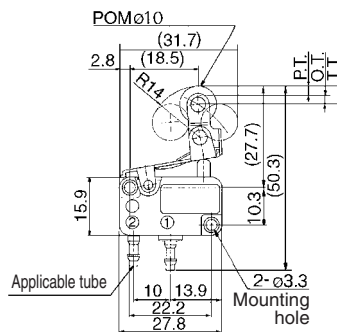


* 0.5 MPa supply

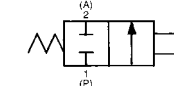
| | | Applicable tubing | |
|---------------|--------|-------------------|-----------------------|
| | | T0425 | TU0425, T0403, TS0425 |
| Bottom ported | 3 port | VM1010-4N-01 | VM1010-4NU-01 |
| | 2 port | VM1110-4N-01 | VM1110-4NU-01 |
| F.O.F. * | | 6 N | |
| P.T. | | 2.5 mm | |
| O.T. | | 2.0 mm | |
| T.T. | | 4.5 mm | |

One way roller lever

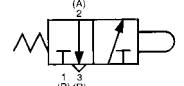
VM1010-4N-02
VM1010-4NU-02
VM1110-4N-02
VM1110-4NU-02



JIS Symbol/2 port



3 port

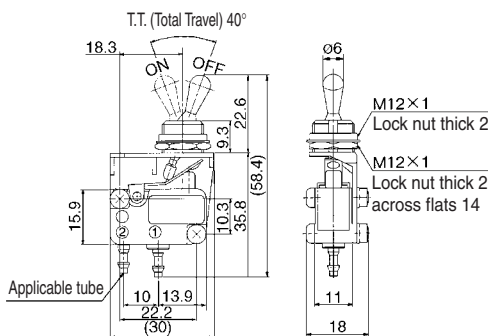


* 0.5 MPa supply

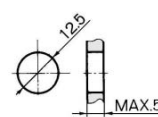
| | | Applicable tubing | |
|---------------|--------|-------------------|-----------------------|
| | | T0425 | TU0425, T0403, TS0425 |
| Bottom ported | 3 port | VM1010-4N-02 | VM1010-4NU-02 |
| | 2 port | VM1110-4N-02 | VM1110-4NU-02 |
| F.O.F. * | | 6 N | |
| P.T. | | 2.5 mm | |
| O.T. | | 2.0 mm | |
| T.T. | | 4.5 mm | |

Toggle lever

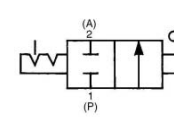
VM1010-4N-08
VM1010-4NU-08
VM1110-4N-08
VM1110-4NU-08



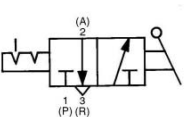
Panel mounting hole



JIS Symbol/2 port



3 port

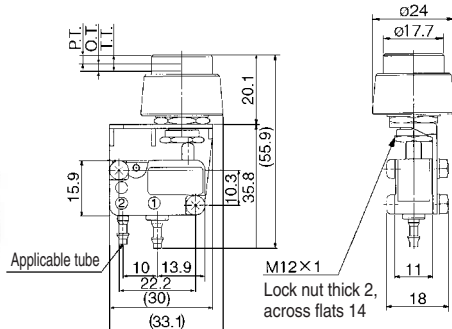


* 0.5 MPa supply

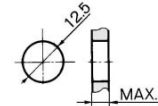
| | | Applicable tubing | |
|---------------|--------|-------------------|-----------------------|
| | | T0425 | TU0425, T0403, TS0425 |
| Bottom ported | 3 port | VM1010-4N-08 | VM1010-4NU-08 |
| | 2 port | VM1110-4N-08 | VM1110-4NU-08 |
| F.O.F. * | | 4 N | |
| T.T. | | 40° | |

Push button

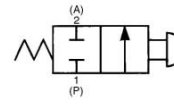
VM1010-4N-32
VM1010-4NU-32
VM1110-4N-32
VM1110-4NU-32



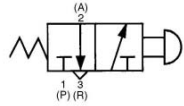
Panel mounting hole



JIS Symbol/2 port



3 port



* 0.5 MPa supply

| | | Applicable tubing | |
|---------------|--------|-------------------|-----------------------|
| | | T0425 | TU0425, T0403, TS0425 |
| Bottom ported | 3 port | VM1010-4N-32 | VM1010-4NU-32 |
| | 2 port | VM1110-4N-32 | VM1110-4NU-32 |
| F.O.F. * | | 6 N | |
| P.T. | | 2.5 mm | |
| O.T. | | 2.0 mm | |
| T.T. | | 4.5 mm | |

2/3 Port Mechanical Valve

Series VM100

Compact size.
Piping options:
Side piping, Bottom piping
A variety of actuator types.



Specifications

| Piping | Side ported | Bottom ported |
|-------------------------------|---|---------------|
| Fluid | Air/Inert gas | |
| Operating pressure | -100 kPa to 1.0 MPa | |
| Ambient and fluid temperature | -5 to 60°C (No freezing) | |
| Effective area | 2.5 mm ² | |
| Lubrication | Not required (Use turbine oil Class 1 ISO VG32, if lubricated.) | |
| Port size | 1/8 | M5 x 0.8 |
| Weight (Basic) | 95 g | 110 g |

Model

| | Side ported | | Bottom ported | | Actuator part no. | Application | |
|----------------------|-----------------------------|--------------|---------------|--------------|-------------------|-------------------|---|
| | 2 port | 3 port | 2 port | 3 port | | | |
| Mechanical operation | Basic | VM120-01-00 | VM130-01-00 | VM122-M5-00 | VM132-M5-00 | — | |
| | | VM121-01-00 | VM131-01-00 | VM123-M5-00 | VM133-M5-00 | — | |
| | Roller lever | VM121-01-01 | VM131-01-01 | VM123-M5-01 | VM133-M5-01 | — | Polyacetal roller |
| | | VM121-01-01S | VM131-01-01S | VM123-M5-01S | VM133-M5-01S | — | Hard steel roller |
| | One way roller lever | VM121-01-02 | VM131-01-02 | VM123-M5-02 | VM133-M5-02 | — | Polyacetal roller |
| | | VM121-01-02S | VM131-01-02S | VM123-M5-02S | VM133-M5-02S | — | Hard steel roller |
| | Straight plunger | VM120-01-05 | VM130-01-05 | VM122-M5-05 | VM132-M5-05 | VM-05B | — |
| | Roller plunger | VM120-01-06 | VM130-01-06 | VM122-M5-06 | VM132-M5-06 | VM-06B | Polyacetal roller |
| | | VM120-01-06S | VM130-01-06S | VM122-M5-06S | VM132-M5-06S | VM-06BS | Hard steel roller |
| | Cross roller plunger | VM120-01-07 | VM130-01-07 | VM122-M5-07 | VM132-M5-07 | VM-07B | Polyacetal roller |
| VM120-01-07S | | VM130-01-07S | VM122-M5-07S | VM132-M5-07S | VM-07BS | Hard steel roller | |
| Manual operation | Toggle lever | VM120-01-08 | VM130-01-08 | VM122-M5-08 | VM132-M5-08 | VM-08B | — |
| | Push button (Mushroom) | VM120-01-30R | VM130-01-30R | VM122-M5-30R | VM132-M5-30R | VM-30AR | Red |
| | | VM120-01-30B | VM130-01-30B | VM122-M5-30B | VM132-M5-30B | VM-30AB | Black |
| | | VM120-01-30G | VM130-01-30G | VM122-M5-30G | VM132-M5-30G | VM-30AG | Green |
| | Push button (Extended) | VM120-01-30Y | VM130-01-30Y | VM122-M5-30Y | VM132-M5-30Y | VM-30AY | Yellow |
| | | VM120-01-32R | VM130-01-32R | VM122-M5-32R | VM132-M5-32R | VM-32AR | Red |
| | | VM120-01-32B | VM130-01-32B | VM122-M5-32B | VM132-M5-32B | VM-32AB | Black |
| | Push button (Flush) | VM120-01-32G | VM130-01-32G | VM122-M5-32G | VM132-M5-32G | VM-32AG | Green |
| | | VM120-01-32Y | VM130-01-32Y | VM122-M5-32Y | VM132-M5-32Y | VM-32AY | Yellow |
| | | VM120-01-33 | VM130-01-33 | VM122-M5-33 | VM132-M5-33 | VM-33A | With a set of red, black, green, yellow |
| | Twist selector (2 position) | VM120-01-34R | VM130-01-34R | VM122-M5-34R | VM132-M5-34R | VM-34AR | Red |
| | | VM120-01-34B | VM130-01-34B | VM122-M5-34B | VM132-M5-34B | VM-34AB | Black |
| | | VM120-01-34G | VM130-01-34G | VM122-M5-34G | VM132-M5-34G | VM-34AG | Green |
| | | VM120-01-34Y | VM130-01-34Y | VM122-M5-34Y | VM132-M5-34Y | VM-34AY | Yellow |
| | Key selector (2 position) | VM120-01-36 | VM130-01-36 | VM122-M5-36 | VM132-M5-36 | VM-36A | — |
| | Twist selector (3 position) | VM131-01-35R | VM151-01-35R | VM133-M5-35R | VM153-M5-35R | — | Red |
| | | VM131-01-35B | VM151-01-35B | VM133-M5-35B | VM153-M5-35B | — | Black |
| | | VM131-01-35G | VM151-01-35G | VM133-M5-35G | VM153-M5-35G | — | Green |
| | | VM131-01-35Y | VM151-01-35Y | VM133-M5-35Y | VM153-M5-35Y | — | Yellow |
| (3 port) | | (5 port) | (3 port) | (5 port) | — | — | |



Note 1) Actuator replacement is available for all types except for roller lever, one way roller lever, and 3 position selector.

Note 2) For push button (mushroom), push button (extended), push button (flush) and a single unit of fastening ring, refer to pages 5-6-6 to 5-6-7. The other parts are not replaceable.

Note 3) The handle of the selector (2 position and 3 position) cannot be removed or replaced alone.

How to Order

VM1 **3** **1** **01** **01** **S**

Port size

| | |
|------------|--------------------------|
| 01 | Rc 1/8 |
| M5 | M5 x 0.8 (Female thread) |
| N01 | NPT 1/8 |
| F01 | G 1/8 |

Piping direction and the length of push rod

| | 0 | 1 | 2 | 3 |
|---------|-------------|-------------|---------------|---------------|
| Length | Long | Short | Long | Short |
| Porting | Side ported | Side ported | Bottom ported | Bottom ported |

Number of ports

| | |
|----------|--------|
| 2 | 2 port |
| 3 | 3 port |

Actuator type

| | |
|-----------|-----------------------------|
| 00 | Basic |
| 01 | Roller lever |
| 02 | One way roller lever |
| 05 | Straight plunger |
| 06 | Roller plunger |
| 07 | Cross roller plunger |
| 08 | Toggle lever |
| 30 | Push button (Mushroom) |
| 32 | Push button (Extended) |
| 33 | Push button (Flush) |
| 34 | Twist selector (2 position) |
| 36 | Key selector (2 position) |
| 35 | Twist selector (3 position) |

Suffix for actuator

| | |
|----------|-------------------|
| S | Hard steel roller |
| R | Red |
| B | Black |
| G | Green |
| Y | Yellow |

Color of push button selector

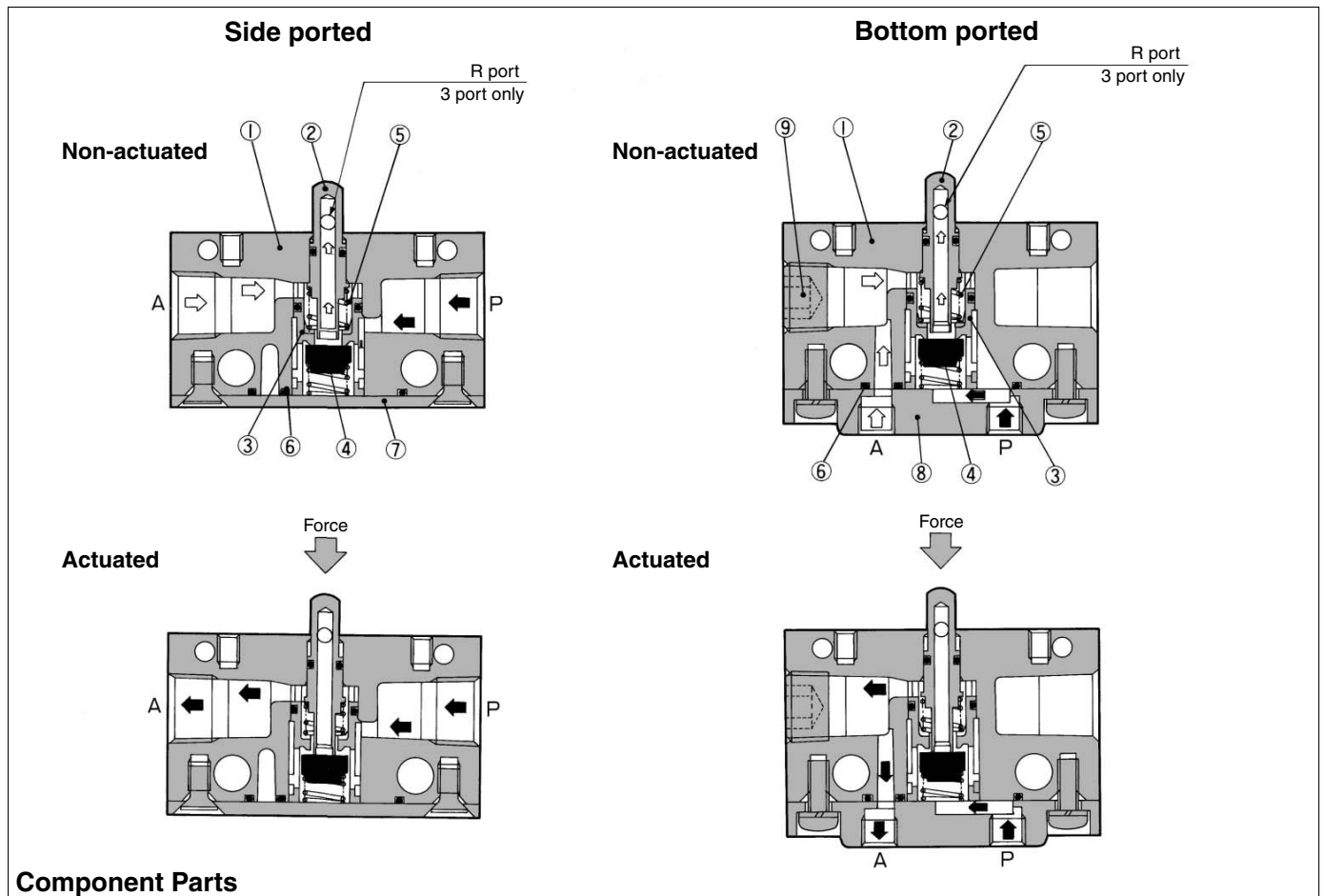
Suffix for indicator light

| | |
|----------|--|
| Z | With miniature indicator light (Bottom piping type only) |
|----------|--|

| Actuator | Height of rod push | Side ported | | Bottom ported | |
|-----------------------------|--------------------|-------------|-------|---------------|-------|
| | | Long | Short | Long | Short |
| Basic | 00 | ○ | ○ | ○ | ○ |
| Roller lever | 01 | x | ○ | x | ○ |
| One way roller lever | 02 | x | ○ | x | ○ |
| Straight plunger | 05 | ○ | x | ○ | x |
| Roller plunger | 06 | ○ | x | ○ | x |
| Cross roller plunger | 07 | ○ | x | ○ | x |
| Toggle lever | 08 | ○ | x | ○ | x |
| Push button (Mushroom) | 30 | ○ | x | ○ | x |
| Push button (Extended) | 32 | ○ | x | ○ | x |
| Push button (Flush) | 33 | ○ | x | ○ | x |
| Twist selector (2 position) | 34 | ○ | x | ○ | x |
| Key selector (2 position) | 36 | ○ | x | ○ | x |
| Twist selector (3 position) | 35 | x | ○ | x | ○ |

Combination possible: ○, Combination impossible: x

Construction



Component Parts

| No. | Description | Material | Note |
|-----|-------------|-----------------|-----------------|
| ① | Valve | ZDC | Metallic plated |
| ② | Plunger | POM | |
| ③ | Valve sheet | POM | |
| ④ | Valve | NBR | |
| ⑤ | Spring | Stainless steel | |

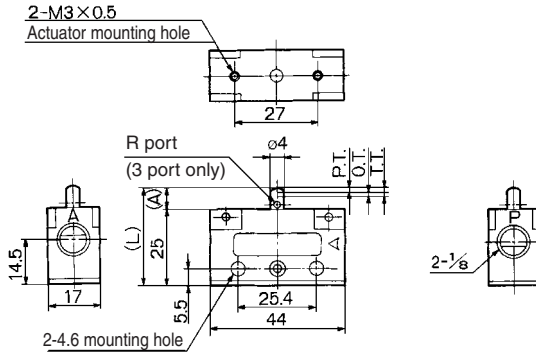
| No. | Description | Material | Note |
|-----|--------------------------|--------------|-----------------|
| ⑥ | Gasket | NBR | |
| ⑦ | Cover | Rolled steel | |
| ⑧ | Sub-plate | ZDC | Metallic plated |
| ⑨ | Hexagon socket head plug | Rolled steel | |

Series VM100

Series VM100/Side Ported

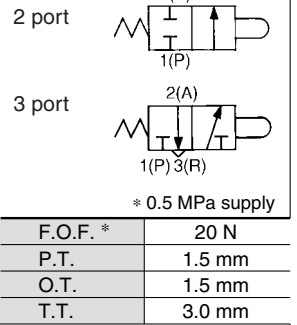
Basic

VM120-01-00
VM130-01-00
VM121-01-00
VM131-01-00



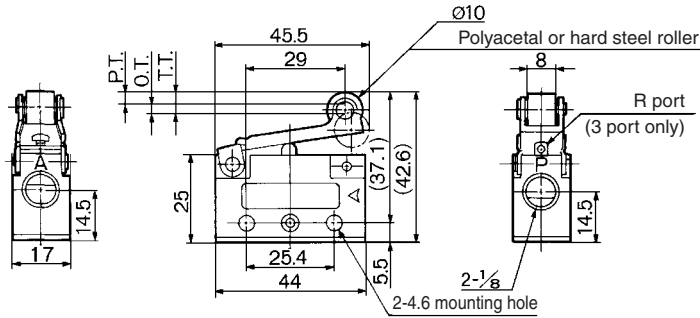
| Model | L | A |
|----------------------------|------|-----|
| VM120-01-00 VM130-01-00 | 32.5 | 7.5 |
| VM121-01-00 VM131-01-00 | 28.5 | 3.5 |

JIS Symbol

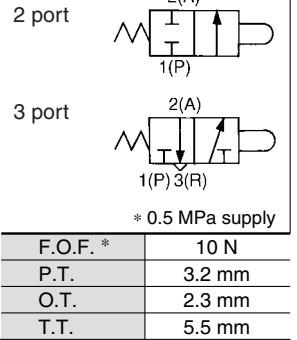


Roller lever

VM121-01-01
VM131-01-01
VM121-01-01S
VM131-01-01S

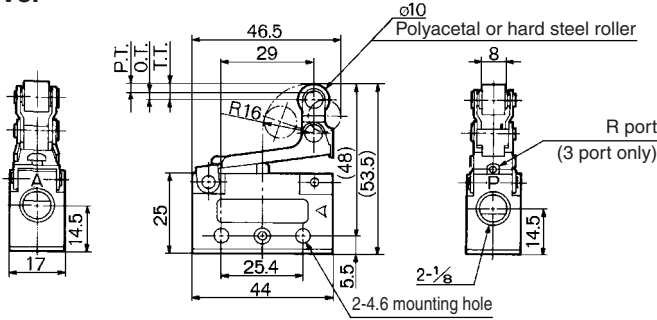


JIS Symbol

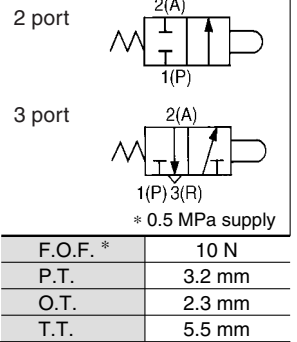


One way roller lever

VM121-01-02
VM131-01-02
VM121-01-02S
VM131-01-02S

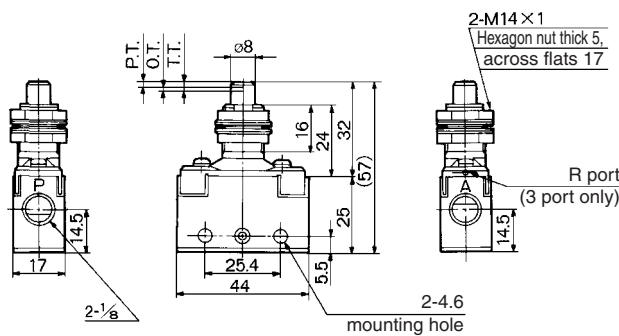


JIS Symbol

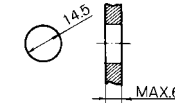


Straight plunger

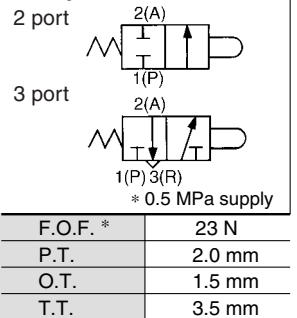
VM120-01-05
VM130-01-05



Panel mounting hole

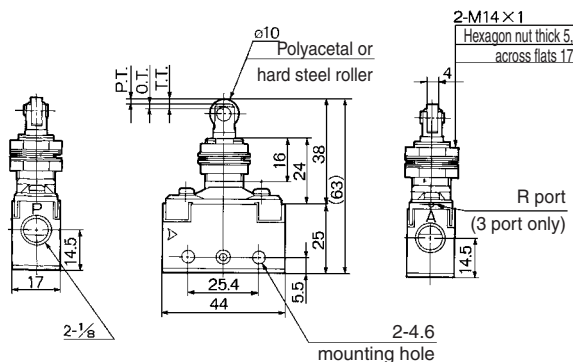


JIS Symbol

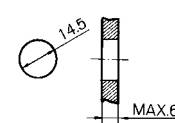


Roller plunger

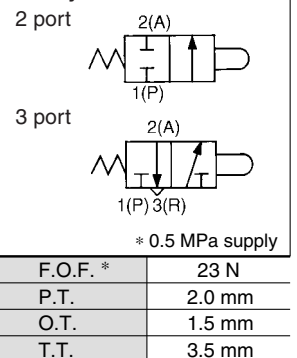
VM120-01-06
VM130-01-06
VM120-01-06S
VM130-01-06S



Panel mounting hole



JIS Symbol

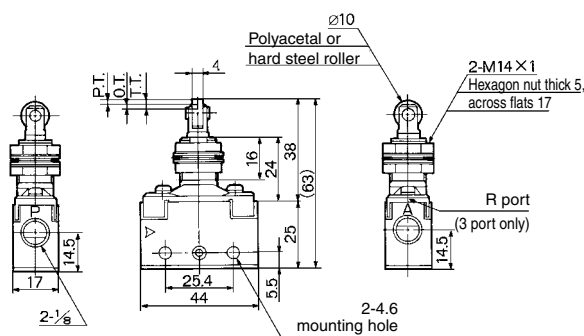


2/3 Port Mechanical Valve Series VM100

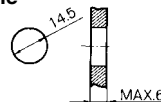
Series VM100/Side Ported

Cross roller plunger

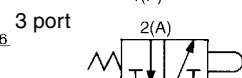
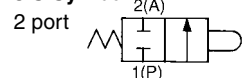
VM120-01-07
VM130-01-07
VM120-01-07S
VM130-01-07S



Panel mounting hole



JIS Symbol



* 0.5 MPa supply

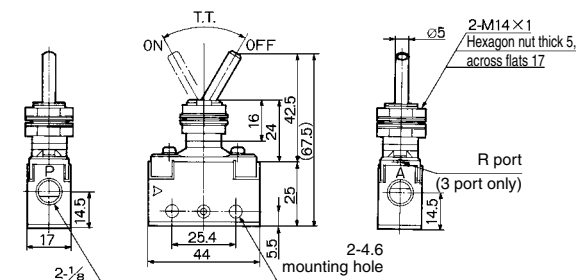
| | |
|----------|--------|
| F.O.F. * | 23 N |
| P.T. | 2 mm |
| O.T. | 1.5 mm |
| T.T. | 3.5 mm |

□A

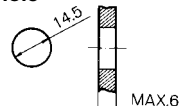
□A

Toggle lever

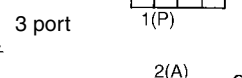
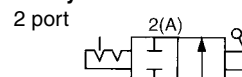
VM120-01-08
VM130-01-08



Panel mounting hole



JIS Symbol



* 0.5 MPa supply

| | |
|----------|------|
| F.O.F. * | 10 N |
| T.T. | 60° |

□A

□A

VM

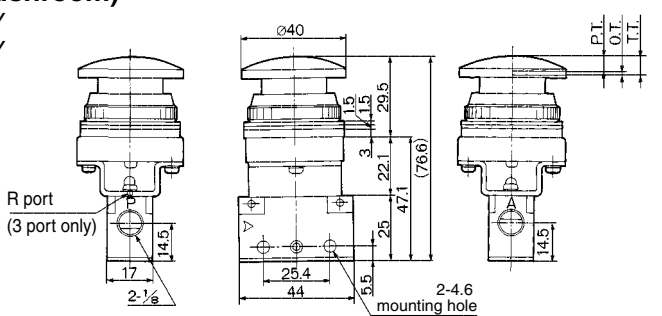
VR

VH

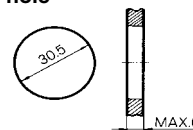
VHS

Push button (Mushroom)

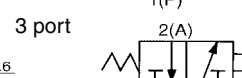
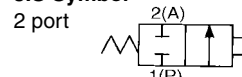
VM120-01-30R/B/G/Y
VM130-01-30R/B/G/Y



Panel mounting hole



JIS Symbol

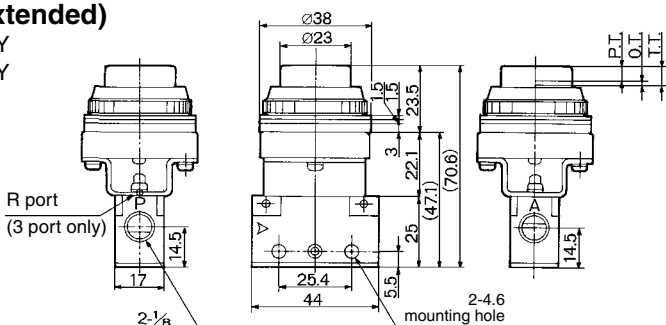


* 0.5 MPa supply

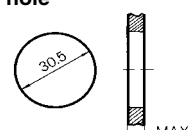
| | |
|----------|--------|
| F.O.F. * | 21 N |
| P.T. | 4.9 mm |
| O.T. | 1.6 mm |
| T.T. | 6.5 mm |

Push button (Extended)

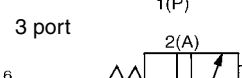
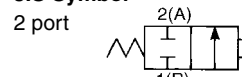
VM120-01-32R/B/G/Y
VM130-01-32R/B/G/Y



Panel mounting hole



JIS Symbol

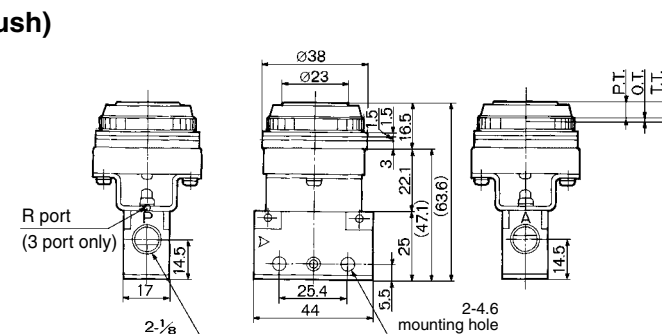


* 0.5 MPa supply

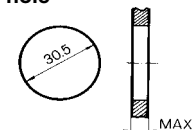
| | |
|----------|--------|
| F.O.F. * | 21 N |
| P.T. | 4.9 mm |
| O.T. | 1.6 mm |
| T.T. | 6.5 mm |

Push button (Flush)

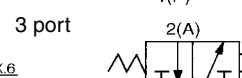
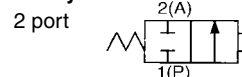
VM120-01-33
VM130-01-33



Panel mounting hole



JIS Symbol



* 0.5 MPa supply

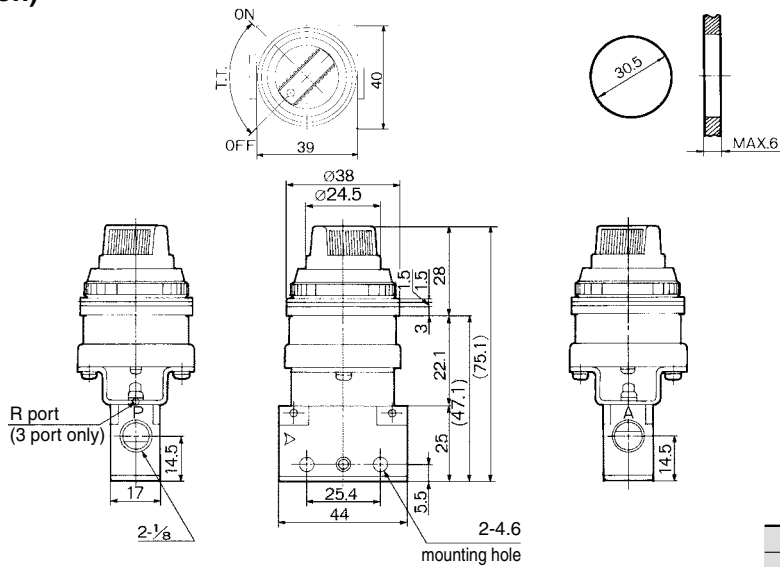
| | |
|----------|--------|
| F.O.F. * | 21 N |
| P.T. | 4.9 mm |
| O.T. | 1.6 mm |
| T.T. | 6.5 mm |

Series VM100

Series VM100/Side Ported

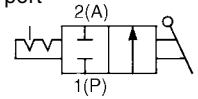
Twist selector (2 position)

VM120-01-34R/B/G/Y
VM130-01-34R/B/G/Y

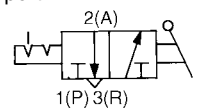


JIS Symbol

2 port



3 port

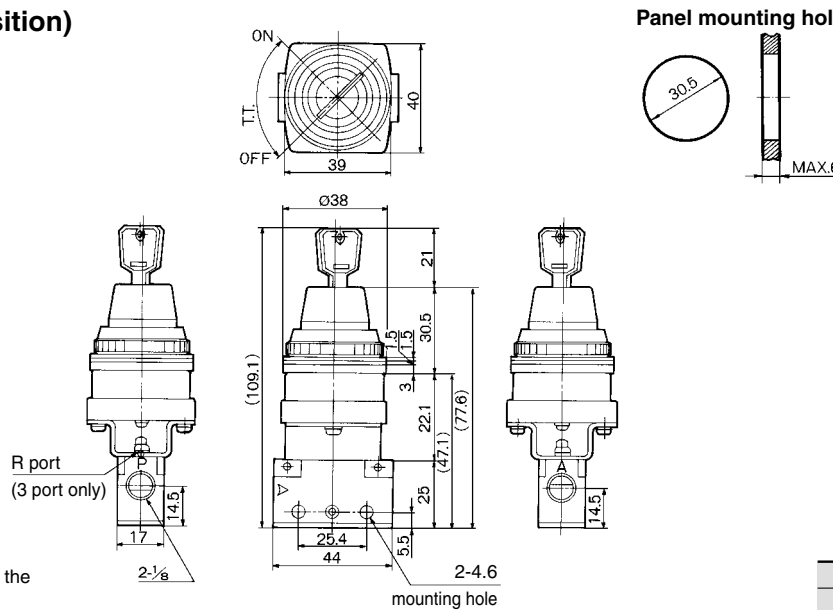


* 0.5 MPa supply

| | |
|----------|------|
| F.O.F. * | 15 N |
| T.T. | 90° |

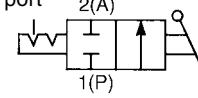
Key selector (2 position)

VM120-01-36
VM130-01-36

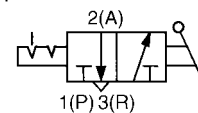


JIS Symbol

2 port



3 port



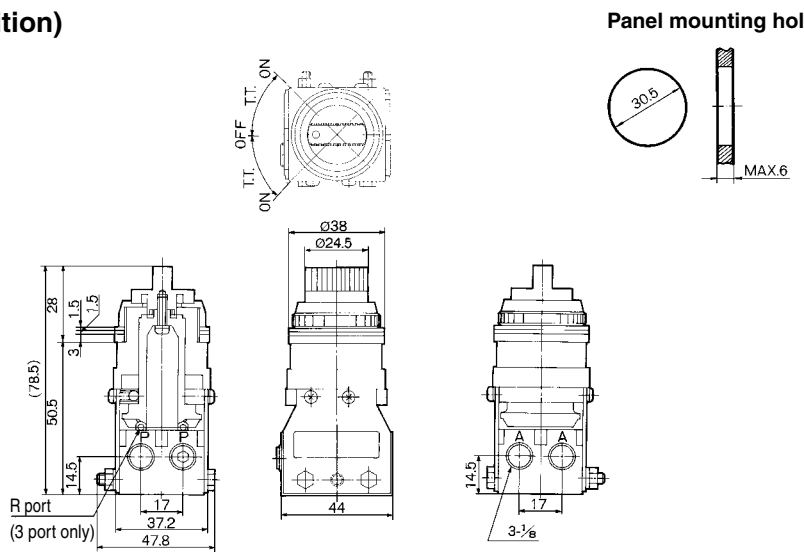
* 0.5 MPa supply

| | |
|----------|------|
| F.O.F. * | 15 N |
| T.T. | 90° |

Key can be removed at the "on" and "off" positions.

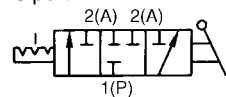
Twist selector (3 position)

VM131-01-35R/B/G/Y
VM151-01-35R/B/G/Y

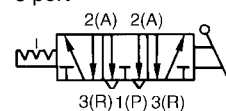


JIS Symbol

3 port



5 port



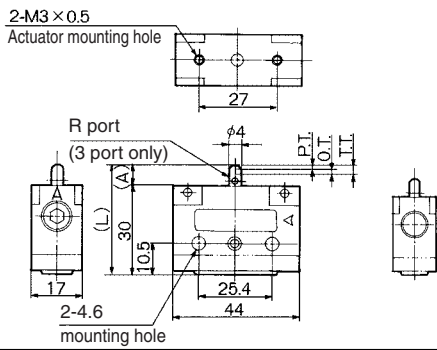
* 0.5 MPa supply

| | |
|----------|------|
| F.O.F. * | 15 N |
| T.T. | 45° |

Series VM100/Bottom Ported

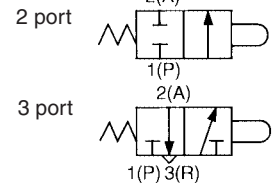
Basic

VM122-M5-00
VM132-M5-00
VM123-M5-00
VM133-M5-00



| Model | L | A |
|----------------------------|------|-----|
| VM122-M5-00 VM132-M5-00 | 37.5 | 7.5 |
| VM123-M5-00 VM133-M5-00 | 33.5 | 3.5 |

JIS Symbol

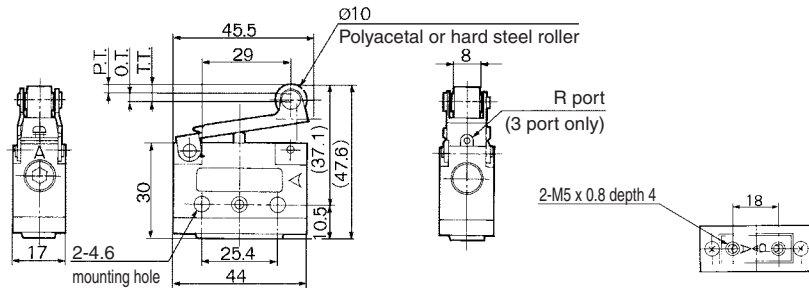


* 0.5 MPa supply

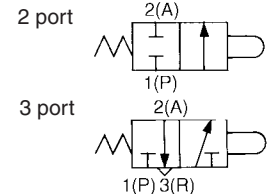
| | |
|---------|--------|
| F.O.F.* | 20 N |
| P.T. | 1.5 mm |
| O.T. | 1.5 mm |
| T.T. | 3.0 mm |

Roller lever

VM123-M5-01
VM133-M5-01
VM123-M5-01S
VM133-M5-01S



JIS Symbol

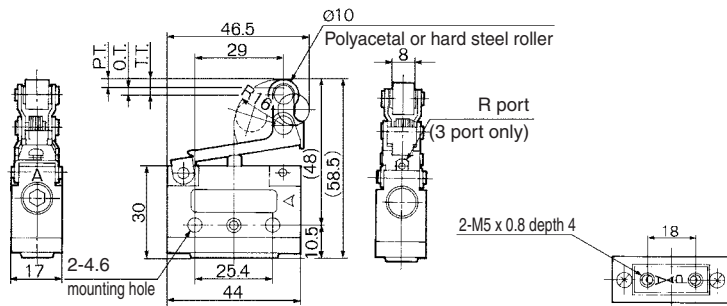


* 0.5 MPa supply

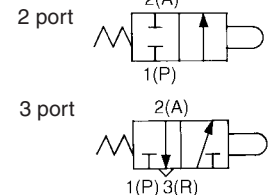
| | |
|---------|--------|
| F.O.F.* | 10 N |
| P.T. | 3.2 mm |
| O.T. | 2.3 mm |
| T.T. | 5.5 mm |

One way roller lever

VM123-M5-02
VM133-M5-02
VM123-M5-02S
VM133-M5-02S



JIS Symbol

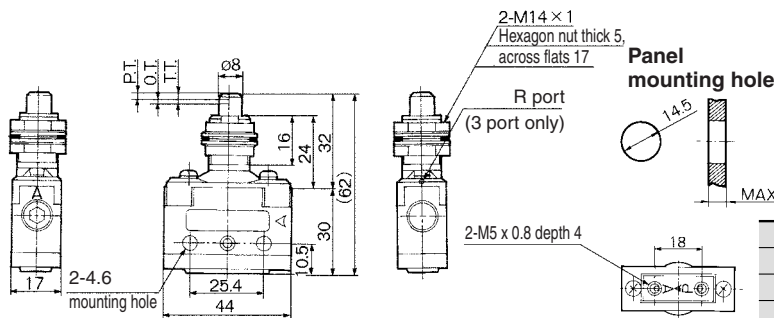


* 0.5 MPa supply

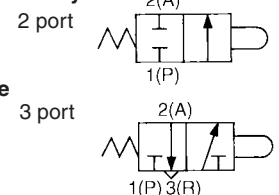
| | |
|---------|--------|
| F.O.F.* | 10 N |
| P.T. | 3.2 mm |
| O.T. | 2.3 mm |
| T.T. | 5.5 mm |

Straight plunger

VM122-M5-05
VM132-M5-05



JIS Symbol

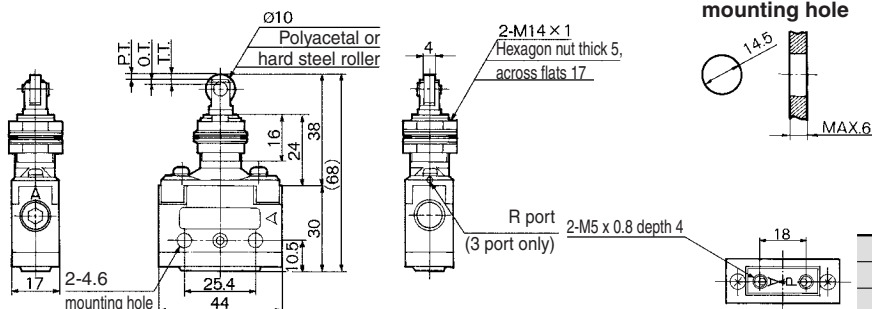


* 0.5 MPa supply

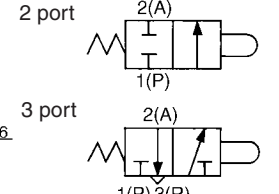
| | |
|---------|--------|
| F.O.F.* | 23 N |
| P.T. | 2.0 mm |
| O.T. | 1.5 mm |
| T.T. | 3.5 mm |

Roller plunger

VM122-M5-06
VM132-M5-06
VM122-M5-06S
VM132-M5-06S



JIS Symbol



* 0.5 MPa supply

| | |
|---------|--------|
| F.O.F.* | 23 N |
| P.T. | 2.0 mm |
| O.T. | 1.5 mm |
| T.T. | 3.5 mm |

□A

V□A

□A

V□A

VM

VR

VH

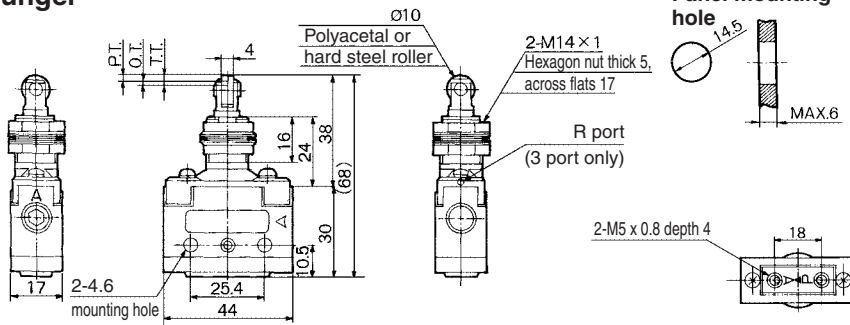
VHS

Series VM100

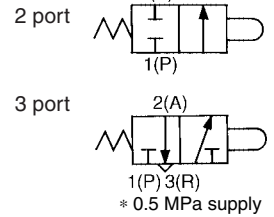
Series VM100/Bottom Ported

Cross roller plunger

VM122-M5-07
VM132-M5-07
VM122-M5-07S
VM132-M5-07S



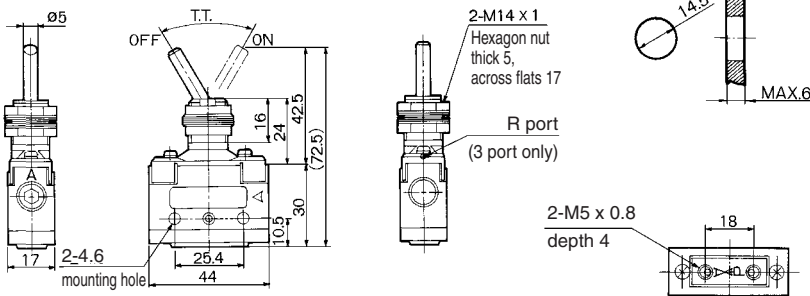
JIS Symbol



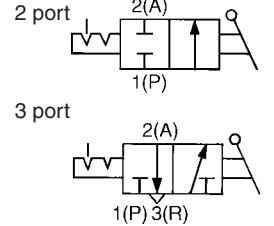
| | |
|----------|--------|
| F.O.F. * | 23 N |
| P.T. | 2 mm |
| O.T. | 1.5 mm |
| T.T. | 3.5 mm |

Toggle lever

VM122-M5-08
VM132-M5-08



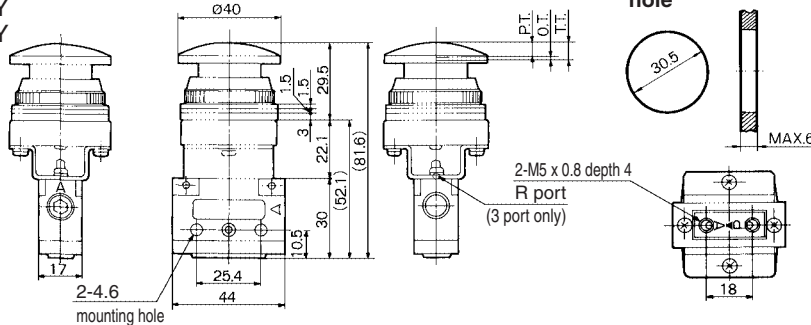
JIS Symbol



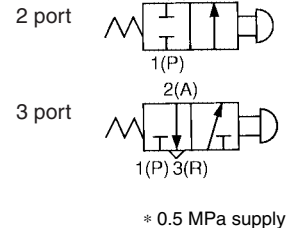
| | |
|----------|------|
| F.O.F. * | 10 N |
| P.T. | 60° |

Push button (Mushroom)

VM122-M5-30R/B/G/Y
VM132-M5-30R/B/G/Y



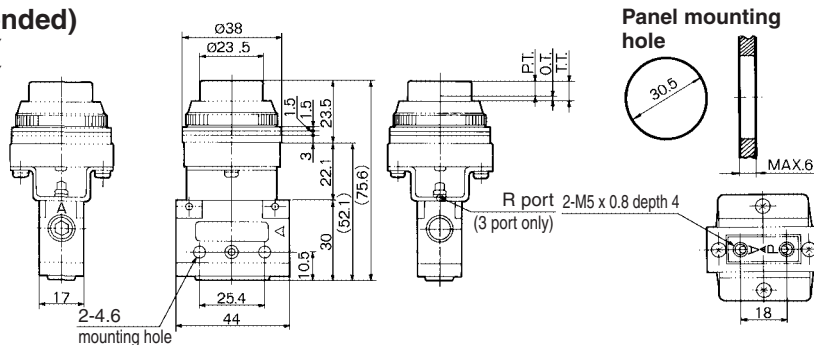
JIS Symbol



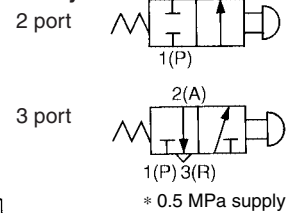
| | |
|----------|--------|
| F.O.F. * | 21 N |
| P.T. | 4.9 mm |
| O.T. | 1.6 mm |
| T.T. | 6.5 mm |

Push button (Extended)

VM122-M5-32R/B/G/Y
VM132-M5-32R/B/G/Y



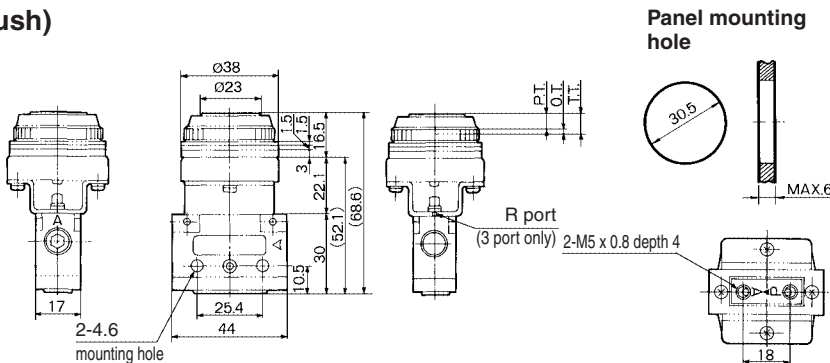
JIS Symbol



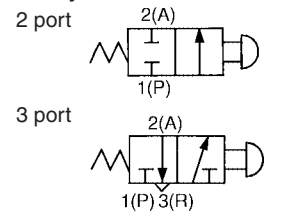
| | |
|----------|--------|
| F.O.F. * | 21 N |
| P.T. | 4.9 mm |
| O.T. | 1.6 mm |
| T.T. | 6.5 mm |

Push button (Flush)

VM122-M5-33
VM132-M5-33



JIS Symbol

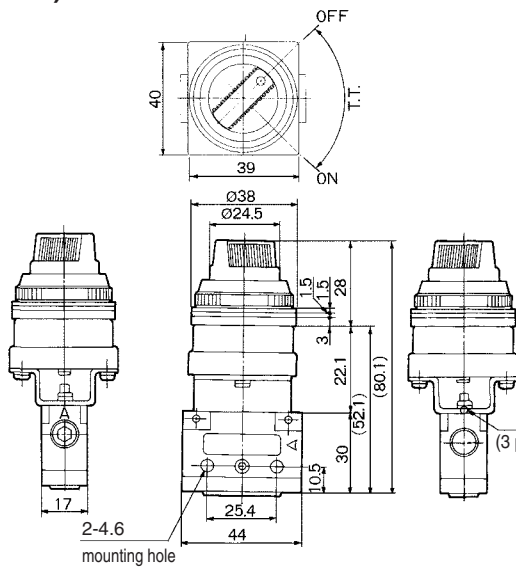


| | |
|----------|--------|
| F.O.F. * | 21 N |
| P.T. | 4.9 mm |
| O.T. | 1.6 mm |
| T.T. | 6.5 mm |

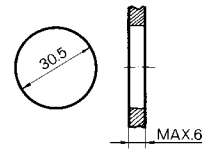
Series VM100/Bottom Ported

Twist selector (2 position)

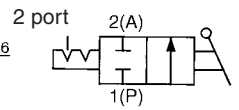
VM122-M5-34R/B/G/Y
VM132-M5-34R/B/G/Y



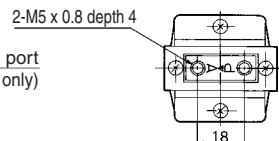
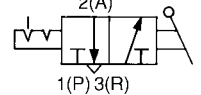
Panel mounting hole



JIS Symbol



3 port

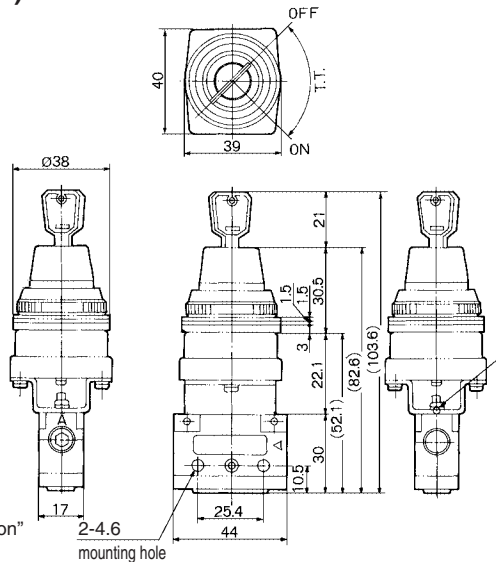


* 0.5 MPa supply

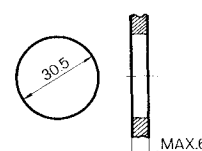
| | |
|----------|------|
| F.O.F. * | 15 N |
| T.T. | 90° |

Key selector (2 position)

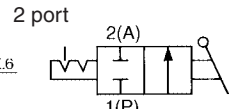
VM122-M5-36
VM132-M5-36



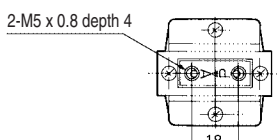
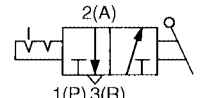
Panel mounting hole



JIS Symbol



3 port



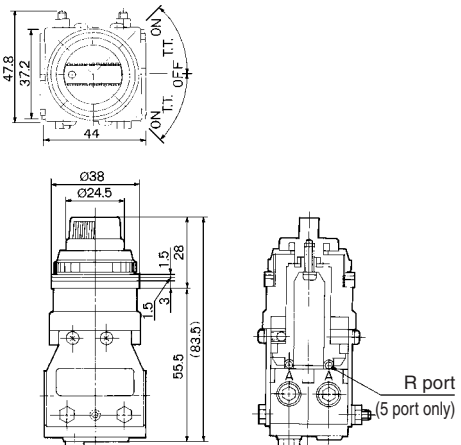
* 0.5 MPa supply

| | |
|----------|------|
| F.O.F. * | 15 N |
| T.T. | 90° |

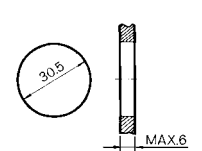
Key can be removed at the "on" and "off" positions.

Twist selector (3 position)

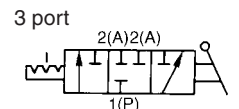
VM133-M5-35R/B/G/Y
VM153-M5-35R/B/G/Y



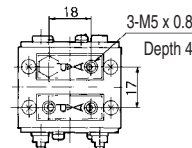
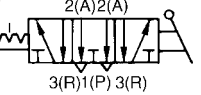
Panel mounting hole



JIS Symbol



5 port



* 0.5 MPa supply

| | |
|----------|------|
| F.O.F. * | 20 N |
| T.T. | 45° |

□A

V□A

□A

V□A

VM

VR

VH

VHS

2/3 Port Mechanical Valve

Series VM200

Large flow capacity.
A variety of actuator types.



Specifications

| | |
|-------------------------------|---|
| Fluid | Air/Inert gas |
| Operating pressure | 0 to 1.0 MPa |
| Ambient and fluid temperature | -5 to 60°C (No freezing) |
| Effective area | 19 mm ² |
| Lubrication | Not required (Use turbine oil Class 1 ISO VG32, if lubricated.) |
| Port size | 1/4 |
| Weight (Basic) | 111 g |

Model

| Actuator | No. of ports | 2 port | 3 port | Actuator part no. | Application |
|-----------------------------|-----------------------------|--------------|--------------|-------------------|---|
| | | | | | |
| Mechanical operation | Basic | VM220-02-00 | VM230-02-00 | — | — |
| | Roller lever | VM220-02-01 | VM230-02-01 | VM-01A | Polyacetal roller |
| | | VM220-02-01S | VM230-02-01S | VM-01AS | Hard steel roller |
| | One way roller lever | VM220-02-02 | VM230-02-02 | VM-02A | Polyacetal roller |
| | | VM220-02-02S | VM230-02-02S | VM-02AS | Hard steel roller |
| | Straight plunger | VM220-02-05 | VM230-02-05 | VM-05A | — |
| | Roller plunger | VM220-02-06 | VM230-02-06 | VM-06A | Polyacetal roller |
| | | VM220-02-06S | VM230-02-06S | VM-06AS | Hard steel roller |
| | Cross roller plunger | VM220-02-07 | VM230-02-07 | VM-07A | Polyacetal roller |
| | | VM220-02-07S | VM230-02-07S | VM-07AS | Hard steel roller |
| Manual operation | Toggle lever | VM220-02-08 | VM230-02-08 | VM-08A | — |
| | Push button (Mushroom) | VM220-02-30R | VM230-02-30R | VM-30AR | Red |
| | | VM220-02-30B | VM230-02-30B | VM-30AB | Black |
| | | VM220-02-30G | VM230-02-30G | VM-30AG | Green |
| | | VM220-02-30Y | VM230-02-30Y | VM-30AY | Yellow |
| | Push button (Extended) | VM220-02-32R | VM230-02-32R | VM-32AR | Red |
| | | VM220-02-32B | VM230-02-32B | VM-32AB | Black |
| | | VM220-02-32G | VM230-02-32G | VM-32AG | Green |
| | Push button (Flush) | VM220-02-32Y | VM230-02-32Y | VM-32AY | Yellow |
| | | VM220-02-33 | VM230-02-33 | VM-33A | With a set of red, black, green, yellow |
| | Twist selector (2 position) | VM220-02-34R | VM230-02-34R | VM-34AR | Red |
| | | VM220-02-34B | VM230-02-34B | VM-34AB | Black |
| | | VM220-02-34G | VM230-02-34G | VM-34AG | Green |
| | | VM220-02-34Y | VM230-02-34Y | VM-34AY | Yellow |
| | Key selector (2 position) | VM220-02-36 | VM230-02-36 | VM-36A | — |
| VM230-02-35R | | VM250-02-35R | — | Red | |
| Twist selector (3 position) | VM230-02-35B | VM250-02-35B | — | Black | |
| | VM230-02-35G | VM250-02-35G | — | Green | |
| | VM230-02-35Y | VM250-02-35Y | — | Yellow | |
| | (3 port) | (5 port) | — | — | |
| Foot pedal | VM220-02-40 | VM230-02-40 | — | — | |



Note 1) Actuator replacement is available for all types except twist selector (3 position) and foot pedal.

Note 2) For push button (mushroom), push button (extended), push button (flush) and a single unit of fastening ring, refer to pages 5-6-6 to 5-6-7. The other parts are not replaceable.

Note 3) The handle of the selector (2 position and 3 position) cannot be removed or replaced alone.

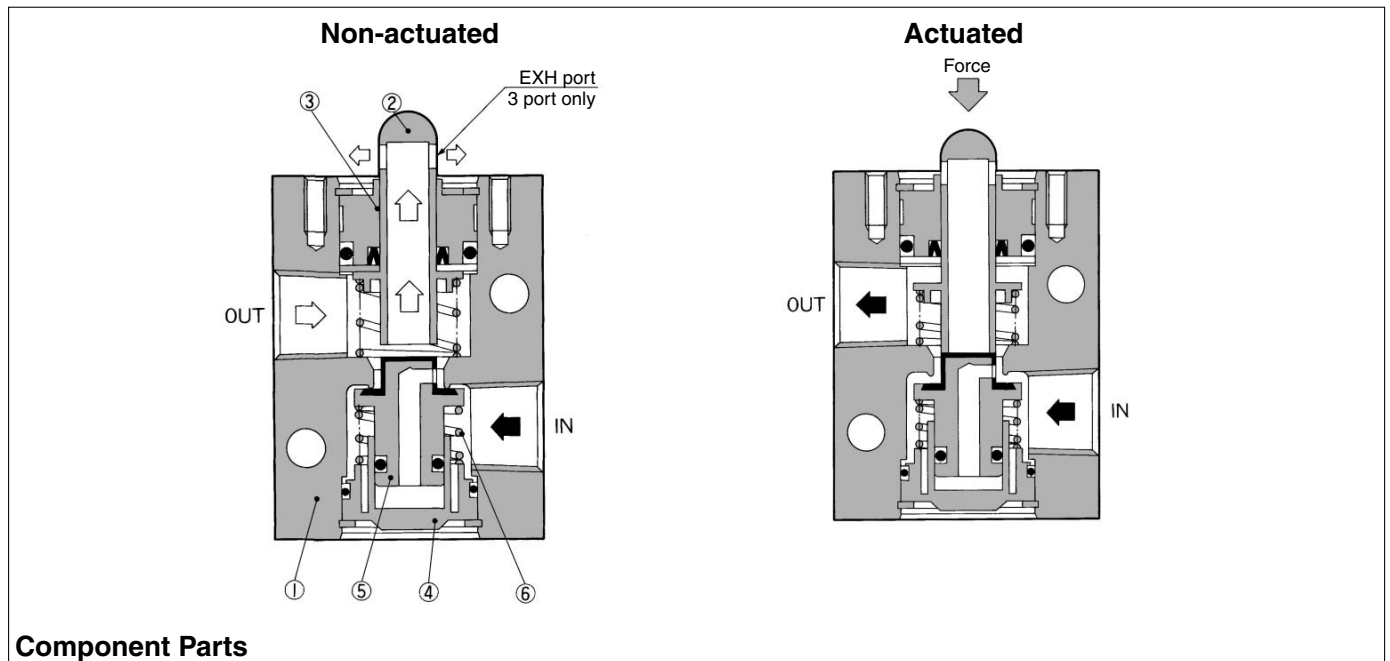
How to Order

VM2 **3** 0 - **02** - **01** **S**

| Number of ports | | Port size | | Actuator type | | Suffix for actuator | |
|-----------------|--------|-----------|---------|---------------|-----------------------------|---------------------|-------------------|
| 2 | 2 port | 02 | Rc 1/4 | 00 | Basic | S | Hard steel roller |
| 3 | 3 port | N02 | NPT 1/4 | 01 | Roller lever | R | Red |
| | | F02 | G 1/4 | 02 | One way roller lever | B | Black |
| | | | | 05 | Straight plunger | G | Green |
| | | | | 06 | Roller plunger | Y | Yellow |
| | | | | 07 | Cross roller plunger | | |
| | | | | 08 | Toggle lever | | |
| | | | | 30 | Push button (Mushroom) | | |
| | | | | 32 | Push button (Extended) | | |
| | | | | 33 | Push button (Flush) | | |
| | | | | 34 | Twist selector (2 position) | | |
| | | | | 36 | Key selector (2 position) | | |
| | | | | 35 | Twist selector (3 position) | | |
| | | | | 40 | Foot pedal | | |

- A
- A
- A
- A
- VM
- VR
- VH
- VHS

Construction



Component Parts

| No. | Description | Material | Note |
|-----|------------------|----------|-----------------|
| ① | Valve | ADC | Metallic plated |
| ② | Plunger | POM | |
| ③ | Plunger retainer | PBT | |

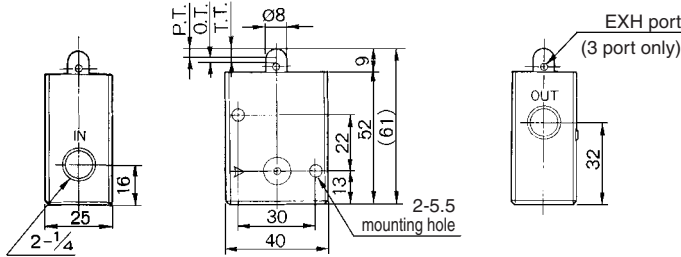
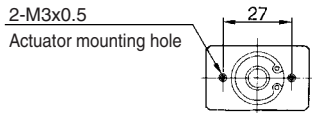
| No. | Description | Material | Note |
|-----|-------------|------------|------|
| ④ | Cover | POM | |
| ⑤ | Valve | Brass, NBR | |
| ⑥ | Spring | Steel | |

Series VM200

Series VM200

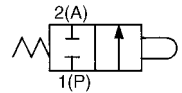
Basic

VM220-02-00
VM230-02-00

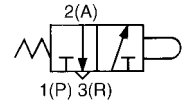


JIS Symbol

2 port



3 port

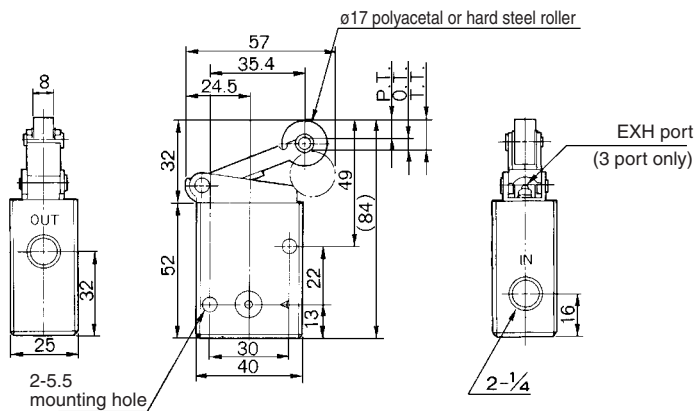


* 0.5 MPa supply

| | |
|----------|--------|
| F.O.F. * | 52 N |
| P.T. | 3.0 mm |
| O.T. | 2.0 mm |
| T.T. | 5.0 mm |

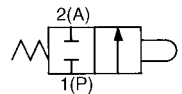
Roller lever

VM220-02-01
VM230-02-01
VM220-02-01S
VM230-02-01S

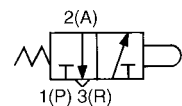


JIS Symbol

2 port



3 port

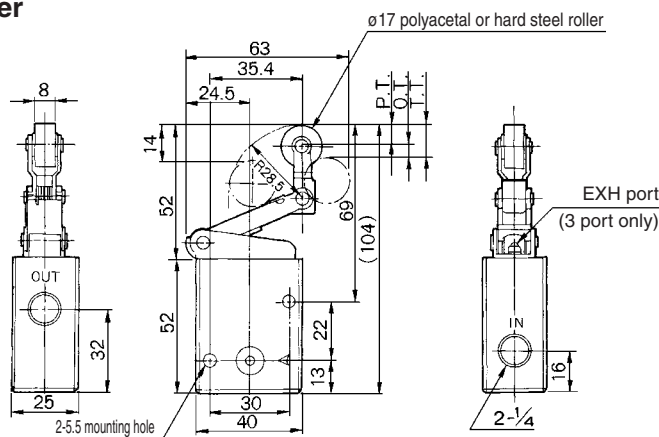


* 0.5 MPa supply

| | |
|----------|---------|
| F.O.F. * | 24 N |
| P.T. | 6.5 mm |
| O.T. | 4.5 mm |
| T.T. | 11.0 mm |

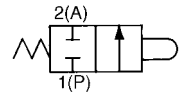
One way roller lever

VM220-02-02
VM230-02-02
VM220-02-02S
VM230-02-02S

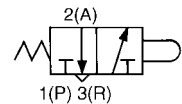


JIS Symbol

2 port



3 port

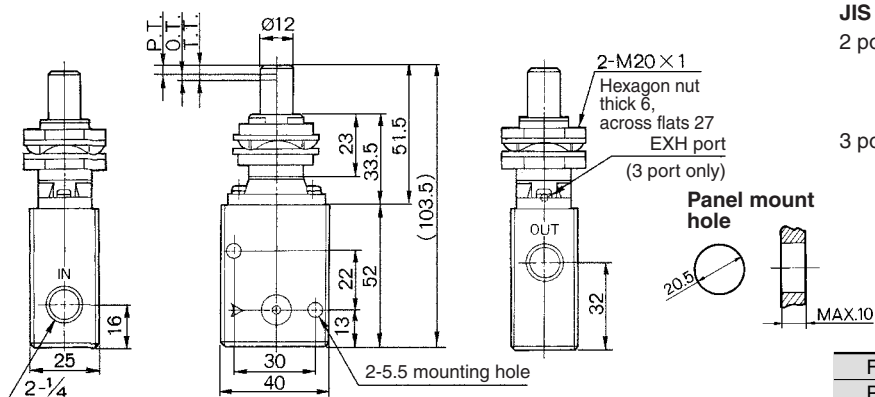


* 0.5 MPa supply

| | |
|----------|---------|
| F.O.F. * | 22 N |
| P.T. | 7.0 mm |
| O.T. | 5.0 mm |
| T.T. | 12.0 mm |

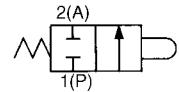
Straight plunger

VM220-02-05
VM230-02-05

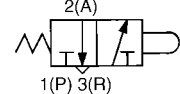


JIS Symbol

2 port



3 port



* 0.5 MPa supply

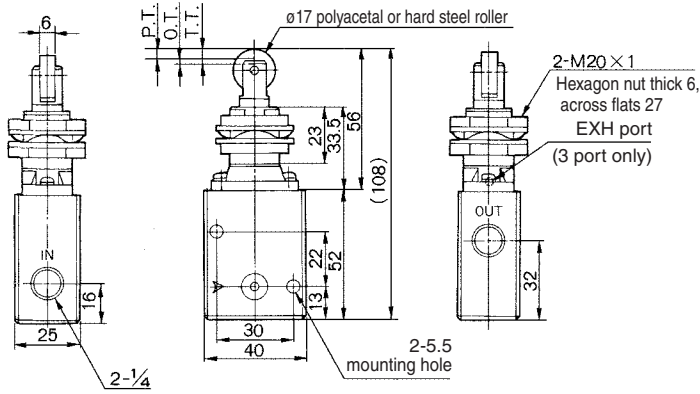
| | |
|----------|--------|
| F.O.F. * | 56 N |
| P.T. | 3.5 mm |
| O.T. | 2.0 mm |
| T.T. | 5.5 mm |

2/3 Port Mechanical Valve Series VM200

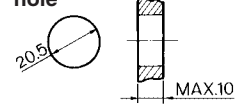
Series VM200

Roller plunger

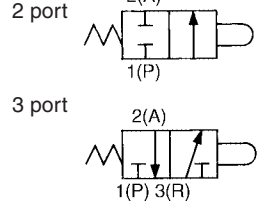
VM220-02-06
VM230-02-06
VM220-02-06S
VM230-02-06S



Panel mounting hole



JIS Symbol

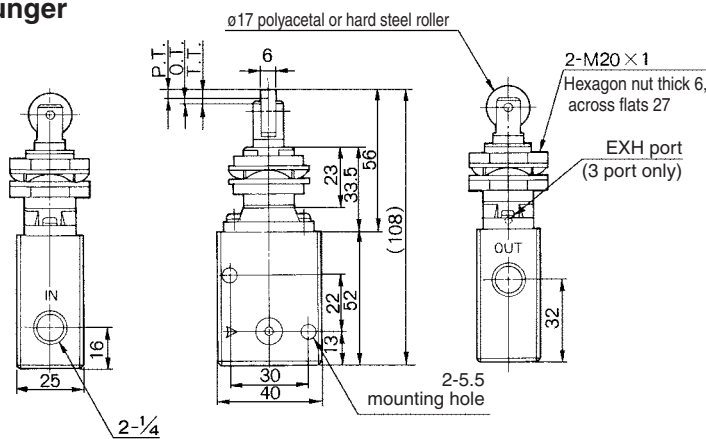


* 0.5 MPa supply

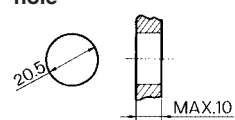
| | |
|----------|--------|
| F.O.F. * | 56 N |
| P.T. | 3.5 mm |
| O.T. | 2.0 mm |
| T.T. | 5.5 mm |

Cross roller plunger

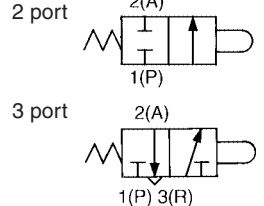
VM220-02-07
VM230-02-07
VM220-02-07S
VM230-02-07S



Panel mounting hole



JIS Symbol

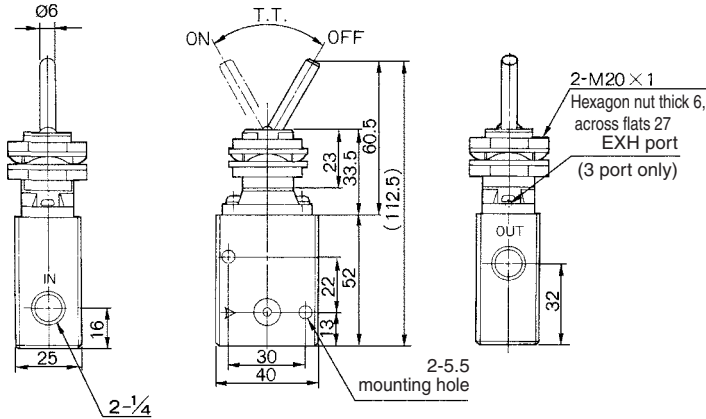


* 0.5 MPa supply

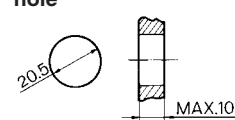
| | |
|----------|--------|
| F.O.F. * | 56 N |
| P.T. | 3.5 mm |
| O.T. | 2.0 mm |
| T.T. | 5.5 mm |

Toggle lever

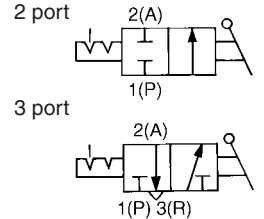
VM220-02-08
VM230-02-08



Panel mounting hole



JIS Symbol

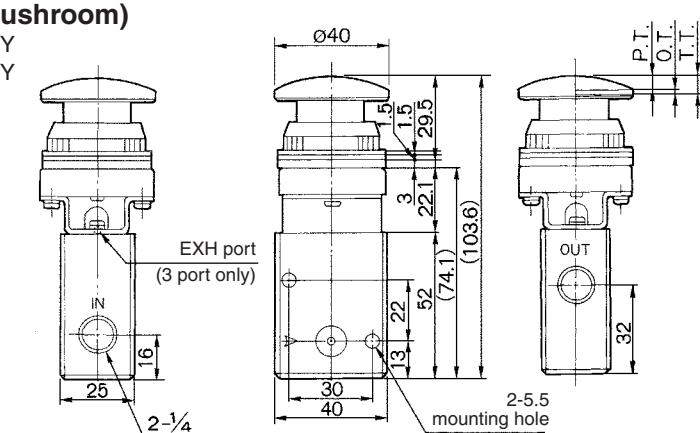


* 0.5 MPa supply

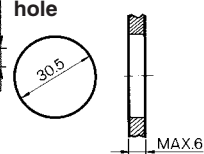
| | |
|----------|------|
| F.O.F. * | 12 N |
| T.T. | 60° |

Push button (Mushroom)

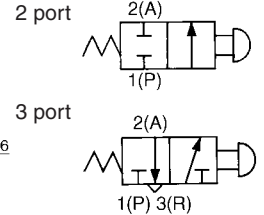
VM220-02-30R/B/G/Y
VM230-02-30R/B/G/Y



Panel mounting hole



JIS Symbol



* 0.5 MPa supply

| | |
|----------|--------|
| F.O.F. * | 52 N |
| P.T. | 4.9 mm |
| O.T. | 1.6 mm |
| T.T. | 6.5 mm |

□A

□A

□A

□A

VM

VR

VH

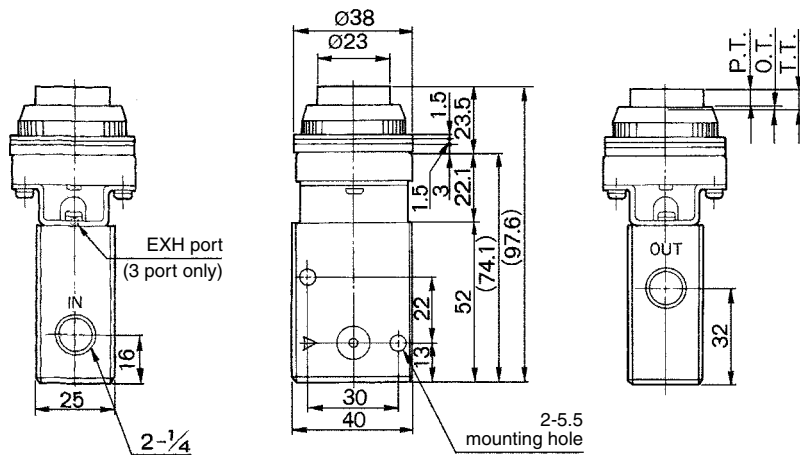
VHS

Series VM200

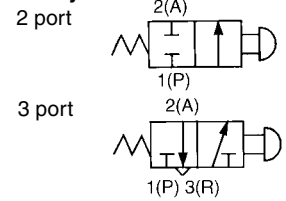
Series VM200

Push button (Extended)

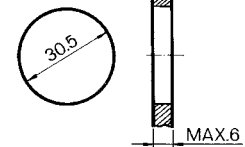
VM220-02-32R/B/G/Y
VM230-02-32R/B/G/Y



JIS Symbol



Panel mounting hole

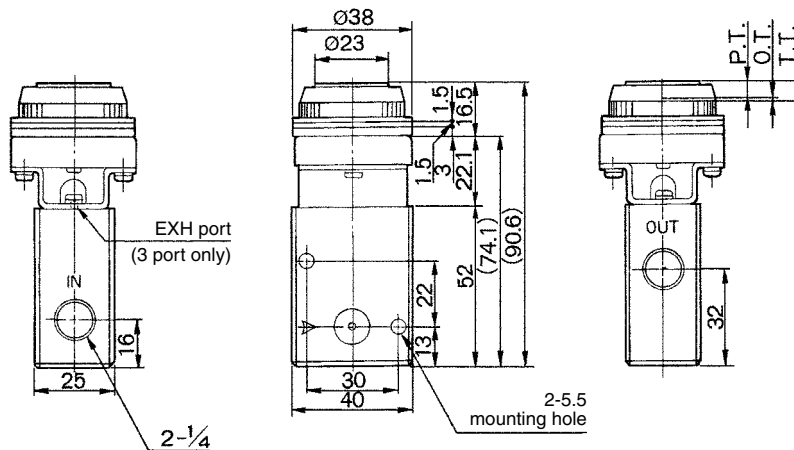


* 0.5 MPa supply

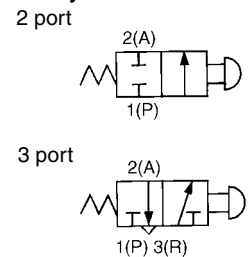
| | |
|----------|--------|
| F.O.F. * | 52 N |
| P.T. | 4.9 mm |
| O.T. | 1.6 mm |
| T.T. | 6.5 mm |

Push button (Flush)

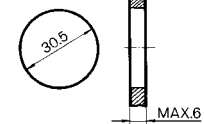
VM220-02-33
VM230-02-33



JIS Symbol



Panel mounting hole

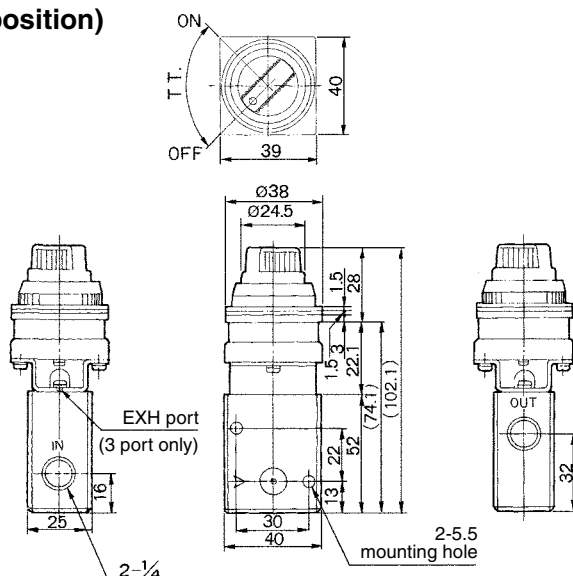


* 0.5 MPa supply

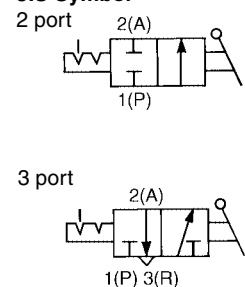
| | |
|----------|--------|
| F.O.F. * | 52 N |
| P.T. | 4.9 mm |
| O.T. | 1.6 mm |
| T.T. | 6.5 mm |

Twist selector (2 position)

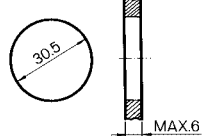
VM220-02-34R/B/G/Y
VM230-02-34R/B/G/Y



JIS Symbol



Panel mounting hole



* 0.5 MPa supply

| | |
|----------|------|
| F.O.F. * | 32 N |
| T.T. | 90° |

2/3 Port Mechanical Valve Series VM200

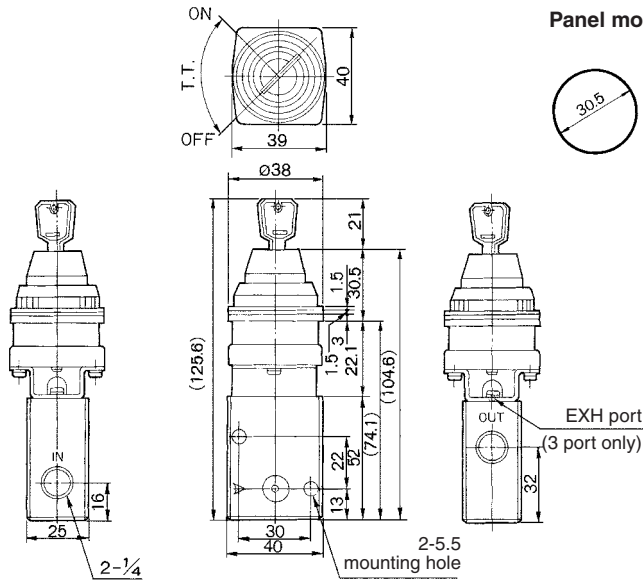
Series VM200

Key selector (2 position)

VM220-02-36
VM230-02-36

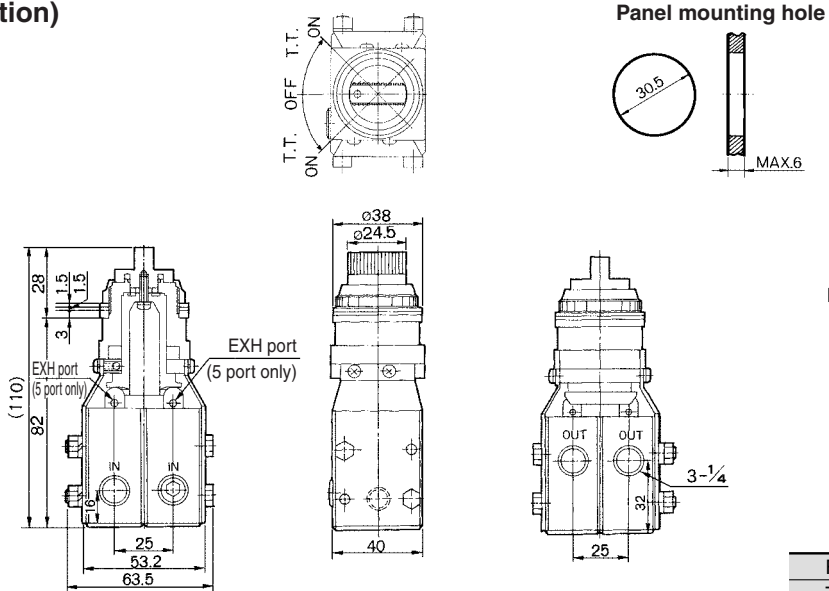


Key can be removed at the "on" and "off" positions.



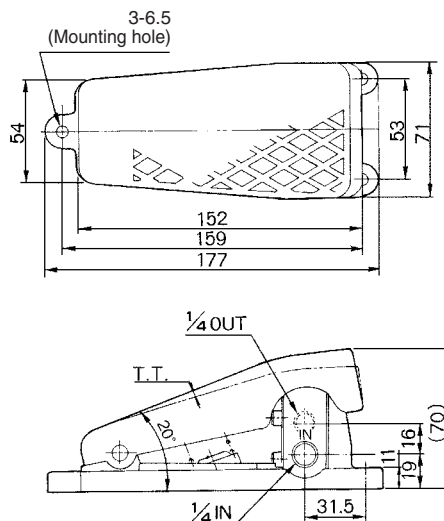
Twist selector (3 position)

VM230-02-35R/B/G/Y
VM250-02-35R/B/G/Y

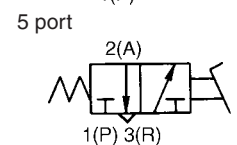
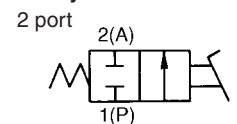


Foot pedal

VM220-02-40
VM230-02-40



JIS Symbol



* 0.5 MPa supply

| | |
|---------|------|
| F.O.F.* | 65 N |
| T.T. | 1.2° |

□A

□A

□A

□A

VM

VR

VH

VHS

3 Port Mechanical Valve

Series VM400

Either N.C. or N.O. is available.

Piping possible to any port.

Proper countermeasures can be taken for applications in which the noise of the exhaust could cause problems to the surroundings.

Specifications

| | |
|-------------------------------|--|
| Fluid | Air/Inert gas |
| Operating pressure | -100 kPa to 1.0 MPa |
| Ambient and fluid temperature | -5 to 60°C (No freezing) |
| Effective area | 7 mm ² |
| Lubrication | Not required (Use turbine oil Class 1 ISO VG32, if lubricated) |
| Port size | 1/8 |
| Weight (Basic) | 110 g |



Model

| | Actuator | Model | Actuator part no. | Application |
|---------------------------|-----------------------------|---------------------|-------------------|---|
| Mechanical operation | Basic | VM430-01-00 | — | — |
| | Roller lever | VM430-01-01 | VM-01A | Polyacetal roller |
| | | VM430-01-01S | VM-01AS | Hard steel roller |
| | One way roller lever | VM430-01-02 | VM-02A | Polyacetal roller |
| | | VM430-01-02S | VM-02AS | Hard steel roller |
| | Straight plunger | VM430-01-05 | VM-05A | — |
| | Roller plunger | VM430-01-06 | VM-06A | Polyacetal roller |
| | | VM430-01-06S | VM-06AS | Hard steel roller |
| Cross roller plunger | VM430-01-07 | VM-07A | Polyacetal roller | |
| | VM430-01-07S | VM-07AS | Hard steel roller | |
| Manual operation | Toggle lever | VM430-01-08 | VM-08A | — |
| | Push button (Mushroom) | VM430-01-30R | VM-30AR | Red |
| | | VM430-01-30B | VM-30AB | Black |
| | | VM430-01-30G | VM-30AG | Green |
| | | VM430-01-30Y | VM-30AY | Yellow |
| | Push button (Extended) | VM430-01-32R | VM-32AR | Red |
| | | VM430-01-32B | VM-32AB | Black |
| | | VM430-01-32G | VM-32AG | Green |
| | Push button (Flush) | VM430-01-32Y | VM-32AY | Yellow |
| | | VM430-01-33 | VM-33A | With a set of red, black, green, yellow |
| | Twist selector (2 position) | VM430-01-34R | VM-34AR | Red |
| | | VM430-01-34B | VM-34AB | Black |
| | | VM430-01-34G | VM-34AG | Green |
| VM430-01-34Y | | VM-34AY | Yellow | |
| Key selector (2 position) | VM430-01-36 | VM-36A | — | |



Note 1) Actuator replacement is available for all types.

Note 2) For push button (mushroom), push button (extended), push button (flush) and a single unit of fastening ring, refer to pages 5-6-6 to 5-6-7. The other parts are not replaceable.

Note 3) The handle of the selector (2 position) cannot be removed or replaced alone.

How to Order

VM4 3 0 - 01 - 01 S

• **Number of ports**

| | |
|---|--------|
| 3 | 3 port |
|---|--------|

• **Port size**

| | |
|-----|---------|
| 01 | Rc 1/8 |
| N01 | NPT 1/8 |
| F01 | G 1/8 |

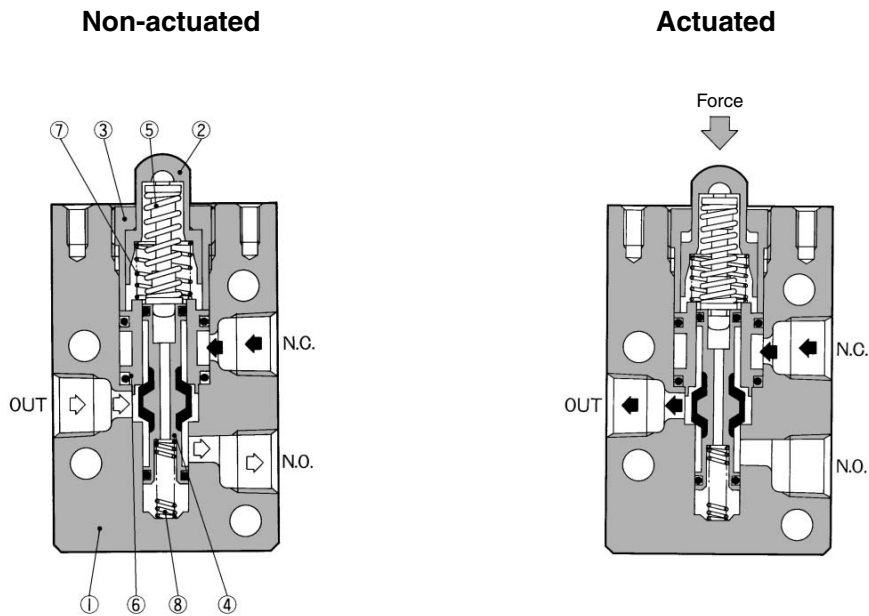
• **Actuator type**

| | |
|----|-----------------------------|
| 00 | Basic |
| 01 | Roller lever |
| 02 | One way roller lever |
| 05 | Straight plunger |
| 06 | Roller plunger |
| 07 | Cross roller plunger |
| 08 | Toggle lever |
| 30 | Push button (Mushroom) |
| 32 | Push button (Extended) |
| 33 | Push button (Flush) |
| 34 | Twist selector (2 position) |
| 36 | Key selector (2 position) |

• **Suffix for actuator**

| | | |
|---|-------------------|-------------------------------|
| S | Hard steel roller | Color of push button selector |
| R | Red | |
| B | Black | |
| G | Green | |
| Y | Yellow | |

Construction



Component Parts

| No. | Description | Material | Note |
|-----|-------------|----------------|----------------------|
| ① | Body | ADC | Metallic plated |
| ② | Plunger | POM | |
| ③ | Upper lid | Brass | Black zinc chromated |
| ④ | Spool valve | Aluminum alloy | Rubber lined |

| No. | Description | Material | Note |
|-----|--------------------|-----------------|------|
| ⑤ | Over travel spring | Stainless steel | |
| ⑥ | Retainer | Brass | |
| ⑦ | Spring | Stainless steel | |
| ⑧ | Spring | Stainless steel | |

S□A

V□A

S□A

V□A

VM

VR

VH

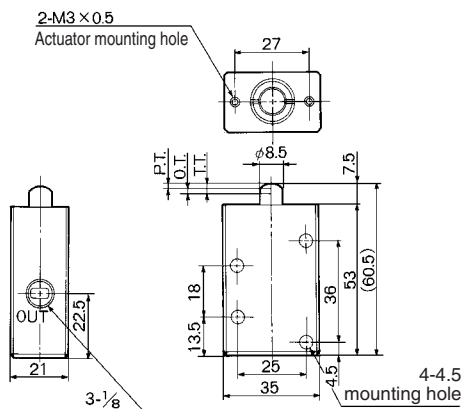
VHS

Series VM400

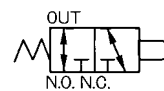
Series VM400

Basic

VM430-01-00



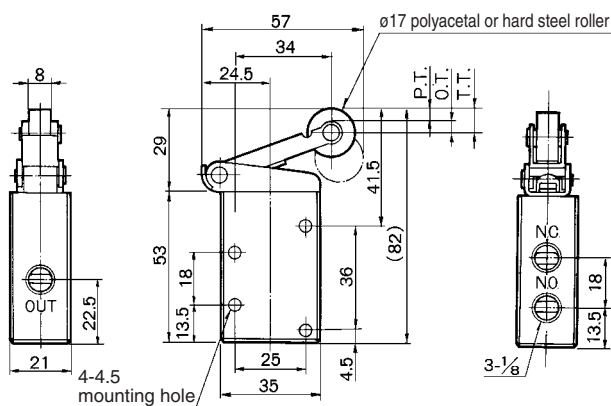
JIS Symbol



| | |
|--------|--------|
| F.O.F. | 26 N |
| P.T. | 1.5 mm |
| O.T. | 2.0 mm |
| T.T. | 3.5 mm |

Roller lever

VM430-01-01
VM430-01-01S



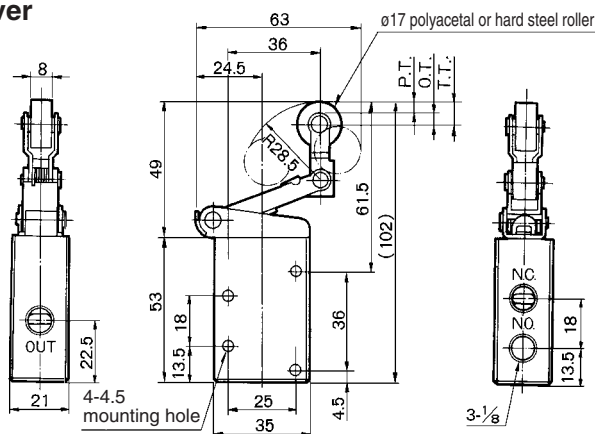
JIS Symbol



| | |
|--------|--------|
| F.O.F. | 12 N |
| P.T. | 4.0 mm |
| O.T. | 4.5 mm |
| T.T. | 8.5 mm |

One way roller lever

VM430-01-02
VM430-01-02S



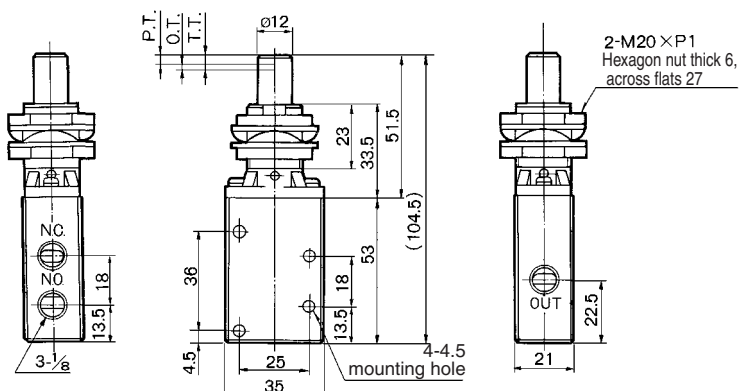
JIS Symbol



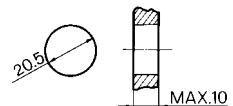
| | |
|--------|--------|
| F.O.F. | 11 N |
| P.T. | 4.0 mm |
| O.T. | 5.0 mm |
| T.T. | 9.0 mm |

Straight plunger

VM430-01-05



Panel mounting hole



JIS Symbol



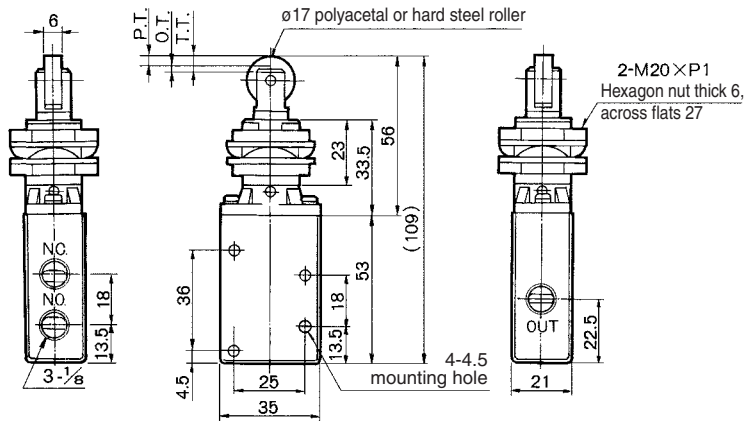
| | |
|--------|--------|
| F.O.F. | 30 N |
| P.T. | 3.5 mm |
| O.T. | 2.0 mm |
| T.T. | 5.5 mm |

3 Port Mechanical Valve Series VM400

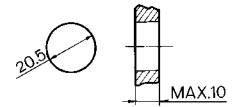
Series VM400

Roller plunger

VM430-01-06
VM430-01-06S



Panel mounting hole



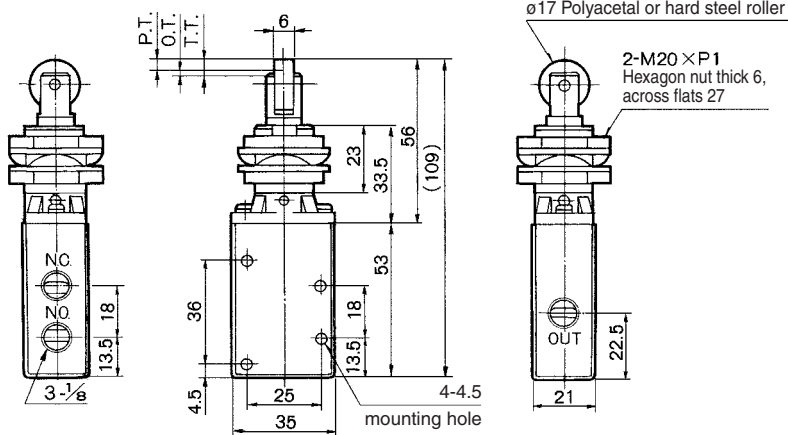
JIS Symbol



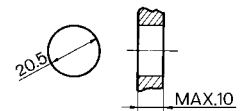
| | |
|--------|--------|
| F.O.F. | 30 N |
| P.T. | 3.5 mm |
| O.T. | 2.0 mm |
| T.T. | 5.5 mm |

Cross roller plunger

VM430-01-07
VM430-01-07S



Panel mounting hole



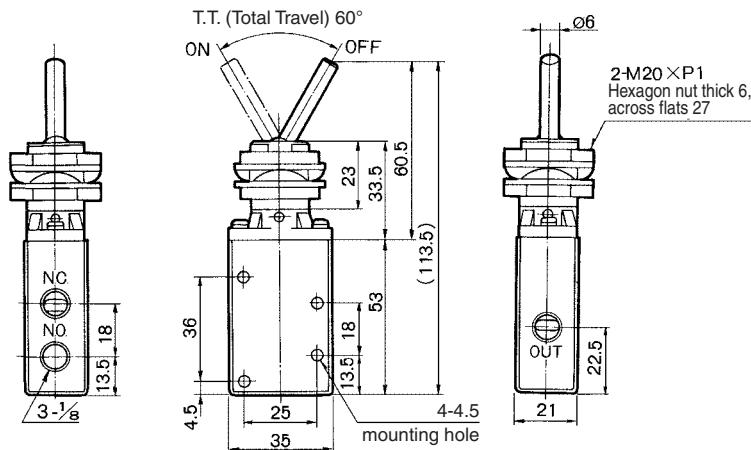
JIS Symbol



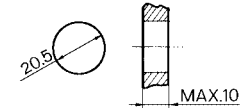
| | |
|--------|--------|
| F.O.F. | 30 N |
| P.T. | 3.5 mm |
| O.T. | 2.0 mm |
| T.T. | 5.5 mm |

Toggle lever

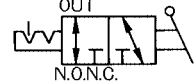
VM430-01-08



Panel mounting hole



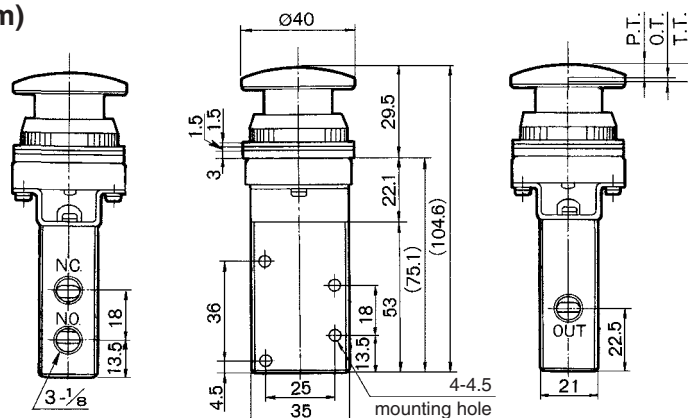
JIS Symbol



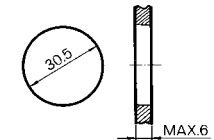
| | |
|--------|-----|
| F.O.F. | 7 N |
| T.T. | 60° |

Push button (Mushroom)

VM430-01-30R/B/G/Y



Panel mounting hole



JIS Symbol



| | |
|--------|--------|
| F.O.F. | 26 N |
| P.T. | 4.6 mm |
| O.T. | 1.6 mm |
| T.T. | 6.5 mm |

S□A

V□A

S□A

V□A

VM

VR

VH

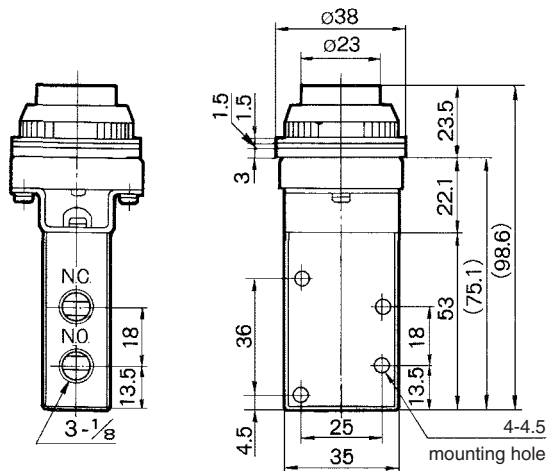
VHS

Series VM400

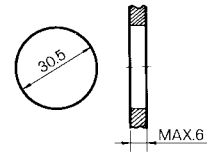
Series VM400

Push button (Extended)

VM430-01-32R/B/G/Y



Panel mounting hole



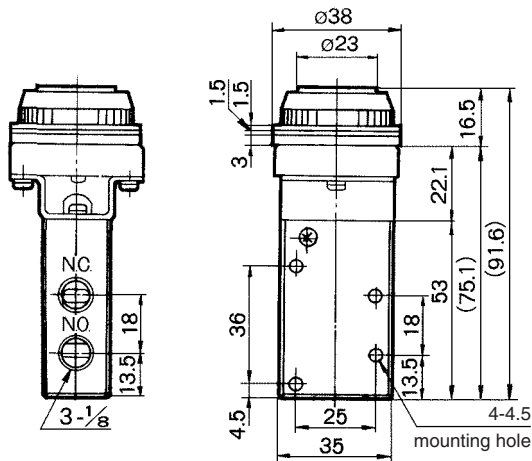
JIS Symbol



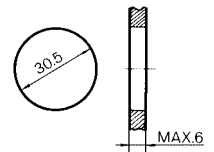
| | |
|--------|--------|
| F.O.F. | 26 N |
| P.T. | 5.4 mm |
| O.T. | 1.6 mm |
| T.T. | 6.5 mm |

Push button (Flush)

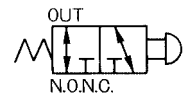
VM430-01-33



Panel mounting hole



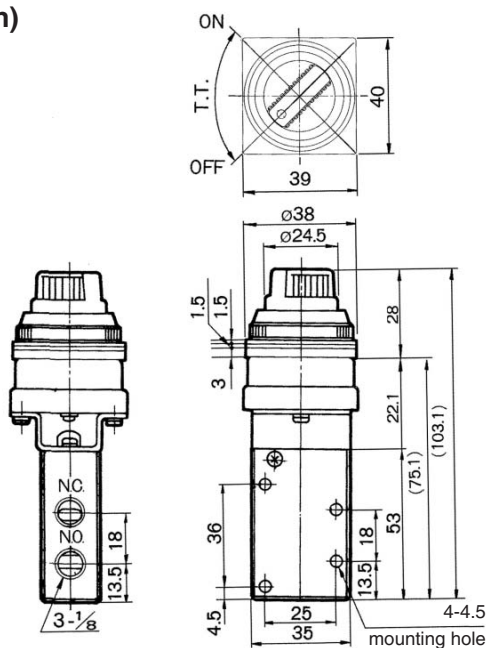
JIS Symbol



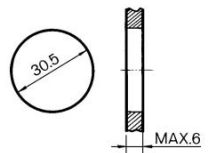
| | |
|--------|--------|
| F.O.F. | 26 N |
| P.T. | 4.9 mm |
| O.T. | 1.6 mm |
| T.T. | 6.5 mm |

Twist selector (2 position)

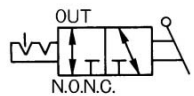
VM430-01-34R/B/G/Y



Panel mounting hole



JIS Symbol



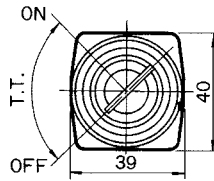
| | |
|--------|------|
| F.O.F. | 20 N |
| T.T. | 90° |

3 Port Mechanical Valve Series VM400

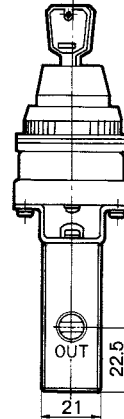
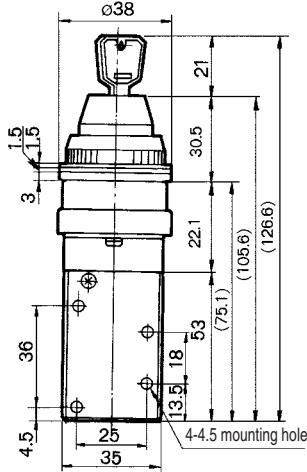
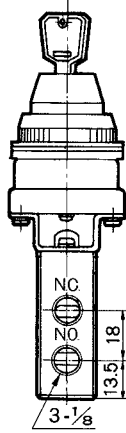
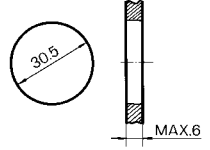
Series VM400

Key selector (2 position)

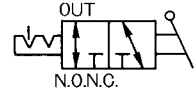
VM430-01-36



Panel mounting hole



JIS Symbol



Key can be removed at the "on" and "off" positions.

| | |
|--------|------|
| F.O.F. | 20 N |
| T.T. | 90° |

S□A

V□A

S□A

V□A

VM

VR

VH

VHS

3 Port Mechanical Valve: Heavy Duty Type Series VM800

Sturdy construction.

Either N.C. or N.O. is available.

Piping possible to any port.

Proper countermeasures can be taken for applications in which the noise of the exhaust could cause problems to the surroundings.

Many actuator positions and orientation options.



Specifications

| | |
|-------------------------------|---|
| Fluid | Air/Inert gas |
| Operating pressure | -100 kPa to 1.0 MPa |
| Ambient and fluid temperature | -5 to 60°C (No freezing) |
| Effective area | 6 mm ² |
| Lubrication | Not required (Use turbine oil Class 1 ISO VG32, if lubricated.) |
| Port size | 1/8 |
| Weight (Basic) | 180 g |

Model

| Actuator | Model | Actuator part no. |
|-------------------------|-------------|-------------------|
| Basic | VM830-01-00 | — |
| Roller lever | VM830-01-01 | VM-01F |
| Adjustable roller lever | VM830-01-13 | VM-13F |
| Adjustable rod lever | VM830-01-14 | VM-14F |



Actuator replacement is available.

How to Order

VM830-01-01

• **Port size**

| | |
|-----|---------|
| 01 | Rc 1/8 |
| N01 | NPT 1/8 |
| F01 | G 1/8 |

• **Number of ports**

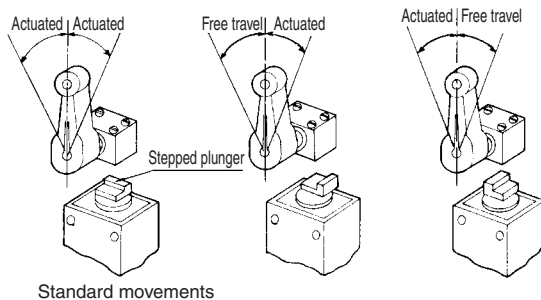
| | |
|---|--------|
| 3 | 3 port |
|---|--------|

• **Actuator type**

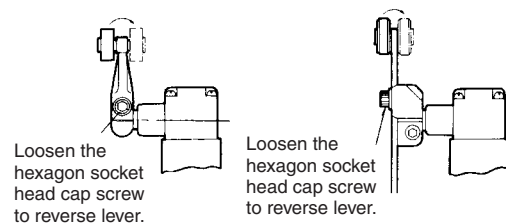
| | |
|----|-------------------------|
| 00 | Basic |
| 01 | Roller lever |
| 13 | Adjustable roller lever |
| 14 | Adjustable rod lever |

Application

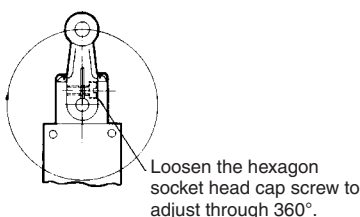
● **Movement is changeable.**



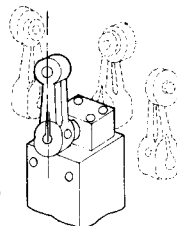
● **Roller can be mounted to inside of lever.**



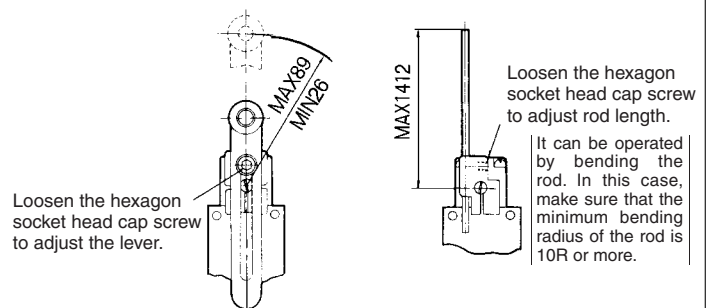
● **Lever location can be changed.**



● **Head direction can be changed.**

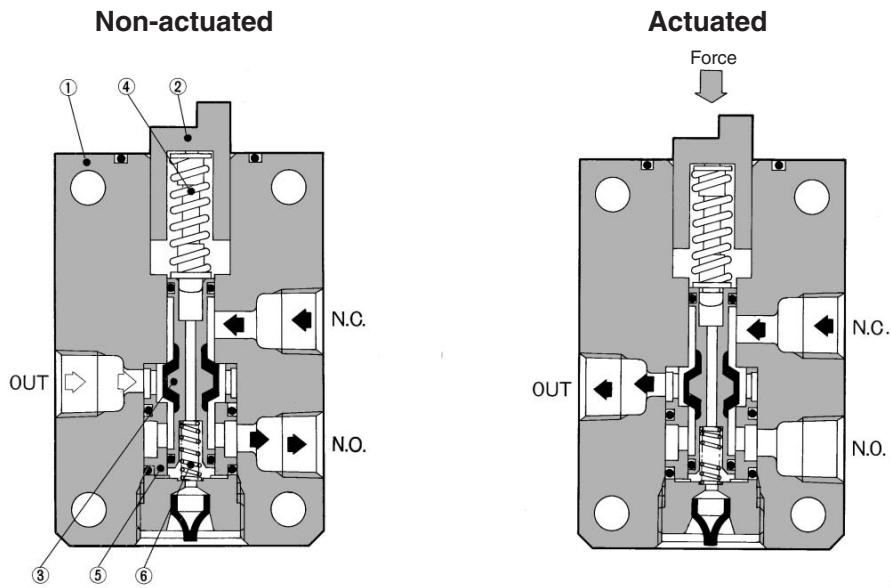


● **Lever length adjustment.**



3 Port Mechanical Valve: Heavy Duty Type Series VM800

Construction



- A
- A
- A
- A
- VM
- VR
- VH
- VHS

Component Parts

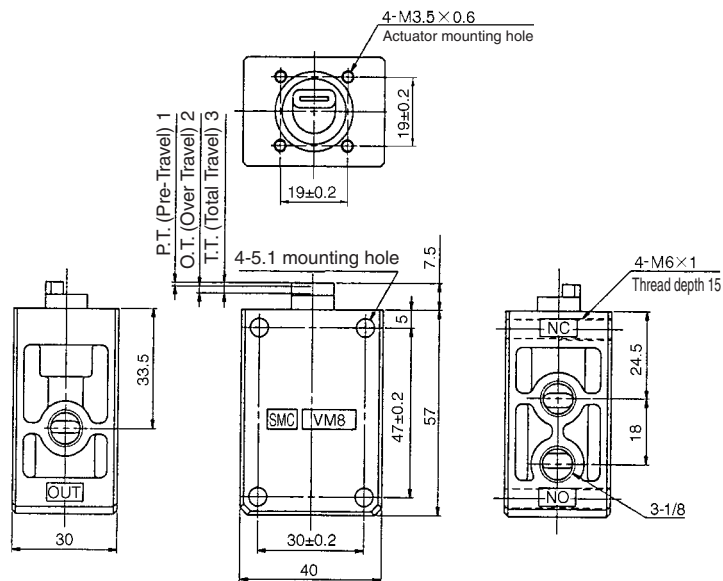
| No. | Description | Material | Note |
|-----|-------------|---------------------|-----------------|
| ① | Body | ADC | Metallic plated |
| ② | Plunger | POM | |
| ③ | Spool valve | Aluminum alloy, NBR | Rubber lined |

| No. | Description | Material | Note |
|-----|--------------------|-----------------|----------------|
| ④ | Over travel spring | Stainless steel | |
| ⑤ | Retainer | Brass | |
| ⑥ | Spring | Steel | Zinc chromated |

Series VM800

Basic

VM830-01-00



JIS Symbol

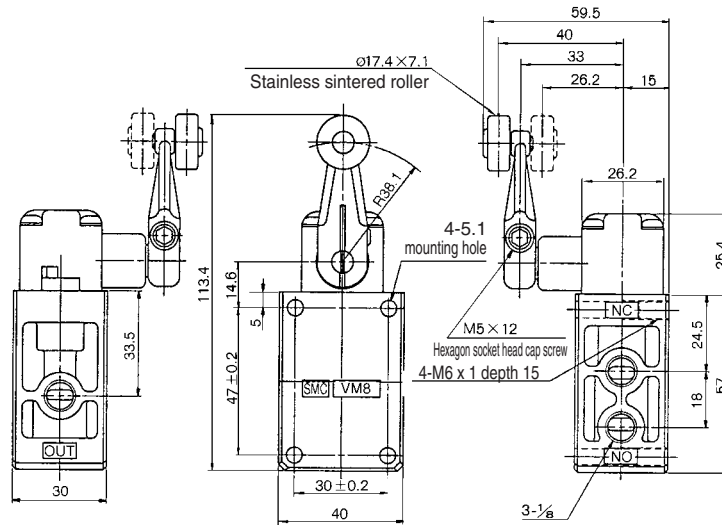


| | |
|--------|--------|
| F.O.F. | 23 N |
| P.T. | 1.0 mm |
| O.T. | 2.0 mm |
| T.T. | 3.0 mm |

Series VM800

Series VM800

Roller lever VM830-01-01

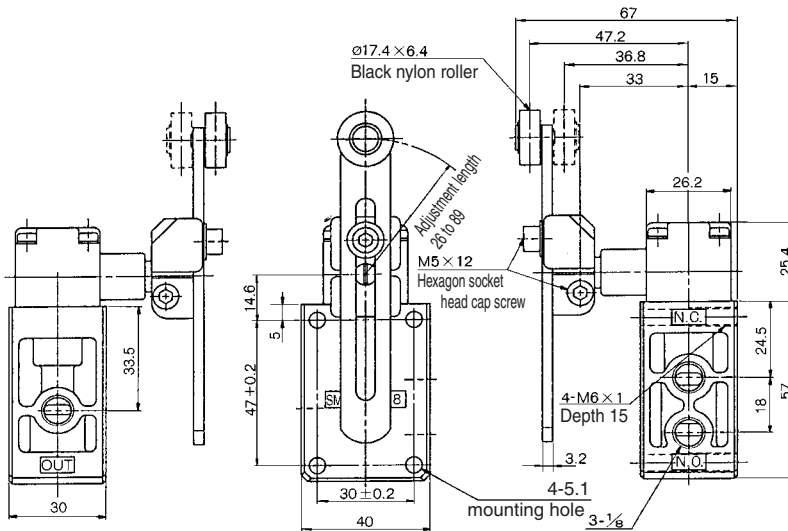


JIS Symbol



| | |
|--------|------|
| F.O.F. | 20 N |
| P.T. | 20° |
| O.T. | 30° |
| T.T. | 50° |

Adjustable roller lever VM830-01-13



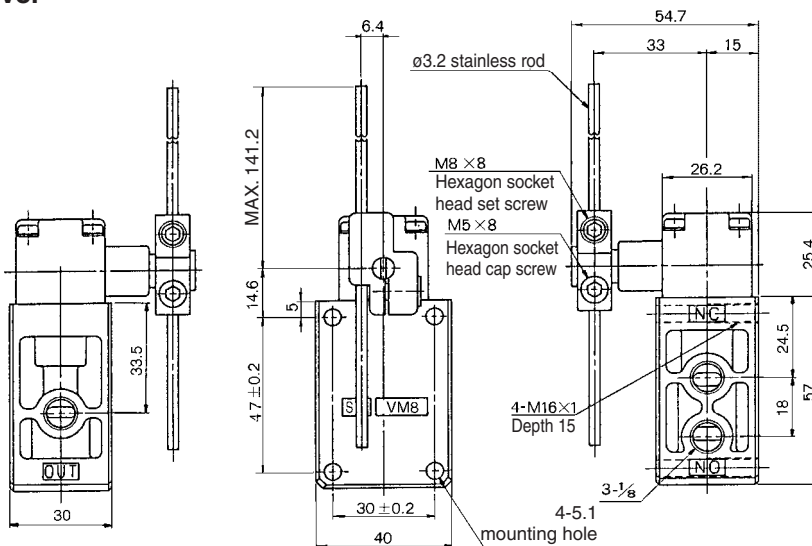
JIS Symbol



* At lever length 38.1 mm

| | |
|----------|------|
| F.O.F. * | 20 N |
| P.T. | 20° |
| O.T. | 30° |
| T.T. | 50° |

Adjustable rod lever VM830-01-14



JIS Symbol



* At lever length 141.2 mm

| | |
|----------|-------|
| F.O.F. * | 2.3 N |
| P.T. | 20° |
| O.T. | 30° |
| T.T. | 50° |

5 Port Mechanical Valve Metal Seal

Series **VZM400**

**Compact design,
large flow capacity 9.9 mm²
High cycle rate,
long life/300 c.p.m. or less
Piping possible to any EXH
port.**

Proper countermeasures can be taken for applications in which the noise of the exhaust could cause problems to the surroundings.

**External pilot model
available. (Option)**

**Foot bracket and manifold
mounting possible.**



Specifications

| | |
|---|---|
| Fluid | Air/Inert gas |
| Operating pressure | 0.15 to 1.0 MPa ⁽¹⁾ |
| Ambient and fluid temperature | -5 to 60°C (No freezing) |
| Effective area | 9.9 mm ² |
| Maximum frequency (Mechanical operation type) | 300 c.p.m. or less |
| Lubrication | Not required (Use turbine oil class 1 ISO VG32, if lubricated.) |
| Port size | Main valve/Rc 1/8 (6A) |
| | Pilot valve (EXH)/M5 x 0.8 |
| Option | Foot bracket ⁽²⁾ |
| Weight (Basic) | 150 g |

* Please contact SMC for manifold mounting style.
 Note 1) External pilot type Main valve: 0 to 1.0 MPa
 Pilot valve: 0.15 to 1.0 MPa

Note 2) The standard body can not be retrofitted with a foot bracket.

Model

| | Actuator | Model | Actuator part no. | Application |
|---------------------------|-----------------------------|----------------------|-------------------|---|
| Mechanical operation | Basic | VZM450-01-00 | — | — |
| | Roller lever | VZM450-01-01 | VM-01C | Polyacetal roller |
| | | VZM450-01-01S | VM-01CS | Hard steel roller |
| | One way roller lever | VZM450-01-02 | VM-02C | Polyacetal roller |
| | | VZM450-01-02S | VM-02CS | Hard steel roller |
| | Straight plunger | VZM450-01-05 | VM-05C | — |
| Roller plunger | VZM450-01-06 | VM-06C | Polyacetal roller | |
| | VZM450-01-06S | VM-06CS | Hard steel roller | |
| Manual operation | Toggle lever | VZM450-01-08 | VM-08C | — |
| | Push button (Mushroom) | VZM450-01-30R | VM-30CR | Red |
| | | VZM450-01-30B | VM-30CB | Black |
| | | VZM450-01-30G | VM-30CG | Green |
| | | VZM450-01-30Y | VM-30CY | Yellow |
| | Push button (Extended) | VZM450-01-32R | VM-32CR | Red |
| | | VZM450-01-32B | VM-32CB | Black |
| | | VZM450-01-32G | VM-32CG | Green |
| | | VZM450-01-32Y | VM-32CY | Yellow |
| | Push button (Flush) | VZM450-01-33 | VM-33C | With a set of red, black, green, yellow |
| | Twist selector (2 position) | VZM450-01-34R | VM-34CR | Red |
| | | VZM450-01-34B | VM-34CB | Black |
| | | VZM450-01-34G | VM-34CG | Green |
| | | VZM450-01-34Y | VM-34CY | Yellow |
| Key selector (2 position) | VZM450-01-36 | VM-36C | — | |

Note 1) Actuator replacement is available for all types.

Note 2) For push button (mushroom), push button (extended), push button (flush) and a single unit of fastening ring, refer to pages 5-6-6 to 5-6-7. The other parts are not replaceable.

Note 3) The handle of the selector (2 position) cannot be removed or replaced alone.

S□A

V□A

S□A

V□A

VM

VR

VH

VHS

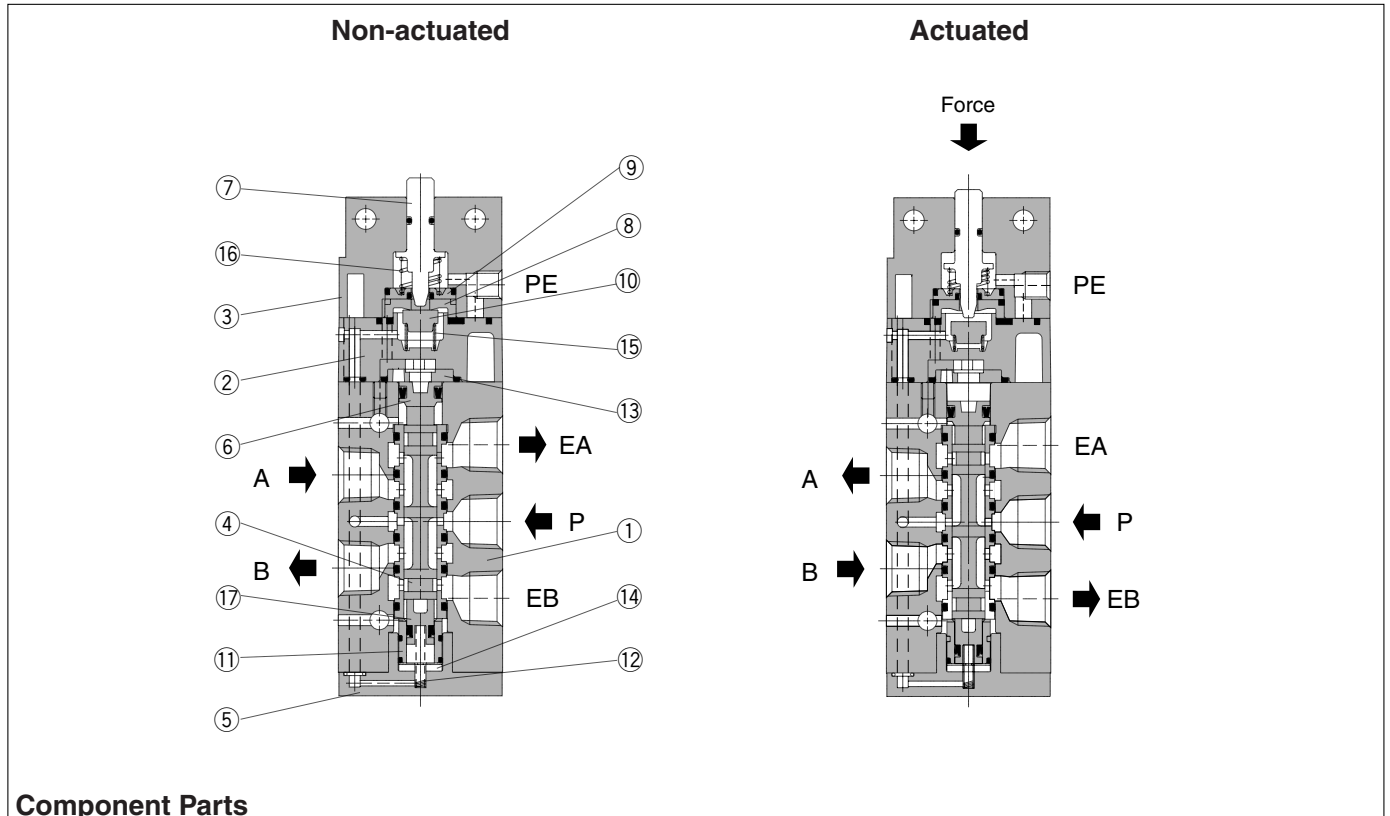
Series VZM400

How to Order

VZM45 0 01 01 S

| Port size | | Actuator type | | Suffix for actuator | | Option | |
|-----------|---------|---------------|-----------------------------|---------------------|-------------------|-------------------------------|---------------------------------------|
| 01 | Rc 1/8 | 00 | Basic | S | Hard steel roller | F | Foot bracket (Only internal pilot) |
| N01 | NPT 1/8 | 01 | Roller lever | R | Red | Color of push button selector | |
| F01 | G 1/8 | 02 | One Way Roller Lever | B | Black | | |
| | | 05 | Straight plunger | G | Green | | |
| | | 06 | Roller plunger | Y | Yellow | | |
| | | 08 | Toggle lever | | | | |
| | | 30 | Push button (Mushroom) | | | | |
| | | 32 | Push button (Extended) | | | | |
| | | 33 | Push button (Flush) | | | | |
| | | 34 | Twist selector (2 position) | | | | |
| | | 36 | Key selector (2 position) | | | | |

Construction



Component Parts

| No. | Description | Material | Note |
|-----|----------------|-----------------|----------------------|
| ① | Body | ADC | Metallic plated |
| ② | Pilot body | PBT | Metallic plated |
| ③ | Head cover | ZDC | Black zinc chromated |
| ④ | Spool/sleeve | Stainless steel | |
| ⑤ | End cover | POM | |
| ⑥ | Piston A | POM | |
| ⑦ | Plunger | POM | |
| ⑧ | Valve seat (A) | POM | |
| ⑨ | Valve seat (B) | POM | |

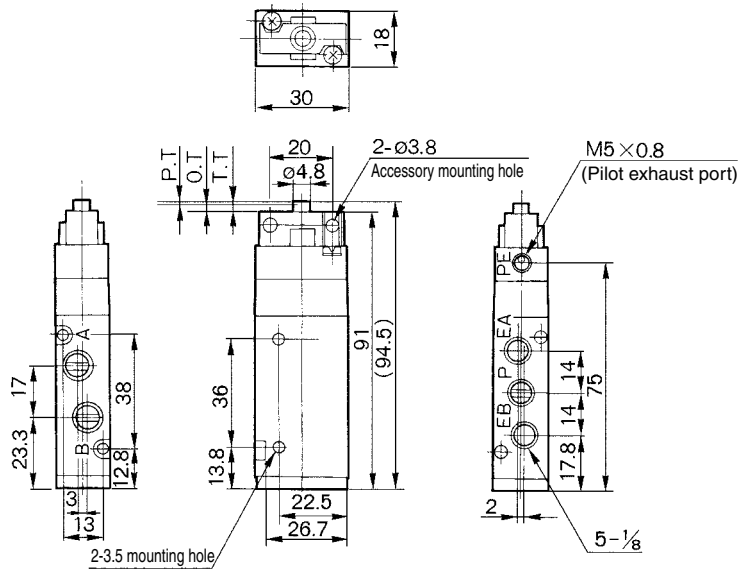
| No. | Description | Material | Note |
|-----|----------------|-----------------|------|
| ⑩ | Valve | NBR | |
| ⑪ | Piston guide B | Aluminum alloy | |
| ⑫ | Return spring | Stainless steel | |
| ⑬ | Cushion | Rubber | |
| ⑭ | Cushion | Rubber | |
| ⑮ | Valve spring | Stainless steel | |
| ⑯ | Return spring | Stainless steel | |
| ⑰ | Piston B | POM | |

5 Port Mechanical Valve Metal Seal Series VZM400

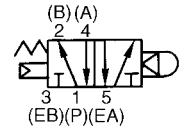
Series VZM400

Basic

VZM450-01-00



JIS Symbol



* 0.5 MPa supply

| | |
|----------|--------|
| F.O.F. * | 16 N |
| P.T. | 1.0 mm |
| O.T. | 2.0 mm |
| T.T. | 3.0 mm |

S□A

V□A

S□A

V□A

VM

VR

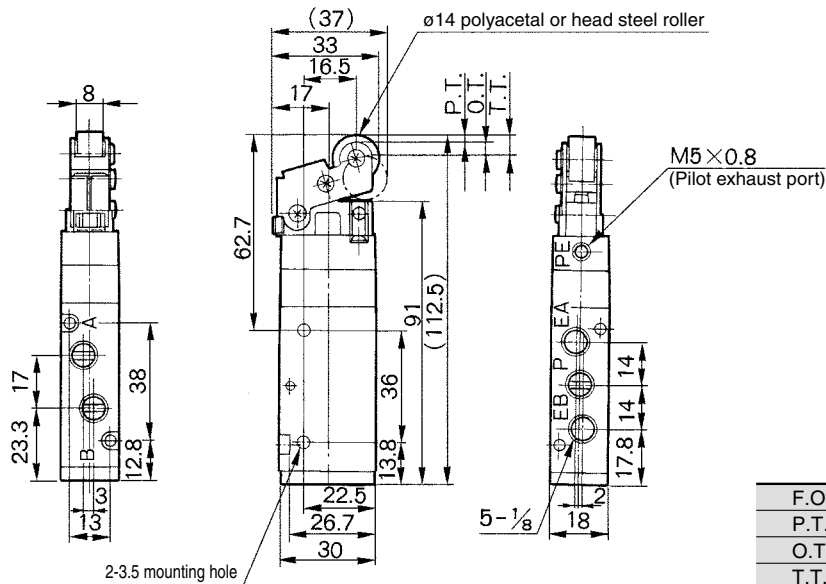
VH

VHS

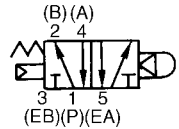
Roller lever

VZM450-01-01

VZM450-01-01S



JIS Symbol



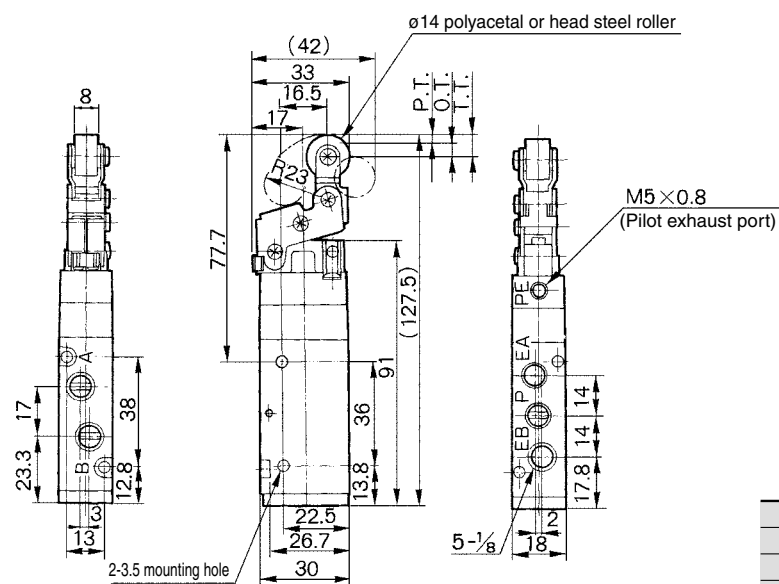
* 0.5 MPa supply

| | |
|----------|--------|
| F.O.F. * | 8 N |
| P.T. | 2.2 mm |
| O.T. | 4.0 mm |
| T.T. | 6.2 mm |

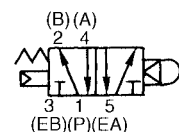
One way roller lever

VZM450-01-02

VZM450-01-02S



JIS Symbol



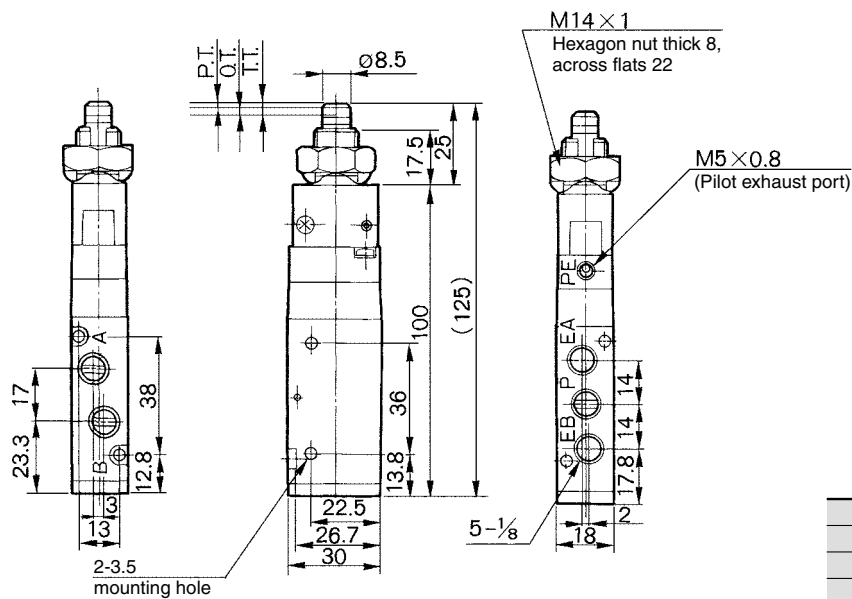
* 0.5 MPa supply

| | |
|----------|--------|
| F.O.F. * | 7 N |
| P.T. | 2.4 mm |
| O.T. | 4.6 mm |
| T.T. | 7.0 mm |

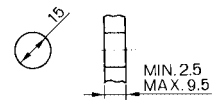
Series VZM400

Series VZM400

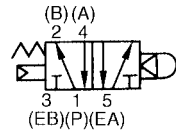
Straight plunger VZM450-01-05



Panel mounting hole



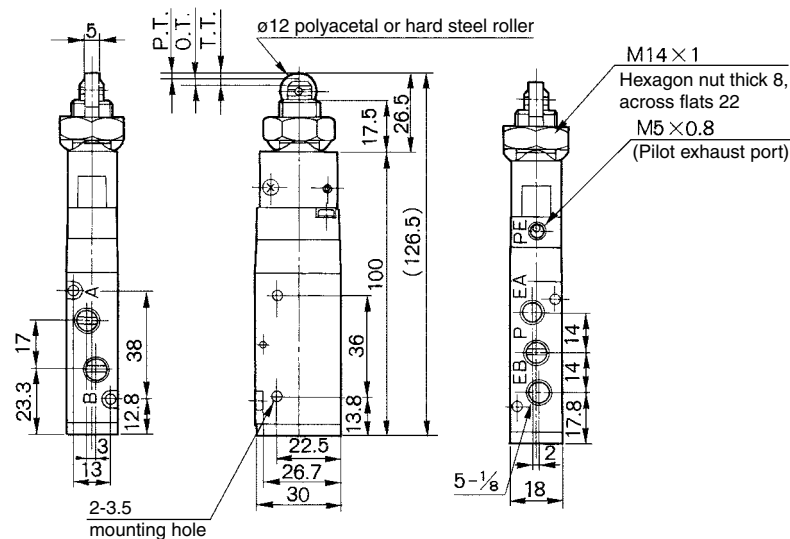
JIS Symbol



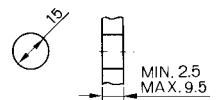
* 0.5 MPa supply

| | |
|----------|--------|
| F.O.F. * | 18 N |
| P.T. | 1.5 mm |
| O.T. | 2.0 mm |
| T.T. | 3.5 mm |

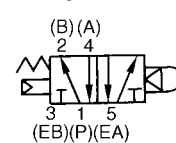
Roller plunger VZM450-01-06 VZM450-01-06S



Panel mounting hole



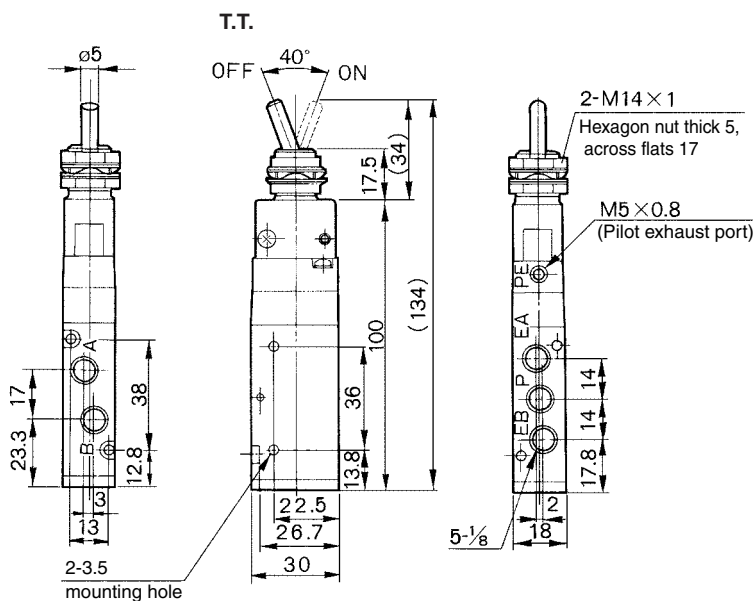
JIS Symbol



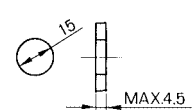
* 0.5 MPa supply

| | |
|----------|--------|
| F.O.F. * | 18 N |
| P.T. | 1.5 mm |
| O.T. | 2.0 mm |
| T.T. | 3.5 mm |

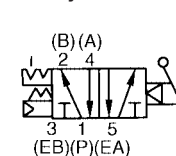
Toggle lever VZM450-01-08



Panel mounting hole



JIS Symbol



* 0.5 MPa supply

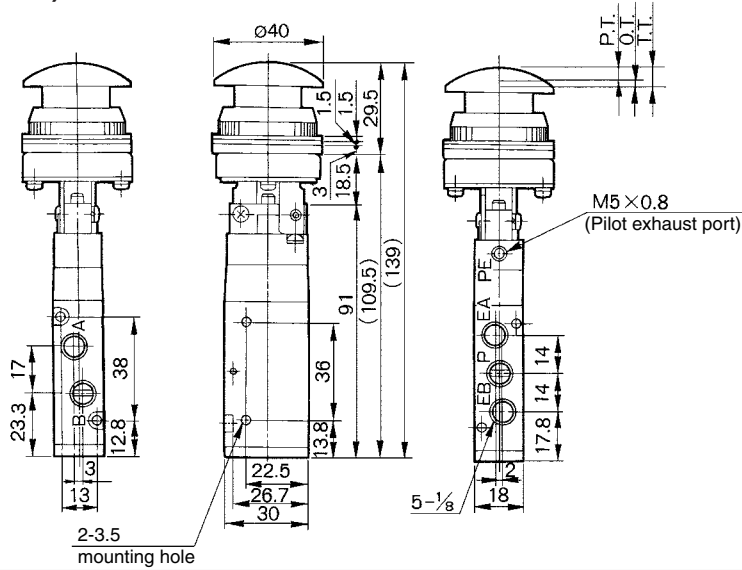
| | |
|----------|------|
| F.O.F. * | 15 N |
| T.T. | 40° |

5 Port Mechanical Valve Metal Seal Series VZM400

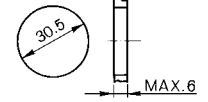
Series VZM400

Push button (Mushroom)

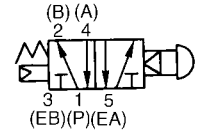
VZM450-01-30R/B/G/Y



Panel mounting hole



JIS Symbol



* 0.5 MPa supply

| | |
|----------|--------|
| F.O.F. * | 21 N |
| P.T. | 4.8 mm |
| O.T. | 1.7 mm |
| T.T. | 6.5 mm |

□A

□A

□A

□A

VM

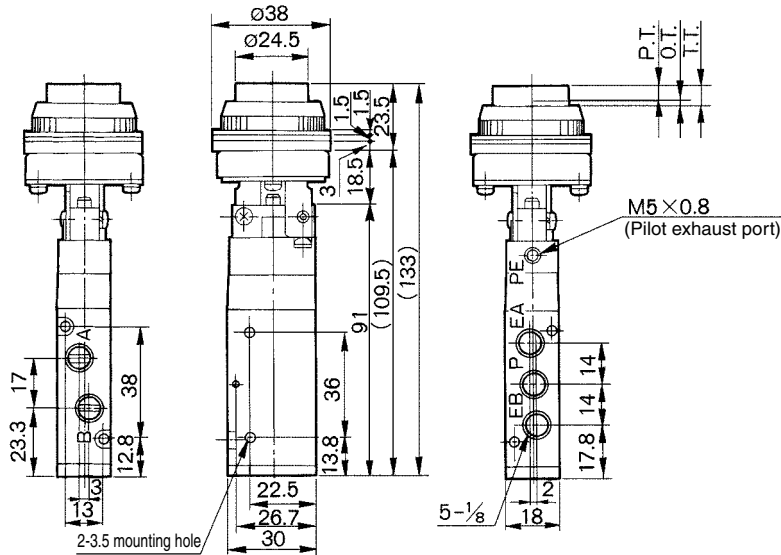
VR

VH

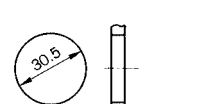
VHS

Push button (Extended)

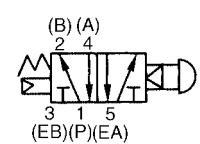
VZM450-01-32R/B/G/Y



Panel mounting hole



JIS Symbol

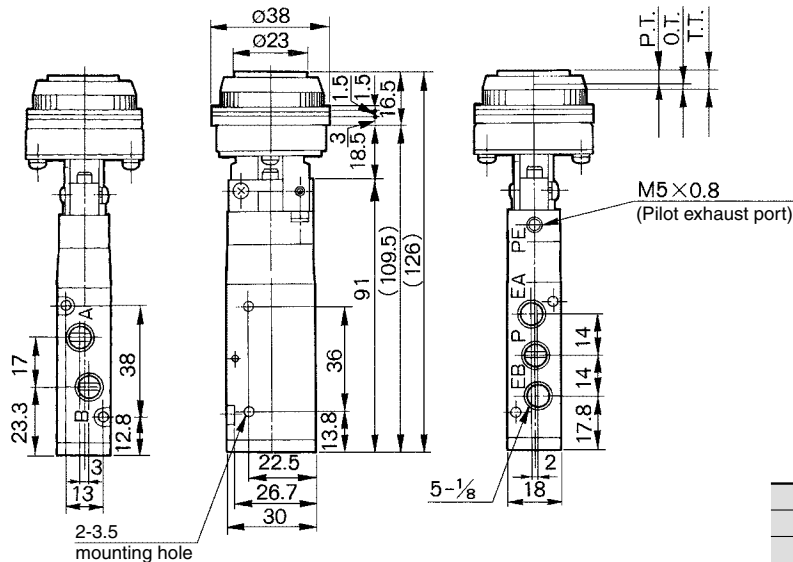


* 0.5 MPa supply

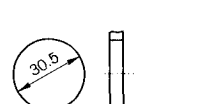
| | |
|----------|--------|
| F.O.F. * | 21 N |
| P.T. | 4.8 mm |
| O.T. | 1.7 mm |
| T.T. | 6.5 mm |

Push button (Flush)

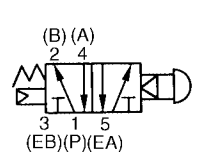
VZM450-01-33



Panel mounting hole



JIS Symbol



* 0.5 MPa supply

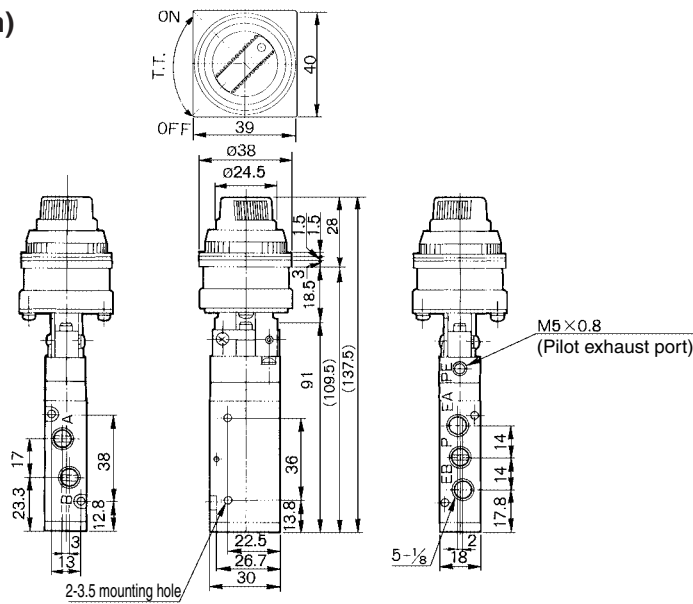
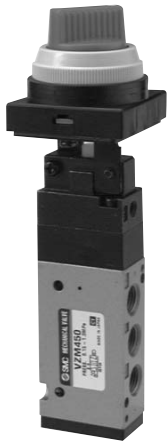
| | |
|----------|--------|
| F.O.F. * | 21 N |
| P.T. | 4.8 mm |
| O.T. | 1.7 mm |
| T.T. | 6.5 mm |

Series VZM400

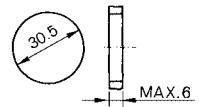
5 Port Mechanical Valve Series VZM400

Twist selector (2 position)

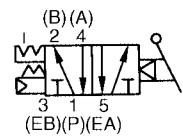
VZM450-01-34R/B/G/Y



Panel mounting hole



JIS Symbol

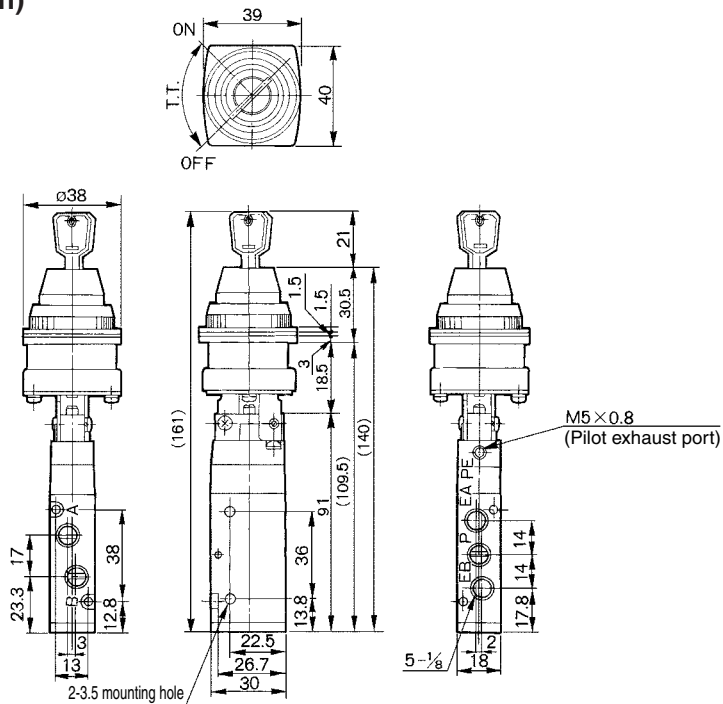


* 0.5 MPa supply

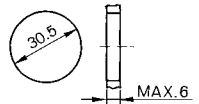
| | |
|----------|------|
| F.O.F. * | 23 N |
| T.T. | 90° |

Key selector (2 position)

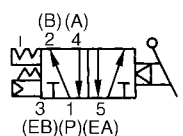
VZM450-01-36



Panel mounting hole



JIS Symbol



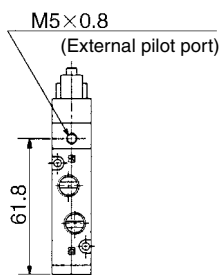
* 0.5 MPa supply

| | |
|----------|------|
| F.O.F. * | 26 N |
| T.T. | 90° |

Key can be removed at the "on" and "off" positions.

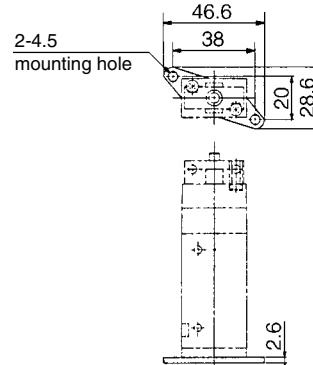
External pilot type

VZM451 type



With foot bracket

VZM450-01-□□-F



5 Port Mechanical Valve

Series VZM500

**Compact design,
large flow capacity 10.8 mm²
High cycle rate,
long life/300 c.p.m. or less
Piping possible to any EXH
port.**

Proper countermeasures can be taken for applications in which the noise of the exhaust could cause problems to the surroundings.

**External pilot model
available. (Option)**

**Foot bracket and manifold
mounting possible.**



PAT. PEND.

Specifications

| | |
|---|---|
| Fluid | Air/Inert gas |
| Operating pressure | 0.15 to 0.7 MPa ⁽¹⁾ |
| Ambient and fluid temperature | -5 to 60°C (No freezing) |
| Effective area | 10.8 mm ² |
| Maximum frequency (Mechanical operation type) | 300 c.p.m. or less |
| Lubrication | Not required (Use turbine oil Class 1 ISO VG32, if lubricated.) |
| Port size | Main valve/Rc 1/8 (6A) |
| | Pilot valve (EXH)/M5 x 0.8 |
| Option | Foot bracket ⁽²⁾ |
| Weight (Basic) | 130 g |

* Please contact SMC for manifold mounting style.
 Note 1) External pilot type Main valve: 0 to 0.7 MPa
 Pilot valve: 0.15 to 0.7 MPa

Note 2) The standard body can not be retrofitted with a foot bracket.

Model

| | Actuator | Model | Actuator part no. | Application |
|---------------------------|-----------------------------|---------------|-------------------|---|
| Mechanical operation | Basic | VZM550-01-00 | — | — |
| | Roller lever | VZM550-01-01 | VM-01C | Polyacetal roller |
| | | VZM550-01-01S | VM-01CS | Hard steel roller |
| | One way roller lever | VZM550-01-02 | VM-02C | Polyacetal roller |
| | | VZM550-01-02S | VM-02CS | Hard steel roller |
| | Straight plunger | VZM550-01-05 | VM-05C | — |
| Roller plunger | VZM550-01-06 | VM-06C | Polyacetal roller | |
| | VZM550-01-06S | VM-06CS | Hard steel roller | |
| Manual operation | Toggle lever | VZM550-01-08 | VM-08C | — |
| | Push button (Mushroom) | VZM550-01-30R | VM-30CR | Red |
| | | VZM550-01-30B | VM-30CB | Black |
| | | VZM550-01-30G | VM-30CG | Green |
| | | VZM550-01-30Y | VM-30CY | Yellow |
| | Push button (Extended) | VZM550-01-32R | VM-32CR | Red |
| | | VZM550-01-32B | VM-32CB | Black |
| | | VZM550-01-32G | VM-32CG | Green |
| | | VZM550-01-32Y | VM-32CY | Yellow |
| | Push button (Flush) | VZM550-01-33 | VM-33C | With a set of red, black, green, yellow |
| | Twist selector (2 position) | VZM550-01-34R | VM-34CR | Red |
| | | VZM550-01-34B | VM-34CB | Black |
| | | VZM550-01-34G | VM-34CG | Green |
| | | VZM550-01-34Y | VM-34CY | Yellow |
| Key selector (2 position) | VZM550-01-36 | VM-36C | — | |
| Push-pull | VZM550-01-37 | — | Black | |

Note 1) Actuator replacement is available for all types. (Except push-pull)
 Note 2) For push button (mushroom), push button (extended), push button (flush) and a single unit of fastening ring, refer to pages 5-6-6 to 5-6-7. The other parts are not replaceable.
 Note 3) The handle of the selector (2 position) cannot be removed or replaced alone.

S□A

V□A

S□A

V□A

VM

VR

VH

VHS

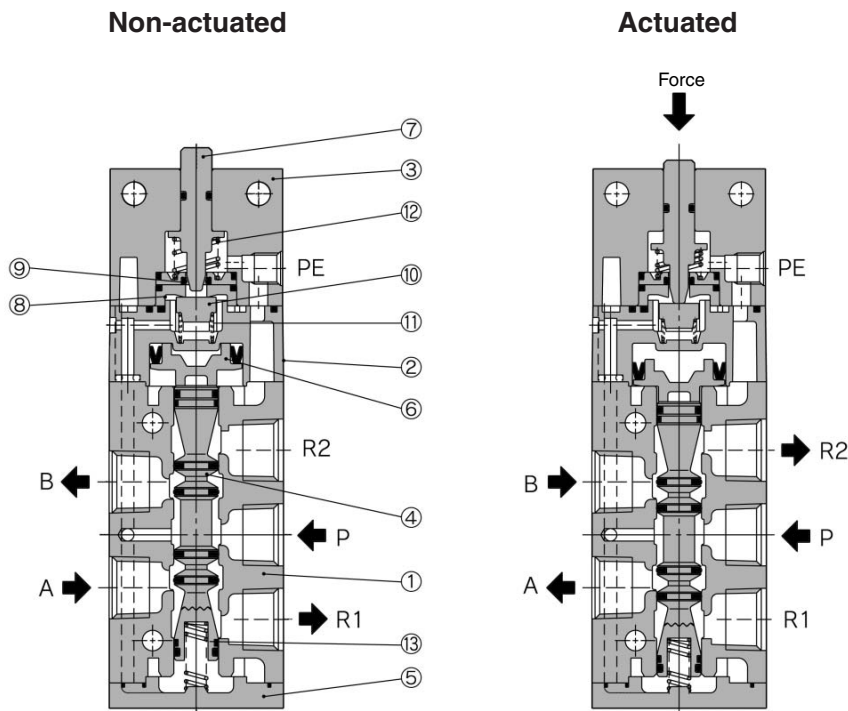
Series VZM500

How to Order

VZM55 0 01 01 S

| Port size | | Actuator type | | Suffix for actuator | | Option | |
|-----------------------|---------------------|---------------|-----------------------------|---------------------|-------------------|-------------------------------|--------------|
| 01 | Rc 1/8 | 00 | Basic | S | Hard steel roller | F | Foot bracket |
| N01 | NPT 1/8 | 01 | Roller lever | R | Red | Color of push button selector | |
| F01 | G 1/8 | 02 | One way roller lever | B | Black | | |
| | | 05 | Straight plunger | G | Green | | |
| | | 06 | Roller plunger | Y | Yellow | | |
| Body option | | 08 | Toggle lever | | | | |
| 0 | Standard | 30 | Push button (Mushroom) | | | | |
| 1* | External pilot type | 32 | Push button (Extended) | | | | |
| * Except VZM550-01-37 | | 33 | Push button (Flush) | | | | |
| | | 34 | Twist selector (2 position) | | | | |
| | | 36 | Key selector (2 position) | | | | |
| | | 37 | Push-pull | | | | |

Construction



Component Parts

| No. | Description | Material | Note |
|-----|----------------------|----------|-----------------------------|
| ① | Body | ADC | Metallic plated |
| ② | Pilot body | PBT | ZDC only for external pilot |
| ③ | Head cover | ZDC | Black zinc chromated |
| ④ | Spool valve assembly | | |
| ⑤ | End cover | ZDC | Metallic plated |
| ⑥ | Piston | POM | |
| ⑦ | Plunger | POM | |

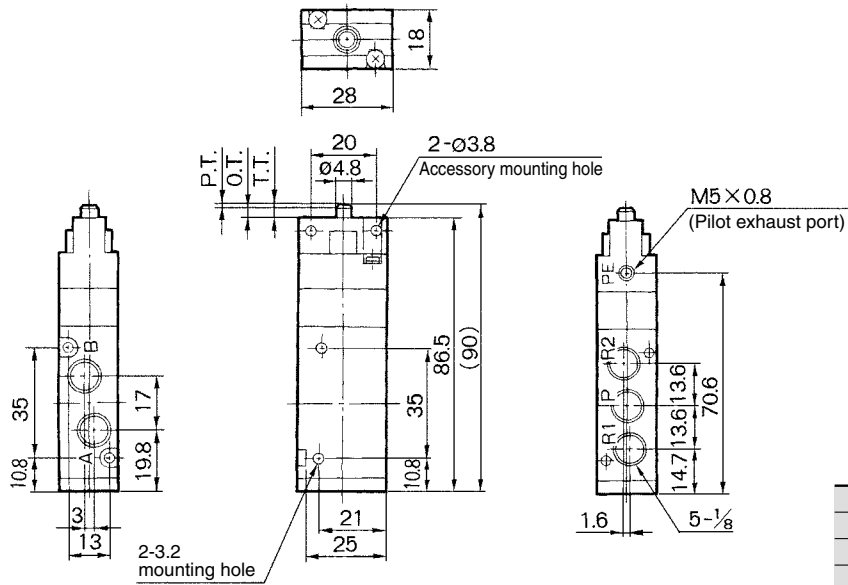
| No. | Description | Material | Note |
|-----|----------------|-----------------|------|
| ⑧ | Valve seat (A) | POM | |
| ⑨ | Valve seat (B) | POM | |
| ⑩ | Valve assembly | NBR | |
| ⑪ | Valve spring | Stainless steel | |
| ⑫ | Return spring | Stainless steel | |
| ⑬ | Spool spring | Stainless steel | |

5 Port Mechanical Valve Series VZM500

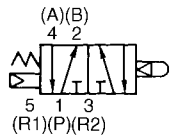
Series VZM500

Basic

VZM550-01-00



JIS Symbol



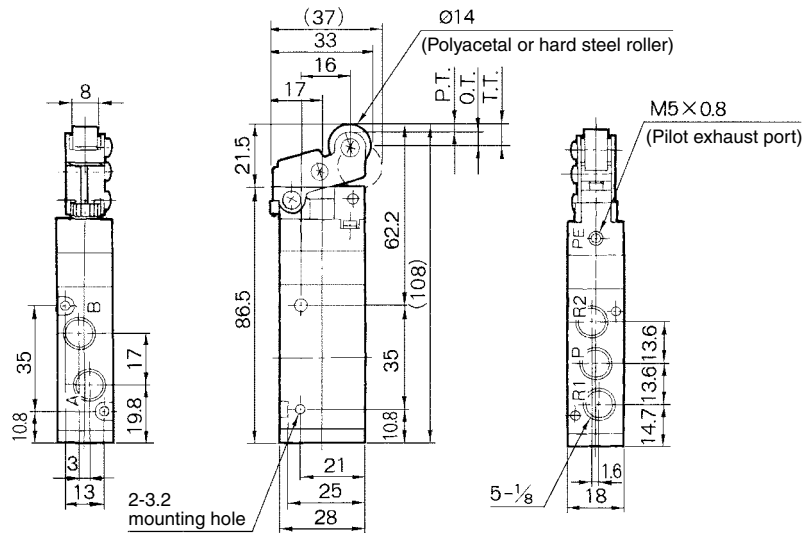
* 0.5 MPa supply

| | |
|----------|--------|
| F.O.F. * | 16 N |
| P.T. | 1.0 mm |
| O.T. | 2.0 mm |
| T.T. | 3.0 mm |

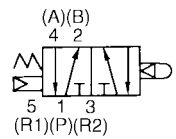
Roller lever

VZM550-01-01

VZM550-01-01S



JIS Symbol



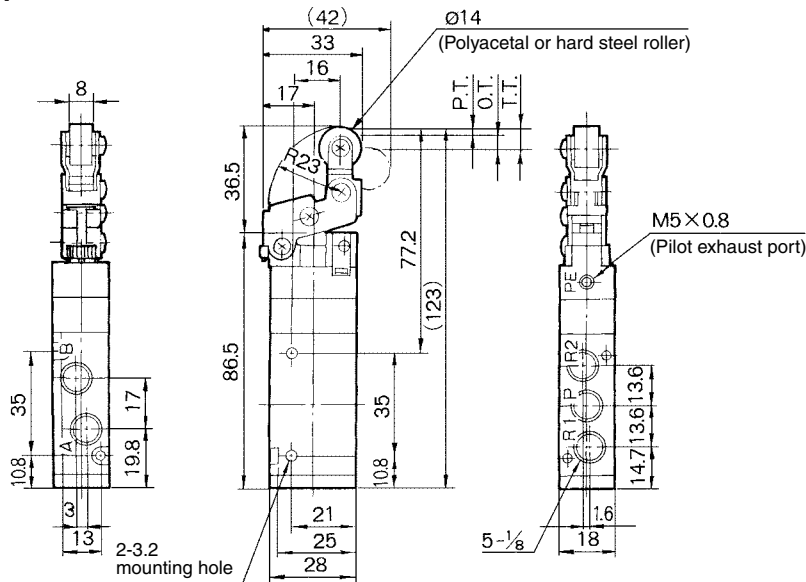
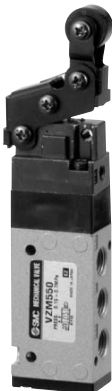
* 0.5 MPa supply

| | |
|----------|--------|
| F.O.F. * | 8 N |
| P.T. | 2.2 mm |
| O.T. | 4.0 mm |
| T.T. | 6.2 mm |

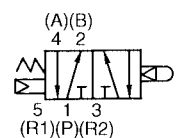
One way roller lever

VZM550-01-02

VZM550-01-02S



JIS Symbol



* 0.5 MPa supply

| | |
|----------|--------|
| F.O.F. * | 7 N |
| P.T. | 2.4 mm |
| O.T. | 4.6 mm |
| T.T. | 7.0 mm |

S□A

V□A

S□A

V□A

VM

VR

VH

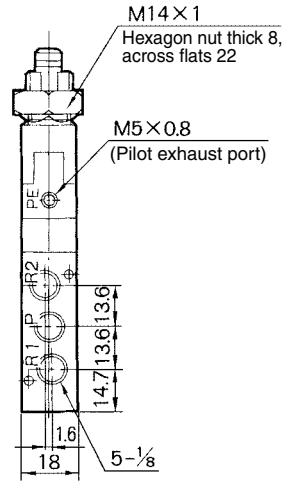
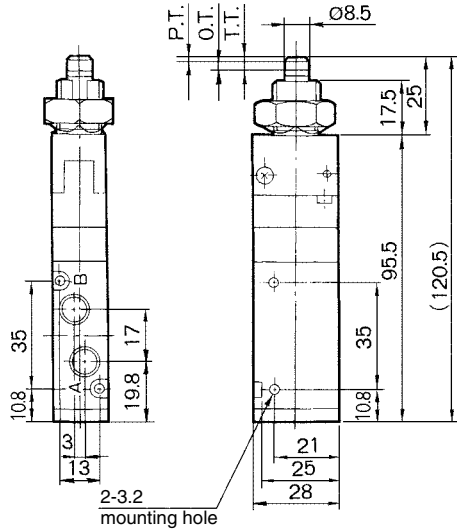
VHS

Series VZM500

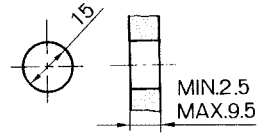
Series VZM500

Straight plunger

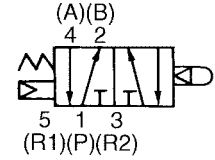
VZM550-01-05



Panel mounting hole



JIS Symbol



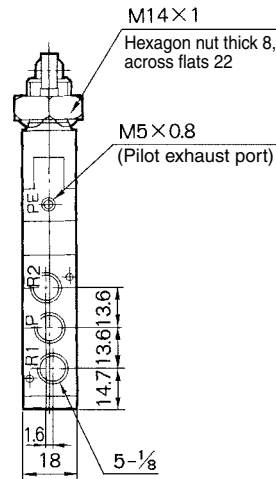
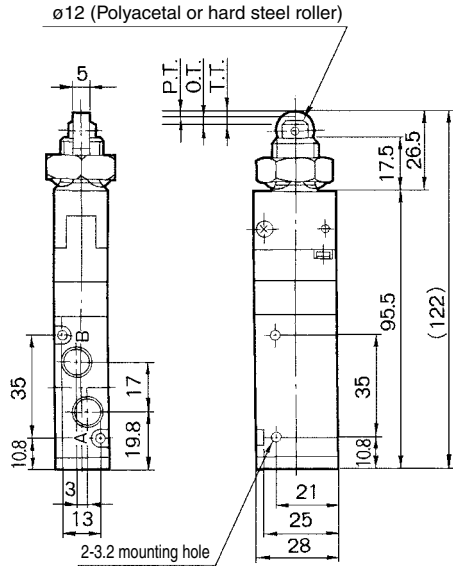
* 0.5 MPa supply

| | |
|----------|--------|
| F.O.F. * | 18 N |
| P.T. | 1.5 mm |
| O.T. | 2.0 mm |
| T.T. | 3.5 mm |

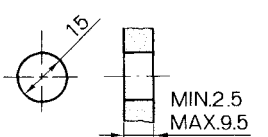
Roller plunger

VZM550-01-06

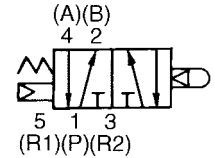
VZM550-01-06S



Panel mounting hole



JIS Symbol

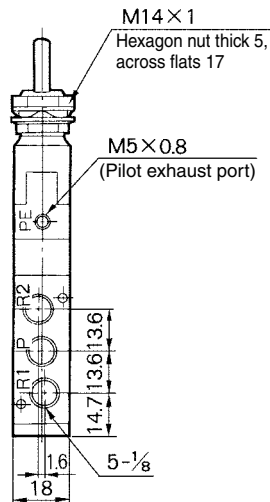
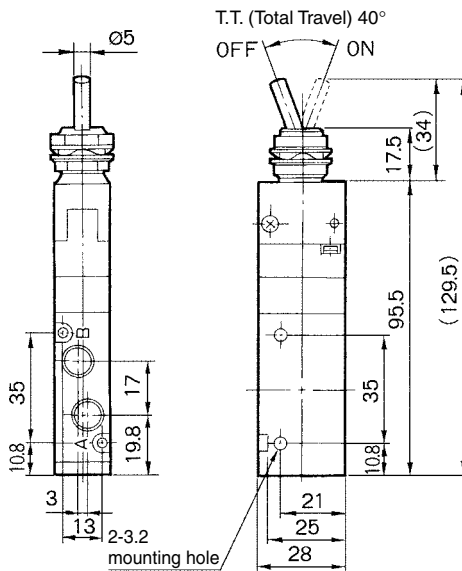


* 0.5 MPa supply

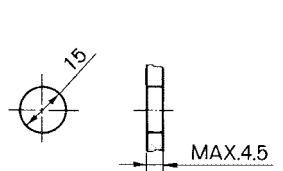
| | |
|----------|--------|
| F.O.F. * | 18 N |
| P.T. | 1.5 mm |
| O.T. | 2.0 mm |
| T.T. | 3.5 mm |

Toggle lever

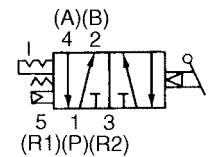
VZM550-01-08



Panel mounting hole



JIS Symbol



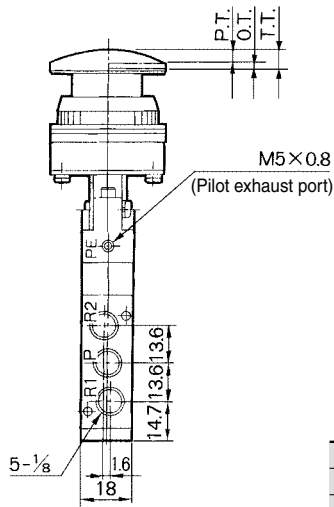
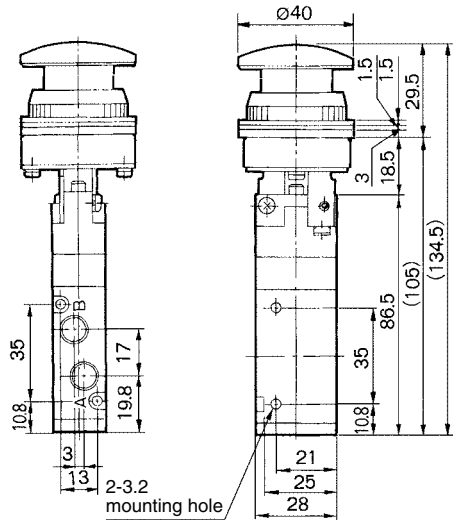
* 0.5 MPa supply

| | |
|----------|------|
| F.O.F. * | 15 N |
| T.T. | 40° |

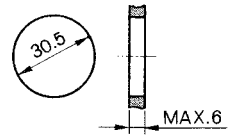
Series VZM500

Push button (Mushroom)

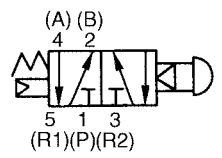
VZM550-01-30R/B/G/Y



Panel mounting hole



JIS symbol



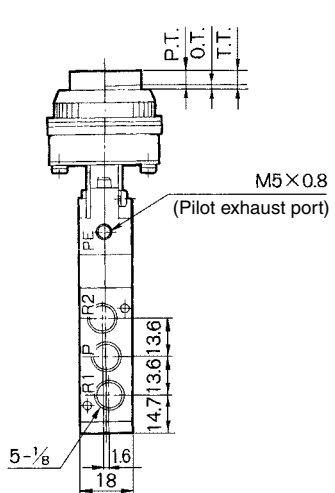
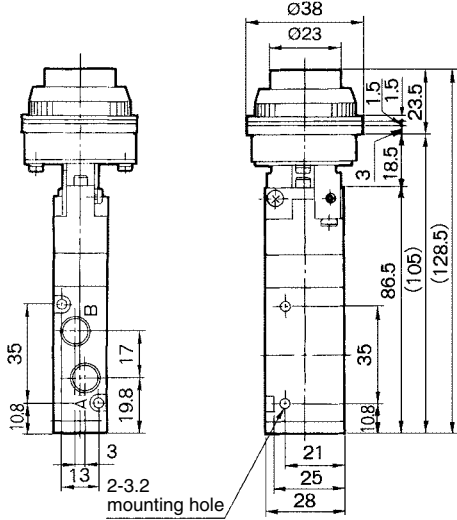
* 0.5 MPa supply

| | |
|----------|--------|
| F.O.F. * | 21 N |
| P.T. | 4.8 mm |
| O.T. | 1.7 mm |
| T.T. | 6.5 mm |

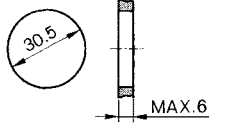
- A
- A
- A
- A
- VM**
- VR**
- VH**
- VHS**

Push button (Extended)

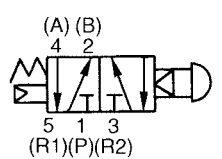
VZM550-01-32R/B/G/Y



Panel mounting hole



JIS symbol

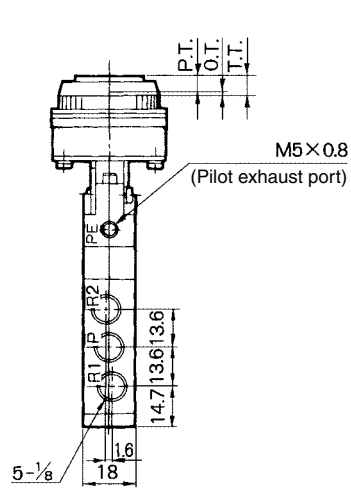
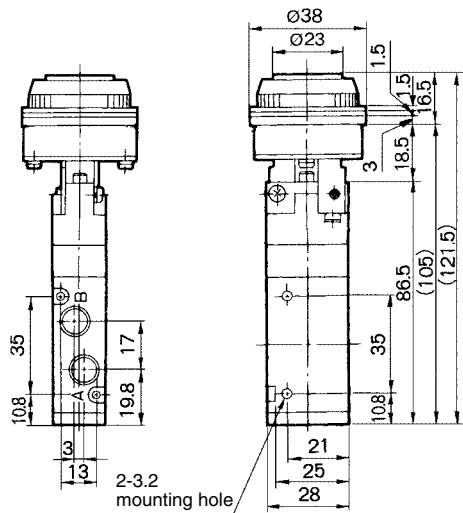


* 0.5 MPa supply

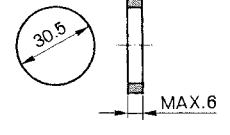
| | |
|----------|--------|
| F.O.F. * | 21 N |
| P.T. | 4.8 mm |
| O.T. | 1.7 mm |
| T.T. | 6.5 mm |

Push button (Flush)

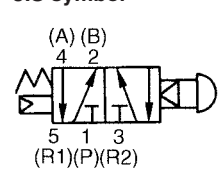
VZM550-01-33



Panel mounting hole



JIS symbol



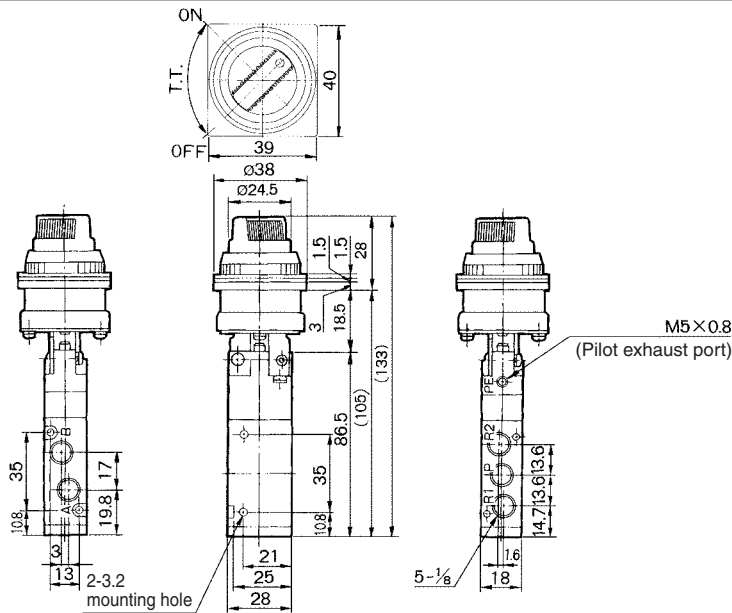
* 0.5 MPa supply

| | |
|----------|--------|
| F.O.F. * | 21 N |
| P.T. | 4.8 mm |
| O.T. | 1.7 mm |
| T.T. | 6.5 mm |

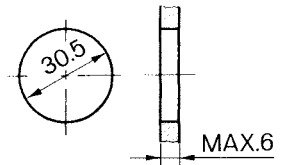
Series VZM500

Series VZM500

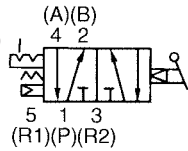
Selector (2 position) VZM550-01-34R/B/G/Y



Panel mounting hole



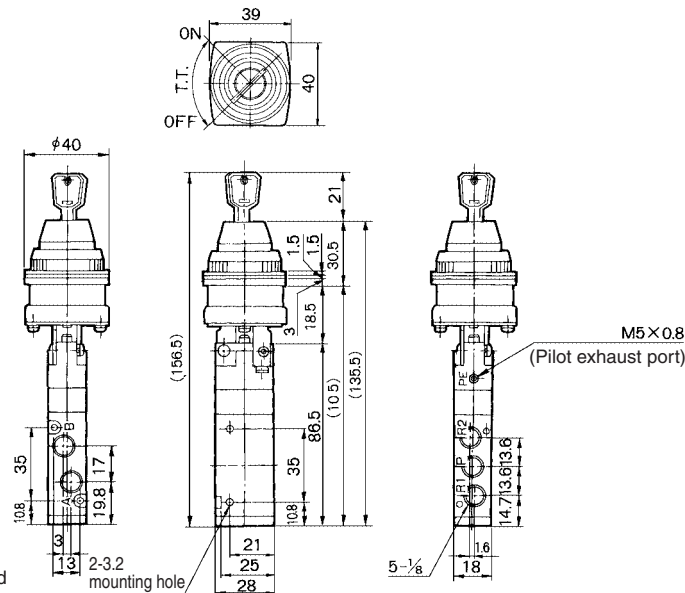
JIS Symbol



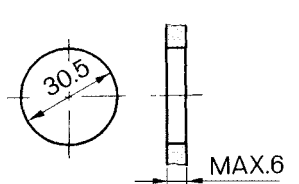
* 0.5 MPa supply

| | |
|----------|------|
| F.O.F. * | 23 N |
| T.T. | 90° |

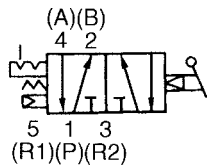
Key selector (2 position) VZM550-01-36



Panel mounting hole



JIS Symbol

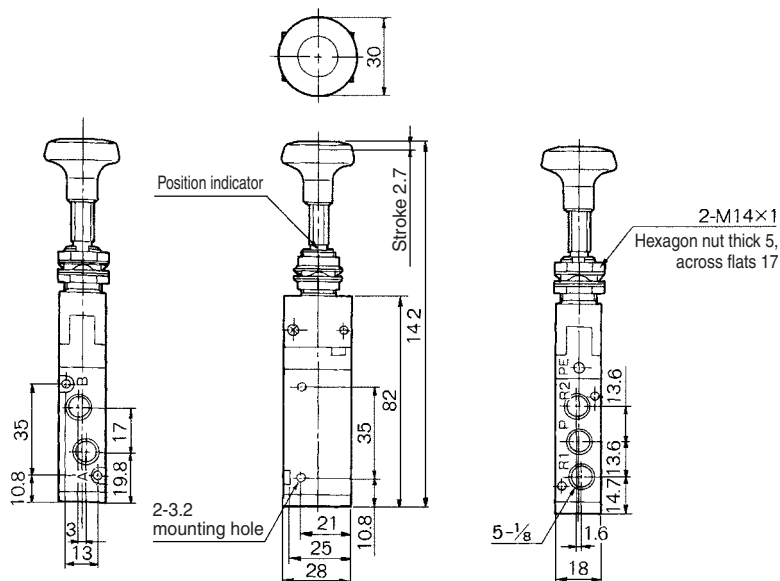


* 0.5 MPa supply

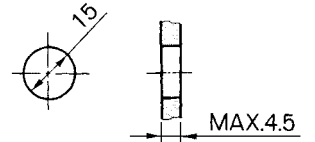
| | |
|----------|------|
| F.O.F. * | 26 N |
| T.T. | 90° |

Key can be removed at the "on" and "off" positions.

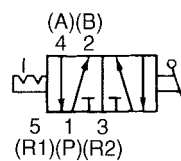
Push pull VZM550-01-37



Panel mounting hole



JIS Symbol

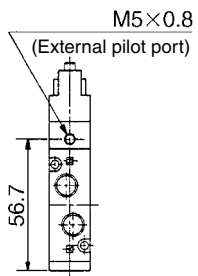


| | |
|--------|--------|
| F.O.F. | 20 N |
| T.T. | 2.7 mm |

5 Port Mechanical Valve Series VZM500

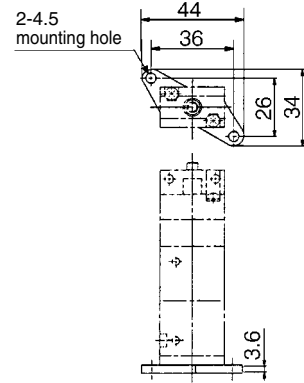
External pilot type

VZM551 type



With foot bracket

VZM55□-01-□□-F



- S□A
- V□A
- S□A
- V□A
- VM**
- VR
- VH
- VHS

5 Port Mechanical Valve Rubber Seal

Series VFM300

**Compact design,
large flow capacity 18 mm²
High cycle rate,
long life/300 c.p.m. or less
Piping possible to any EXH
port.**

Proper countermeasures can be taken for applications in which the noise of the exhaust could cause problems to the surroundings.

**External pilot model
available. (Option)**

**Foot bracket and manifold
mounting possible.**



Specifications

| | |
|---|---|
| Fluid | Air/Inert gas |
| Operating pressure | 0.15 to 0.9 MPa ⁽¹⁾ |
| Ambient and fluid temperature | -5 to 60°C (No freezing) |
| Effective area | 18 mm ² |
| Maximum frequency (Mechanical operation type) | 300 c.p.m. or less |
| Lubrication | Not required (Use turbine oil Class 1 ISO VG32, if lubricated.) Main valve/SUP, CYL port 1/4, EXH port 1/8 |
| Port size | Pilot valve (EXH)/M5 x 0.8 |
| Option | Foot bracket ⁽²⁾ |
| Weight (Basic) | 260 g |

* Please contact SMC for manifold mounting style.
 Note 1) External pilot type Main valve: 0 to 0.9 MPa
 Pilot valve: 0.15 to 0.9 MPa
 Note 2) The standard body can not be retrofitted with a foot bracket.

Model

| | Actuator | Model | Actuator part no. | Application |
|---------------------------|-----------------------------|---------------|-------------------|---|
| Mechanical operation | Basic | VFM350-02-00 | — | — |
| | Roller lever | VFM350-02-01 | VM-01C | Polyacetal roller |
| | | VFM350-02-01S | VM-01CS | Hard steel roller |
| | One way roller lever | VFM350-02-02 | VM-02C | Polyacetal roller |
| | | VFM350-02-02S | VM-02CS | Hard steel roller |
| | Straight plunger | VFM350-02-05 | VM-05D | — |
| Roller plunger | VFM350-02-06 | VM-06D | Polyacetal roller | |
| | VFM350-02-06S | VM-06DS | Hard steel roller | |
| Manual operation | Toggle lever | VFM350-02-08 | VM-08D | — |
| | Push button (Mushroom) | VFM350-02-30R | VM-30CR | Red |
| | | VFM350-02-30B | VM-30CB | Black |
| | | VFM350-02-30G | VM-30CG | Green |
| | | VFM350-02-30Y | VM-30CY | Yellow |
| | Push button (Extended) | VFM350-02-32R | VM-32CR | Red |
| | | VFM350-02-32B | VM-32CB | Black |
| | | VFM350-02-32G | VM-32CG | Green |
| | Push button (Flush) | VFM350-02-32Y | VM-32CY | Yellow |
| | | VFM350-02-33 | VM-33C | With a set of red, black, green, yellow |
| | Twist selector (2 position) | VFM350-02-34R | VM-34CR | Red |
| | | VFM350-02-34B | VM-34CB | Black |
| | | VFM350-02-34G | VM-34CG | Green |
| VFM350-02-34Y | | VM-34CY | Yellow | |
| Key selector (2 position) | VFM350-02-36 | VM-36C | — | |

Note 1) Actuator replacement is available for all types.
 Note 2) For push button (mushroom), push button (extended), push button (flush) and a single unit of fastening ring, refer to pages 5-6-6 to 5-6-7. The other parts are not replaceable.
 Note 3) The handle of the selector (2 position) cannot be removed or replaced alone.

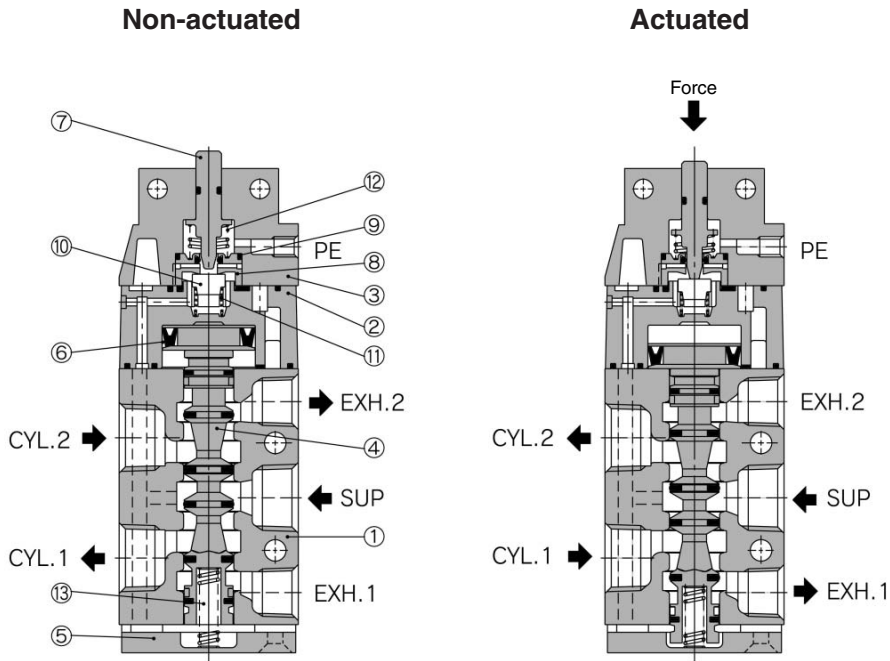
How to Order

VFM35 0 02 01 S

| Port size | | Actuator type | | Suffix for actuator | | Option | |
|-----------|---------|---------------|-----------------------------|---------------------|-------------------|-------------------------------------|---------------------------------------|
| 02 | Rc 1/4 | 00 | Basic | S | Hard steel roller | F | Foot bracket (Only internal pilot) |
| N02 | NPT 1/4 | 01 | Roller lever | R | Red | Color of push button selector | |
| F02 | G 1/4 | 02 | One way roller lever | B | Black | | |
| | | 05 | Straight plunger | G | Green | | |
| | | 06 | Roller plunger | Y | Yellow | | |
| | | 08 | Toggle lever | | | | |
| | | 30 | Push button (Mushroom) | | | | |
| | | 32 | Push button (Extended) | | | | |
| | | 33 | Push button (Flush) | | | | |
| | | 34 | Twist selector (2 position) | | | | |
| | | 36 | Key selector (2 position) | | | | |

| Body option | |
|-------------|---------------------|
| 0 | Internal pilot type |
| 1 | External pilot type |

Construction



Component Parts

| No. | Description | Material | Note |
|-----|----------------------|----------|----------------------|
| ① | Body | ADC | Metallic plated |
| ② | Pilot body | PBT | Metallic plated |
| ③ | Head cover | ZDC | Black zinc chromated |
| ④ | Spool valve assembly | | |
| ⑤ | End cover | ADC | Metallic plated |
| ⑥ | Piston | POM | |
| ⑦ | Plunger | POM | |

| No. | Description | Material | Note |
|-----|----------------|-----------------|------|
| ⑧ | Valve seat (A) | POM | |
| ⑨ | Valve seat (B) | POM | |
| ⑩ | Valve | NBR | |
| ⑪ | Valve spring | Stainless steel | |
| ⑫ | Return spring | Stainless steel | |
| ⑬ | Spool spring | Stainless steel | |

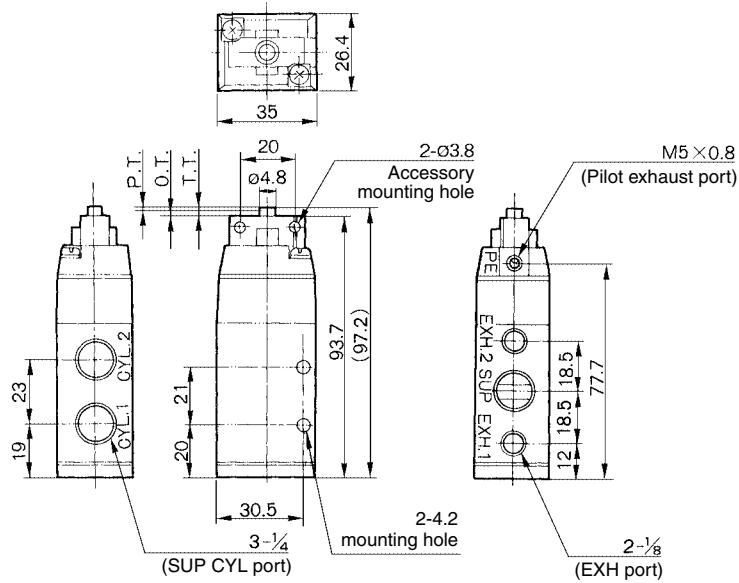
S□A
V□A
S□A
V□A
VM
VR
VH
VHS

Series VFM300

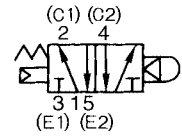
Series VFM300

Basic

VFM350-02-00



JIS Symbol

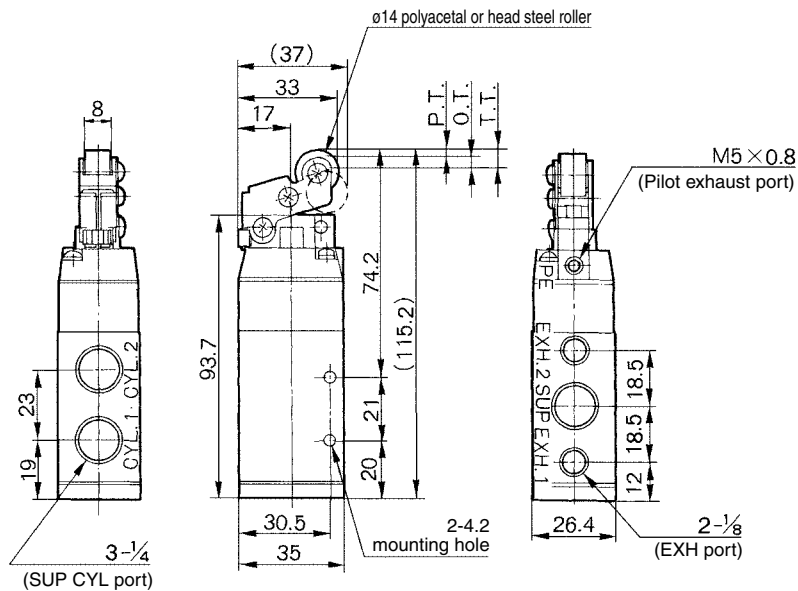


* 0.5 MPa supply

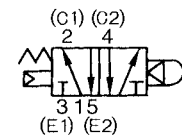
| | |
|----------|--------|
| F.O.F. * | 16 N |
| P.T. | 1.0 mm |
| O.T. | 2.0 mm |
| T.T. | 3.0 mm |

Roller lever

VFM350-02-01
VFM350-02-01S



JIS Symbol

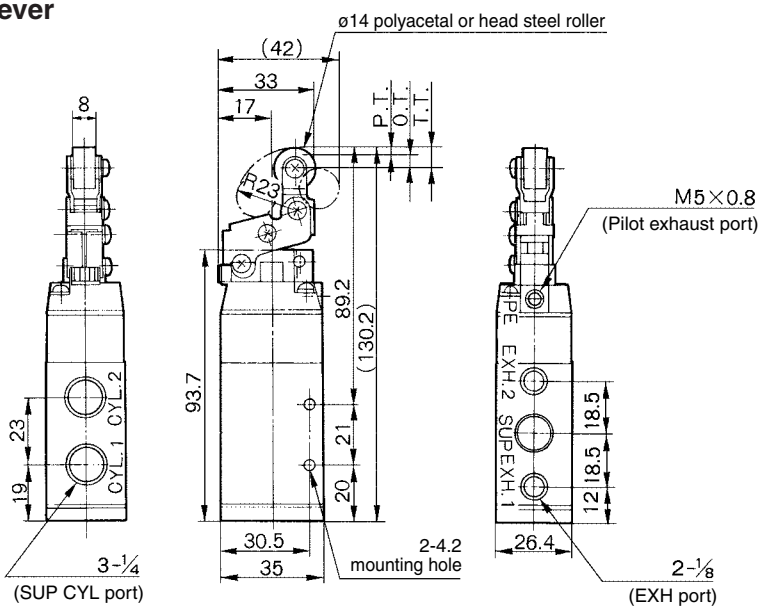


* 0.5 MPa supply

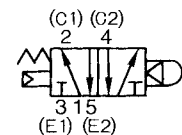
| | |
|----------|--------|
| F.O.F. * | 8 N |
| P.T. | 2.2 mm |
| O.T. | 4.0 mm |
| T.T. | 6.2 mm |

One way roller lever

VFM350-02-02
VFM350-02-02S



JIS Symbol



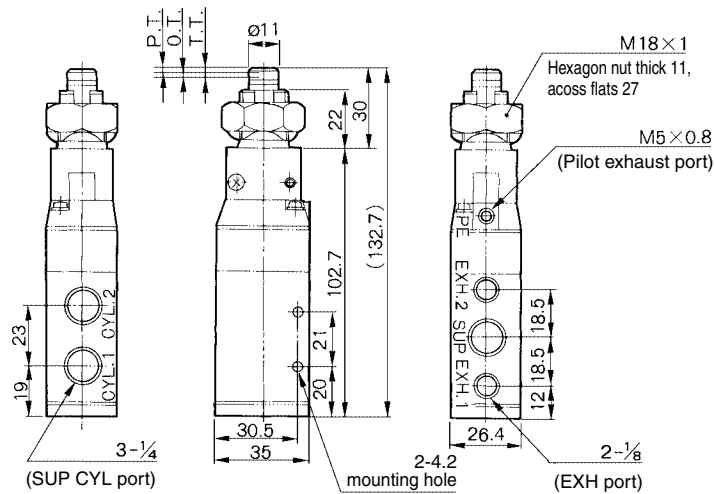
* 0.5 MPa supply

| | |
|----------|--------|
| F.O.F. * | 7 N |
| P.T. | 2.4 mm |
| O.T. | 4.6 mm |
| T.T. | 7.0 mm |

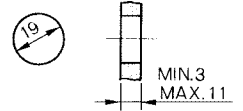
5 Port Mechanical Valve Rubber Seal Series VFM300

Series VFM300

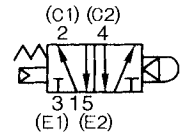
Straight plunger VFM350-02-05



Panel mounting hole



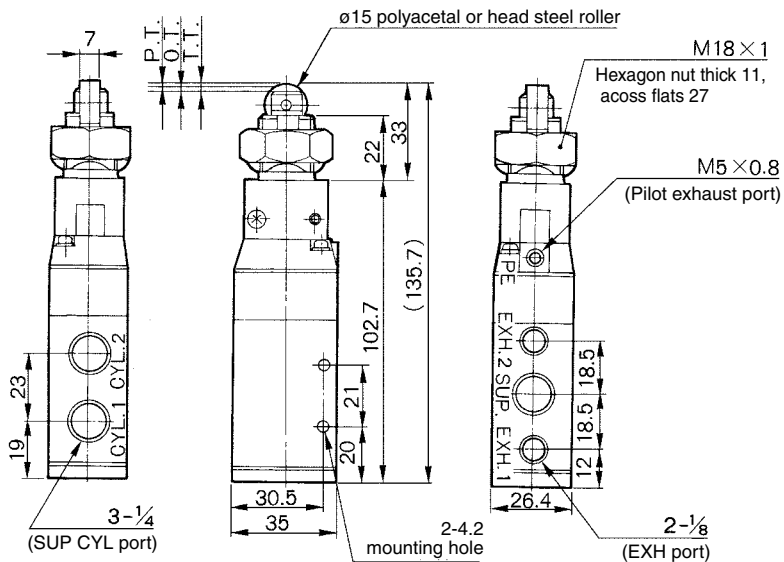
JIS symbol



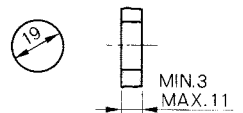
* 0.5 MPa supply

| | |
|----------|--------|
| F.O.F. * | 20 N |
| P.T. | 1.5 mm |
| O.T. | 2.0 mm |
| T.T. | 3.5 mm |

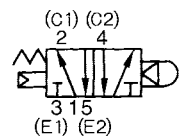
Roller plunger VFM350-02-06 VFM350-02-06S



Panel mounting hole



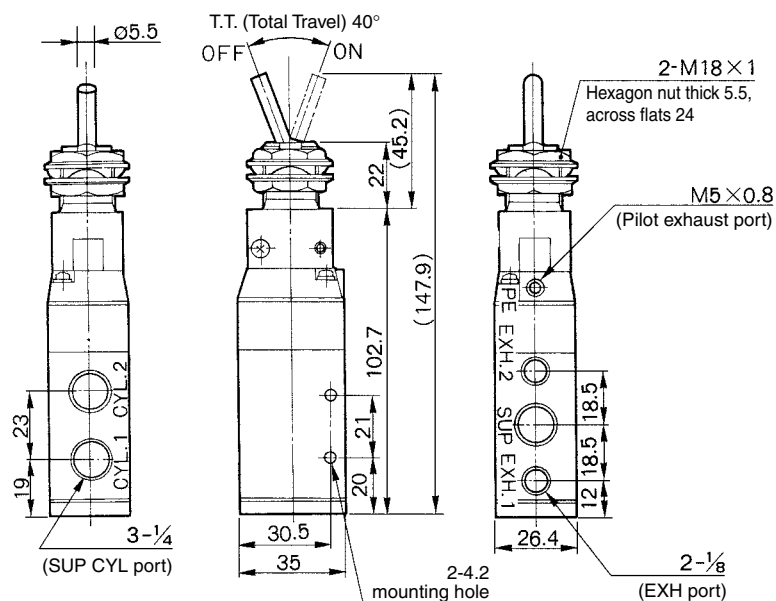
JIS symbol



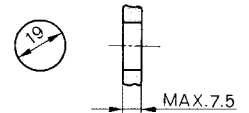
* 0.5 MPa supply

| | |
|----------|--------|
| F.O.F. * | 20 N |
| P.T. | 1.5 mm |
| O.T. | 2.0 mm |
| T.T. | 3.5 mm |

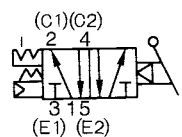
Toggle lever VFM350-02-08



Panel mounting hole



JIS Symbol



* 0.5 MPa supply

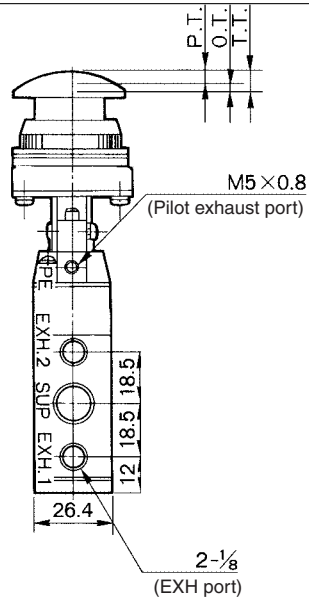
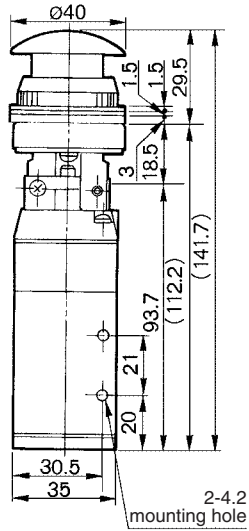
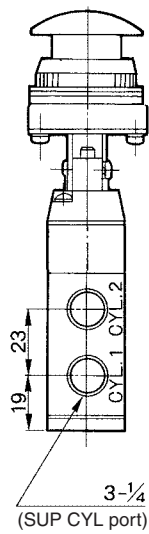
| | |
|----------|------|
| F.O.F. * | 15 N |
| T.T. | 40° |

Series VFM300

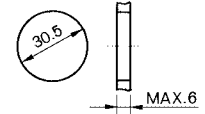
Series VFM300

Push button (Mushroom)

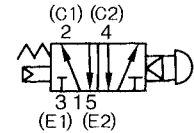
VFM350-02-30R/B/G/Y



Panel mounting hole



JIS Symbol

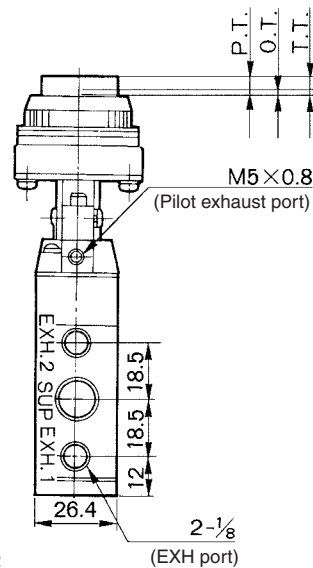
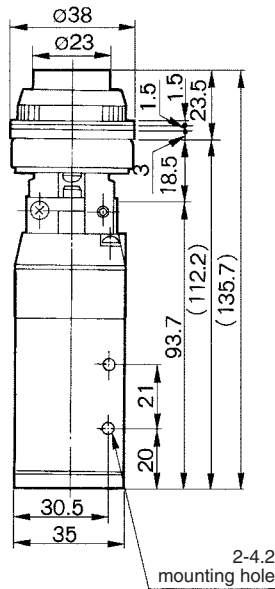
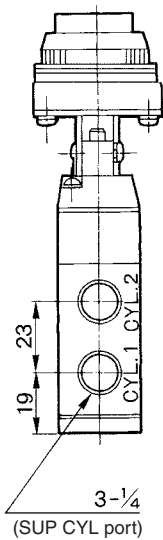


* 0.5 MPa supply

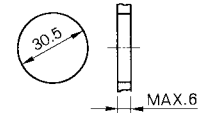
| | |
|----------|--------|
| F.O.F. * | 21 N |
| P.T. | 4.8 mm |
| O.T. | 1.7 mm |
| T.T. | 6.5 mm |

Push button (Extended)

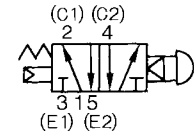
VFM350-02-32R/B/G/Y



Panel mounting hole



JIS Symbol

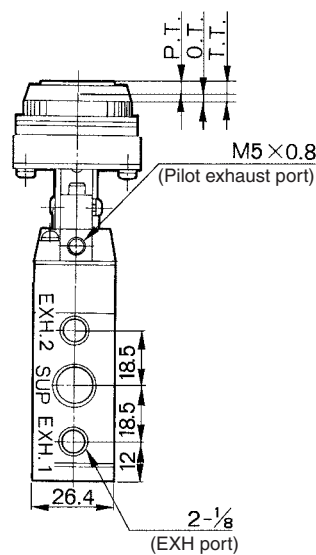
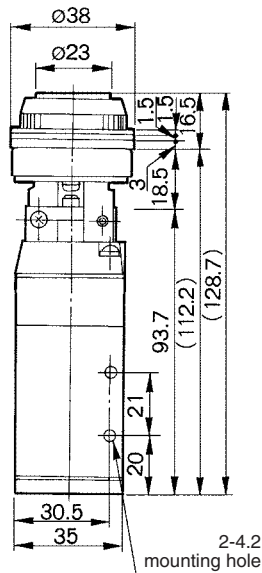
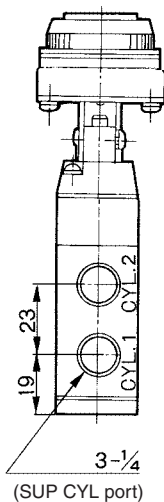


* 0.5 MPa supply

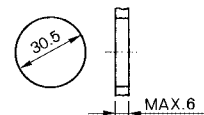
| | |
|----------|--------|
| F.O.F. * | 21 N |
| P.T. | 4.8 mm |
| O.T. | 1.7 mm |
| T.T. | 6.5 mm |

Push button (Flush)

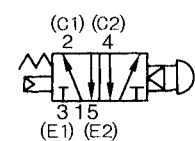
VFM350-02-33



Panel mounting hole



JIS Symbol



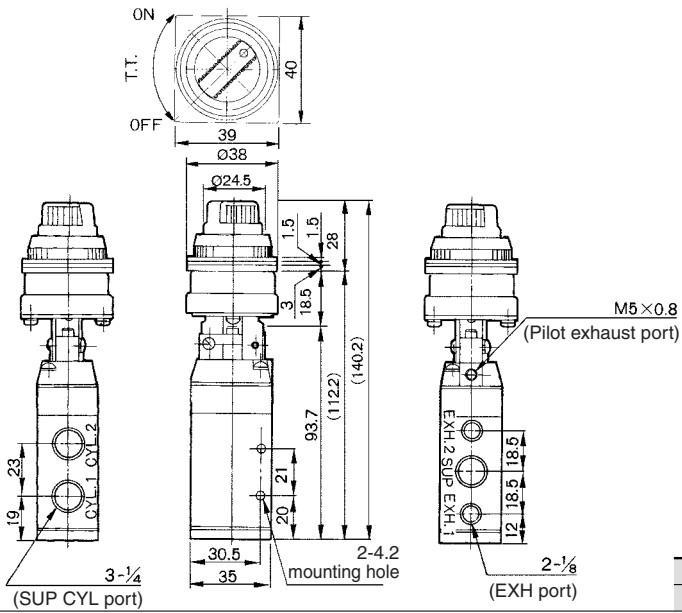
* 0.5 MPa supply

| | |
|----------|--------|
| F.O.F. * | 21 N |
| P.T. | 4.8 mm |
| O.T. | 1.7 mm |
| T.T. | 6.5 mm |

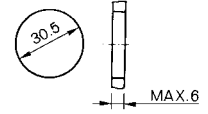
5 Port Mechanical Valve Rubber Seal Series VFM300

Series VFM300

Twist selector (2 position) VFM350-02-34R/B/G/Y



Panel mounting hole

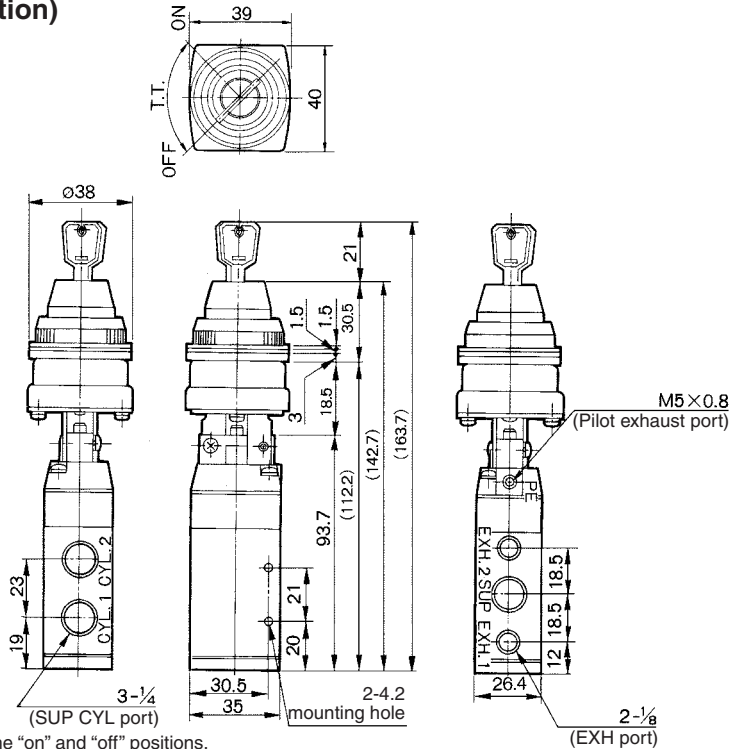


JIS Symbol

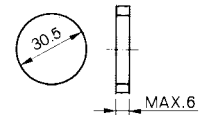


| | |
|------------------|------|
| * 0.5 MPa supply | |
| F.O.F. * | 23 N |
| T.T. | 90° |

Key selector (2 position) VFM350-02-36



Panel mounting hole



JIS Symbol

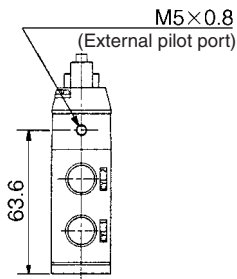


| | |
|------------------|------|
| * 0.5 MPa supply | |
| F.O.F. * | 26 N |
| T.T. | 90° |

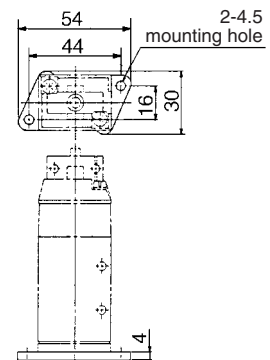


Key can be removed at the "on" and "off" positions.

External pilot type VFM351 type



With foot bracket VFM350-02-□□-F



5 Port Mechanical Valve Metal Seal

Series **VFM200**

**Compact design,
large flow capacity 18 mm²
High cycle rate,
long life/300 c.p.m. or less
Piping possible to any EXH
port.**

Proper countermeasures can be taken for applications in which the noise of the exhaust could cause problems to the surroundings.

**External pilot model
available. (Option)**

**Foot bracket and manifold
mounting possible.**



Specifications

| | |
|---|---|
| Fluid | Air/Inert gas |
| Operating pressure | 0.1 to 1.0 MPa ⁽¹⁾ |
| Ambient and fluid temperature | -5 to 60°C (No freezing) |
| Effective area | 18 mm ² |
| Maximum frequency (Mechanical operation type) | 300 c.p.m. or less |
| Lubrication | Not required (Use turbine oil Class 1 ISO VG32, if lubricated.) |
| Port size | Main valve Rc 1/4 |
| | Pilot valve (EXH)/M5 x 0.8 |
| Option | Foot bracket ⁽²⁾ |
| Weight (Basic) | 300 g |

* Please contact SMC for manifold mounting style.
 Note 1) External pilot type Main valve: 0 to 1.0 MPa
 Pilot valve: 0.1 to 1.0 MPa

Note 2) The standard body can not be retrofitted with a foot bracket.

Model

| | Actuator | Model | Actuator part no. | Application |
|---------------------------|-----------------------------|----------------------|-------------------|---|
| Mechanical operation | Basic | VFM250-02-00 | — | — |
| | Roller lever | VFM250-02-01 | VM-01C | Polyacetal roller |
| | | VFM250-02-01S | VM-01CS | Hard steel roller |
| | One way roller lever | VFM250-02-02 | VM-02C | Polyacetal roller |
| | | VFM250-02-02S | VM-02CS | Hard steel roller |
| | Straight plunger | VFM250-02-05 | VM-05D | — |
| Roller plunger | VFM250-02-06 | VM-06D | Polyacetal roller | |
| | VFM250-02-06S | VM-06DS | Hard steel roller | |
| Manual operation | Toggle lever | VFM250-02-08 | VM-08D | — |
| | Push button (Mushroom) | VFM250-02-30R | VM-30CR | Red |
| | | VFM250-02-30B | VM-30CB | Black |
| | | VFM250-02-30G | VM-30CG | Green |
| | | VFM250-02-30Y | VM-30CY | Yellow |
| | Push button (Extended) | VFM250-02-32R | VM-32CR | Red |
| | | VFM250-02-32B | VM-32CB | Black |
| | | VFM250-02-32G | VM-32CG | Green |
| | | VFM250-02-32Y | VM-32CY | Yellow |
| | Push button (Flush) | VFM250-02-33 | VM-33C | With a set of red, black, green, yellow |
| | Twist selector (2 position) | VFM250-02-34R | VM-34CR | Red |
| | | VFM250-02-34B | VM-34CB | Black |
| | | VFM250-02-34G | VM-34CG | Green |
| VFM250-02-34Y | | VM-34CY | Yellow | |
| Key selector (2 position) | VFM250-02-36 | VM-36C | — | |

Note 1) Actuator replacement is available for all types.

Note 2) For push button (mushroom), push button (extended), push button (flush) and a single unit of fastening ring, refer to pages 5-6-6 to 5-6-7. The other parts are not replaceable.

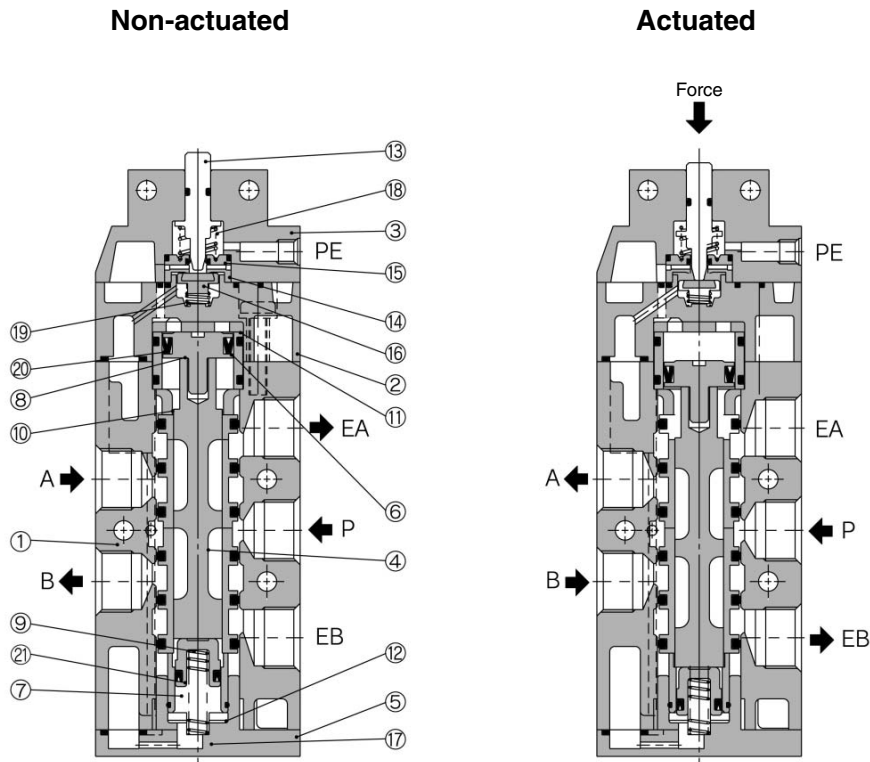
Note 3) The handle of the selector (2 position) cannot be removed or replaced alone.

How to Order

VFM25 0 02 01 S

| | | | |
|-----------------------|--------------------------------|----------------------------|--------------------------------------|
| Body option | Actuator type | Suffix for actuator | Option |
| 0 Internal pilot type | 00 Basic | S Hard steel roller | F Foot bracket (Only internal pilot) |
| 1 External pilot type | 01 Roller lever | R Red | |
| | 02 One way roller lever | B Black | Color of push button selector |
| | 05 Straight plunger | G Green | |
| | 06 Roller plunger | Y Yellow | |
| | 08 Toggle lever | | |
| | 30 Push button (Mushroom) | | |
| | 32 Push button (Extended) | | |
| | 33 Push button (Flush) | | |
| | 34 Twist selector (2 position) | | |
| | 36 Key selector (2 position) | | |

Construction



Component Parts

| No. | Description | Material | Note |
|-----|----------------------------|-----------------|----------------------|
| ① | Body | ADC | Metallic plated |
| ② | Pilot body | ZDC | Metallic plated |
| ③ | Head cover | ZDC | Black zinc chromated |
| ④ | Spool/sleeve | Stainless steel | |
| ⑤ | End cover | POM | |
| ⑥ | Piston guide | Brass | |
| ⑦ | Piston guide for end cover | Brass | |
| ⑧ | Piston | POM | |
| ⑨ | Piston for end cover | POM | |
| ⑩ | Guide bushing | POM | |
| ⑪ | Cushion | Urethane rubber | |

| No. | Description | Material | Note |
|-----|-----------------------|-----------------|------|
| ⑫ | Cushion for end cover | Urethane rubber | |
| ⑬ | Plunger | POM | |
| ⑭ | Valve seat (A) | POM | |
| ⑮ | Valve seat (B) | POM | |
| ⑯ | Valve | NBR | |
| ⑰ | Return spring | Stainless steel | |
| ⑱ | Return spring | Stainless steel | |
| ⑲ | Valve spring | Stainless steel | |
| ⑳ | Mini Y packing | NBR | |
| ㉑ | Mini Y packing | NBR | |

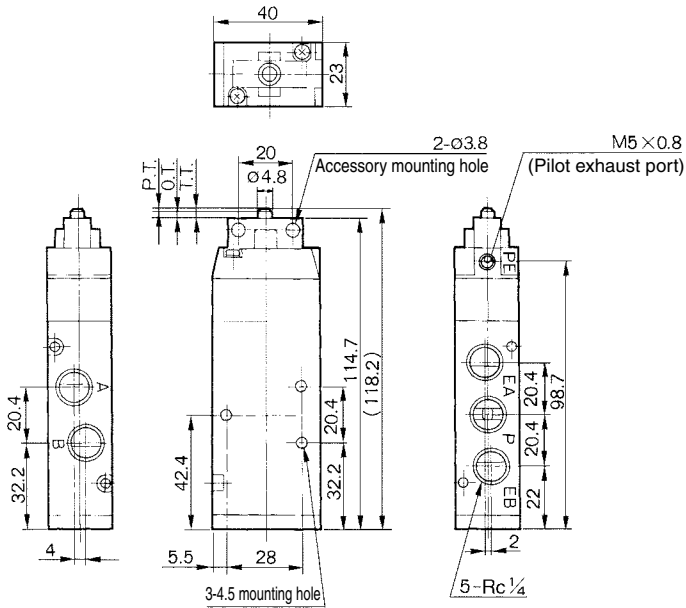
S□A
V□A
S□A
V□A
VM
VR
VH
VHS

Series VFM200

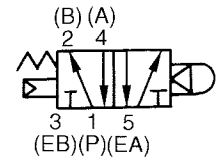
Series VFM200

Basic

VFM250-02-00



JIS Symbol

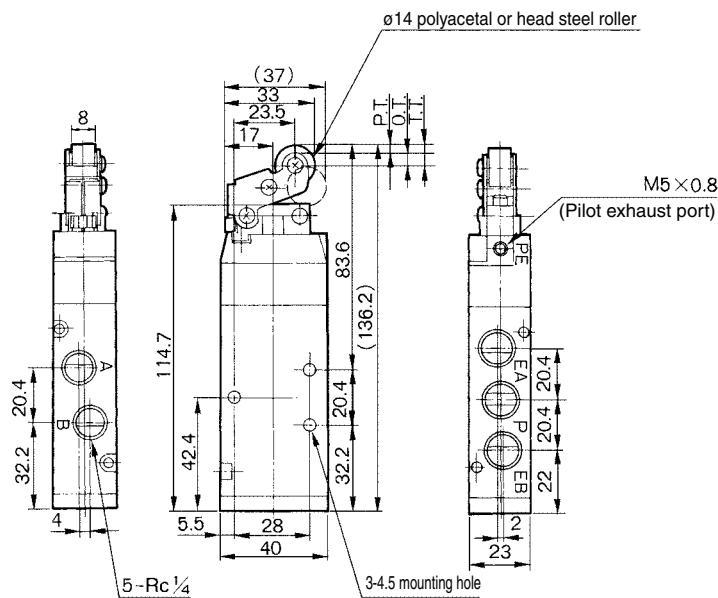


* 0.5 MPa supply

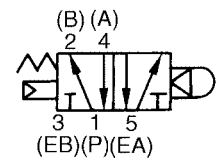
| | |
|----------|--------|
| F.O.F. * | 16 N |
| P.T. | 1.0 mm |
| O.T. | 2.0 mm |
| T.T. | 3.0 mm |

Roller lever

VFM250-02-01
VFM250-02-01S



JIS Symbol

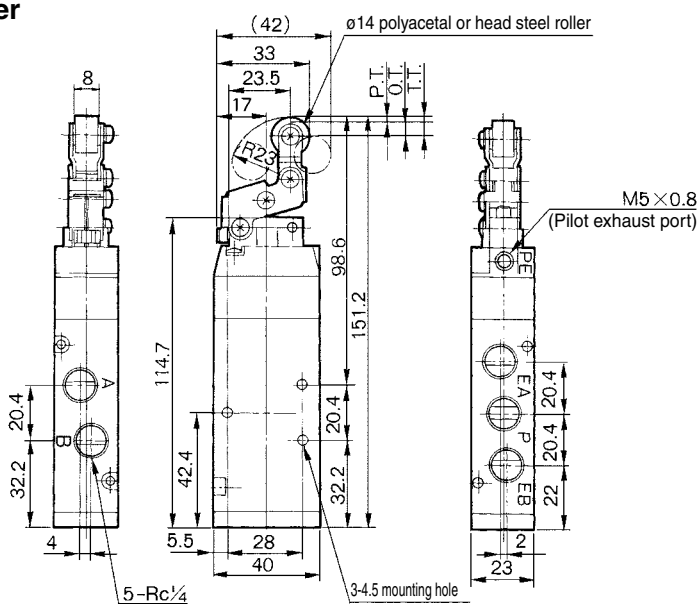


* 0.5 MPa supply

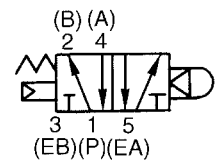
| | |
|----------|--------|
| F.O.F. * | 8 N |
| P.T. | 2.2 mm |
| O.T. | 4.0 mm |
| T.T. | 6.2 mm |

One way roller lever

VFM250-02-02
VFM250-02-02S



JIS Symbol



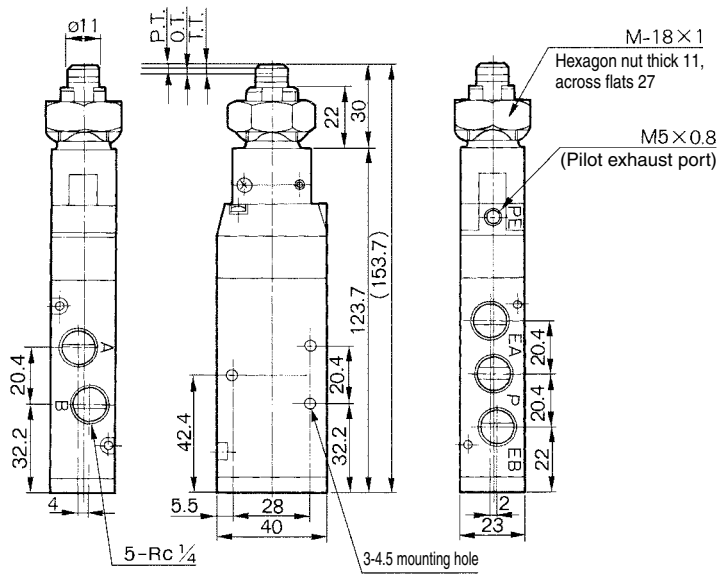
* 0.5 MPa supply

| | |
|----------|--------|
| F.O.F. * | 7 N |
| P.T. | 2.4 mm |
| O.T. | 4.6 mm |
| T.T. | 7.0 mm |

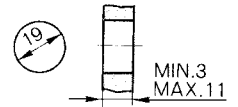
5 Port Mechanical Valve Metal Seal Series VFM200

Series VFM200

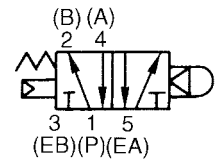
Straight plunger VFM250-02-05



Panel mounting hole



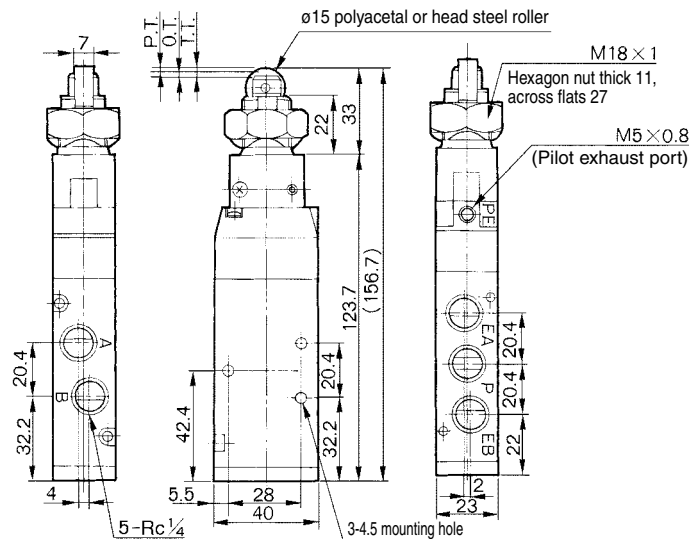
JIS Symbol



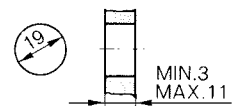
* 0.5 MPa supply

| | |
|----------|--------|
| F.O.F. * | 20 N |
| P.T. | 1.5 mm |
| O.T. | 2.0 mm |
| T.T. | 3.5 mm |

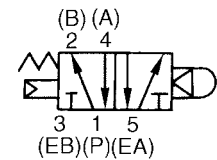
Roller plunger VFM250-02-06 VFM250-02-06S



Panel mounting hole



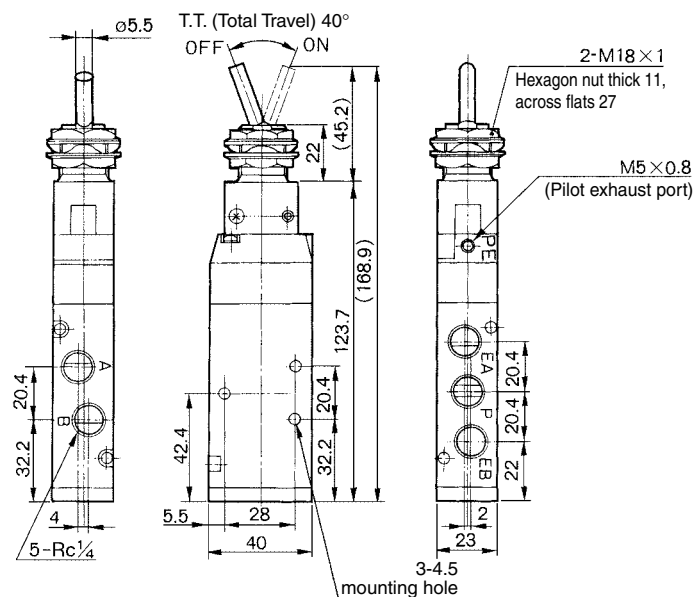
JIS symbol



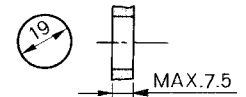
* 0.5 MPa supply

| | |
|----------|--------|
| F.O.F. * | 20 N |
| P.T. | 1.5 mm |
| O.T. | 2.0 mm |
| T.T. | 3.5 mm |

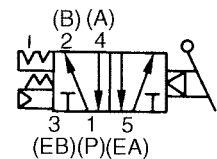
Toggle lever VFM250-02-08



Panel mounting hole



JIS symbol



* 0.5 MPa supply

| | |
|----------|------|
| F.O.F. * | 15 N |
| T.T. | 40° |

S□A

V□A

S□A

V□A

VM

VR

VH

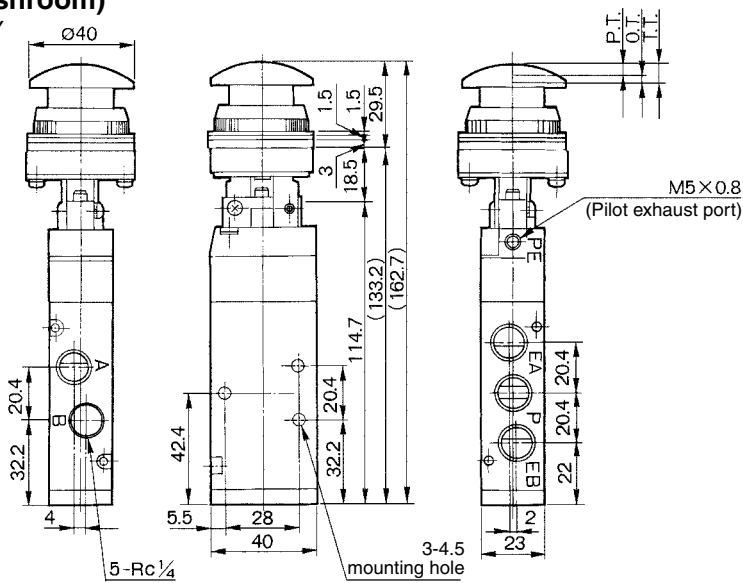
VHS

Series VFM200

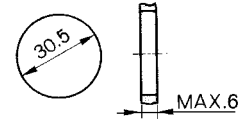
Series VFM200

Push button (Mushroom)

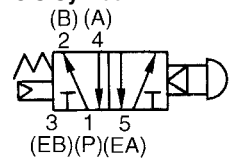
VFM250-02-30R/B/G/Y



Panel mounting hole



JIS Symbol

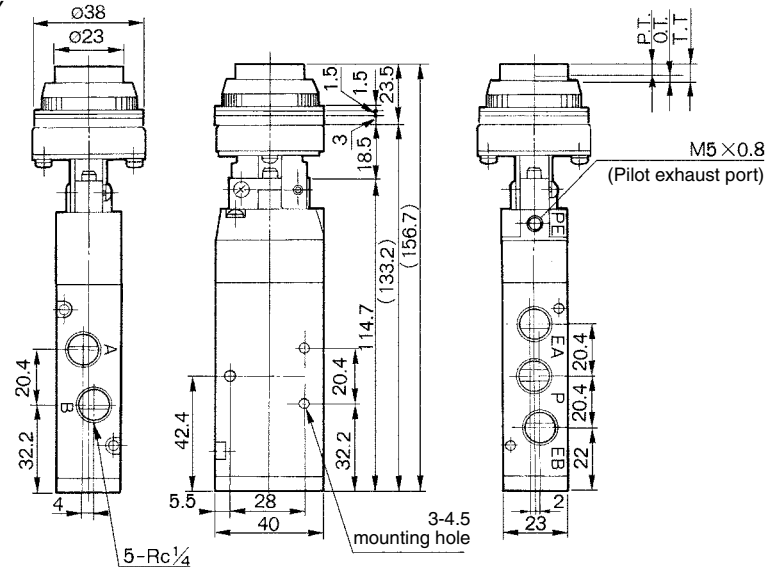


* 0.5 MPa supply

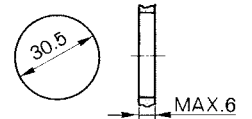
| | |
|----------|--------|
| F.O.F. * | 21 N |
| P.T. | 4.8 mm |
| O.T. | 1.7 mm |
| T.T. | 6.5 mm |

Push button (Extended)

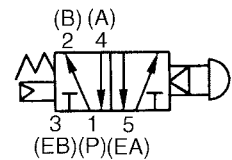
VFM250-02-32R/B/G/Y



Panel mounting hole



JIS Symbol

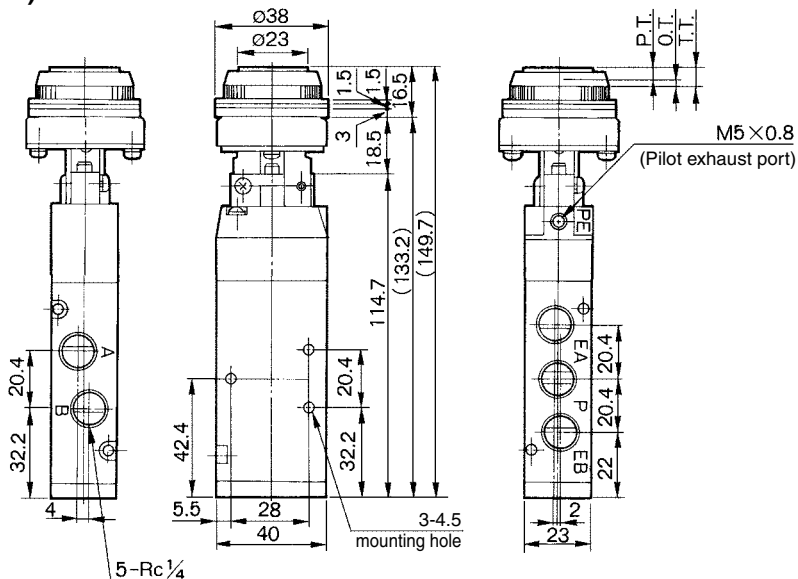


* 0.5 MPa supply

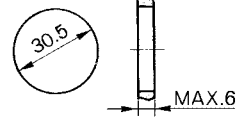
| | |
|----------|--------|
| F.O.F. * | 21 N |
| P.T. | 4.8 mm |
| O.T. | 1.7 mm |
| T.T. | 6.5 mm |

Push button (Flush)

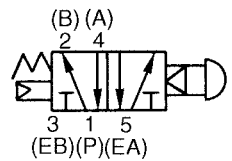
VFM250-02-33



Panel mounting hole



JIS Symbol



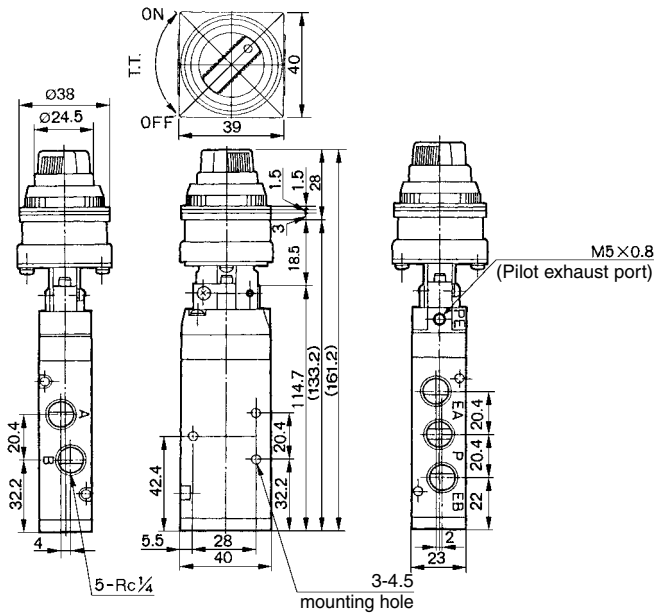
* 0.5 MPa supply

| | |
|----------|--------|
| F.O.F. * | 21 N |
| P.T. | 4.8 mm |
| O.T. | 1.7 mm |
| T.T. | 6.5 mm |

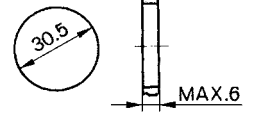
5 Port Mechanical Valve Metal Seal Series VFM200

Series VFM200

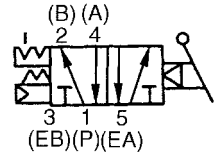
Twist selector (2 position) VFM250-02-34R/B/G/Y



Panel mounting hole



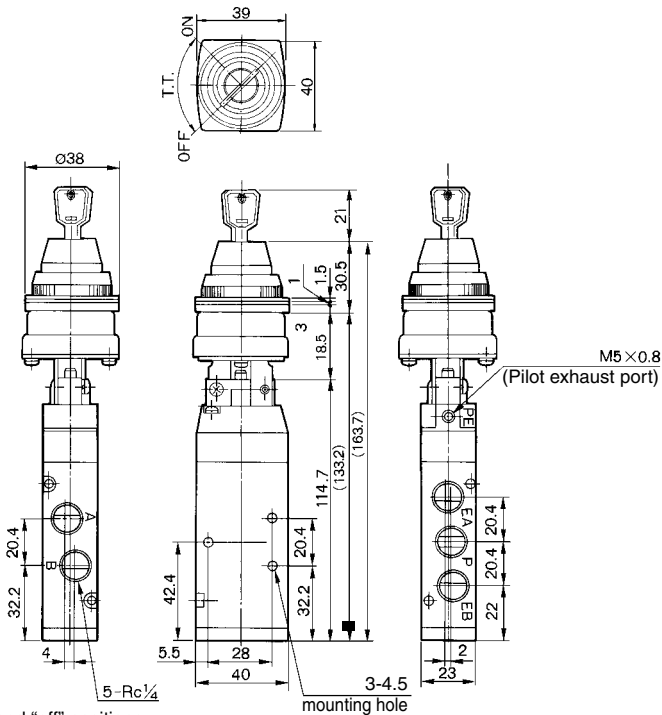
JIS Symbol



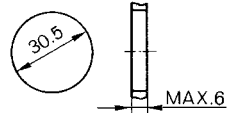
* 0.5 MPa supply

| | |
|----------|------|
| F.O.F. * | 23 N |
| T.T. | 90° |

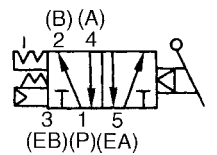
Key selector (2 position) VFM250-02-36



Panel mounting hole



JIS Symbol



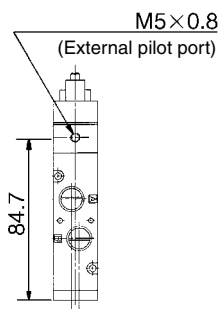
* 0.5 MPa supply

| | |
|----------|------|
| F.O.F. * | 26 N |
| T.T. | 90° |



Key can be removed at the "on" and "off" positions.

External pilot type VFM251 type



With foot bracket VFM250-02-□□-F

