

Mechanical Valves Series VM



Mechanical Valves

Model	VM1000	VM100	VM200	VM400	VZM500	VZM400	VFM300	VFM200	VM800
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	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

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		●	●	●	●	●	●	●	●


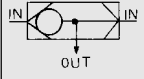


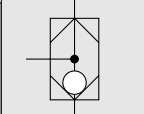

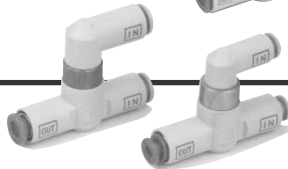
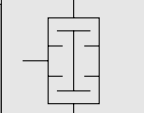

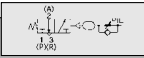





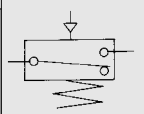





- A
- V□A
- S□A
- V□A
- VM
- VR
- VH
- VHS



Effective area (mm ²)	1	2.5	19	7	10.8	9.9	18	18	6
Number of ports	2, 3	2, 3	2, 3	3	5	5	5	5	3
Function	Poppet 	Poppet 	Poppet 	Balanced poppet 	Rubber spool 	Metal spool 	Rubber spool 	Metal spool 	Balanced poppet

Series VM

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				

INDEX

Mechanical Valves

Series VM1000	Page P. 5-6-8
Series VM100	P. 5-6-12
Series VM200	P. 5-6-20
Series VM400	P. 5-6-26
Series VZM500	P. 5-6-41
Series VZM400	P. 5-6-35
Series VFM300	P. 5-6-48
Series VFM200	P. 5-6-54
Series VFM800	P. 5-6-32

Transmitters

Relay Valve.....	Page P. 5-7-1
Shuttle Valve.....	P. 5-7-3
Shuttle Valve with One-touch Fitting.....	P. 5-7-5
AND Valve with One-touch Fitting.....	P. 5-7-7
Time Delay Valve.....	P. 5-7-9
Pneumatic-Electric Relay.....	P. 5-7-10
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

Definition of Symbol

⚠ 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.

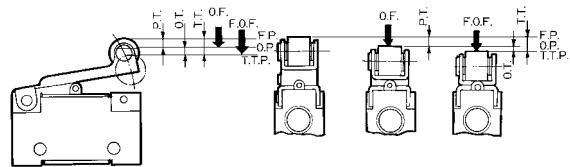
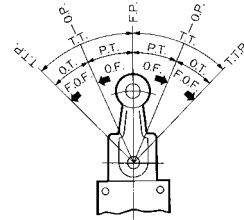
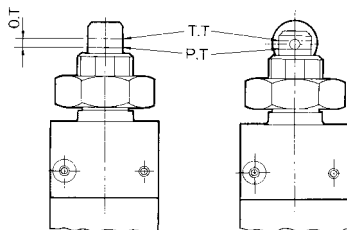
• **Actuator stroke**

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)
	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.



- 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.

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.

- 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

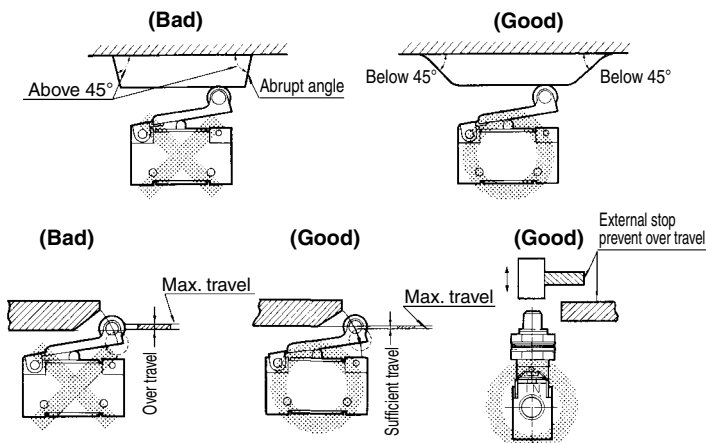
- Cam and dog angle and maximum speed

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
	Straight plunger	—	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.

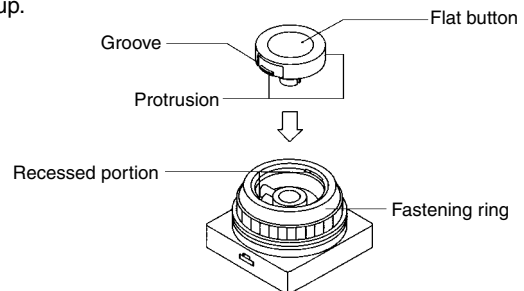
Failure to observe this precaution could lead to unsafe operation, such as unintended operation or malfunction.

How to Change the Buttons

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

1. Push button (Flush type)

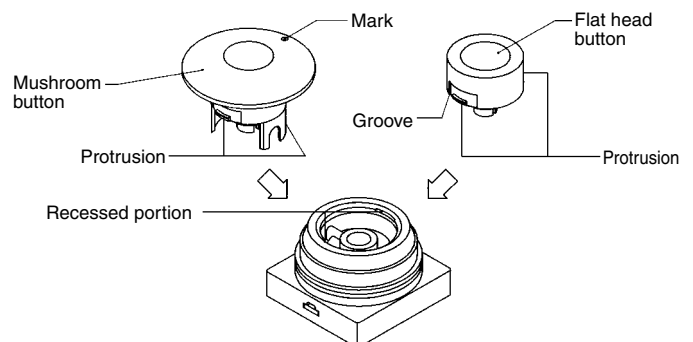
- Installation Of the four colors, red, green, black, and yellow, select and align the protruding portion of the button with the recessed portion of the body and push in.
- Removal Remove the fastening ring and insert the tip of a small flat screwdriver into the groove of the button to pry it up.



2. Push button (Mushroom and extended types)

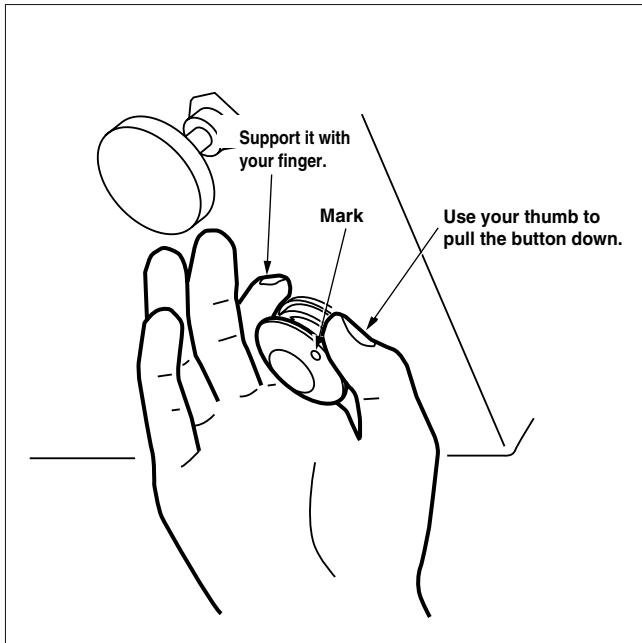
At the time of shipment, only 1 button of the color that you specified is attached to the body.

	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	

 A

 A

 A

 A

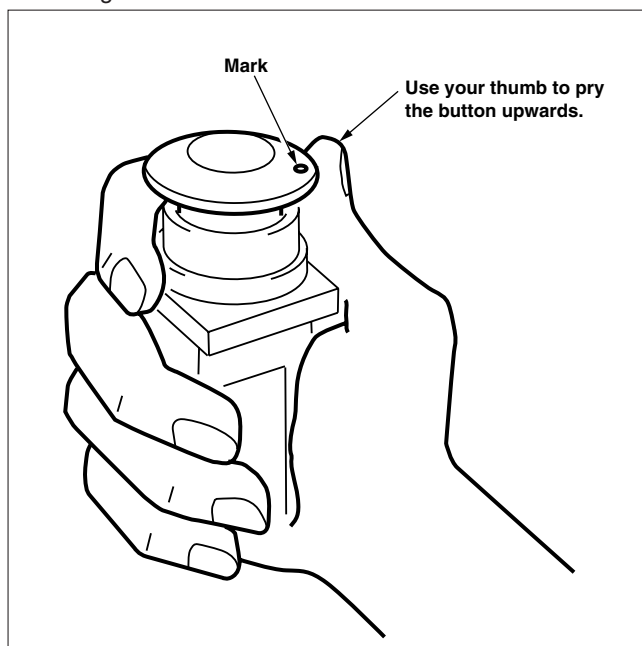
 VM

 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.

Micro Mechanical Valve Series VM1000

How to Order

VM1 0 0 0 4N 00 R

Applicable tubing (Material/Size)

4N	Nylon ø4/2.5 (T0425)
	Nylon ø4/3 (T0403)
4NU	Soft Nylon ø4/2.5 (TS0425)
	Polyurethane ø4/2.5 (TU0425)

Actuator type

00	Basic
01	Roller lever
02	One way roller lever
08	Toggle lever
32	Push button

Color of push button

R	Red
G	Green
B	Black

Total travel/Basic (T.T.)

0	4.8 mm
1	2.5 mm (Option)*

* Basic only.

Piping

0	Side ported
1	Bottom ported

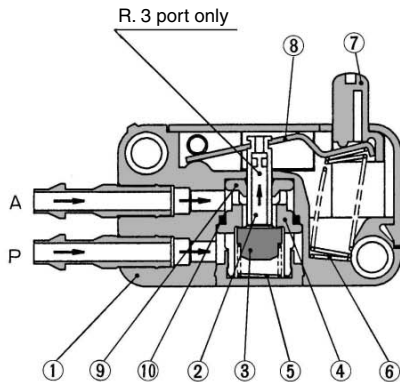
Number of ports

0	3 port
1	2 port

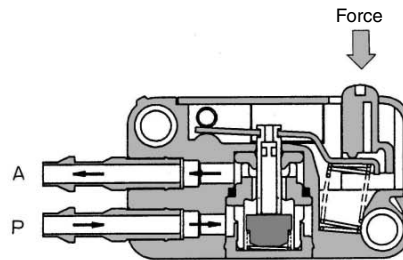
- A
- A
- A
- A
- VM
- VR
- VH
- VHS

Construction

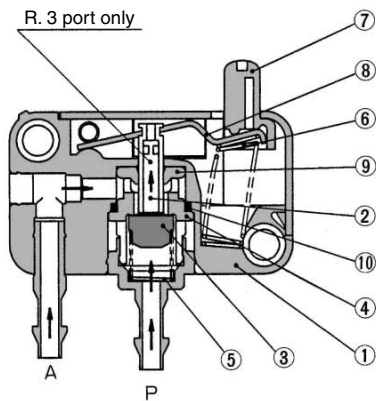
Side ported/Non-actuated



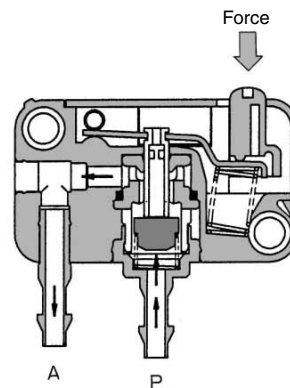
Side ported/Actuated



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	

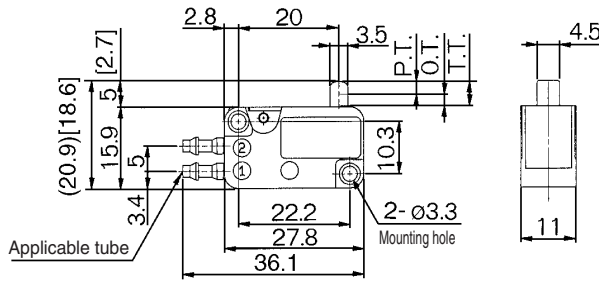
No.	Description	Material	Note
⑥	Spring	Stainless steel	
⑦	Plunger	POM	T.T. = 2.5 mm only, w/threads
⑧	Lever	Stainless steel	
⑨	Packing	NBR	
⑩	O-ring	NBR	

Series VM1000

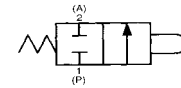
Series VM1000/Side Ported

Basic

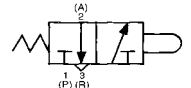
- VM1000-4N-00
- VM1000-4NU-00
- VM1100-4N-00
- VM1100-4NU-00



JIS Symbol/2 port



3 port

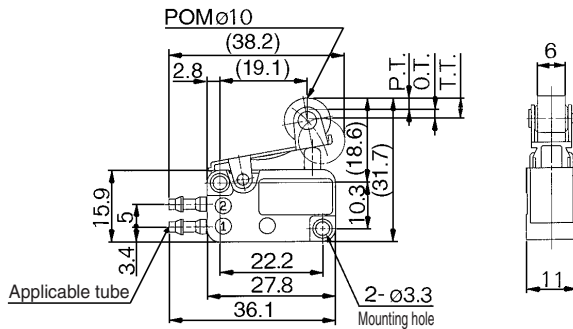


* 0.5 MPa supply

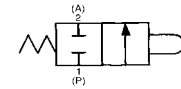
		Applicable tubing	
		T0425	TU0425, T0403, TS0425
Side ported	3 port	VM1000-4N-00	VM1000-4NU-00
	2 port	VM1100-4N-00	VM1100-4NU-00
F.O.F. *		6 N	
P.T.		2.5 mm [2.0 mm]	
O.T.		2.3 mm [0.5 mm]	
T.T.		4.8 mm [2.5 mm]	

Roller lever

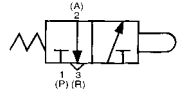
- VM1000-4N-01
- VM1000-4NU-01
- VM1100-4N-01
- VM1100-4NU-01



JIS Symbol/2 port



3 port

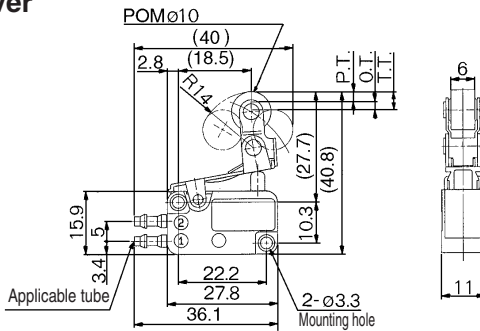


* 0.5 MPa supply

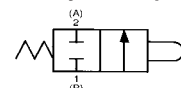
		Applicable tubing	
		T0425	TU0425, T0403, TS0425
Side ported	3 port	VM1000-4N-01	VM1000-4NU-01
	2 port	VM1100-4N-01	VM1100-4NU-01
F.O.F. *		6 N	
P.T.		2.5 mm	
O.T.		2.0 mm	
T.T.		4.5 mm	

One way roller lever

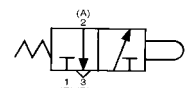
- VM1000-4N-02
- VM1000-4NU-02
- VM1100-4N-02
- VM1100-4NU-02



JIS Symbol/2 port



3 port

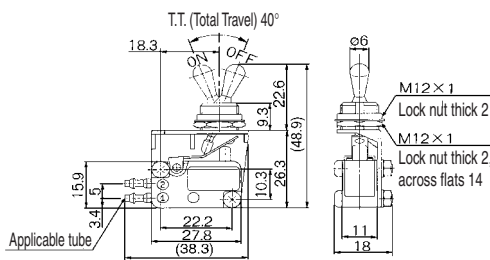


* 0.5 MPa supply

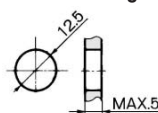
		Applicable tubing	
		T0425	TU0425, T0403, TS0425
Side ported	3 port	VM1000-4N-02	VM1000-4NU-02
	2 port	VM1100-4N-02	VM1100-4NU-02
F.O.F. *		6 N	
P.T.		2.5 mm	
O.T.		2.0 mm	
T.T.		4.5 mm	

Toggle lever

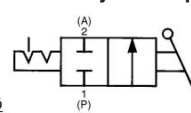
- VM1000-4N-08
- VM1000-4NU-08
- VM1100-4N-08
- VM1100-4NU-08



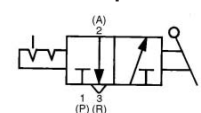
Panel mounting hole



JIS Symbol/2 port



3 port

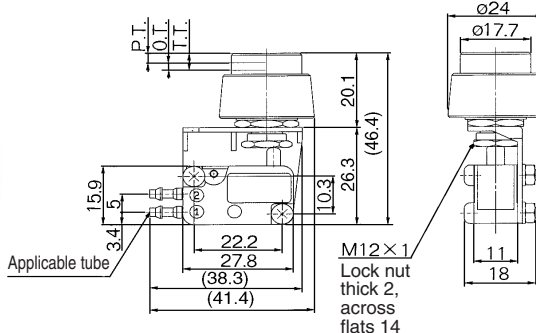


* 0.5 MPa supply

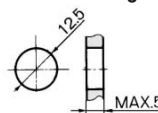
		Applicable tubing	
		T0425	TU0425, T0403, TS0425
Side ported	3 port	VM1000-4N-08	VM1000-4NU-08
	2 port	VM1100-4N-08	VM1100-4NU-08
F.O.F. *		4 N	
P.T.		40°	

Push button

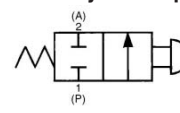
- VM1000-4N-32
- VM1000-4NU-32
- VM1100-4N-32
- VM1100-4NU-32



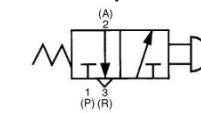
Panel mounting hole



JIS Symbol/2 port



3 port



* 0.5 MPa supply

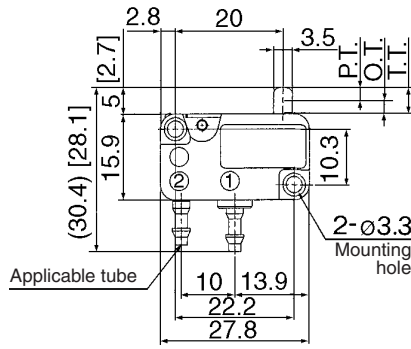
		Applicable tubing	
		T0425	TU0425, T0403, TS0425
Side ported	3 port	VM1000-4N-32	VM1000-4NU-32
	2 port	VM1100-4N-32	VM1100-4NU-32
F.O.F. *		6 N	
P.T.		2.5 mm	
O.T.		2.0 mm	
T.T.		4.5 mm	

Micro Mechanical Valve Series VM1000

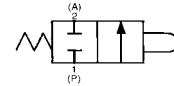
Series VM1000/Bottom Ported

Basic

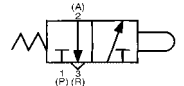
- VM1010-4N-00
- VM1010-4NU-00
- VM1110-4N-00
- VM1110-4NU-00



JIS Symbol/2 port



3 port

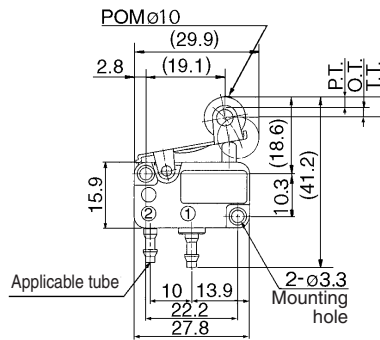


* 0.5 MPa supply

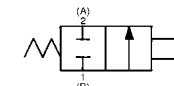
		Applicable tubing	
		T0425	TU0425, T0403, TS0425
Bottom ported	3 port	VM1010-4N-00	VM1010-4NU-00
	2 port	VM1110-4N-00	VM1110-4NU-00
F.O.F. *		6 N	
P.T.		2.5 mm	
O.T.		2.3 mm [0.5 mm]	
T.T.		4.8 mm [2.5 mm]	

Roller lever

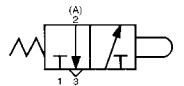
- VM1010-4N-01
- VM1010-4NU-01
- VM1110-4N-01
- VM1110-4NU-01



JIS Symbol/2 port



3 port

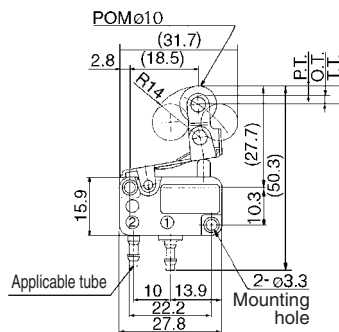


* 0.5 MPa supply

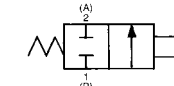
		Applicable tubing	
		T0425	TU0425, T0403, TS0425
Bottom ported	3 port	VM1010-4N-01	VM1010-4NU-01
	2 port	VM1110-4N-01	VM1110-4NU-01
F.O.F. *		6 N	
P.T.		2.5 mm	
O.T.		2.0 mm	
T.T.		4.5 mm	

One way roller lever

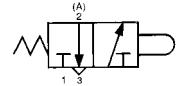
- VM1010-4N-02
- VM1010-4NU-02
- VM1110-4N-02
- VM1110-4NU-02



JIS Symbol/2 port



3 port

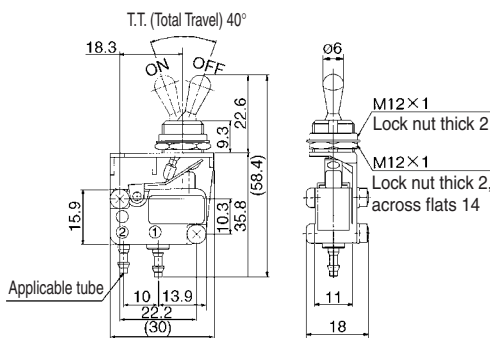


* 0.5 MPa supply

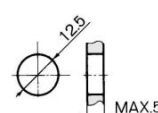
		Applicable tubing	
		T0425	TU0425, T0403, TS0425
Bottom ported	3 port	VM1010-4N-02	VM1010-4NU-02
	2 port	VM1110-4N-02	VM1110-4NU-02
F.O.F. *		6 N	
P.T.		2.5 mm	
O.T.		2.0 mm	
T.T.		4.5 mm	

Toggle lever

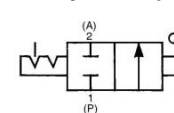
- VM1010-4N-08
- VM1010-4NU-08
- VM1110-4N-08
- VM1110-4NU-08



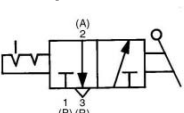
Panel mounting hole



JIS Symbol/2 port



3 port

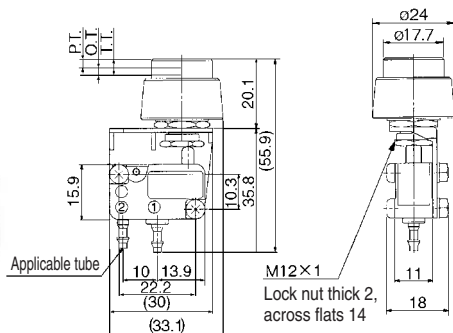


* 0.5 MPa supply

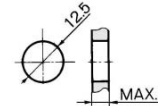
		Applicable tubing	
		T0425	TU0425, T0403, TS0425
Bottom ported	3 port	VM1010-4N-08	VM1010-4NU-08
	2 port	VM1110-4N-08	VM1110-4NU-08
F.O.F. *		4 N	
T.T.		40°	

Push button

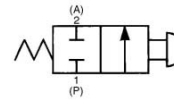
- VM1010-4N-32
- VM1010-4NU-32
- VM1110-4N-32
- VM1110-4NU-32



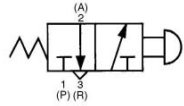
Panel mounting hole



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
		VM120-01-30Y	VM130-01-30Y	VM122-M5-30Y	VM132-M5-30Y	VM-30AY	Yellow
	Push button (Extended)	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
		VM120-01-32G	VM130-01-32G	VM122-M5-32G	VM132-M5-32G	VM-32AG	Green
	Push button (Flush)	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.

2/3 Port Mechanical Valve Series VM100

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	Long	Side ported
1	Short	
2	Long	Bottom ported
3	Short	

• **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	Color of push button selector
R	Red	
B	Black	
G	Green	
Y	Yellow	

• **Suffix for indicator light**

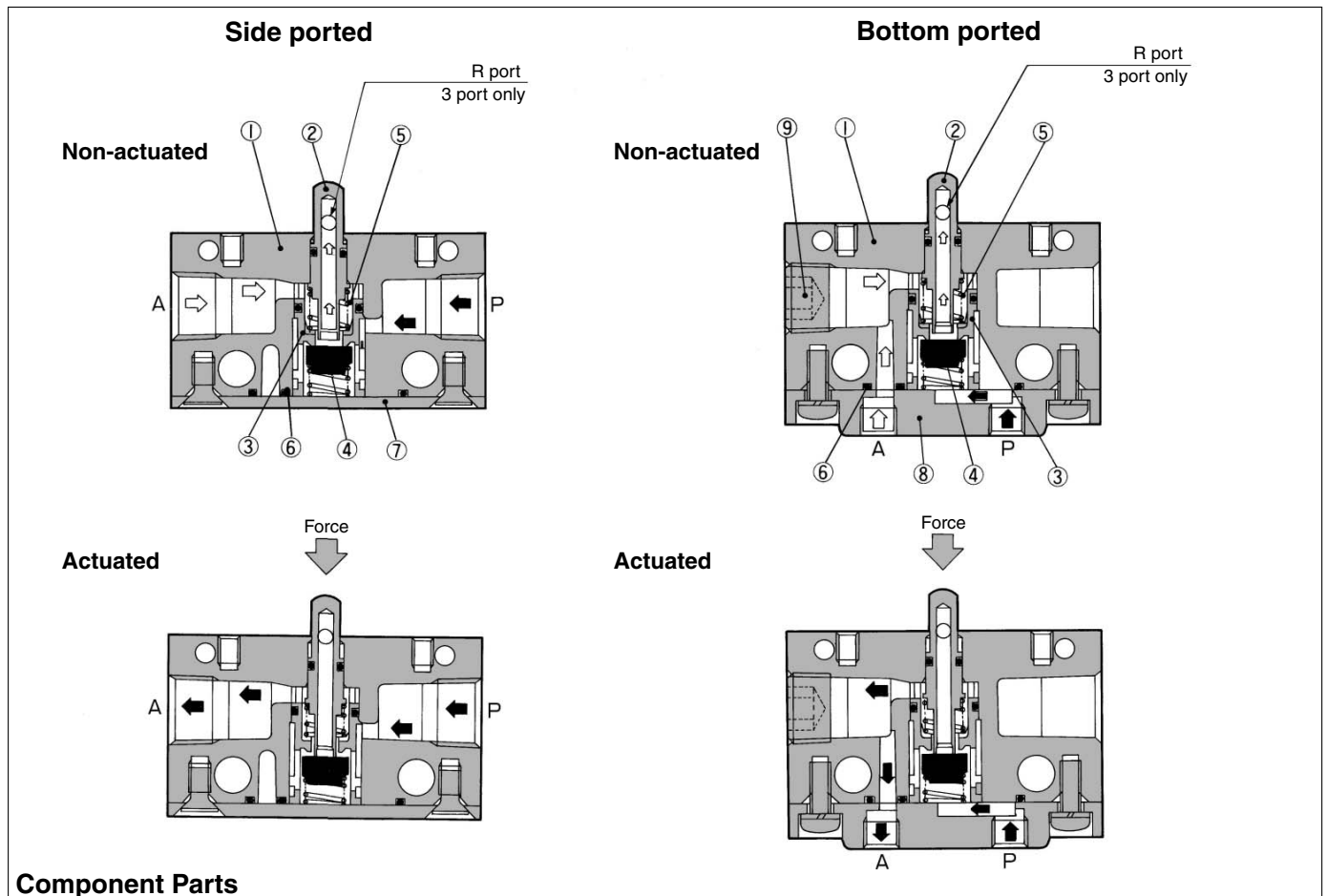
Z	With miniature indicator light (Bottom piping type only)
----------	--

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

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

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	

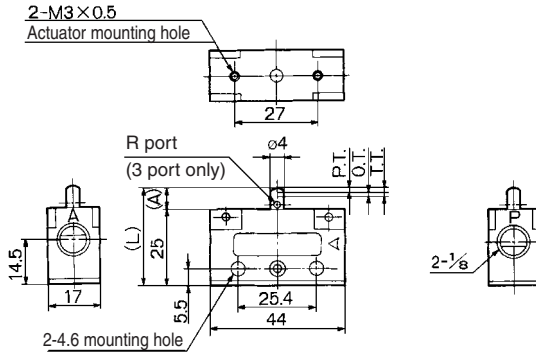
No.	Description	Material	Note
⑥	Gasket	NBR	
⑦	Cover	Rolled steel	
⑧	Sub-plate	ZDC	Metallic plated
⑨	Hexagon socket head plug	Rolled steel	

Series VM100

Series VM100/Side Ported

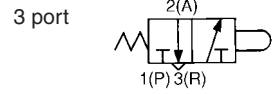
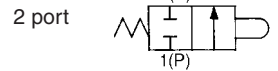
Basic

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



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

JIS Symbol

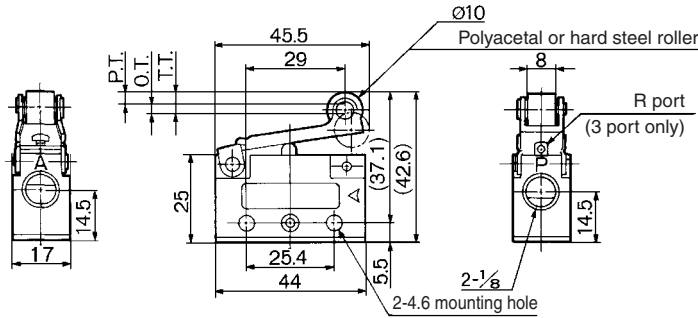


* 0.5 MPa supply

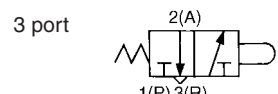
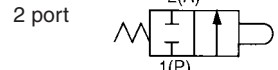
F.O.F. *	20 N
P.T.	1.5 mm
O.T.	1.5 mm
T.T.	3.0 mm

Roller lever

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



JIS Symbol

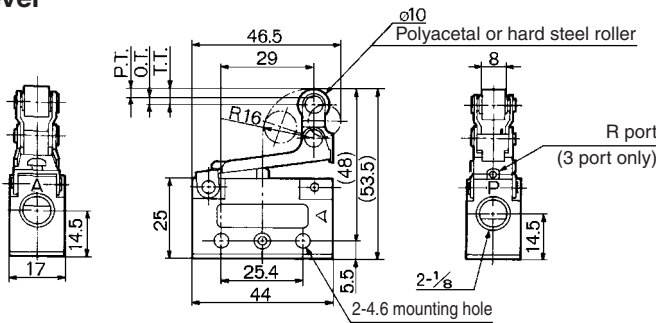


* 0.5 MPa supply

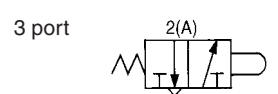
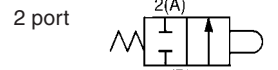
F.O.F. *	10 N
P.T.	3.2 mm
O.T.	2.3 mm
T.T.	5.5 mm

One way roller lever

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



JIS Symbol

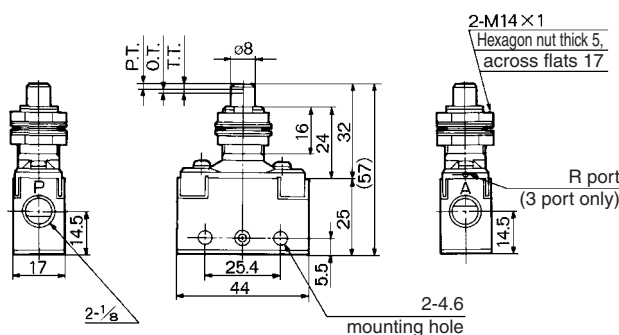


* 0.5 MPa supply

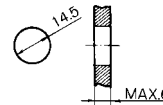
F.O.F. *	10 N
P.T.	3.2 mm
O.T.	2.3 mm
T.T.	5.5 mm

Straight plunger

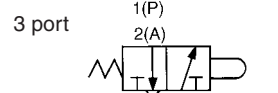
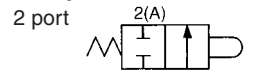
- VM120-01-05
- VM130-01-05



Panel mounting hole



JIS Symbol

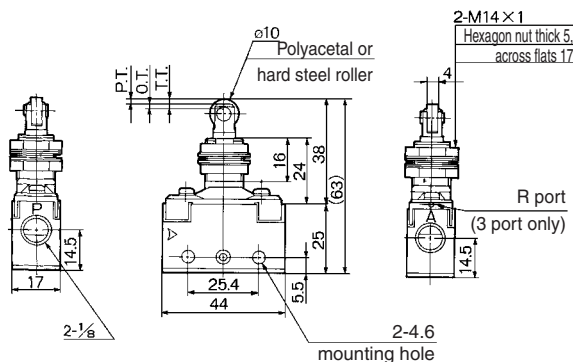


* 0.5 MPa supply

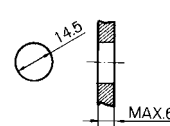
F.O.F. *	23 N
P.T.	2.0 mm
O.T.	1.5 mm
T.T.	3.5 mm

Roller plunger

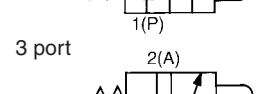
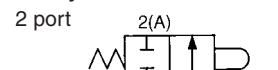
- VM120-01-06
- VM130-01-06
- VM120-01-06S
- VM130-01-06S



Panel mounting hole



JIS Symbol



* 0.5 MPa supply

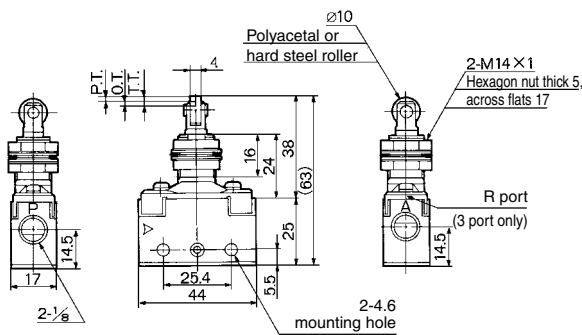
F.O.F. *	23 N
P.T.	2.0 mm
O.T.	1.5 mm
T.T.	3.5 mm

2/3 Port Mechanical Valve Series VM100

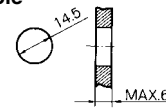
Series VM100/Side Ported

Cross roller plunger

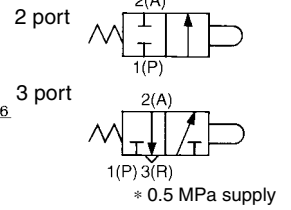
VM120-01-07
VM130-01-07
VM120-01-07S
VM130-01-07S



Panel mounting hole



JIS Symbol



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

□A

□A

□A

VM

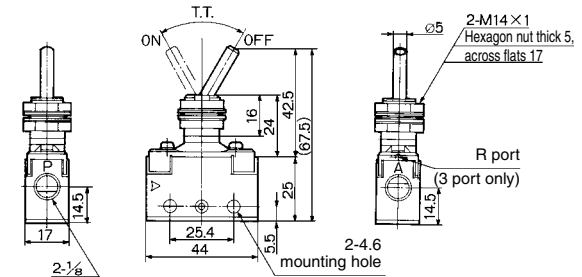
VR

VH

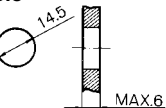
VHS

Toggle lever

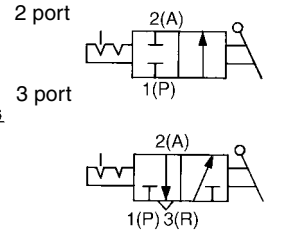
VM120-01-08
VM130-01-08



Panel mounting hole



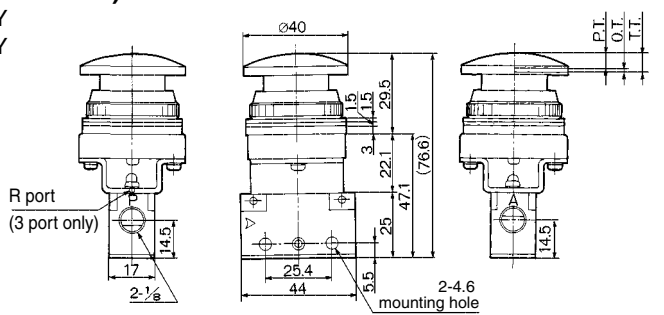
JIS Symbol



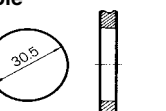
F.O.F.*	10 N
T.T.	60°

Push button (Mushroom)

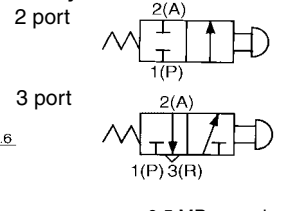
VM120-01-30R/B/G/Y
VM130-01-30R/B/G/Y



Panel mounting hole



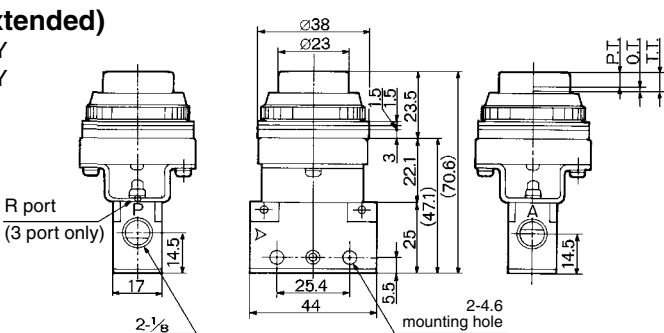
JIS Symbol



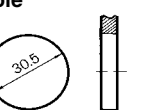
F.O.F.*	21 N
P.T.	4.9 mm
O.T.	1.6 mm
T.T.	6.5 mm

Push button (Extended)

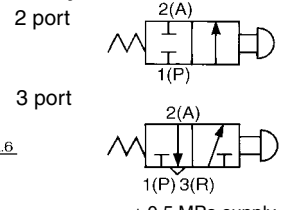
VM120-01-32R/B/G/Y
VM130-01-32R/B/G/Y



Panel mounting hole



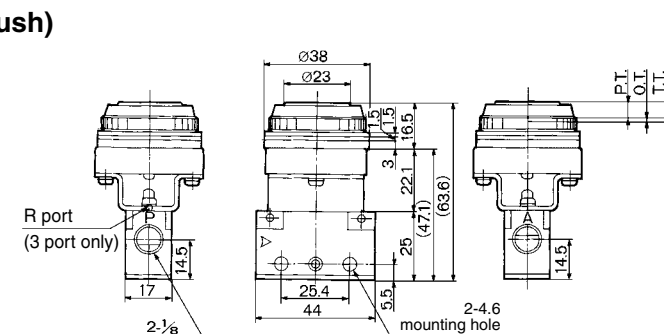
JIS Symbol



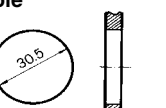
F.O.F.*	21 N
P.T.	4.9 mm
O.T.	1.6 mm
T.T.	6.5 mm

Push button (Flush)

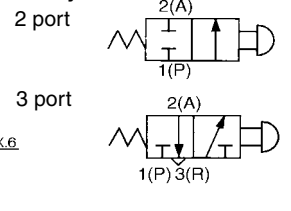
VM120-01-33
VM130-01-33



Panel mounting hole



JIS Symbol



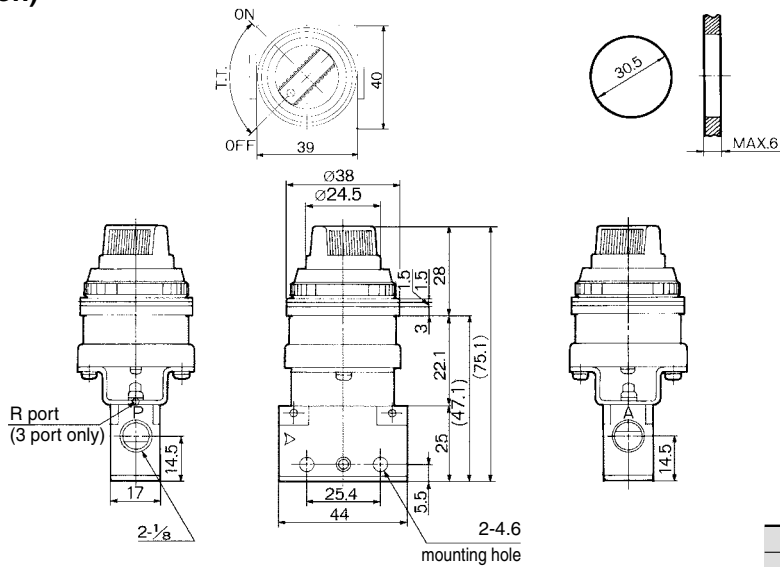
F.O.F.*	21 N
P.T.	4.9 mm
O.T.	1.6 mm
T.T.	6.5 mm

Series VM100

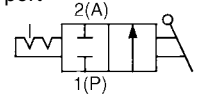
Series VM100/Side Ported

Twist selector (2 position)

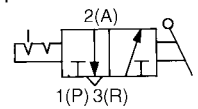
VM120-01-34R/B/G/Y
VM130-01-34R/B/G/Y



JIS Symbol
2 port



3 port

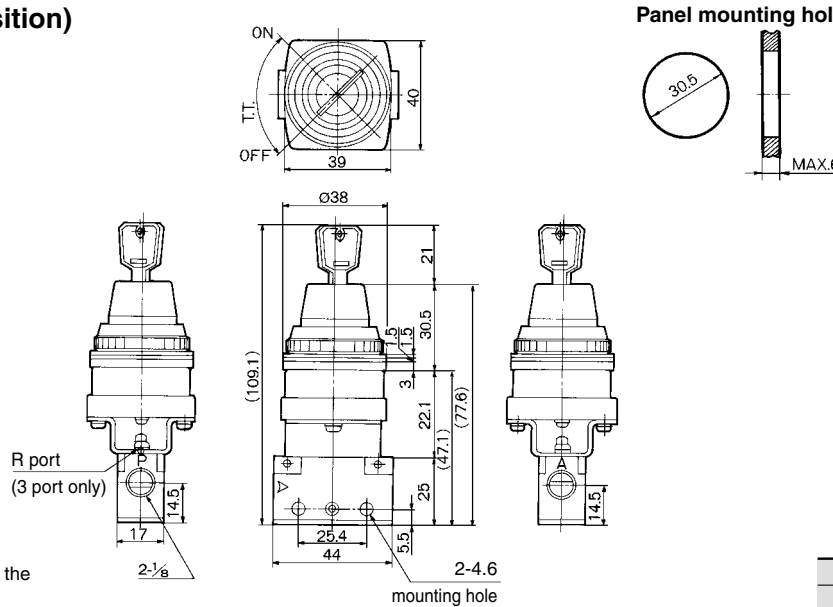


* 0.5 MPa supply

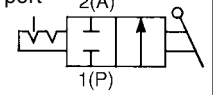
F.O.F. *	15 N
T.T.	90°

Key selector (2 position)

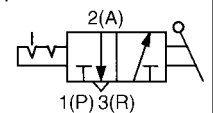
VM120-01-36
VM130-01-36



JIS Symbol
2 port



3 port



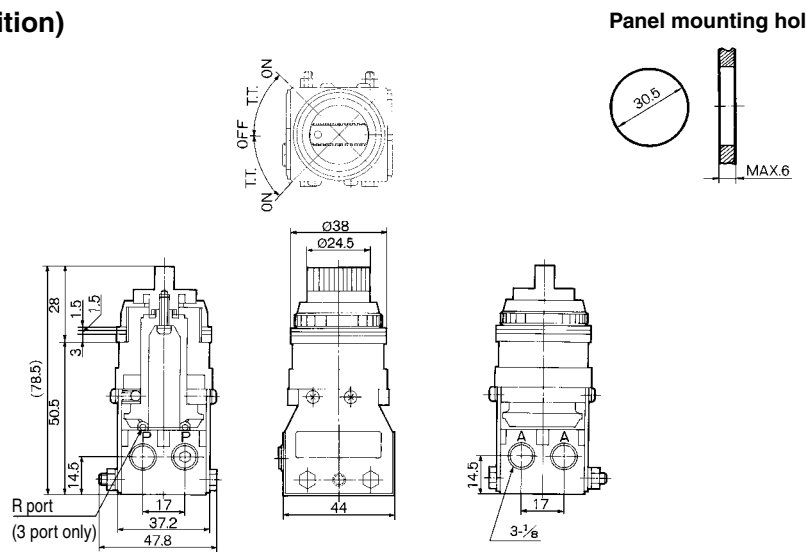
* 0.5 MPa supply

F.O.F. *	15 N
T.T.	90°

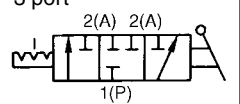
Key can be removed at the "on" and "off" positions.

Twist selector (3 position)

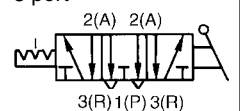
VM131-01-35R/B/G/Y
VM151-01-35R/B/G/Y



JIS Symbol
3 port



5 port



* 0.5 MPa supply

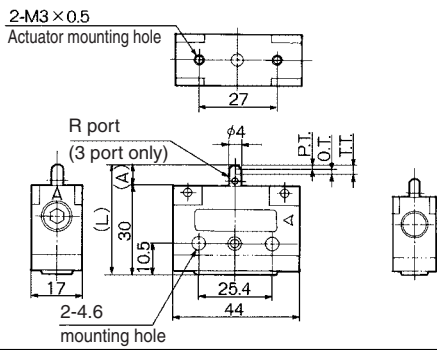
F.O.F. *	15 N
T.T.	45°

2/3 Port Mechanical Valve Series VM100

Series VM100/Bottom Ported

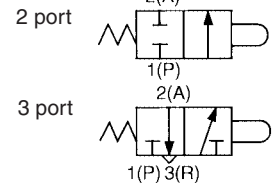
Basic

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



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

JIS Symbol

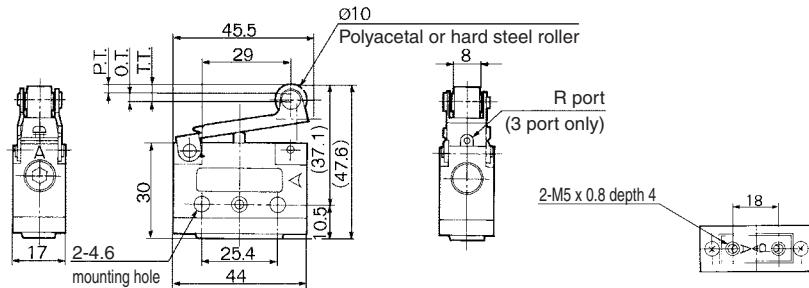


* 0.5 MPa supply

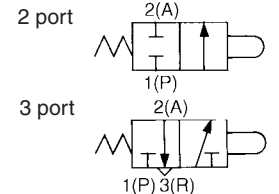
F.O.F.*	20 N
P.T.	1.5 mm
O.T.	1.5 mm
T.T.	3.0 mm

Roller lever

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



JIS Symbol

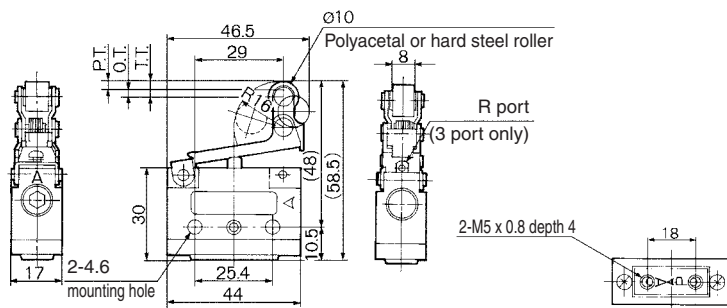


* 0.5 MPa supply

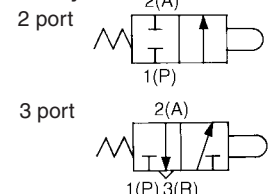
F.O.F.*	10 N
P.T.	3.2 mm
O.T.	2.3 mm
T.T.	5.5 mm

One way roller lever

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



JIS Symbol

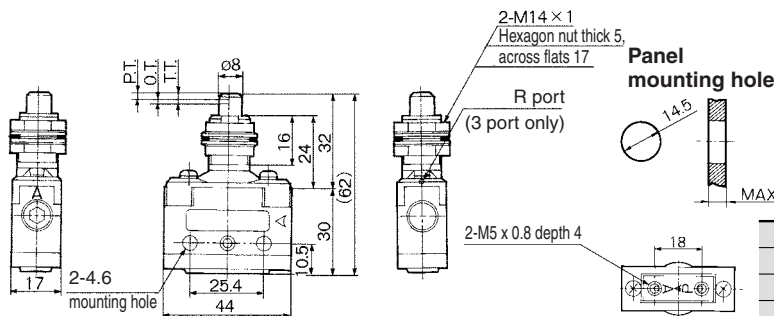


* 0.5 MPa supply

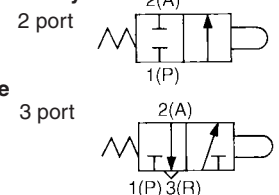
F.O.F.*	10 N
P.T.	3.2 mm
O.T.	2.3 mm
T.T.	5.5 mm

Straight plunger

- VM122-M5-05
- VM132-M5-05



JIS Symbol

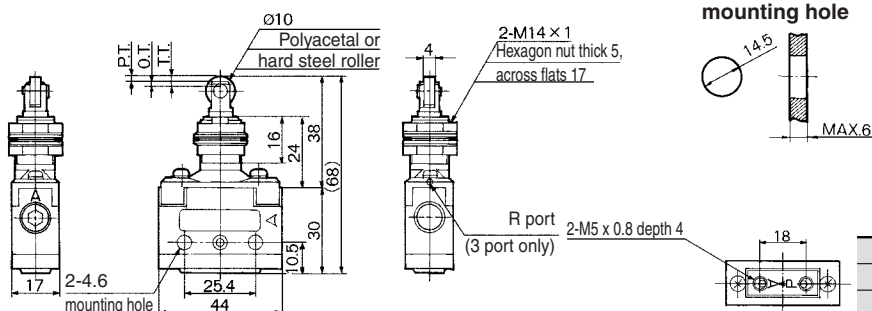


* 0.5 MPa supply

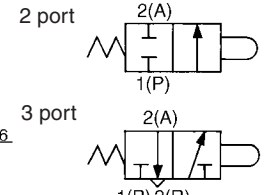
F.O.F.*	23 N
P.T.	2.0 mm
O.T.	1.5 mm
T.T.	3.5 mm

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

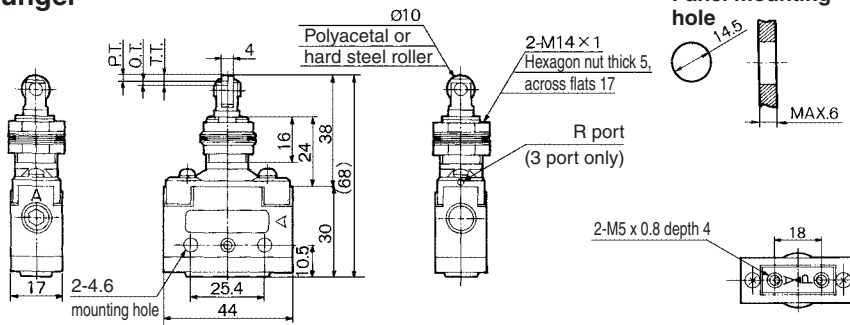
- A
- A
- A
- VM
- VR
- VH
- VHS

Series VM100

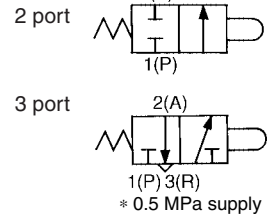
Series VM100/Bottom Ported

Cross roller plunger

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



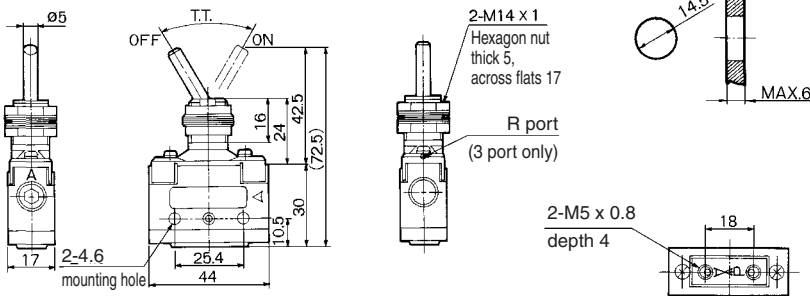
JIS Symbol



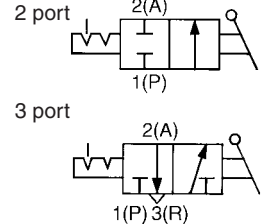
F.O.F. *	23 N
P.T.	2 mm
O.T.	1.5 mm
T.T.	3.5 mm

Toggle lever

VM122-M5-08
VM132-M5-08



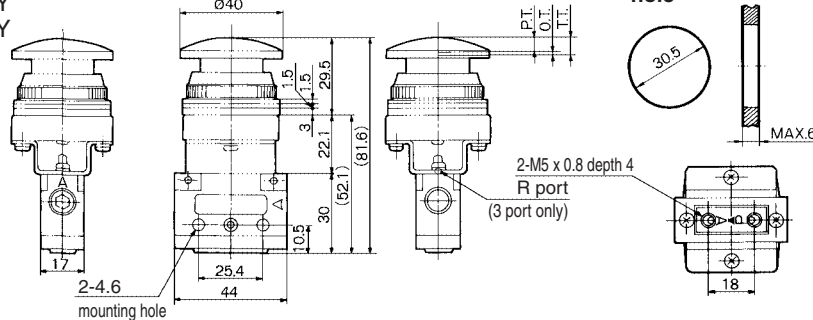
JIS Symbol



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

2 port

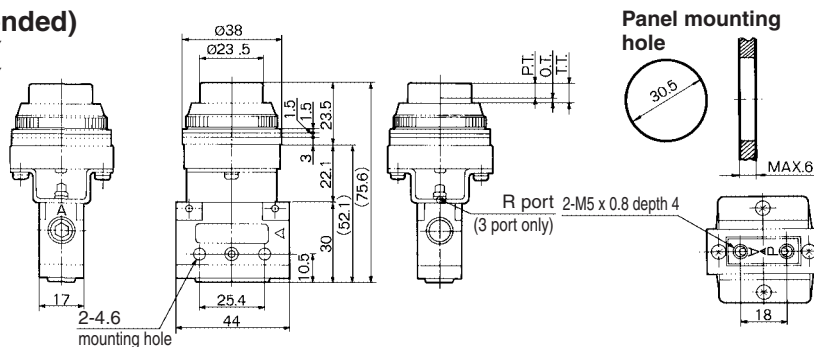
3 port

* 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)

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



JIS Symbol

2 port

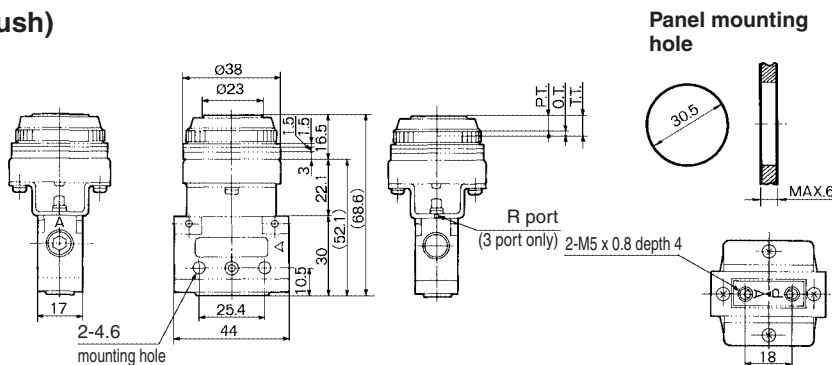
3 port

* 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)

VM122-M5-33
VM132-M5-33



JIS Symbol

2 port

3 port

* 0.5 MPa supply

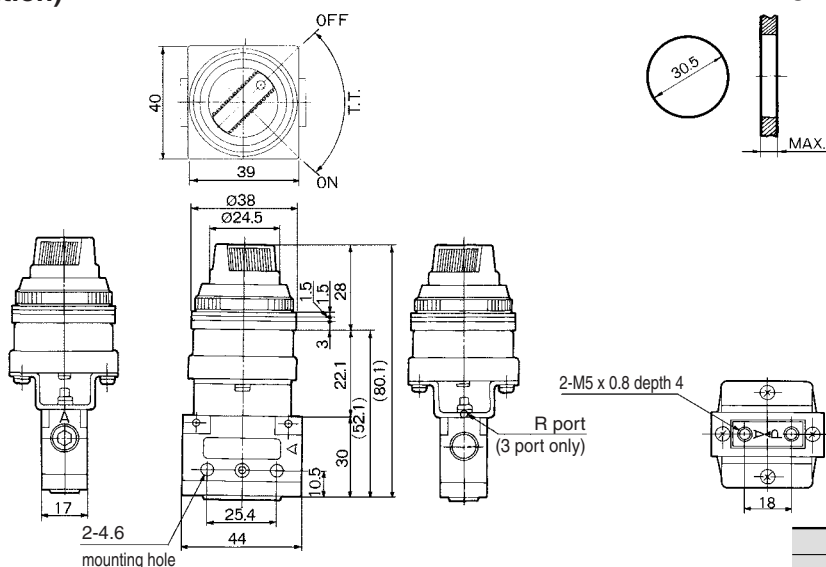
F.O.F. *	21 N
P.T.	4.9 mm
O.T.	1.6 mm
T.T.	6.5 mm

2/3 Port Mechanical Valve Series VM100

Series VM100/Bottom Ported

Twist selector (2 position)

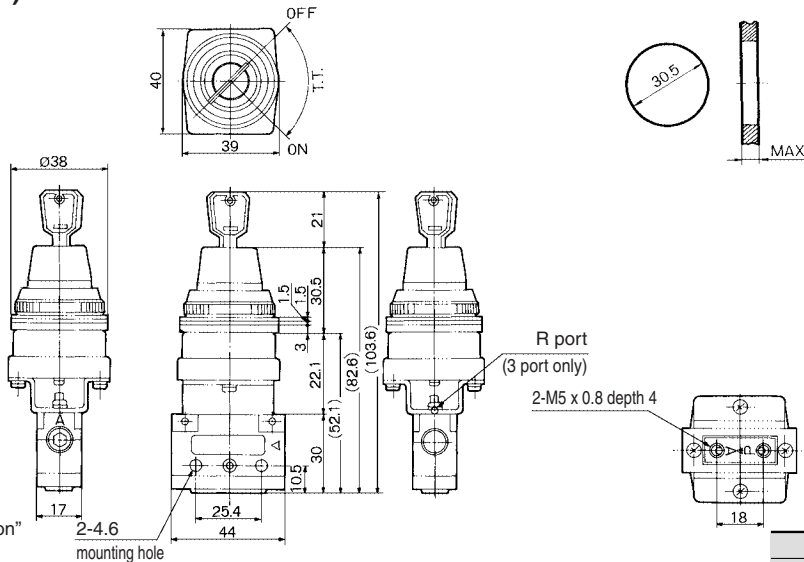
VM122-M5-34R/B/G/Y
VM132-M5-34R/B/G/Y



F.O.F. *	15 N
T.T.	90°

Key selector (2 position)

VM122-M5-36
VM132-M5-36

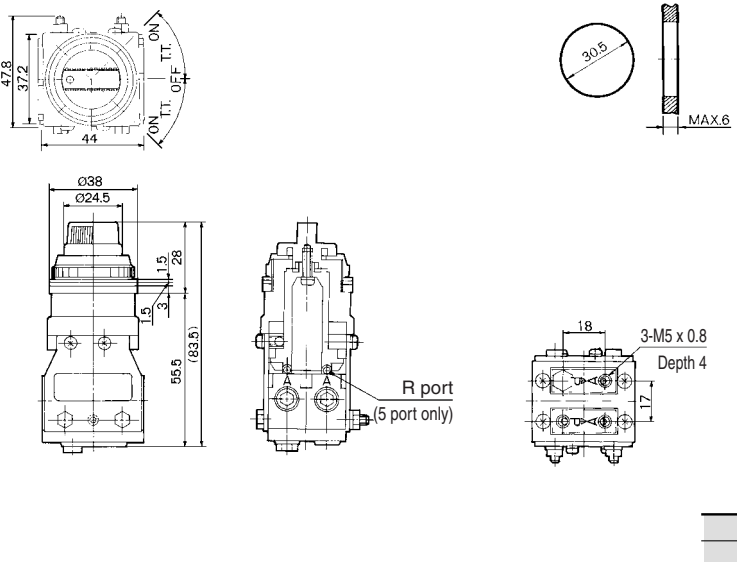


F.O.F. *	15 N
T.T.	90°

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



F.O.F. *	20 N
T.T.	45°

- A
- A
- A
- 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.

2/3 Port Mechanical Valve Series VM200

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		

S□A

V□A

S□A

V□A

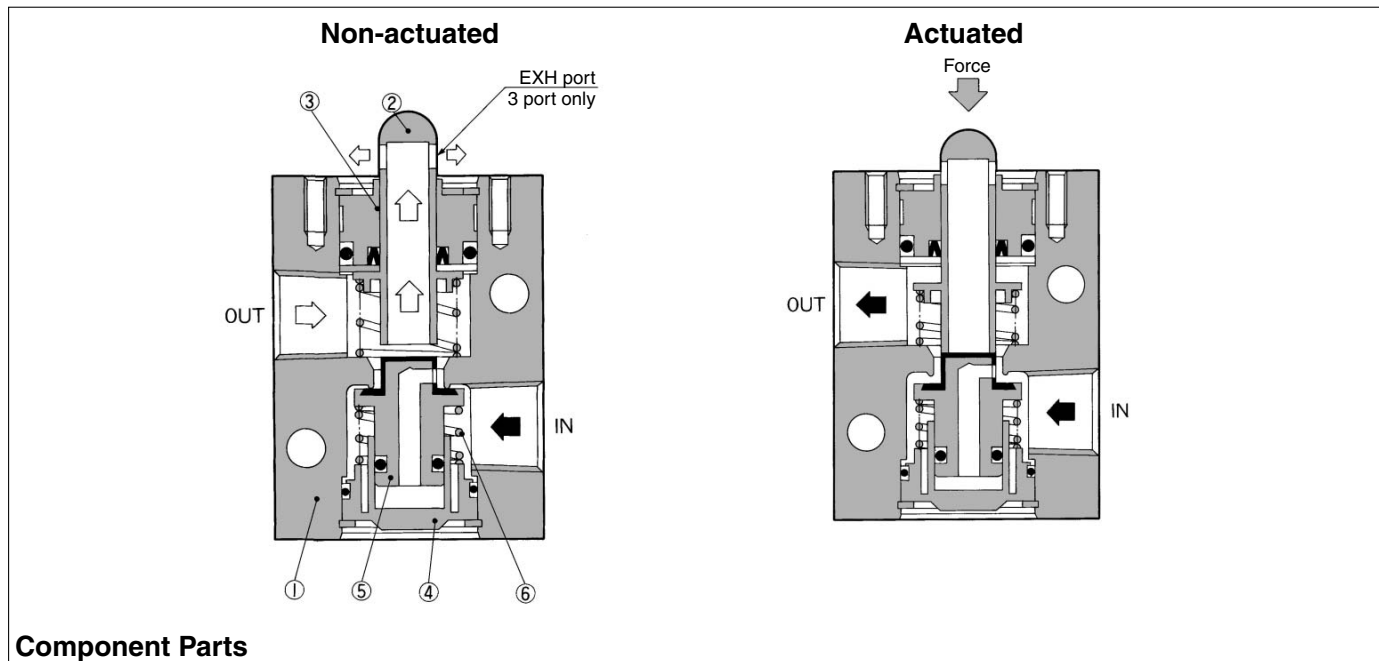
VM

VR

VH

VHS

Construction



Component Parts

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

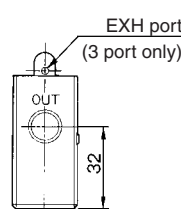
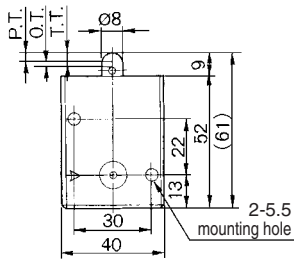
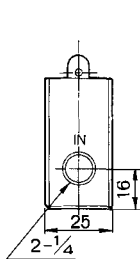
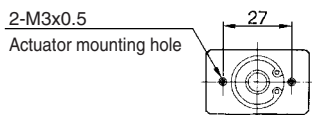
No.	Description	Material	Note
④	Cover	POM	
⑤	Valve	Brass, NBR	
⑥	Spring	Steel	

Series VM200

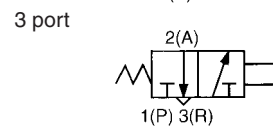
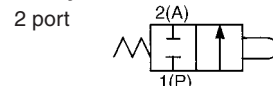
Series VM200

Basic

VM220-02-00
VM230-02-00



JIS Symbol

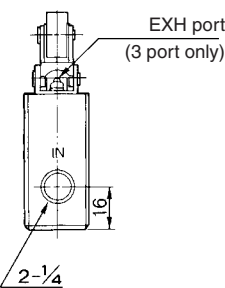
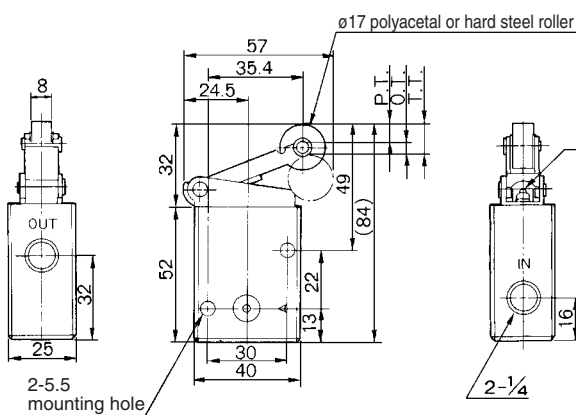


* 0.5 MPa supply

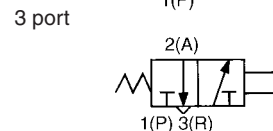
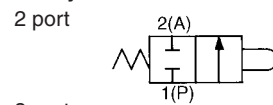
F.O.F. *	52 N
P.T.	3.0 mm
O.T.	2.0 mm
T.T.	5.0 mm

Roller lever

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



JIS Symbol

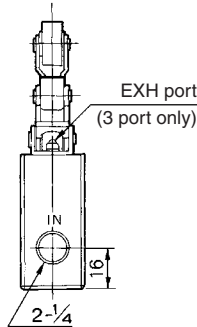
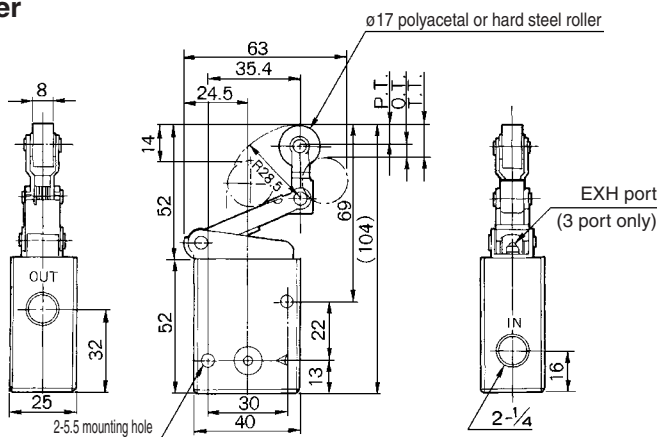


* 0.5 MPa supply

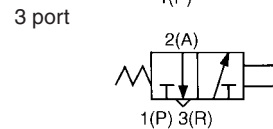
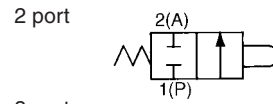
F.O.F. *	24 N
P.T.	6.5 mm
O.T.	4.5 mm
T.T.	11.0 mm

One way roller lever

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



JIS Symbol

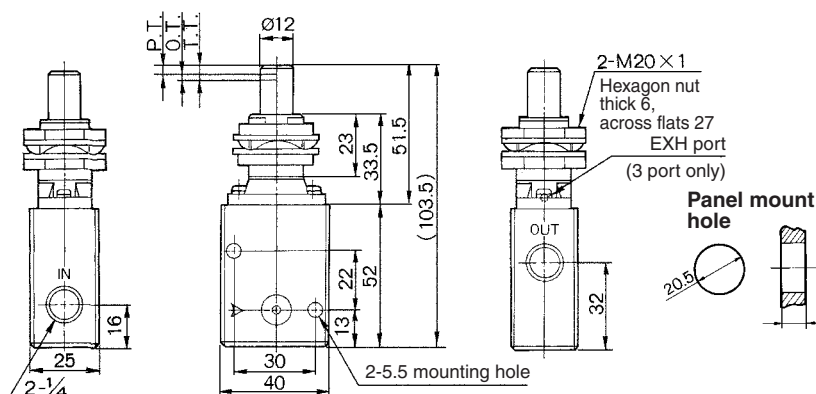


* 0.5 MPa supply

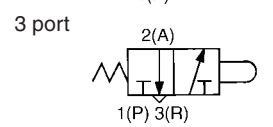
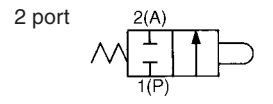
F.O.F. *	22 N
P.T.	7.0 mm
O.T.	5.0 mm
T.T.	12.0 mm

Straight plunger

VM220-02-05
VM230-02-05



JIS Symbol



* 0.5 MPa supply

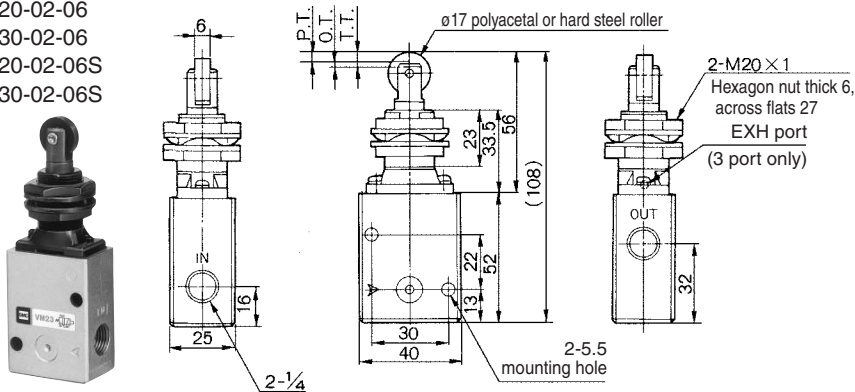
F.O.F. *	56 N
P.T.	3.5 mm
O.T.	2.0 mm
T.T.	5.5 mm

2/3 Port Mechanical Valve Series VM200

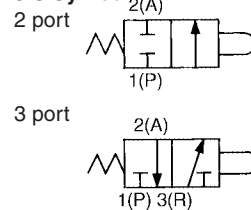
Series VM200

Roller plunger

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



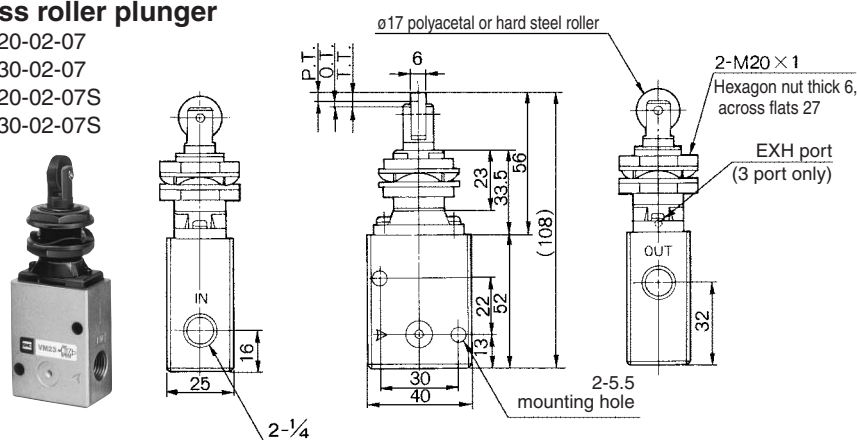
JIS Symbol



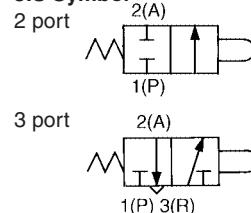
* 0.5 MPa supply	
F.O.F. *	56 N
P.T.	3.5 mm
O.T.	2.0 mm
T.T.	5.5 mm

Cross roller plunger

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



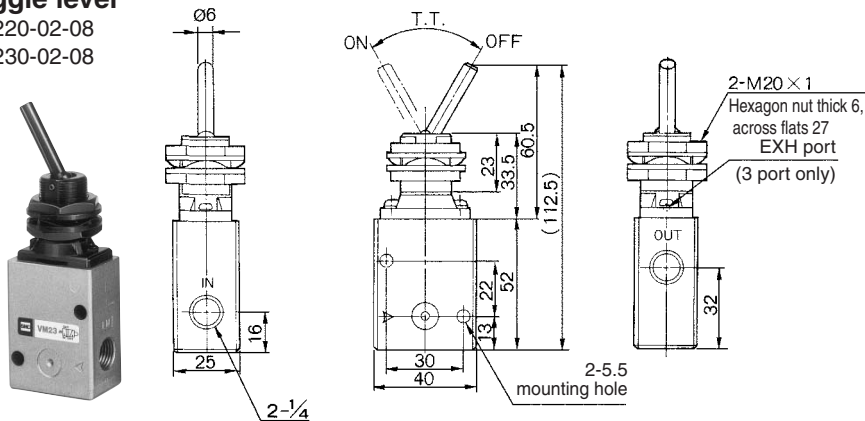
JIS Symbol



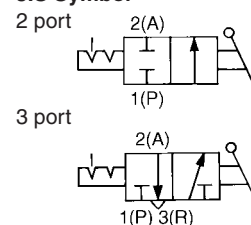
* 0.5 MPa supply	
F.O.F. *	56 N
P.T.	3.5 mm
O.T.	2.0 mm
T.T.	5.5 mm

Toggle lever

VM220-02-08
VM230-02-08



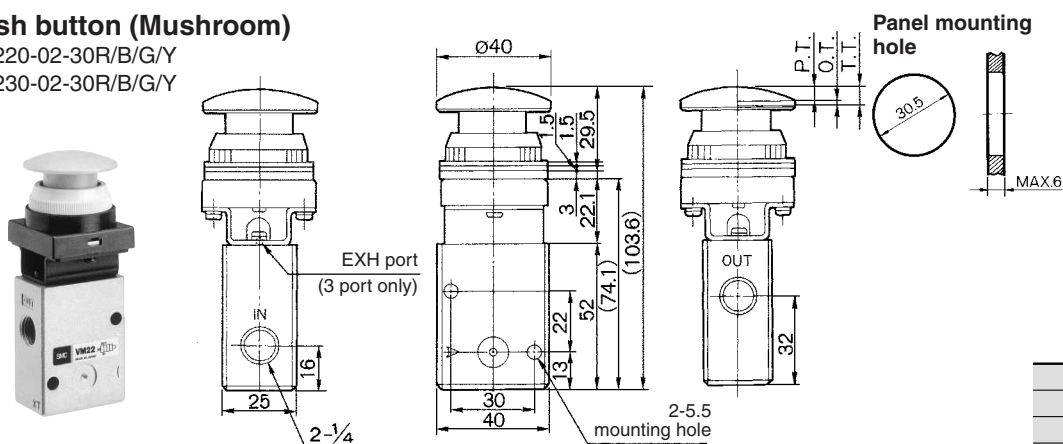
JIS Symbol



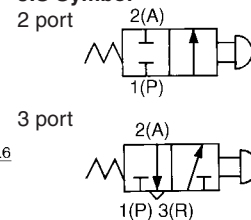
* 0.5 MPa supply	
F.O.F. *	12 N
T.T.	60°

Push button (Mushroom)

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



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

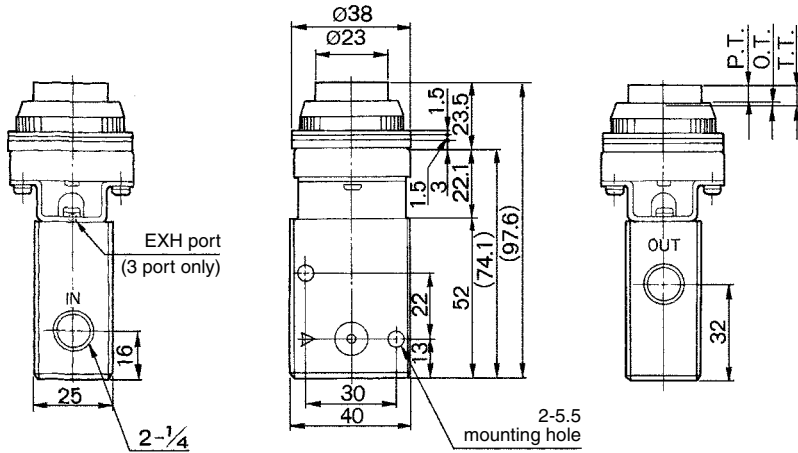
VHS

Series VM200

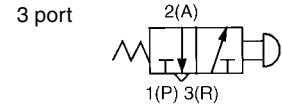
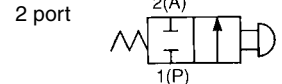
Series VM200

Push button (Extended)

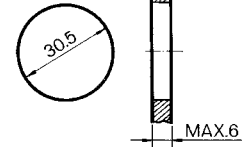
VM220-02-32R/B/G/Y
VM230-02-32R/B/G/Y



JIS Symbol



Panel mounting hole

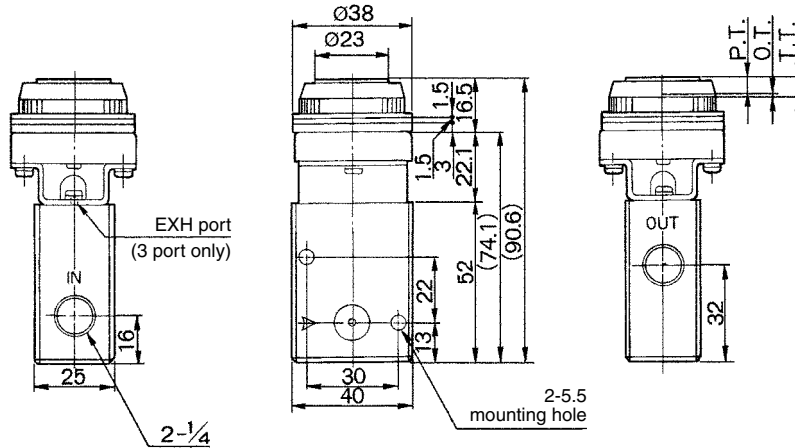


* 0.5 MPa supply

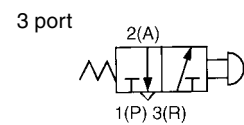
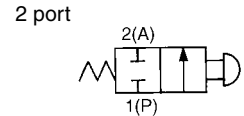
F.O.F. *	52 N
P.T.	4.9 mm
O.T.	1.6 mm
T.T.	6.5 mm

Push button (Flush)

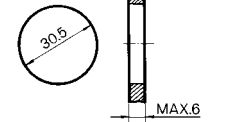
VM220-02-33
VM230-02-33



JIS Symbol



Panel mounting hole

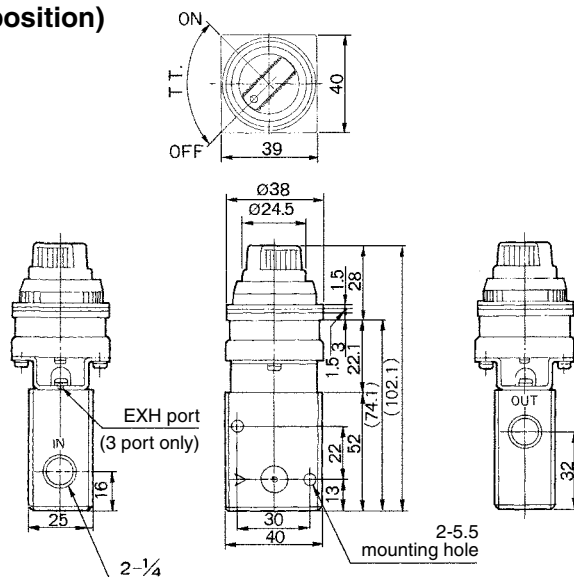


* 0.5 MPa supply

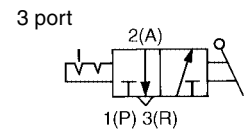
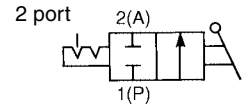
F.O.F. *	52 N
P.T.	4.9 mm
O.T.	1.6 mm
T.T.	6.5 mm

Twist selector (2 position)

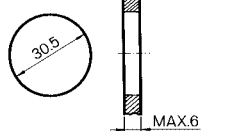
VM220-02-34R/B/G/Y
VM230-02-34R/B/G/Y



JIS Symbol



Panel mounting hole



* 0.5 MPa supply

F.O.F. *	32 N
T.T.	90°

2/3 Port Mechanical Valve Series VM200

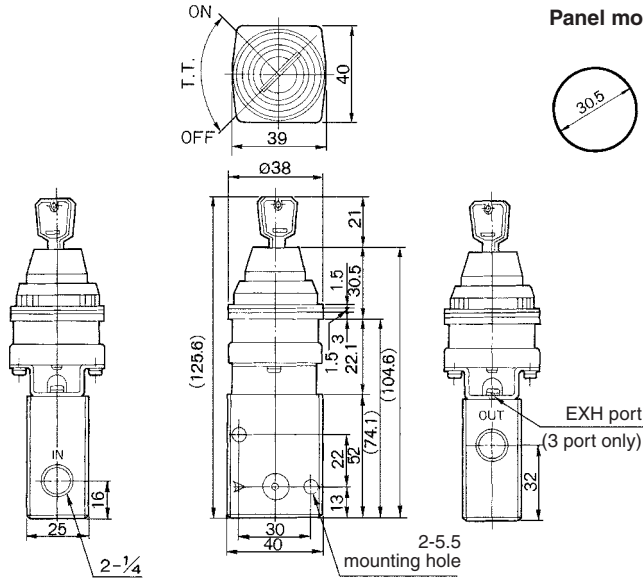
Series VM200

Key selector (2 position)

VM220-02-36
VM230-02-36

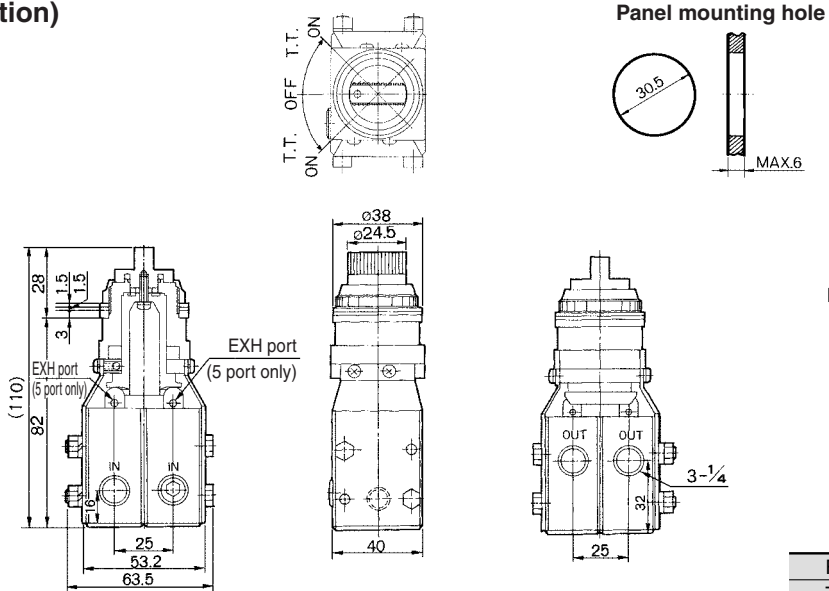


Key can be removed at the "on" and "off" positions.



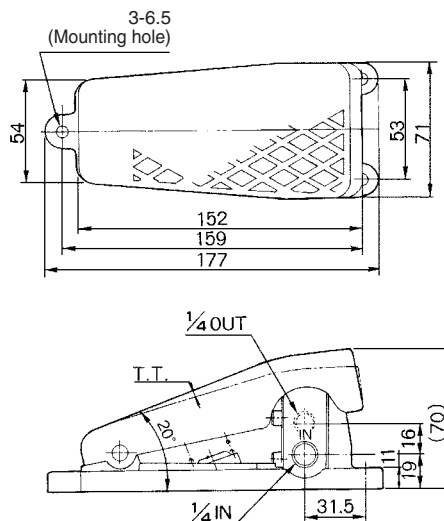
Twist selector (3 position)

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

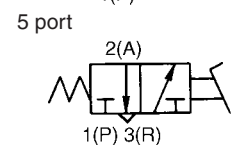
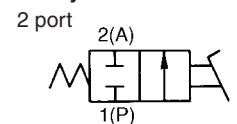


Foot pedal

VM220-02-40
VM230-02-40



JIS Symbol



* 0.5 MPa supply

F.O.F.*	65 N
T.T.	1.2°

- A
- A
- A
- 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.

3 Port Mechanical Valve Series VM400

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

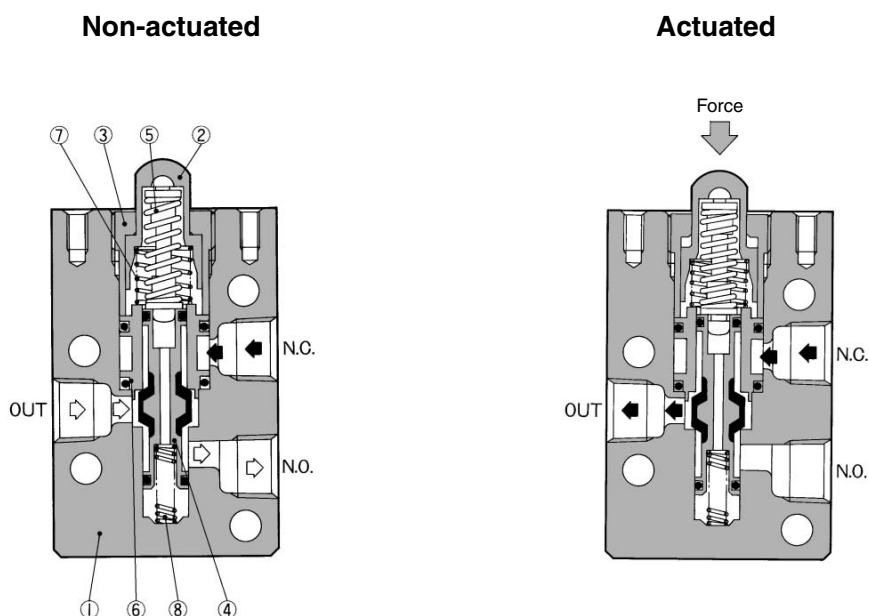
• Actuator type

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	
R	Red	Color of push button selector
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

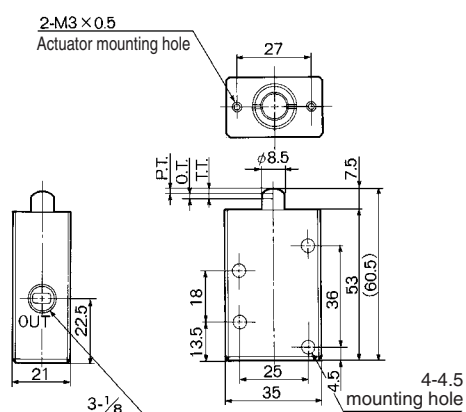
VHS

Series VM400

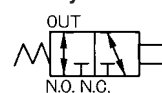
Series VM400

Basic

VM430-01-00



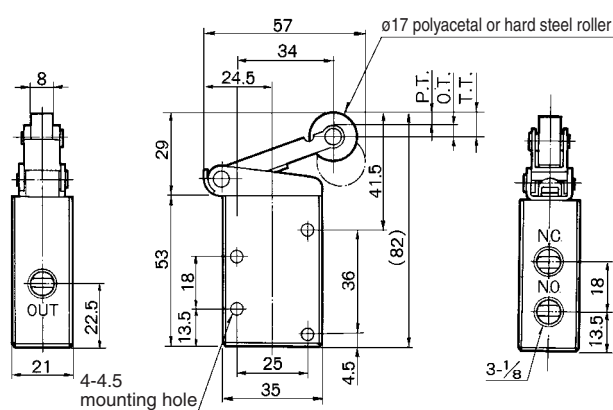
JIS Symbol



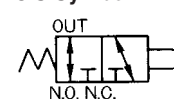
F.O.F.	26 N
P.T.	1.5 mm
O.T.	2.0 mm
T.T.	3.5 mm

Roller lever

VM430-01-01
VM430-01-01S



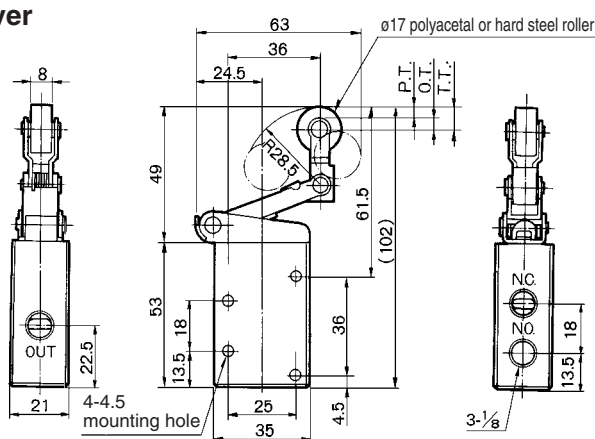
JIS Symbol



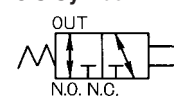
F.O.F.	12 N
P.T.	4.0 mm
O.T.	4.5 mm
T.T.	8.5 mm

One way roller lever

VM430-01-02
VM430-01-02S



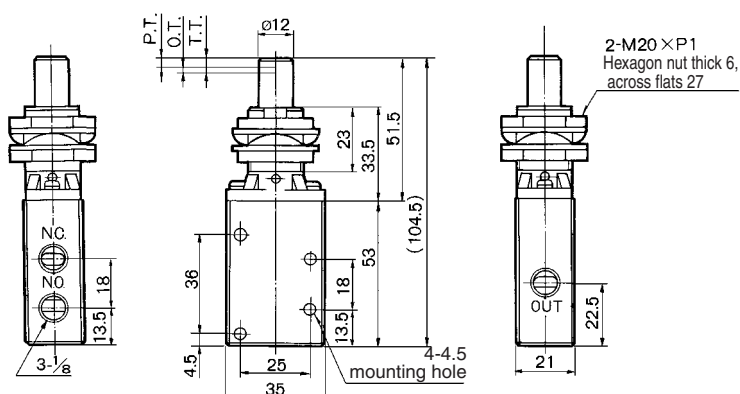
JIS Symbol



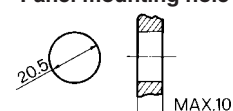
F.O.F.	11 N
P.T.	4.0 mm
O.T.	5.0 mm
T.T.	9.0 mm

Straight plunger

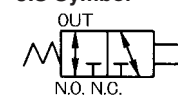
VM430-01-05



Panel mounting hole



JIS Symbol



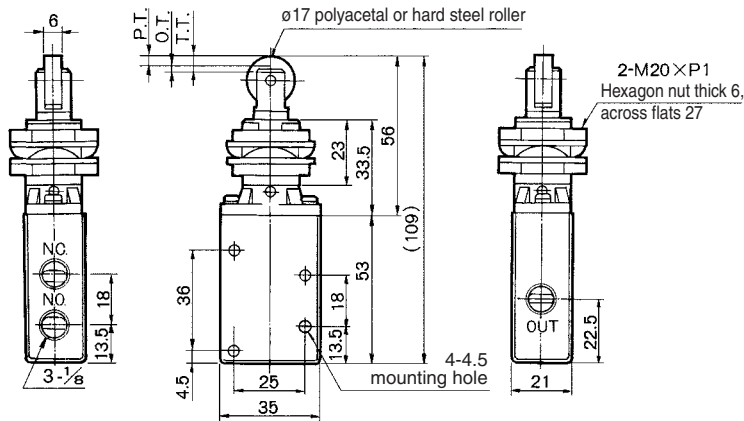
F.O.F.	30 N
P.T.	3.5 mm
O.T.	2.0 mm
T.T.	5.5 mm

3 Port Mechanical Valve Series VM400

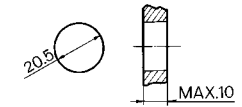
Series VM400

Roller plunger

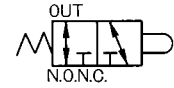
VM430-01-06
VM430-01-06S



Panel mounting hole



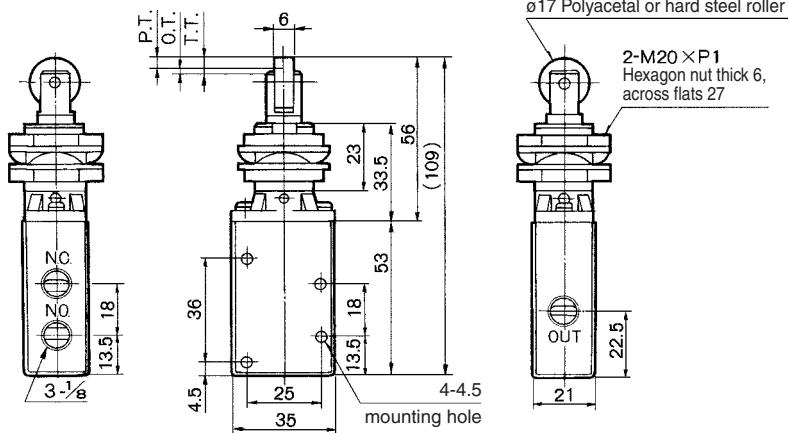
JIS Symbol



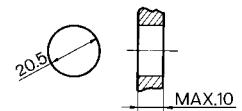
F.O.F.	30 N
P.T.	3.5 mm
O.T.	2.0 mm
T.T.	5.5 mm

Cross roller plunger

VM430-01-07
VM430-01-07S



Panel mounting hole



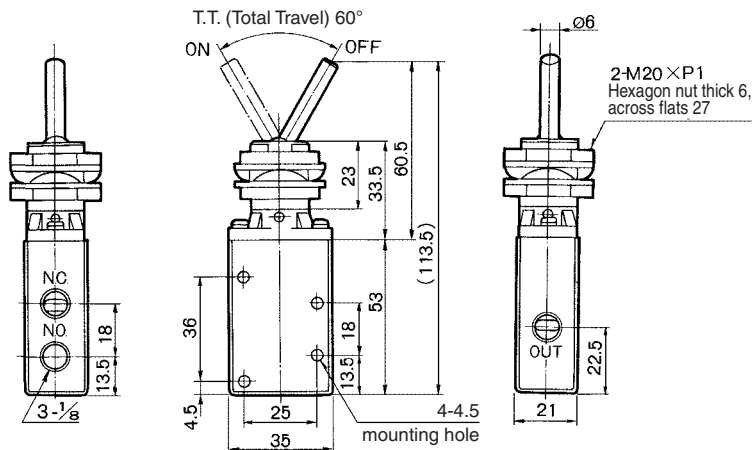
JIS Symbol



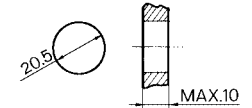
F.O.F.	30 N
P.T.	3.5 mm
O.T.	2.0 mm
T.T.	5.5 mm

Toggle lever

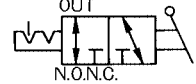
VM430-01-08



Panel mounting hole



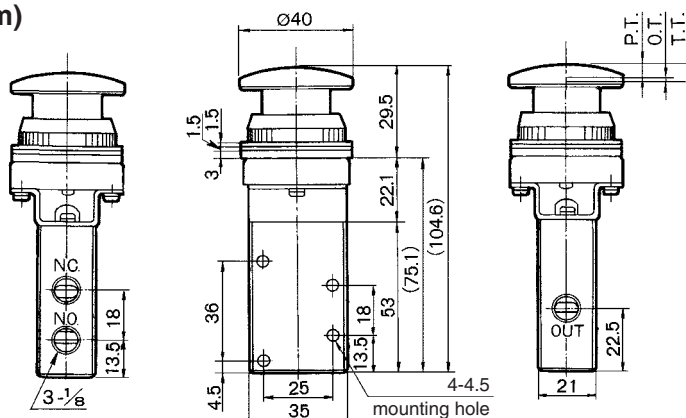
JIS Symbol



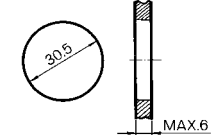
F.O.F.	7 N
T.T.	60°

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

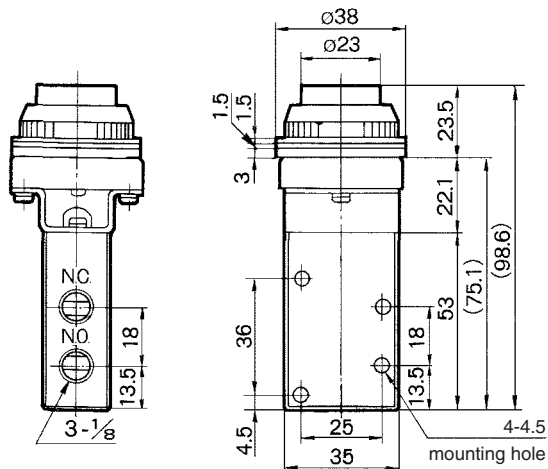
- A
- A
- A
- A
- VM
- VR
- VH
- VHS

Series VM400

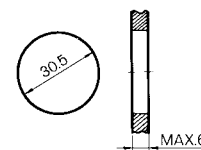
Series VM400

Push button (Extended)

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



Panel mounting hole



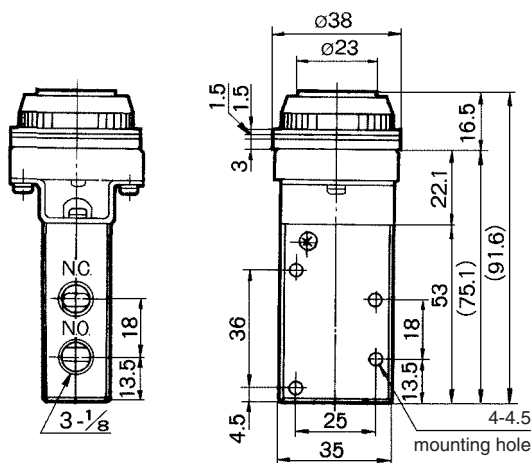
JIS Symbol



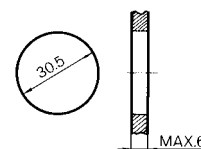
F.O.F.	26 N
P.T.	5.4 mm
O.T.	1.6 mm
T.T.	6.5 mm

Push button (Flush)

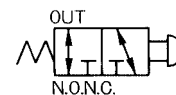
VM430-01-33



Panel mounting hole



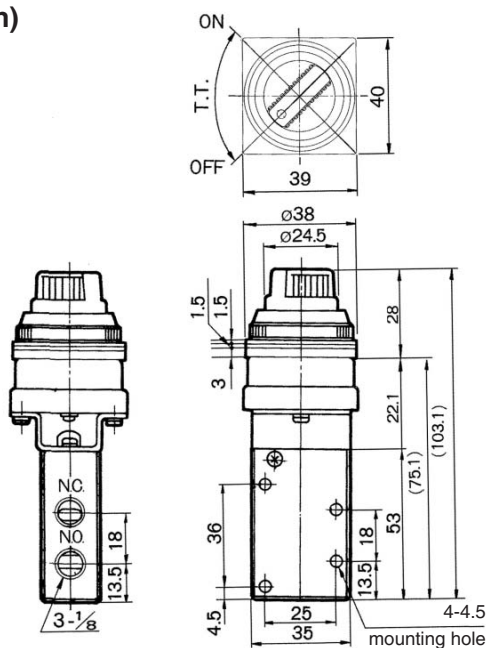
JIS Symbol



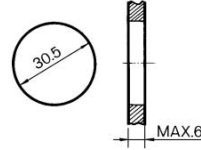
F.O.F.	26 N
P.T.	4.9 mm
O.T.	1.6 mm
T.T.	6.5 mm

Twist selector (2 position)

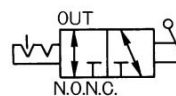
VM430-01-34R/B/G/Y



Panel mounting hole



JIS Symbol



F.O.F.	20 N
T.T.	90°

3 Port Mechanical Valve Series VM400

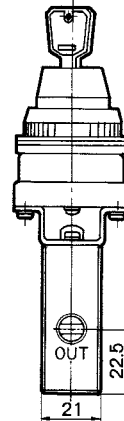
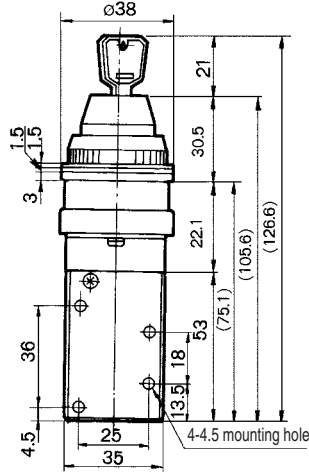
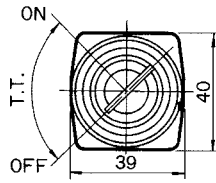
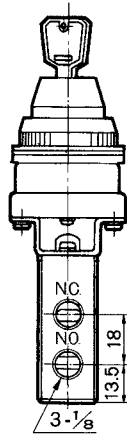
Series VM400

Key selector (2 position)

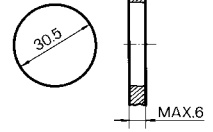
VM430-01-36



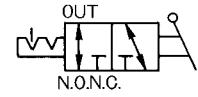
Key can be removed at the "on" and "off" positions.



Panel mounting hole



JIS Symbol



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**

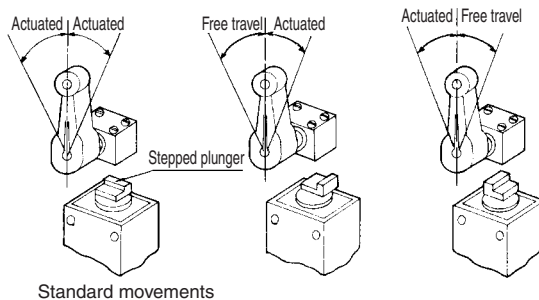
3	3 port
---	--------

• **Actuator type**

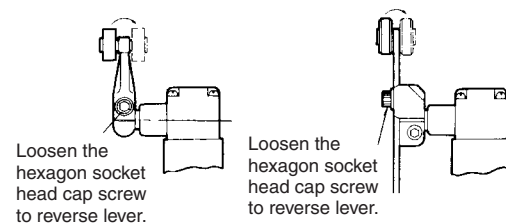
00	Basic
01	Roller lever
13	Adjustable roller lever
14	Adjustable rod lever

Application

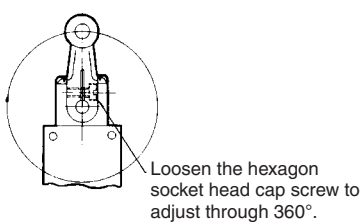
● **Movement is changeable.**



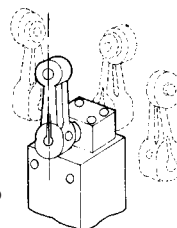
● **Roller can be mounted to inside of lever.**



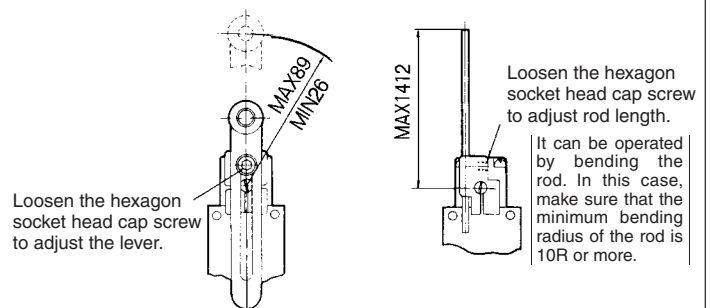
● **Lever location can be changed.**



● **Head direction can be changed.**

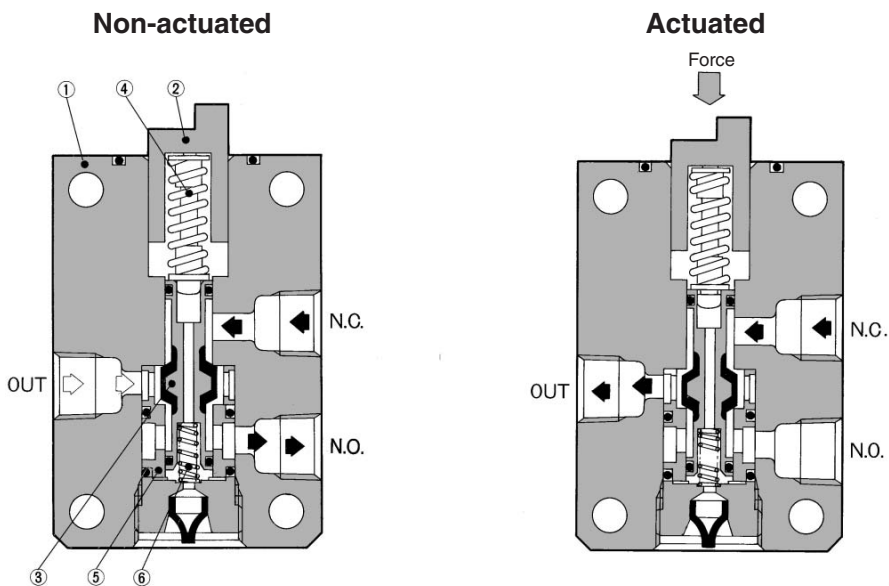


● **Lever length adjustment.**



3 Port Mechanical Valve: Heavy Duty Type Series VM800

Construction



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

Component Parts

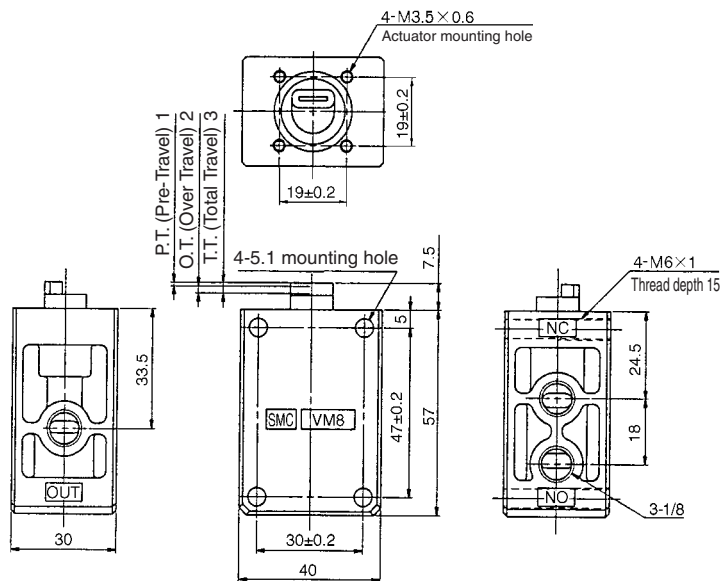
No.	Description	Material	Note
①	Body	ADC	Metallic plated
②	Plunger	POM	
③	Spool valve	Aluminum alloy, NBR	Rubber lined

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

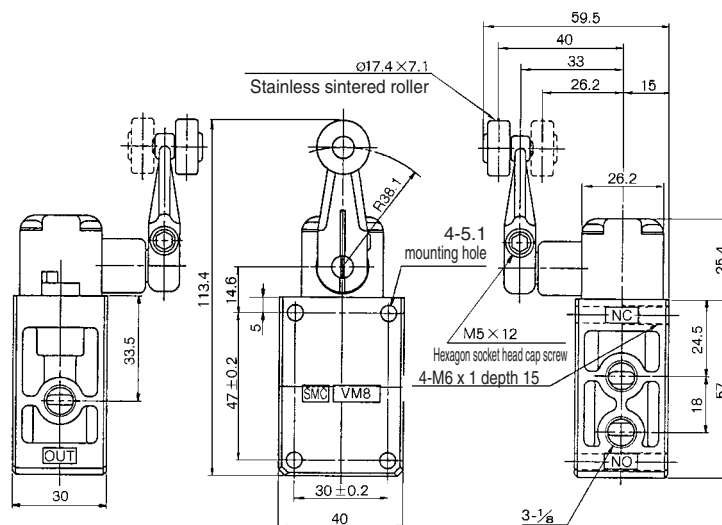


F.O.F.	23 N
P.T.	1.0 mm
O.T.	2.0 mm
T.T.	3.0 mm

Series VM800

Series VM800

Roller lever VM830-01-01

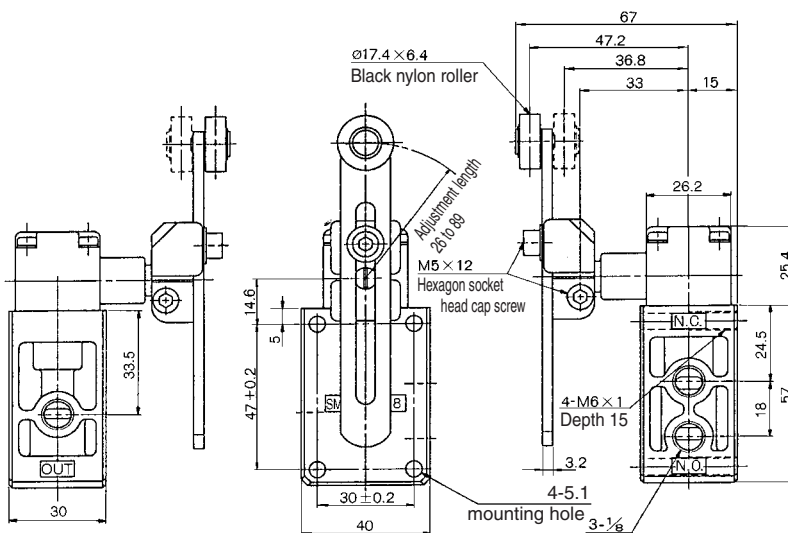


JIS Symbol



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

Adjustable roller lever VM830-01-13



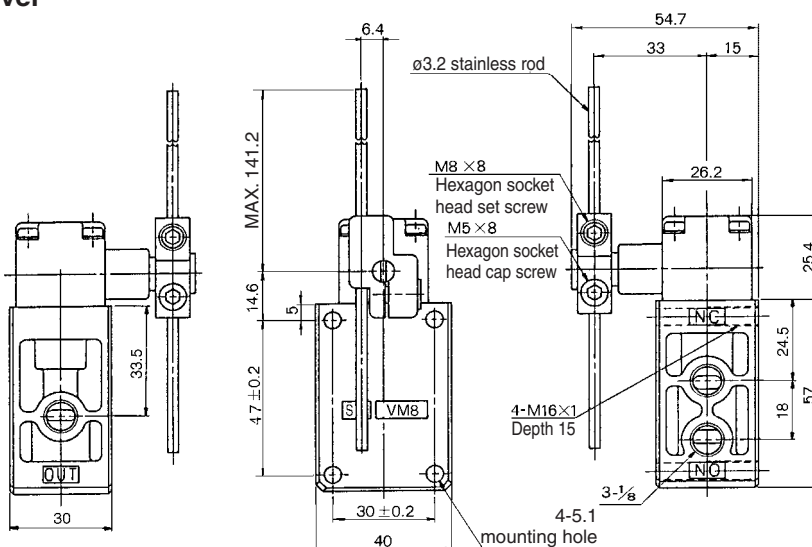
JIS Symbol



* 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.

 A

 A

 A

 A

 VM

 VR

 VH

 VHS

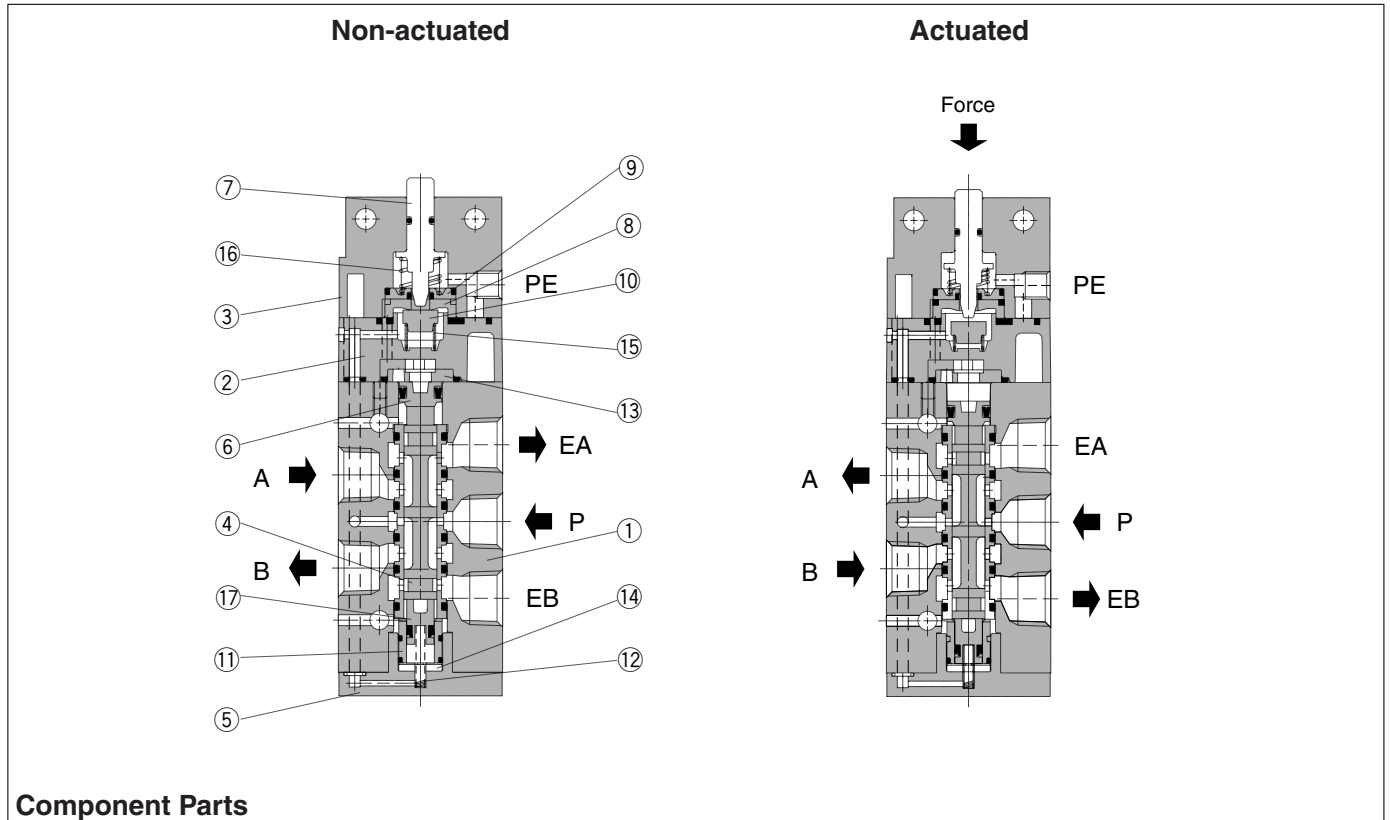
Series VZM400

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

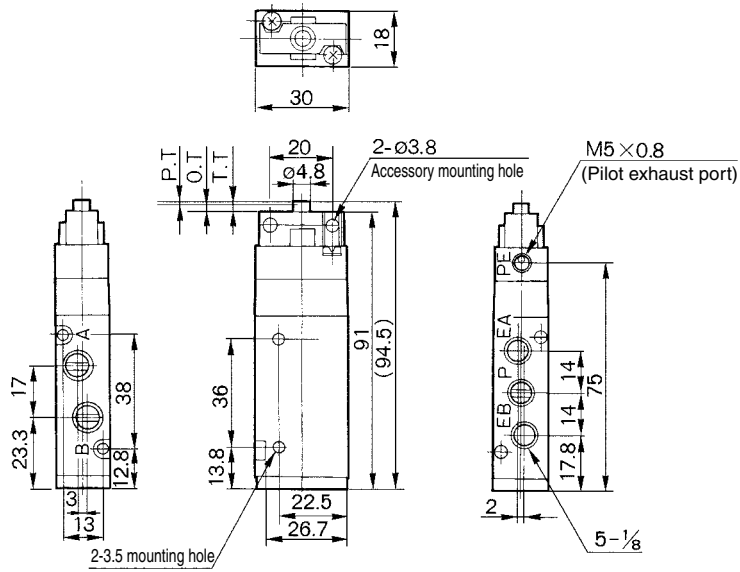
No.	Description	Material	Note
①	Body	ADC	Metallic plated
②	Pilot body	PBT	Metallic plated
③	Head cover	ZDC	Black zinc chromated
④	Spool/sleeve	Stainless steel	
⑤	End cover	POM	
⑥	Piston A	POM	
⑦	Plunger	POM	
⑧	Valve seat (A)	POM	
⑨	Valve seat (B)	POM	

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	

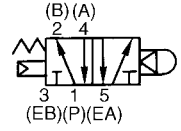
5 Port Mechanical Valve Metal Seal Series VZM400

Series VZM400

Basic VZM450-01-00



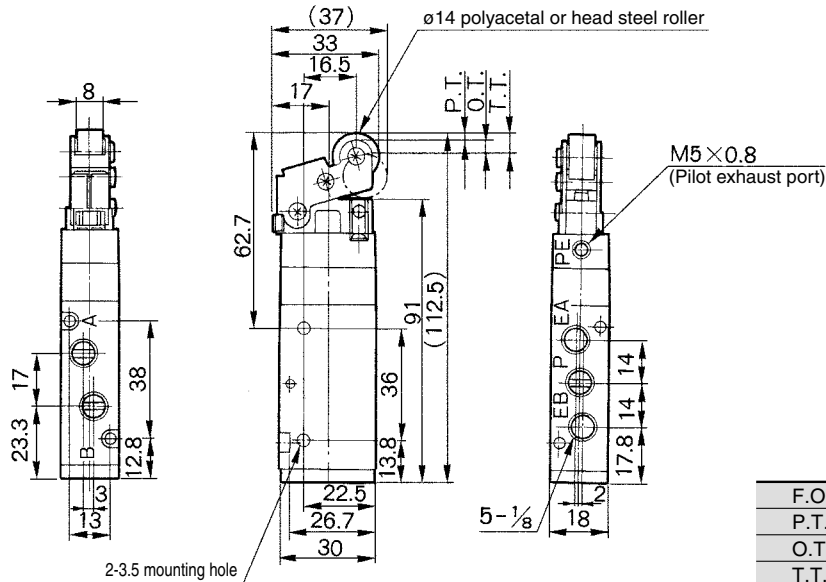
JIS Symbol



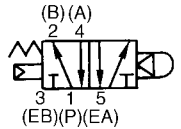
* 0.5 MPa supply

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

Roller lever VZM450-01-01 VZM450-01-01S



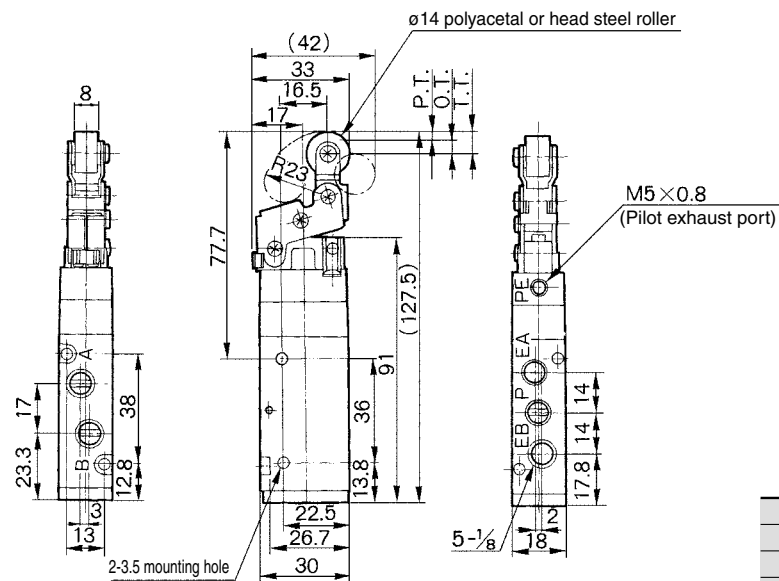
JIS Symbol



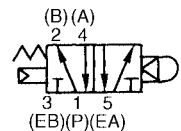
* 0.5 MPa supply

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

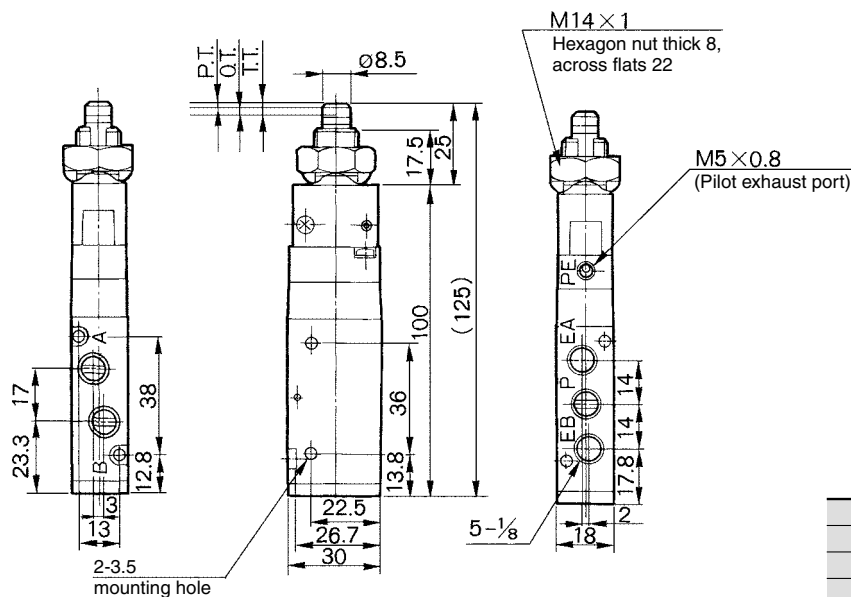
- A
- A
- A
- A
- VM
- VR
- VH
- VHS

Series VZM400

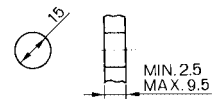
Series VZM400

Straight plunger

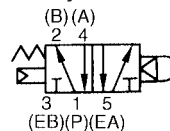
VZM450-01-05



Panel mounting hole



JIS Symbol



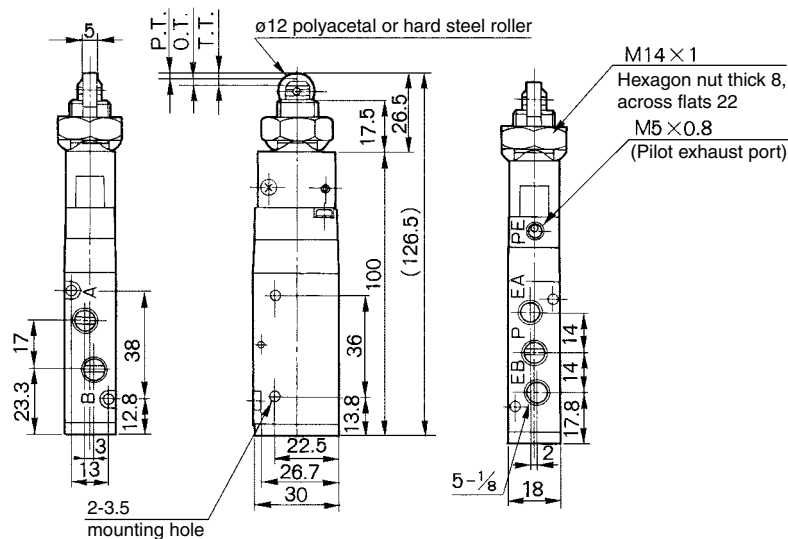
* 0.5 MPa supply

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

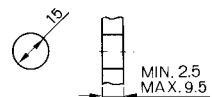
Roller plunger

VZM450-01-06

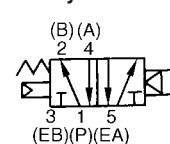
VZM450-01-06S



Panel mounting hole



JIS Symbol

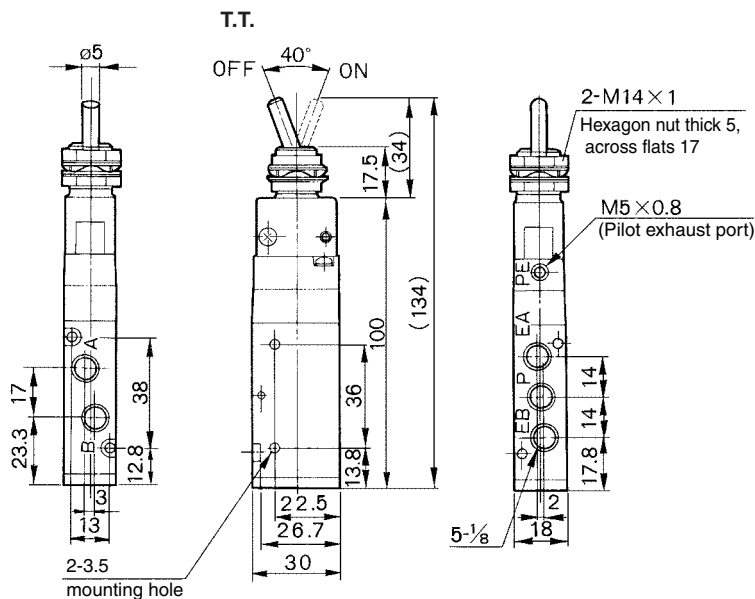


* 0.5 MPa supply

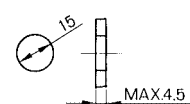
F.O.F. *	18 N
P.T.	1.5 mm
O.T.	2.0 mm
T.T.	3.5 mm

Toggle lever

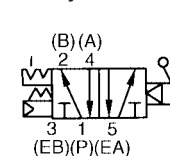
VZM450-01-08



Panel mounting hole



JIS Symbol



* 0.5 MPa supply

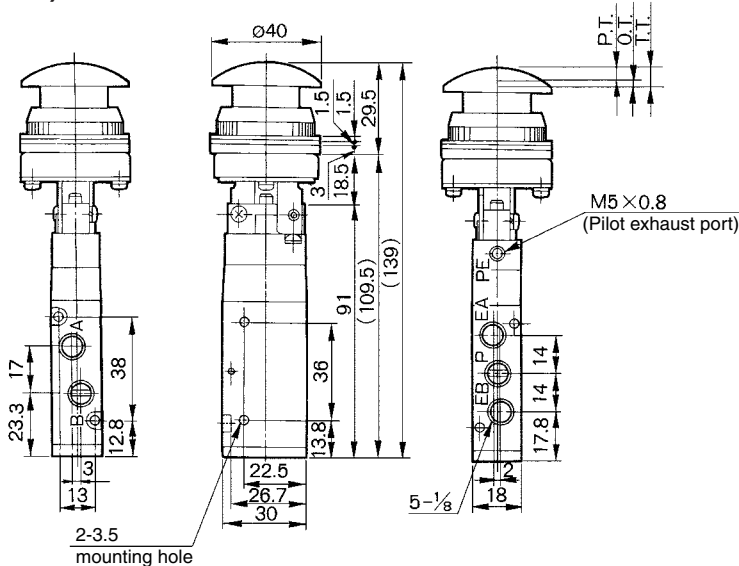
F.O.F. *	15 N
T.T.	40°

5 Port Mechanical Valve Metal Seal Series VZM400

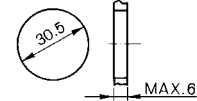
Series VZM400

Push button (Mushroom)

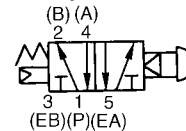
VZM450-01-30R/B/G/Y



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

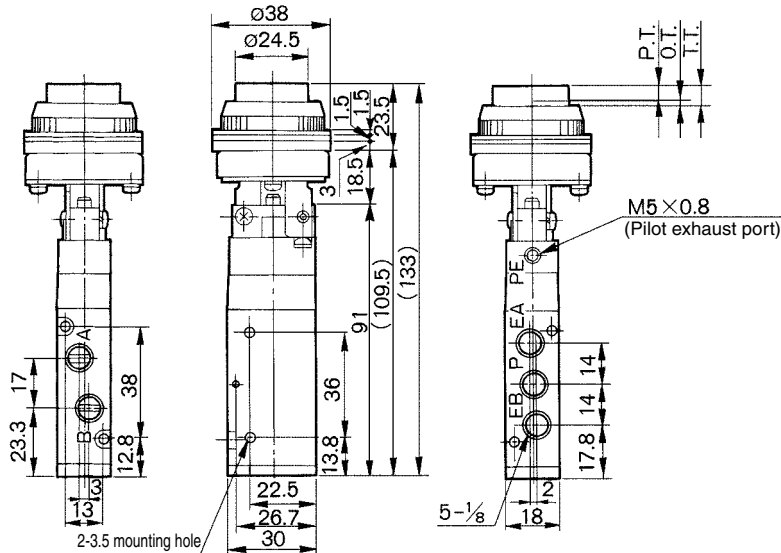
VR

VH

VHS

Push button (Extended)

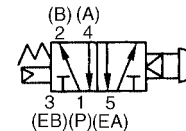
VZM450-01-32R/B/G/Y



Panel mounting hole



JIS Symbol

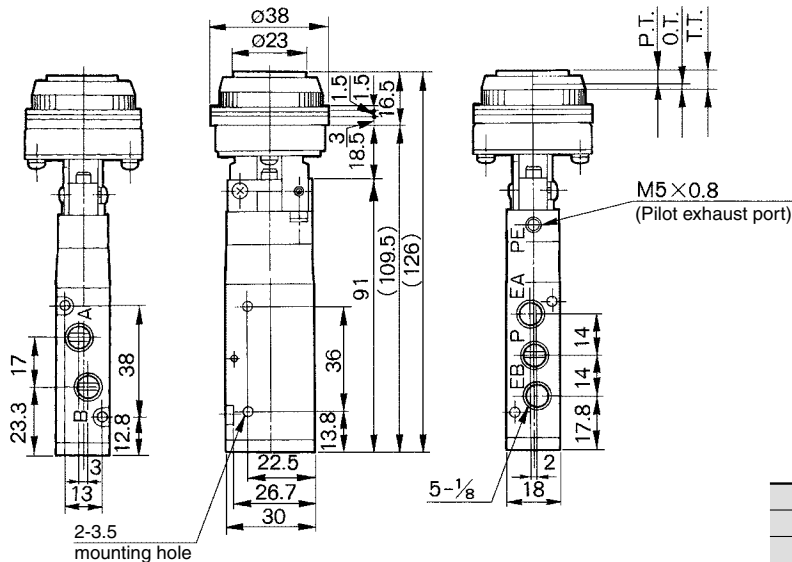


* 0.5 MPa supply

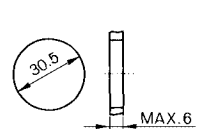
F.O.F. *	21 N
P.T.	4.8 mm
O.T.	1.7 mm
T.T.	6.5 mm

Push button (Flush)

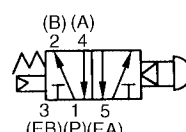
VZM450-01-33



Panel mounting hole



JIS Symbol



* 0.5 MPa supply

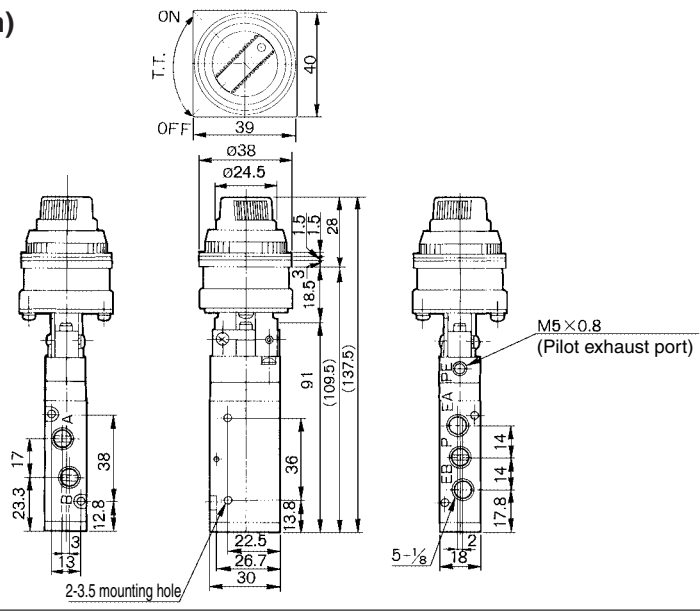
F.O.F. *	21 N
P.T.	4.8 mm
O.T.	1.7 mm
T.T.	6.5 mm

Series VZM400

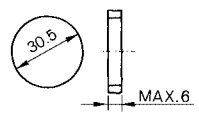
5 Port Mechanical Valve Series VZM400

Twist selector (2 position)

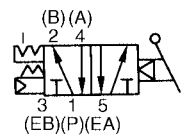
VZM450-01-34R/B/G/Y



Panel mounting hole



JIS Symbol

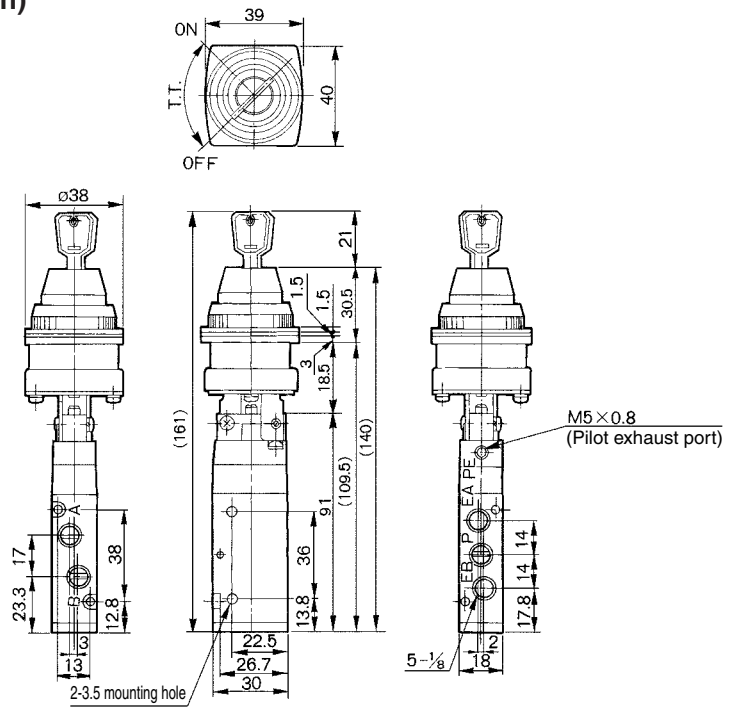


* 0.5 MPa supply

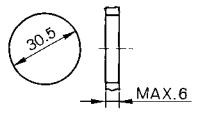
F.O.F. *	23 N
T.T.	90°

Key selector (2 position)

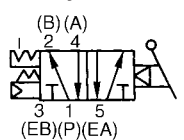
VZM450-01-36



Panel mounting hole



JIS Symbol



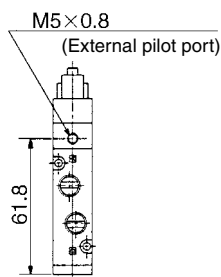
* 0.5 MPa supply

F.O.F. *	26 N
T.T.	90°

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

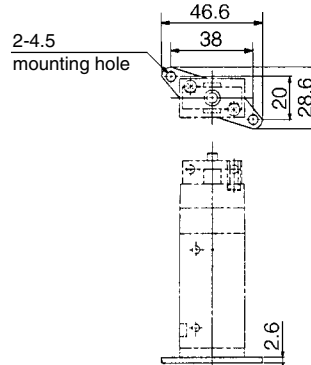
External pilot type

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.

 A

 A

 A

 A

 M

 R

 H

 H

 S

Series VZM500

How to Order

VZM55 **0** **01** **01** **S** **□**

Port size

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

Body option

0	Standard
1*	External pilot type

* Except
VZM550-01-37

Actuator type

00	Basic
01	Roller lever
02	One way roller lever
05	Straight plunger
06	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)
37	Push-pull

Suffix for actuator

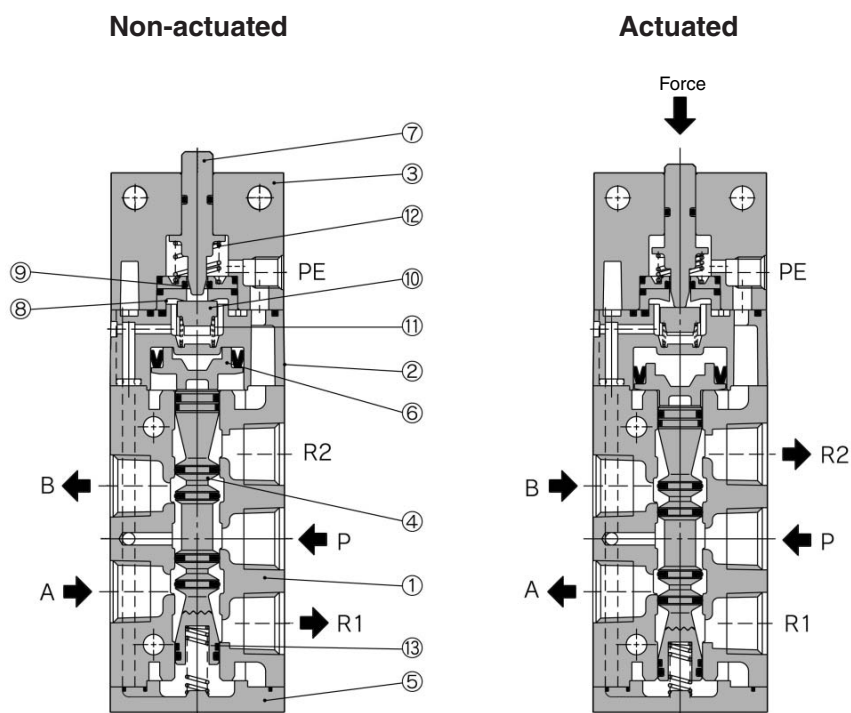
S	Hard steel roller
R	Red
B	Black
G	Green
Y	Yellow

Color of push button selector

Option

F	Foot bracket
----------	--------------

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	

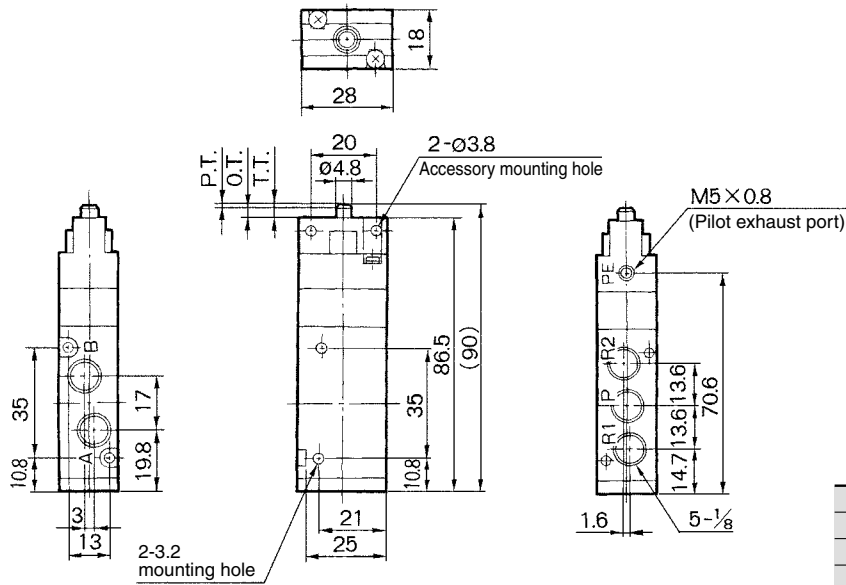
No.	Description	Material	Note
⑧	Valve seat (A)	POM	
⑨	Valve seat (B)	POM	
⑩	Valve assembly	NBR	
⑪	Valve spring	Stainless steel	
⑫	Return spring	Stainless steel	
⑬	Spool spring	Stainless steel	

5 Port Mechanical Valve Series VZM500

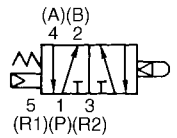
Series VZM500

Basic

VZM550-01-00



JIS Symbol



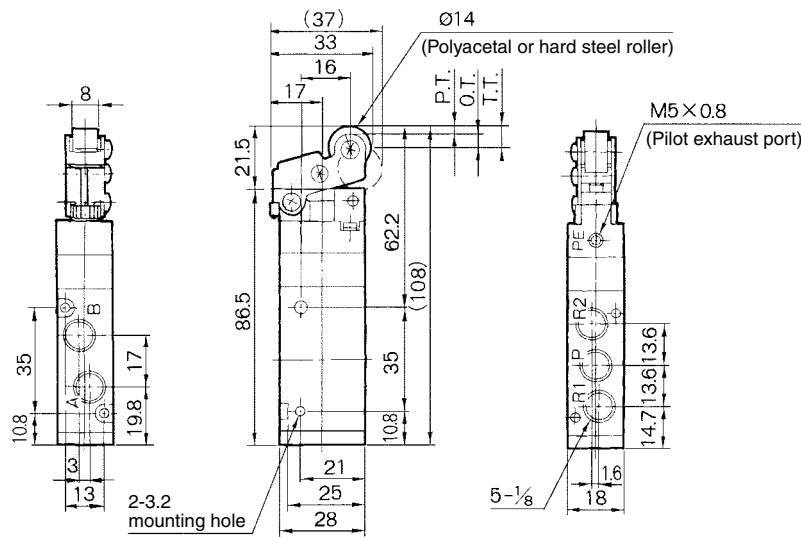
* 0.5 MPa supply

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

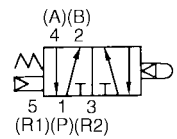
Roller lever

VZM550-01-01

VZM550-01-01S



JIS Symbol



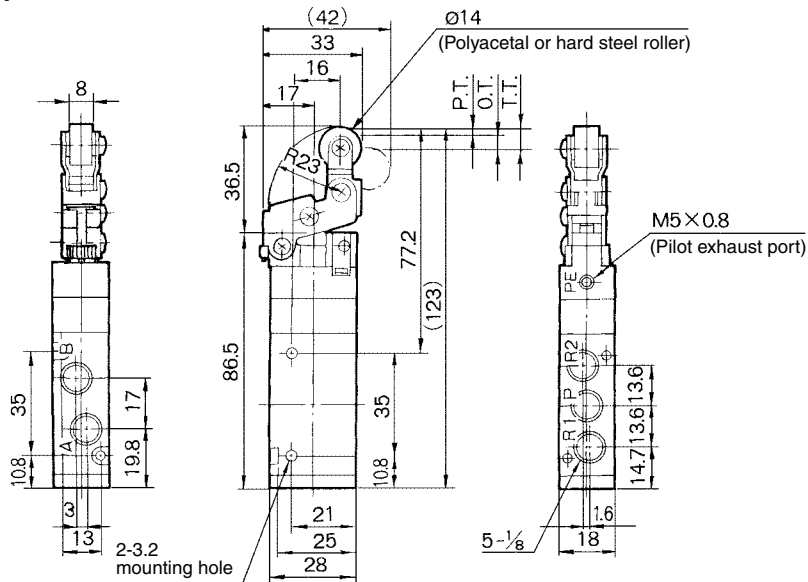
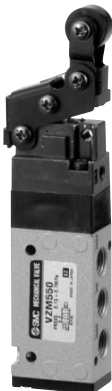
* 0.5 MPa supply

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

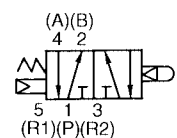
One way roller lever

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

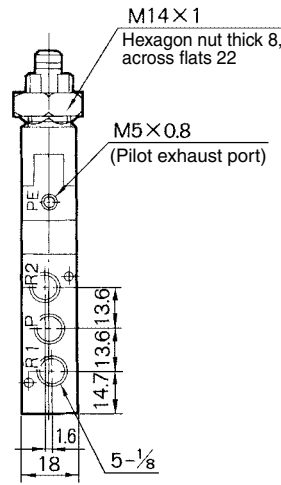
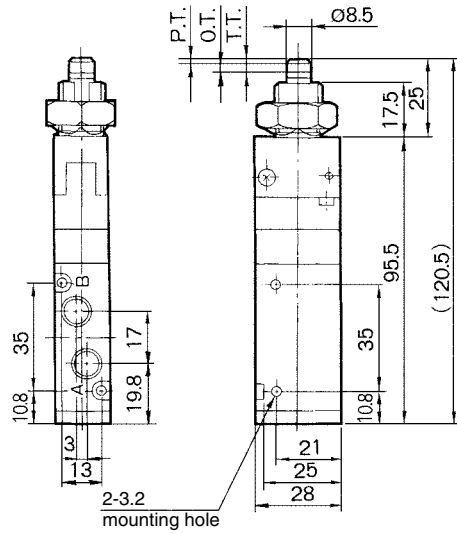
- A
- A
- A
- A
- VM
- VR
- VH
- VHS

Series VZM500

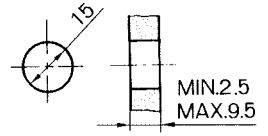
Series VZM500

Straight plunger

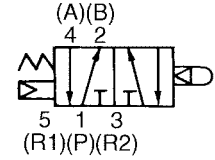
VZM550-01-05



Panel mounting hole



JIS Symbol



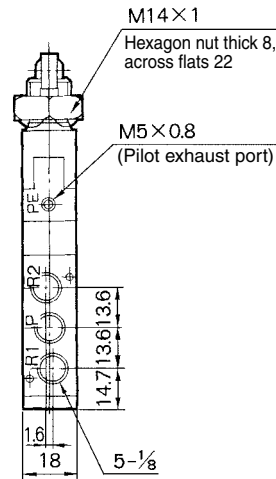
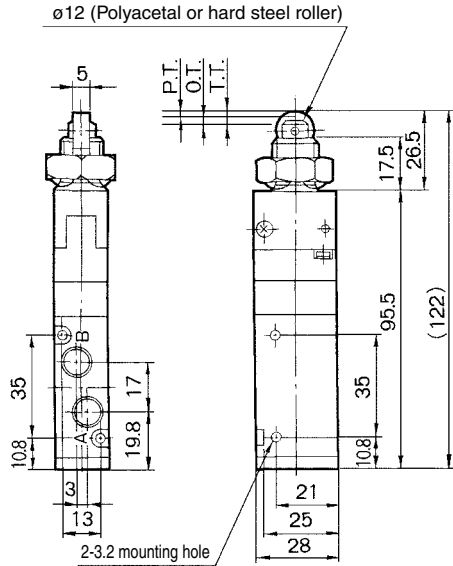
* 0.5 MPa supply

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

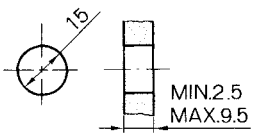
Roller plunger

VZM550-01-06

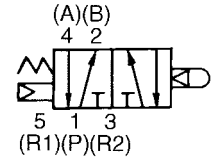
VZM550-01-06S



Panel mounting hole



JIS Symbol

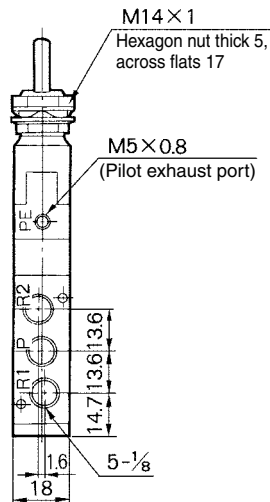
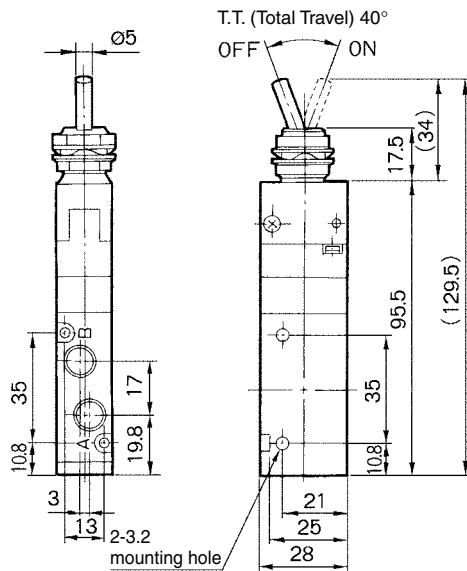


* 0.5 MPa supply

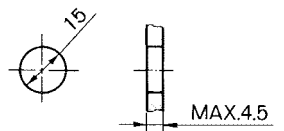
F.O.F. *	18 N
P.T.	1.5 mm
O.T.	2.0 mm
T.T.	3.5 mm

Toggle lever

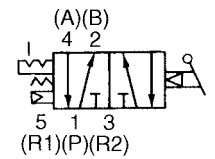
VZM550-01-08



Panel mounting hole



JIS Symbol



* 0.5 MPa supply

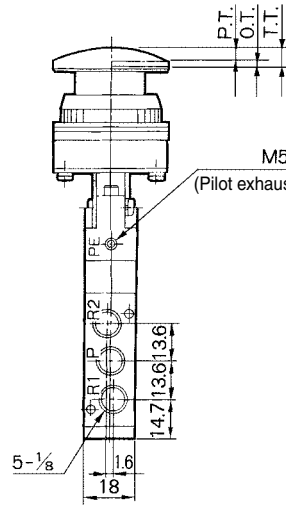
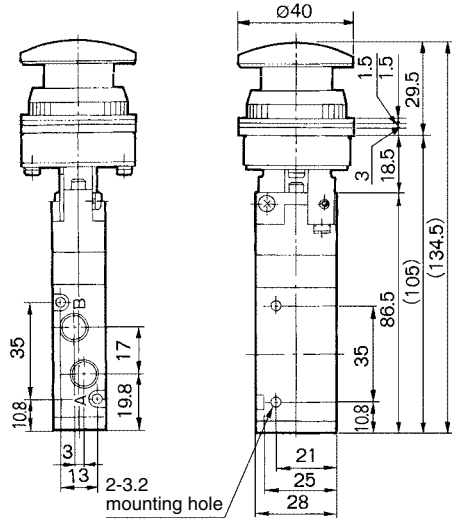
F.O.F. *	15 N
T.T.	40°

5 Port Mechanical Valve Series VZM500

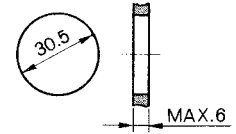
Series VZM500

Push button (Mushroom)

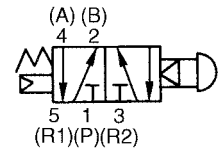
VZM550-01-30R/B/G/Y



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

V□A

□A

V□A

VM

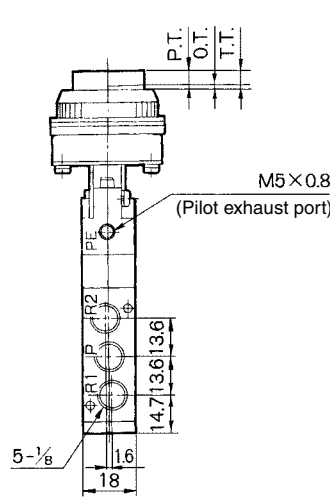
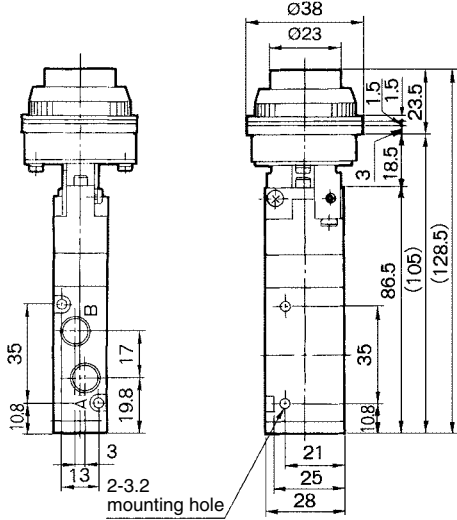
VR

VH

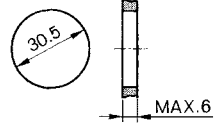
VHS

Push button (Extended)

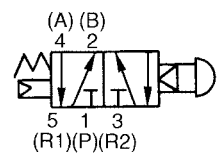
VZM550-01-32R/B/G/Y



Panel mounting hole



JIS symbol

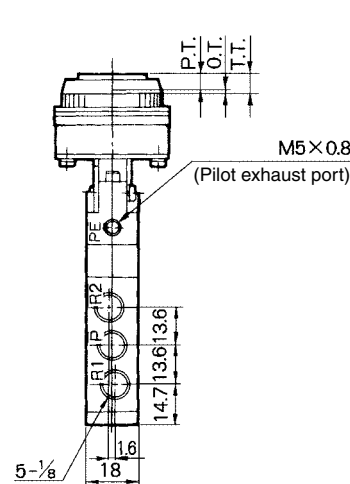
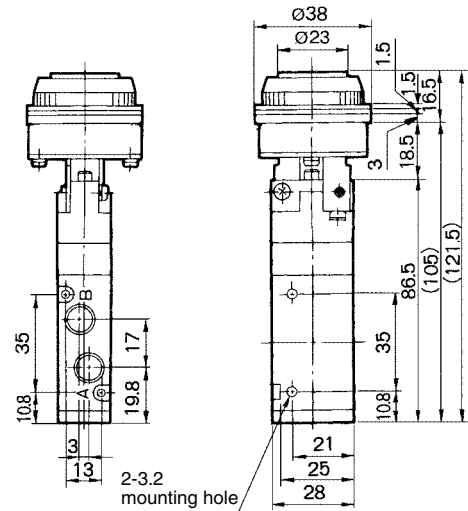


* 0.5 MPa supply

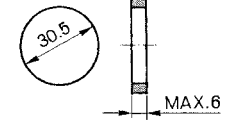
F.O.F. *	21 N
P.T.	4.8 mm
O.T.	1.7 mm
T.T.	6.5 mm

Push button (Flush)

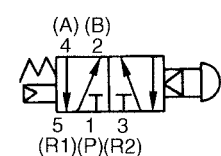
VZM550-01-33



Panel mounting hole



JIS symbol



* 0.5 MPa supply

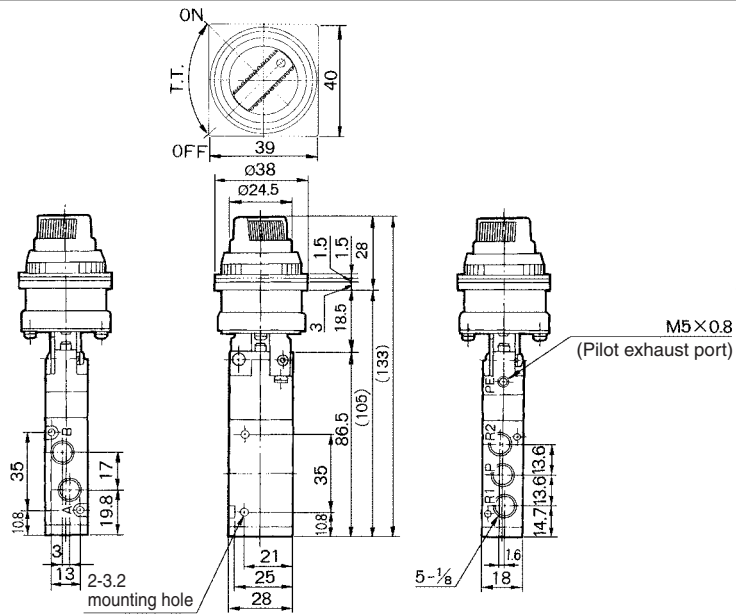
F.O.F. *	21 N
P.T.	4.8 mm
O.T.	1.7 mm
T.T.	6.5 mm

Series VZM500

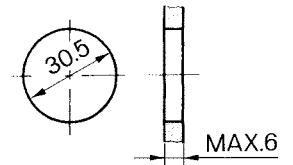
Series VZM500

Selector (2 position)

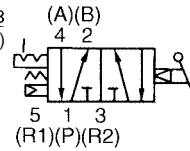
VZM550-01-34R/B/G/Y



Panel mounting hole



JIS Symbol

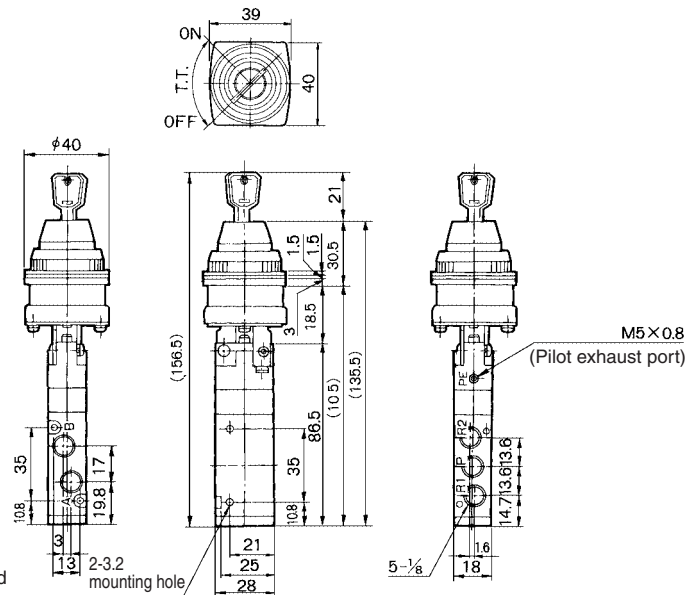


* 0.5 MPa supply

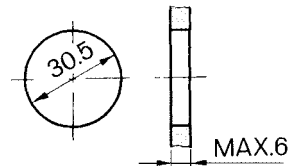
F.O.F. *	23 N
T.T.	90°

Key selector (2 position)

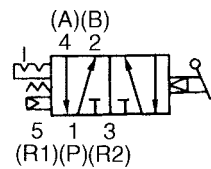
VZM550-01-36



Panel mounting hole



JIS Symbol



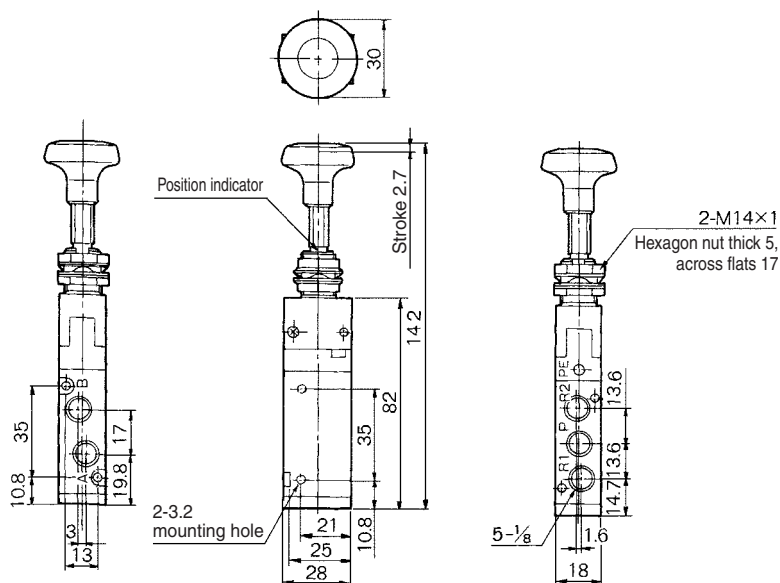
* 0.5 MPa supply

F.O.F. *	26 N
T.T.	90°

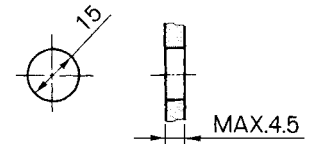
Key can be removed at the "on" and "off" positions.

Push pull

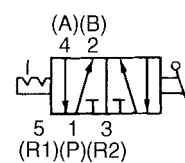
VZM550-01-37



Panel mounting hole



JIS Symbol

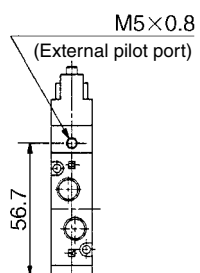


F.O.F.	20 N
T.T.	2.7 mm

5 Port Mechanical Valve Series VZM500

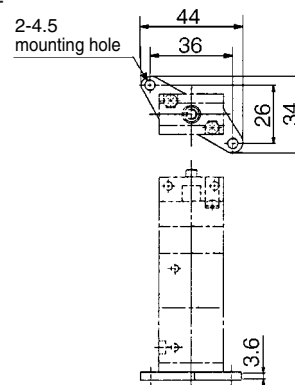
External pilot type

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.)
Port size	Main valve/SUP, CYL port 1/4, EXH port 1/8 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	—	
Manual operation	Roller plunger	VFM350-02-06	VM-06D	Polyacetal roller	
		VFM350-02-06S	VM-06DS	Hard steel roller	
	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
		VFM350-02-32Y	VM-32CY	Yellow	
	Push button (Flush)	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.

5 Port Mechanical Valve Rubber Seal Series VFM300

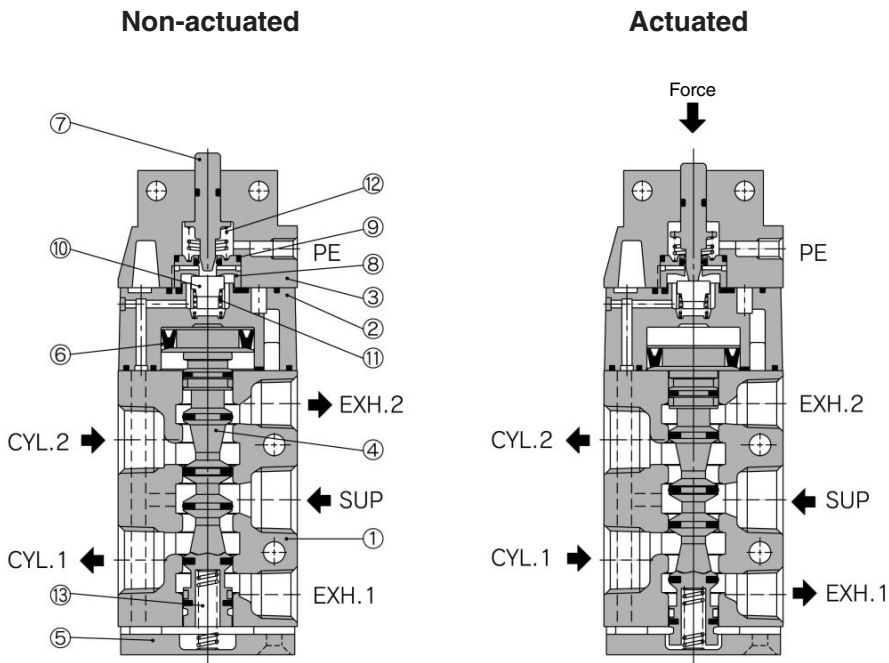
How to Order

VFM35 **0** **02** **01** **S**

<p>Port size</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>02</td><td>Rc 1/4</td></tr> <tr><td>N02</td><td>NPT 1/4</td></tr> <tr><td>F02</td><td>G 1/4</td></tr> </table> <p>Body option</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>0</td><td>Internal pilot type</td></tr> <tr><td>1</td><td>External pilot type</td></tr> </table>	02	Rc 1/4	N02	NPT 1/4	F02	G 1/4	0	Internal pilot type	1	External pilot type	<p>Actuator type</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>00</td><td>Basic</td></tr> <tr><td>01</td><td>Roller lever</td></tr> <tr><td>02</td><td>One way roller lever</td></tr> <tr><td>05</td><td>Straight plunger</td></tr> <tr><td>06</td><td>Roller plunger</td></tr> <tr><td>08</td><td>Toggle lever</td></tr> <tr><td>30</td><td>Push button (Mushroom)</td></tr> <tr><td>32</td><td>Push button (Extended)</td></tr> <tr><td>33</td><td>Push button (Flush)</td></tr> <tr><td>34</td><td>Twist selector (2 position)</td></tr> <tr><td>36</td><td>Key selector (2 position)</td></tr> </table>	00	Basic	01	Roller lever	02	One way roller lever	05	Straight plunger	06	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)	<p>Suffix for actuator</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>S</td><td>Hard steel roller</td></tr> <tr><td>R</td><td>Red</td></tr> <tr><td>B</td><td>Black</td></tr> <tr><td>G</td><td>Green</td></tr> <tr><td>Y</td><td>Yellow</td></tr> </table> <p style="font-size: small; text-align: center;">Color of push button selector</p>	S	Hard steel roller	R	Red	B	Black	G	Green	Y	Yellow	<p>Option</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>F</td><td>Foot bracket (Only internal pilot)</td></tr> </table>	F	Foot bracket (Only internal pilot)
02	Rc 1/4																																														
N02	NPT 1/4																																														
F02	G 1/4																																														
0	Internal pilot type																																														
1	External pilot type																																														
00	Basic																																														
01	Roller lever																																														
02	One way roller lever																																														
05	Straight plunger																																														
06	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)																																														
S	Hard steel roller																																														
R	Red																																														
B	Black																																														
G	Green																																														
Y	Yellow																																														
F	Foot bracket (Only internal pilot)																																														

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

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	

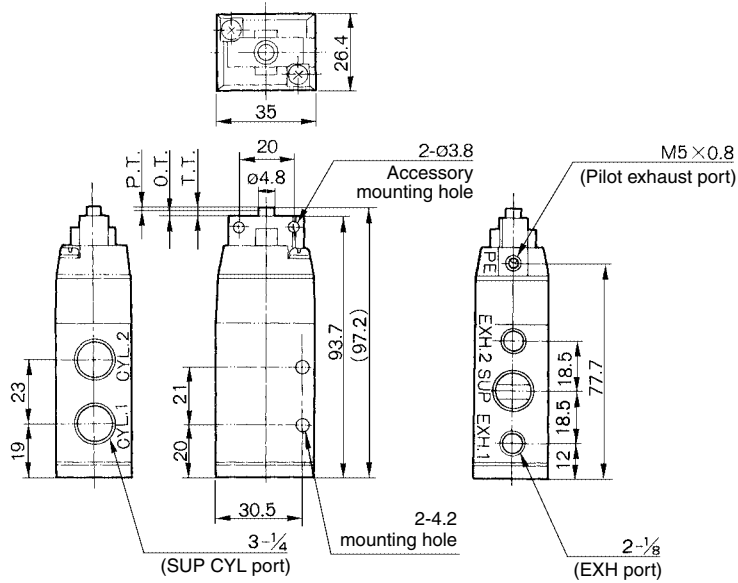
No.	Description	Material	Note
⑧	Valve seat (A)	POM	
⑨	Valve seat (B)	POM	
⑩	Valve	NBR	
⑪	Valve spring	Stainless steel	
⑫	Return spring	Stainless steel	
⑬	Spool spring	Stainless steel	

Series VFM300

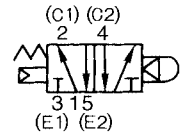
Series VFM300

Basic

VFM350-02-00



JIS Symbol

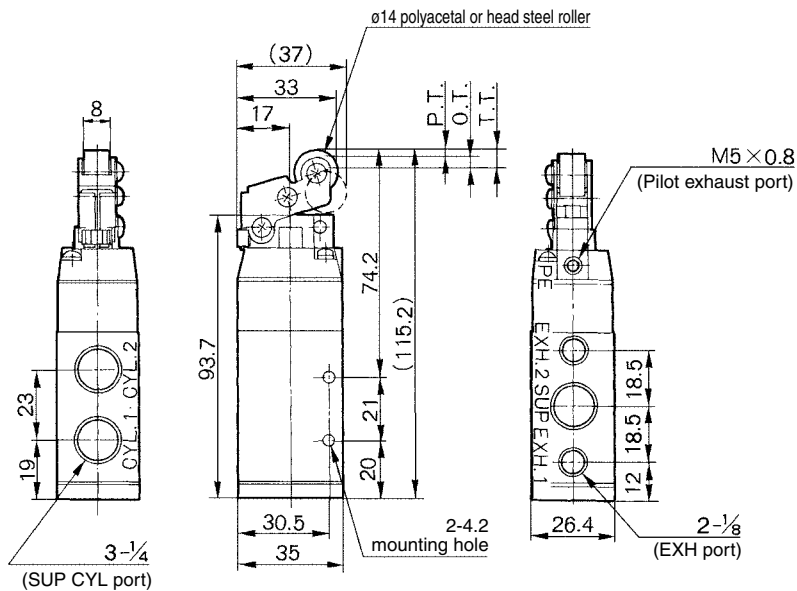


* 0.5 MPa supply

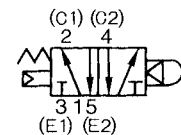
F.O.F. *	16 N
P.T.	1.0 mm
O.T.	2.0 mm
T.T.	3.0 mm

Roller lever

VFM350-02-01
VFM350-02-01S



JIS Symbol

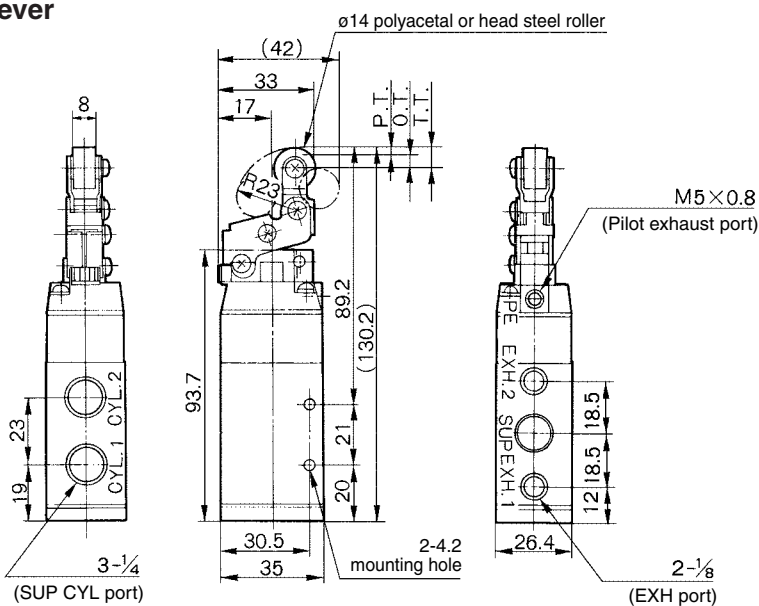


* 0.5 MPa supply

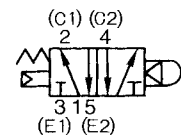
F.O.F. *	8 N
P.T.	2.2 mm
O.T.	4.0 mm
T.T.	6.2 mm

One way roller lever

VFM350-02-02
VFM350-02-02S



JIS Symbol



* 0.5 MPa supply

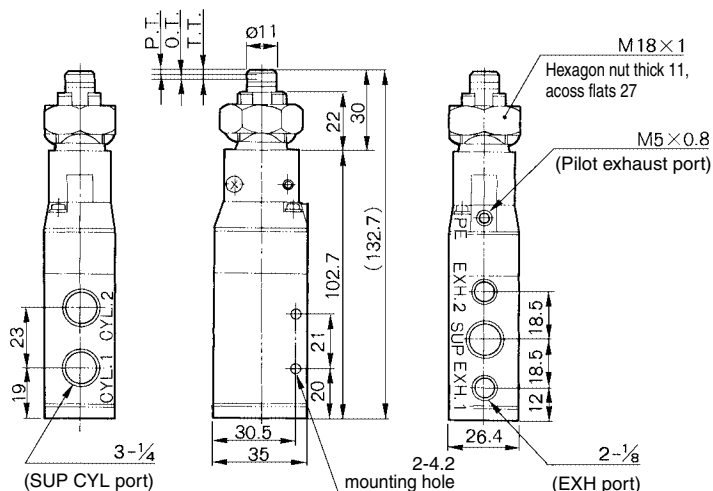
F.O.F. *	7 N
P.T.	2.4 mm
O.T.	4.6 mm
T.T.	7.0 mm

5 Port Mechanical Valve Rubber Seal Series VFM300

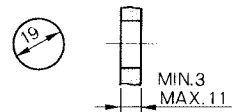
Series VFM300

Straight plunger

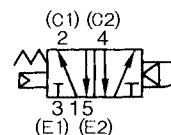
VFM350-02-05



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

□A

□A

□A

□A

VM

VR

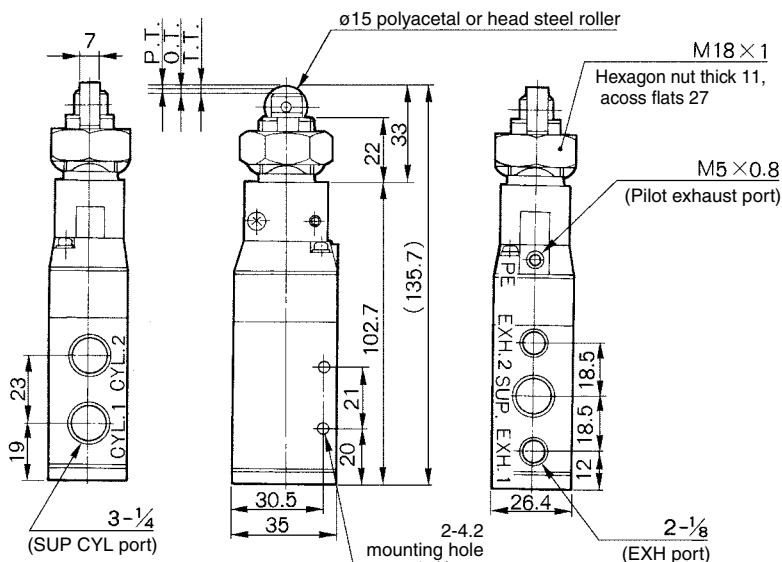
VH

VHS

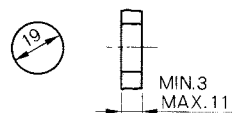
Roller plunger

VFM350-02-06

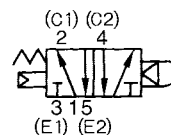
VFM350-02-06S



Panel mounting hole



JIS symbol

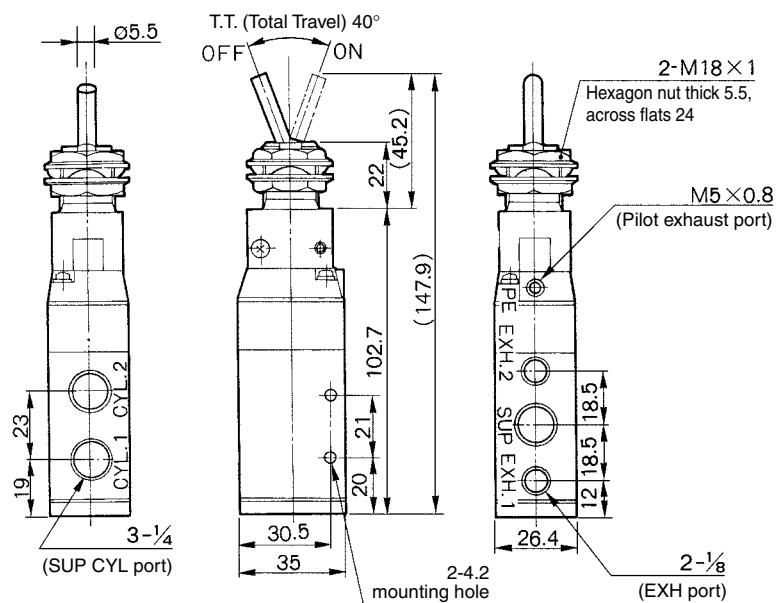


* 0.5 MPa supply

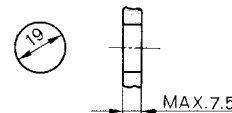
F.O.F. *	20 N
P.T.	1.5 mm
O.T.	2.0 mm
T.T.	3.5 mm

Toggle lever

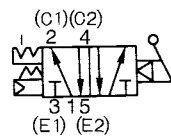
VFM350-02-08



Panel mounting hole



JIS Symbol



* 0.5 MPa supply

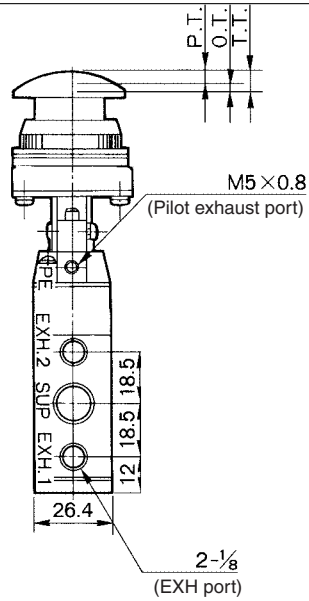
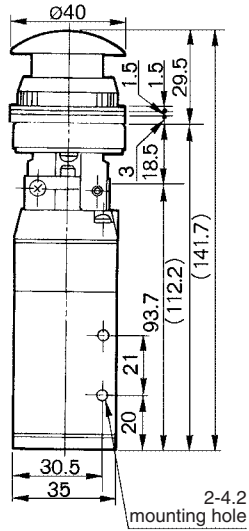
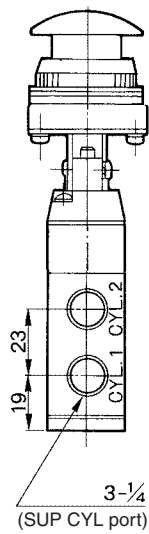
F.O.F. *	15 N
T.T.	40°

Series VFM300

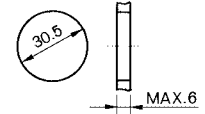
Series VFM300

Push button (Mushroom)

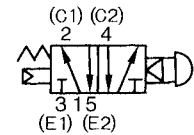
VFM350-02-30R/B/G/Y



Panel mounting hole



JIS Symbol

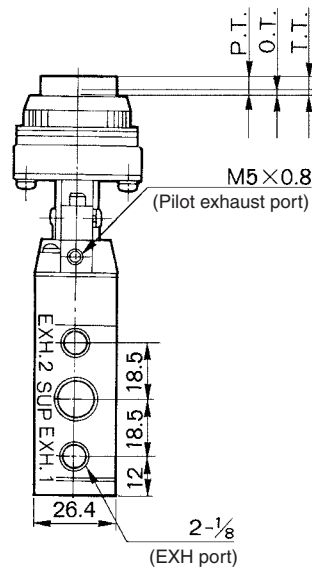
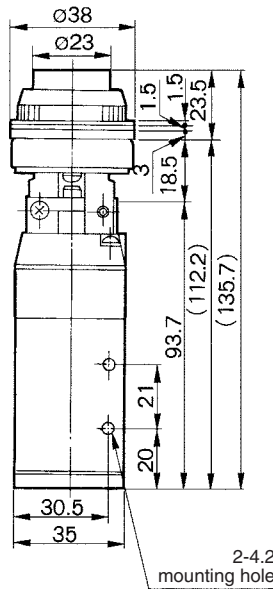
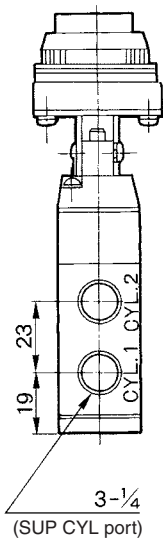


* 0.5 MPa supply

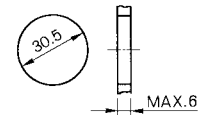
F.O.F. *	21 N
P.T.	4.8 mm
O.T.	1.7 mm
T.T.	6.5 mm

Push button (Extended)

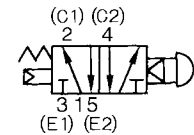
VFM350-02-32R/B/G/Y



Panel mounting hole



JIS Symbol

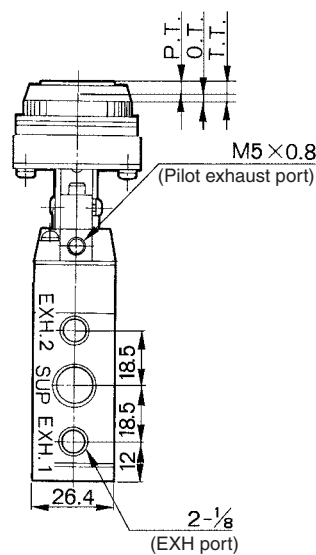
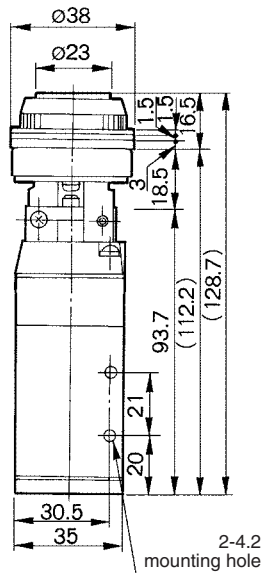
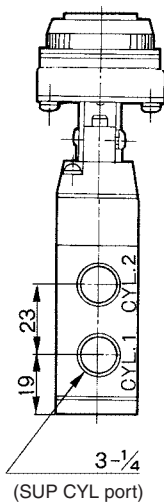


* 0.5 MPa supply

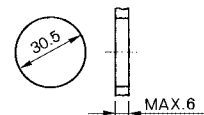
F.O.F. *	21 N
P.T.	4.8 mm
O.T.	1.7 mm
T.T.	6.5 mm

Push button (Flush)

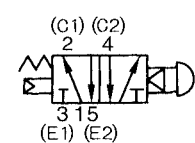
VFM350-02-33



Panel mounting hole



JIS Symbol



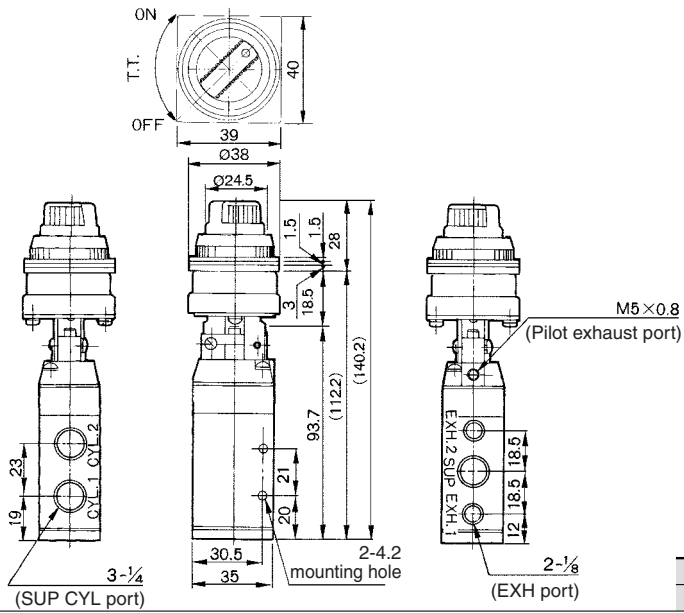
* 0.5 MPa supply

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

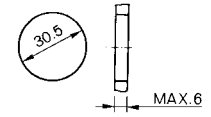
5 Port Mechanical Valve Rubber Seal Series VFM300

Series VFM300

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



Panel mounting hole

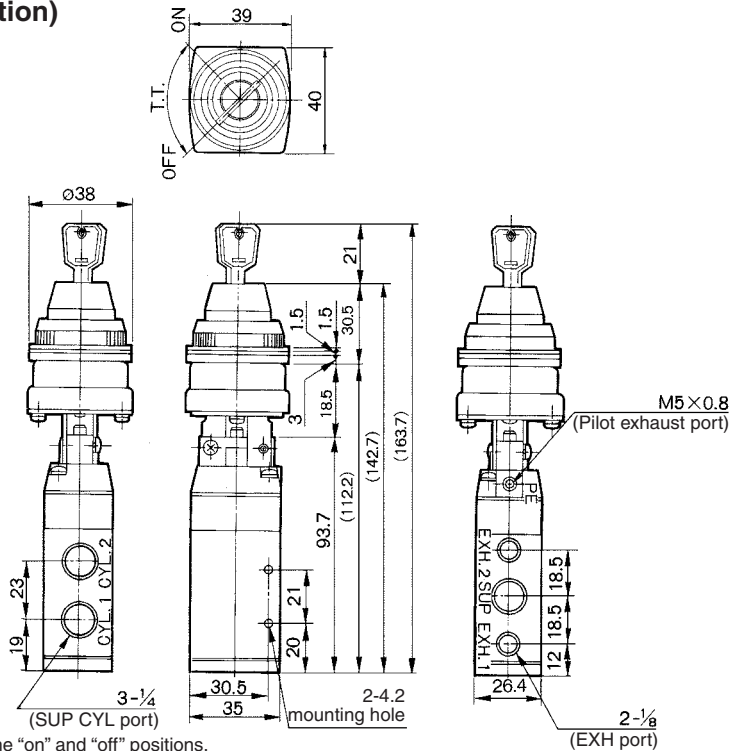


JIS Symbol

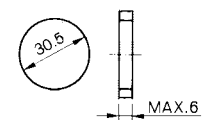


* 0.5 MPa supply	
F.O.F. *	23 N
T.T.	90°

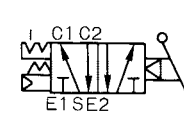
Key selector (2 position) VFM350-02-36



Panel mounting hole



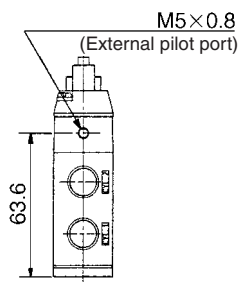
JIS Symbol



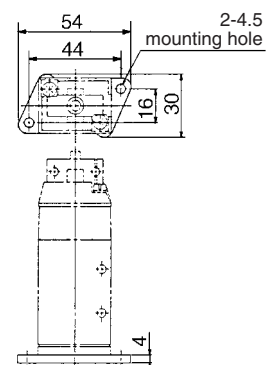
* 0.5 MPa supply	
F.O.F. *	26 N
T.T.	90°

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

External pilot type VFM351 type



With foot bracket VFM350-02-□□-F



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

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.

5 Port Mechanical Valve Metal Seal Series VFM200

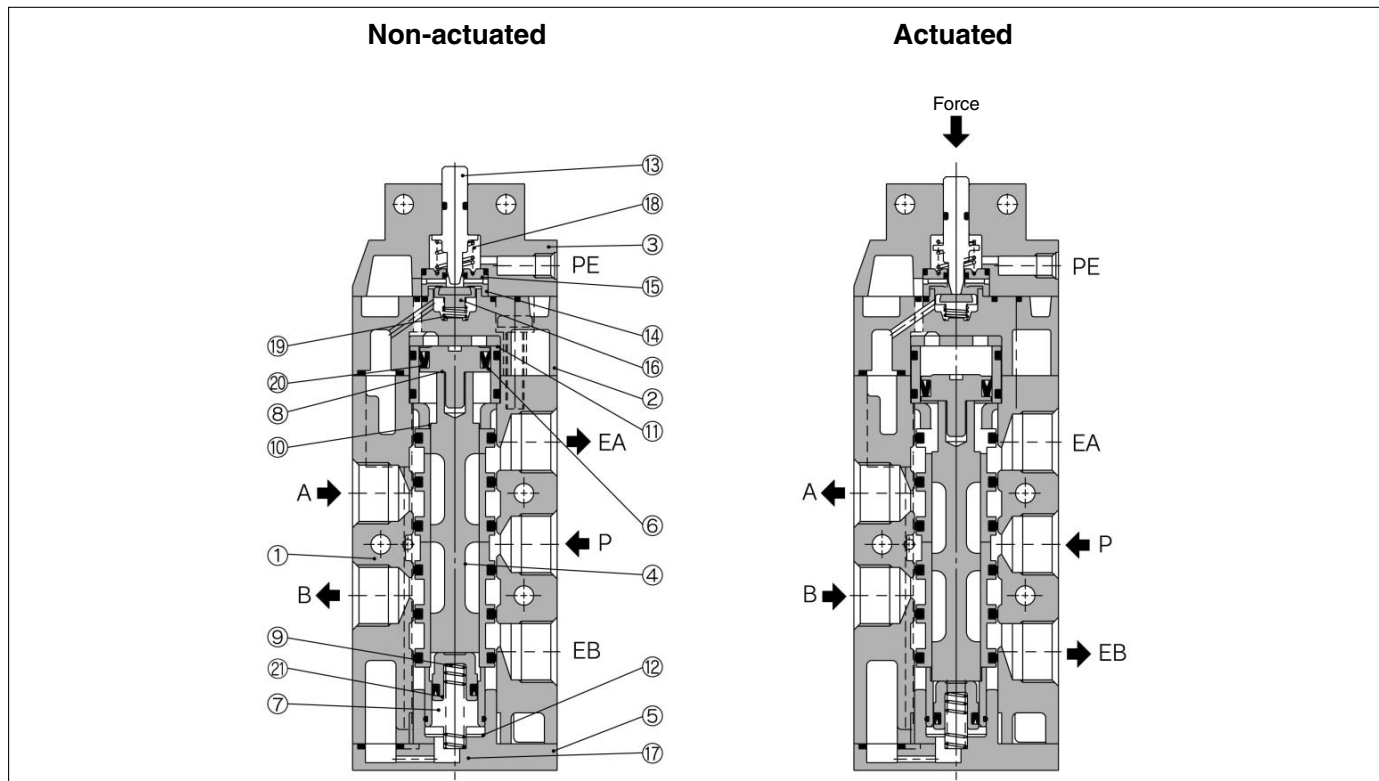
How to Order

VFM25 0 02 01 S

<p>Port size</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20px;">02</td> <td>Rc 1/4</td> </tr> </table>	02	Rc 1/4	<p>Body option</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20px;">0</td> <td>Internal pilot type</td> </tr> <tr> <td>1</td> <td>External pilot type</td> </tr> </table>	0	Internal pilot type	1	External pilot type	<p>Actuator type</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>00</td><td>Basic</td></tr> <tr><td>01</td><td>Roller lever</td></tr> <tr><td>02</td><td>One way roller lever</td></tr> <tr><td>05</td><td>Straight plunger</td></tr> <tr><td>06</td><td>Roller plunger</td></tr> <tr><td>08</td><td>Toggle lever</td></tr> <tr><td>30</td><td>Push button (Mushroom)</td></tr> <tr><td>32</td><td>Push button (Extended)</td></tr> <tr><td>33</td><td>Push button (Flush)</td></tr> <tr><td>34</td><td>Twist selector (2 position)</td></tr> <tr><td>36</td><td>Key selector (2 position)</td></tr> </table>	00	Basic	01	Roller lever	02	One way roller lever	05	Straight plunger	06	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)	<p>Suffix for actuator</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20px;">S</td> <td>Hard steel roller</td> <td rowspan="5" style="vertical-align: middle;">Color of push button selector</td> </tr> <tr> <td>R</td> <td>Red</td> </tr> <tr> <td>B</td> <td>Black</td> </tr> <tr> <td>G</td> <td>Green</td> </tr> <tr> <td>Y</td> <td>Yellow</td> </tr> </table>	S	Hard steel roller	Color of push button selector	R	Red	B	Black	G	Green	Y	Yellow	<p>Option</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20px;">F</td> <td>Foot bracket (Only internal pilot)</td> </tr> </table>	F	Foot bracket (Only internal pilot)
02	Rc 1/4																																												
0	Internal pilot type																																												
1	External pilot type																																												
00	Basic																																												
01	Roller lever																																												
02	One way roller lever																																												
05	Straight plunger																																												
06	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)																																												
S	Hard steel roller	Color of push button selector																																											
R	Red																																												
B	Black																																												
G	Green																																												
Y	Yellow																																												
F	Foot bracket (Only internal pilot)																																												

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

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	

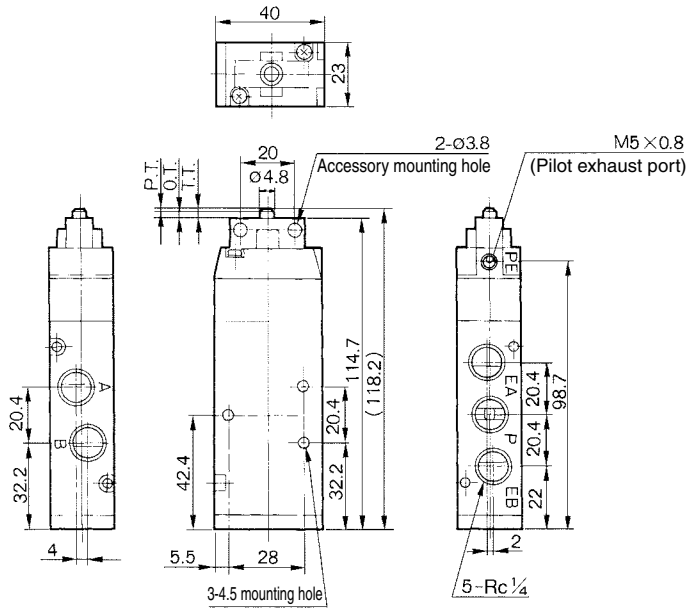
No.	Description	Material	Note
⑫	Cushion for end cover	Urethane rubber	
⑬	Plunger	POM	
⑭	Valve seat (A)	POM	
⑮	Valve seat (B)	POM	
⑯	Valve	NBR	
⑰	Return spring	Stainless steel	
⑱	Return spring	Stainless steel	
⑲	Valve spring	Stainless steel	
⑳	Mini Y packing	NBR	
㉑	Mini Y packing	NBR	

Series VFM200

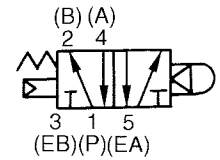
Series VFM200

Basic

VFM250-02-00



JIS Symbol

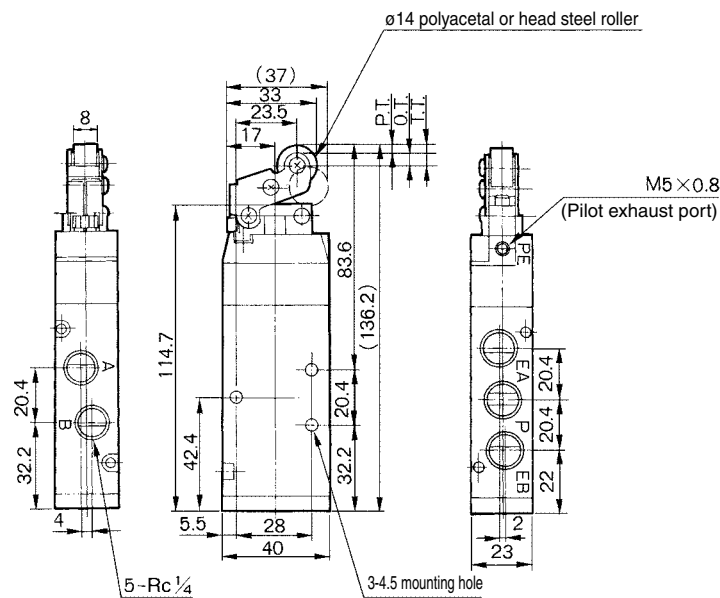


* 0.5 MPa supply

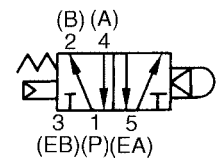
F.O.F. *	16 N
P.T.	1.0 mm
O.T.	2.0 mm
T.T.	3.0 mm

Roller lever

VFM250-02-01
VFM250-02-01S



JIS Symbol

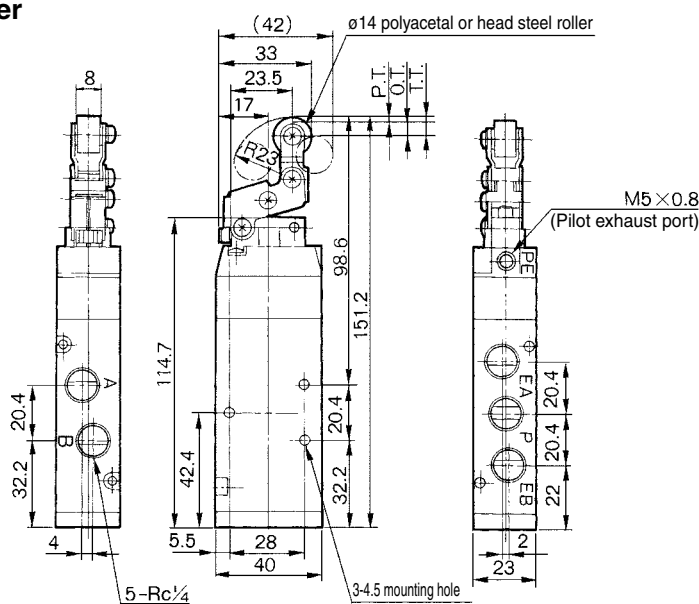


* 0.5 MPa supply

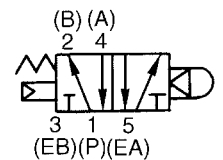
F.O.F. *	8 N
P.T.	2.2 mm
O.T.	4.0 mm
T.T.	6.2 mm

One way roller lever

VFM250-02-02
VFM250-02-02S



JIS Symbol



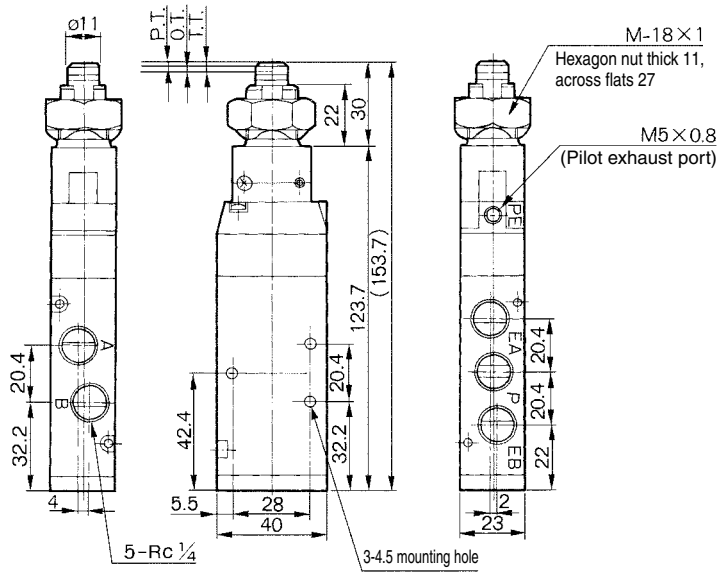
* 0.5 MPa supply

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

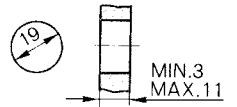
5 Port Mechanical Valve Metal Seal Series VFM200

Series VFM200

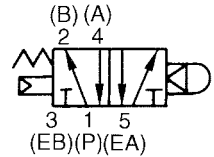
Straight plunger VFM250-02-05



Panel mounting hole



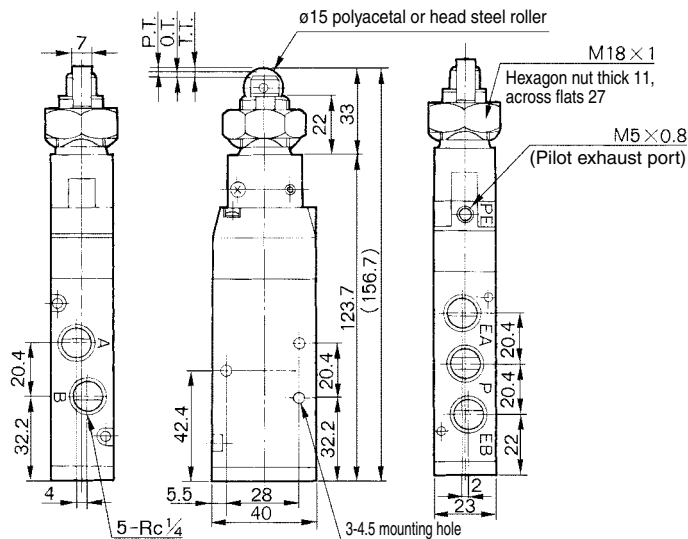
JIS Symbol



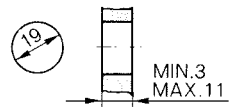
* 0.5 MPa supply

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

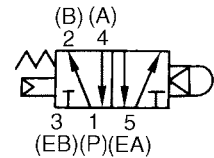
Roller plunger VFM250-02-06 VFM250-02-06S



Panel mounting hole



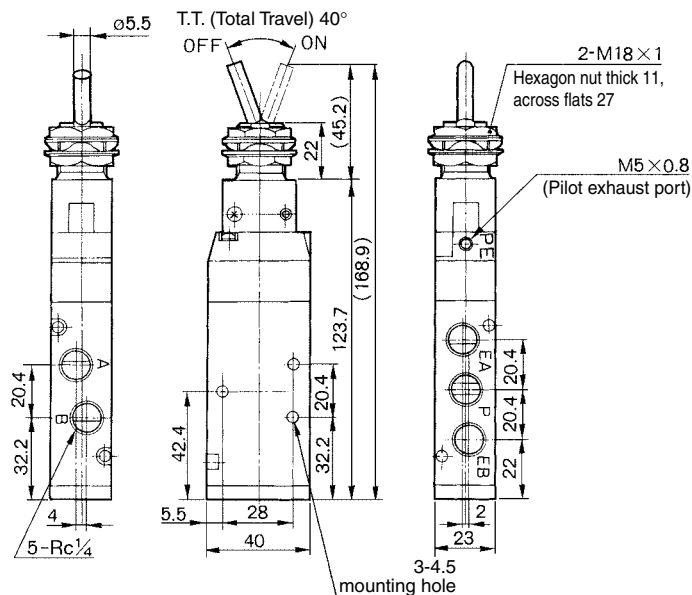
JIS symbol



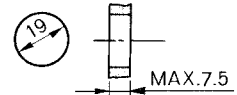
* 0.5 MPa supply

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

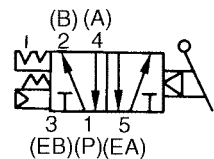
Toggle lever VFM250-02-08



Panel mounting hole



JIS symbol



* 0.5 MPa supply

F.O.F. *	15 N
T.T.	40°

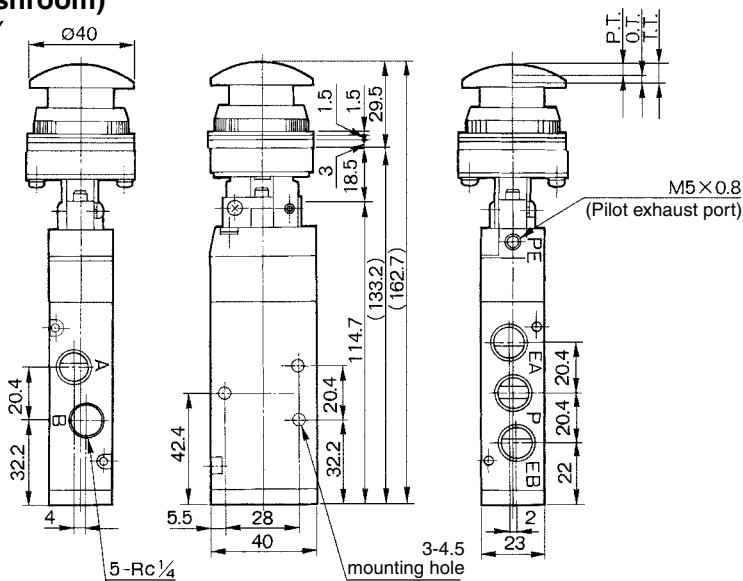
- A
- A
- A
- A
- VM
- VR
- VH
- VHS

Series VFM200

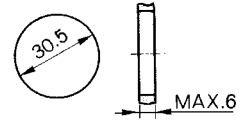
Series VFM200

Push button (Mushroom)

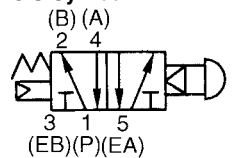
VFM250-02-30R/B/G/Y



Panel mounting hole



JIS Symbol

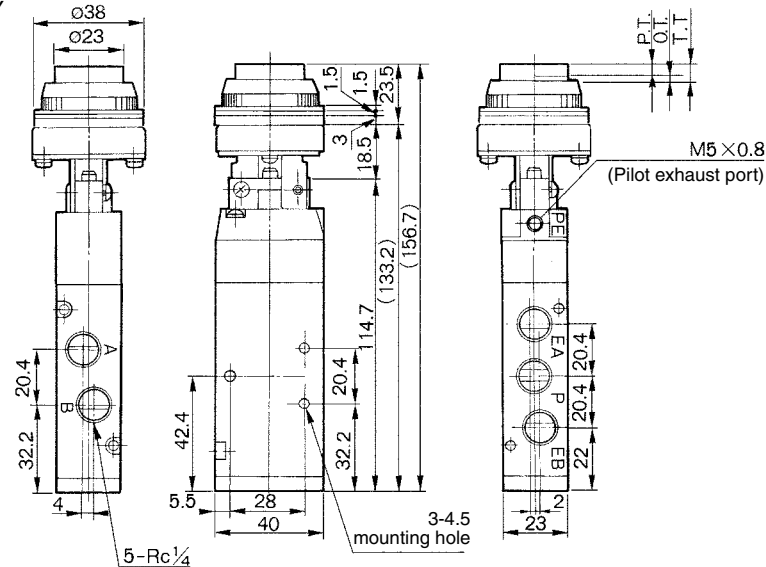


* 0.5 MPa supply

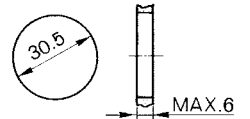
F.O.F. *	21 N
P.T.	4.8 mm
O.T.	1.7 mm
T.T.	6.5 mm

Push button (Extended)

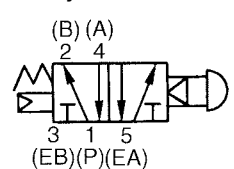
VFM250-02-32R/B/G/Y



Panel mounting hole



JIS Symbol

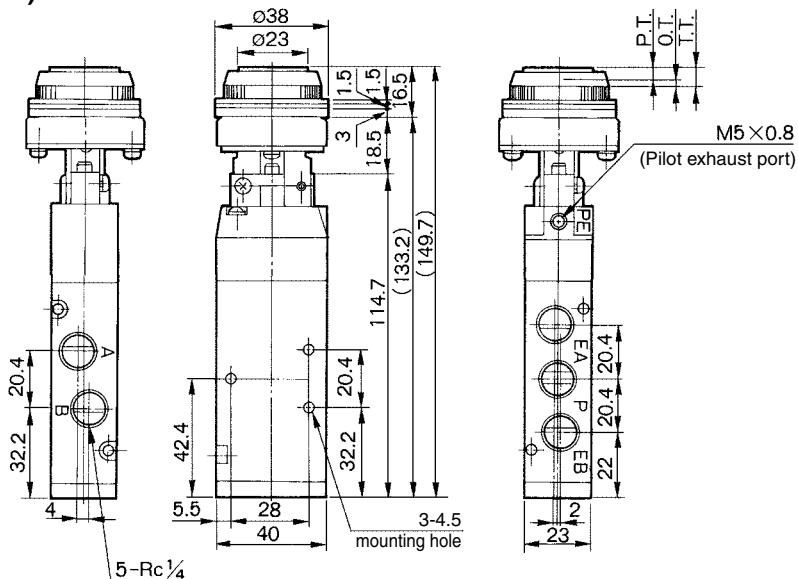


* 0.5 MPa supply

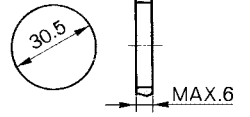
F.O.F. *	21 N
P.T.	4.8 mm
O.T.	1.7 mm
T.T.	6.5 mm

Push button (Flush)

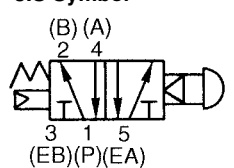
VFM250-02-33



Panel mounting hole



JIS Symbol



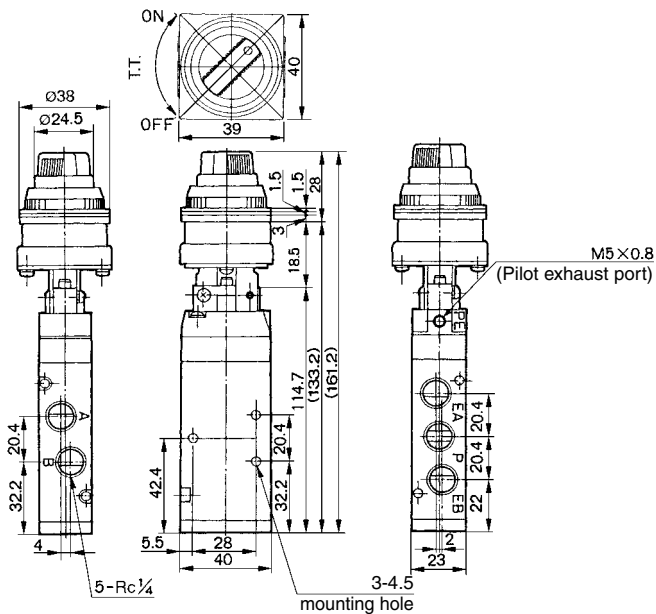
* 0.5 MPa supply

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

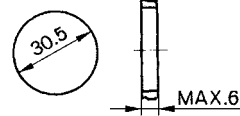
5 Port Mechanical Valve Metal Seal Series VFM200

Series VFM200

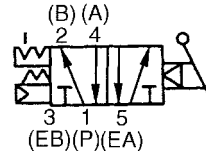
Twist selector (2 position) VFM250-02-34R/B/G/Y



Panel mounting hole



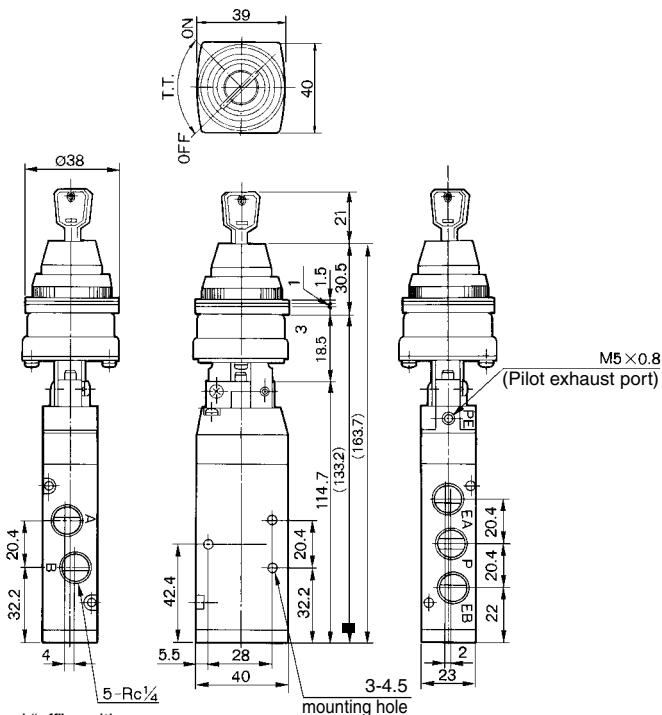
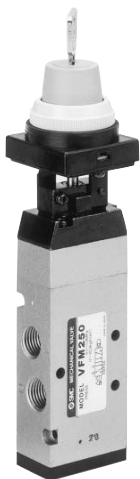
JIS Symbol



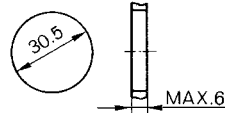
* 0.5 MPa supply

F.O.F. *	23 N
T.T.	90°

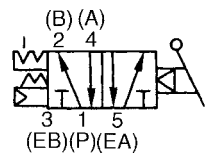
Key selector (2 position) VFM250-02-36



Panel mounting hole



JIS Symbol



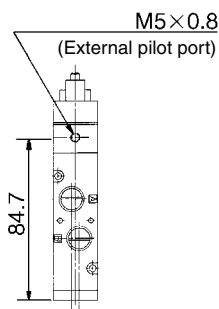
* 0.5 MPa supply

F.O.F. *	26 N
T.T.	90°

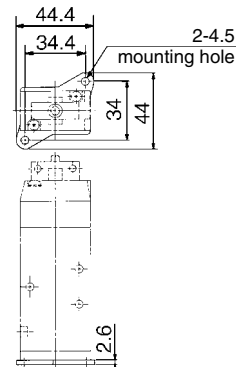


Key can be removed at the "on" and "off" positions.

External pilot type VFM251 type



With foot bracket VFM250-02-□□-F

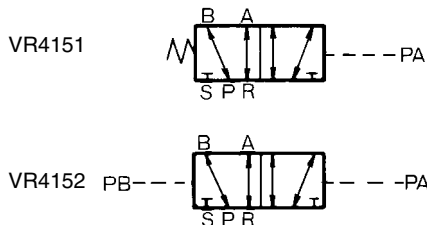


Transmitters: Relay Valve VR4151/4152

Appropriate output sequences are affected according to the signal received from the mechanical valve.



JIS Symbol



⚠ Precautions

Be sure to read before handling. Refer to pages 5-11-2 to 6 for Safety Instruction and Solenoid Valve Precautions.

Environment

⚠ Caution

Operate the valve in an area in which the vibration does not exceed 5 G. Vibrations could cause the valve to malfunction.

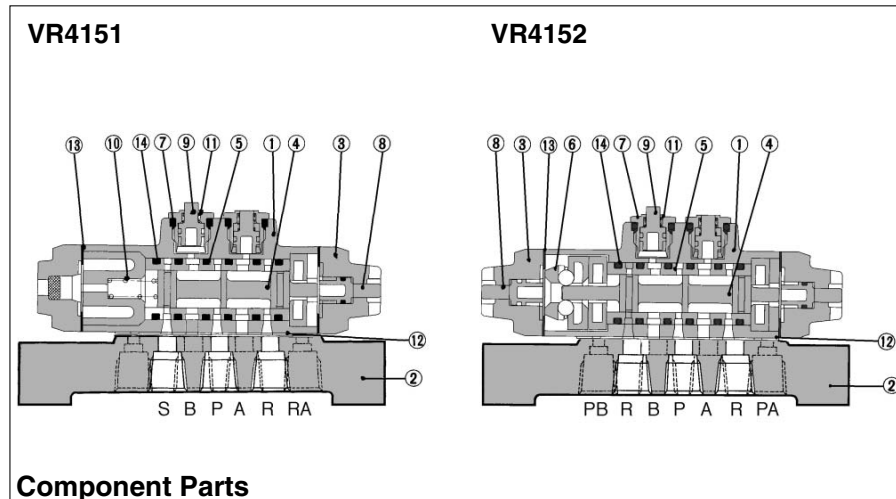
Specifications

Fluid	Air	
Operating pressure	0 to 1.0 MPa	
Pilot pressure	0.15 to 1.0 MPa	
Ambient and fluid temperature	-5 to 60°C (No freezing)	
Effective area	1/8: 7 mm ²	
Port size	1/8	
Weight	Side ported	350 g
	Bottom ported	300 g
Lubrication	Not required (Use turbine oil Class 1 ISO VG32, if lubricated.)	

Model

Function	Sub-plate	Model	Indicator	
Single pilot	W/o sub-plate	VR4151-00-0	○	
		VR4151-00-1		
	W/ sub-plate	Side piping	VR4151-01A-0	○
		Bottom piping	VR4151-01B-0	
		Bottom piping	VR4151-01B-1	
Double pilot	W/o sub-plate	VR4152-00-0	○	
		VR4152-00-1		
	W/ sub-plate	Side piping	VR4152-01A-0	○
		Bottom piping	VR4152-01B-0	
		Bottom piping	VR4152-01B-1	

Construction



Component Parts

No.	Description	Material	No.	Description	Material
①	Valve	ADC	⑧	Manual button	PE
②	Sub-plate	ZDC	⑨	Piston	PE
③	Pilot cover	ADC	⑩	Spring	Steel
④	Spool	Stainless steel	⑪	Spring	Stainless steel
⑤	Sleeve	Stainless steel	⑫	Gasket	NBR
⑥	Detent assembly		⑬	Gasket	NBR
⑦	Piston cover	Brass	⑭	O-ring	NBR

S□A

V□A

S□A

V□A

VM

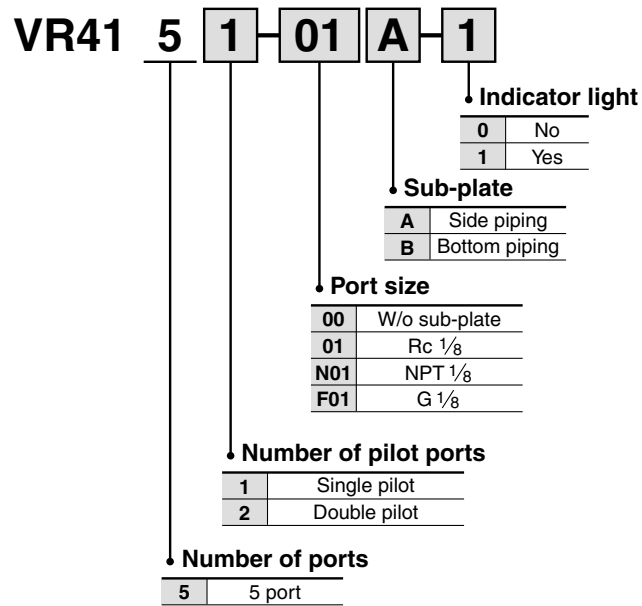
VR

VH

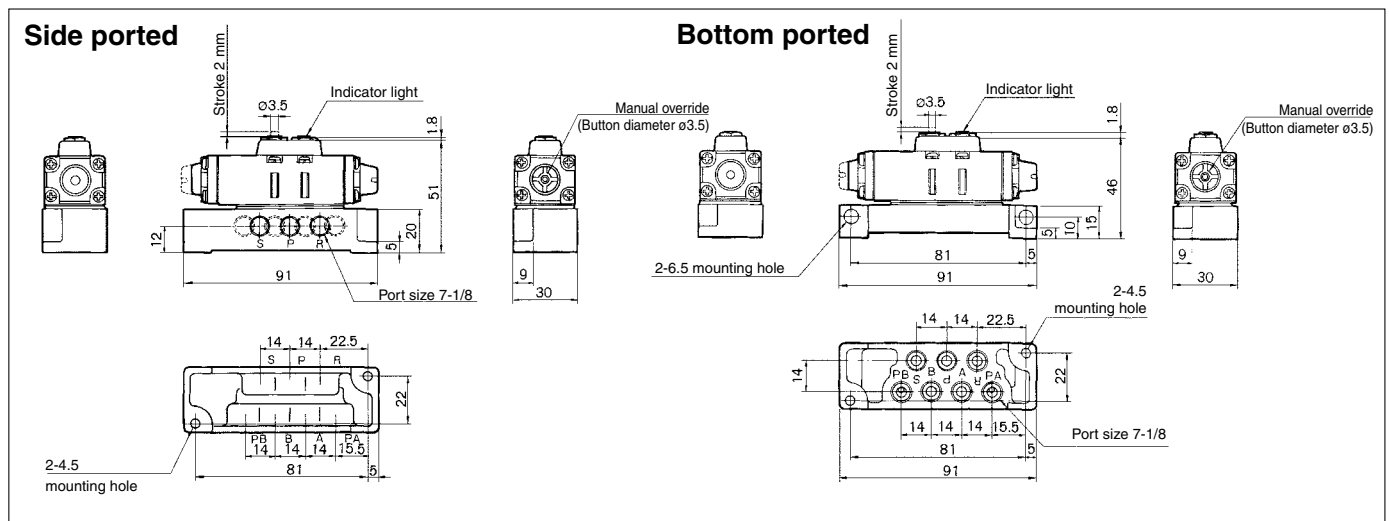
VHS

Series VR4151/4152

How to Order



Dimensions

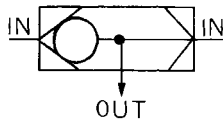


Transmitters: Shuttle Valve VR1210/1220

3 ported check valve with one output and 2 pneumatic signal input ports. Output always supplied by high pressure inlet.



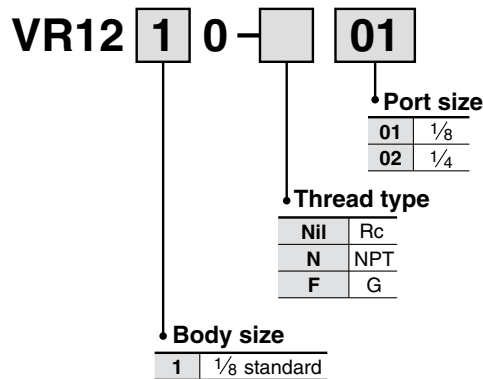
JIS Symbol



Model/Specifications

Model	VR1210-01	VR1220-02
Max. operating pressure	1.0 MPa	
Min. operating pressure	0.05 MPa	
Min. pressure differential	0.05 MPa	
Ambient and fluid temperature	-5 to 60°C (No freezing)	
Effective area	7 mm ²	15 mm ²
Port size	1/8	1/4
Weight	24 g	45 g

How to Order



S□A

V□A

S□A

V□A

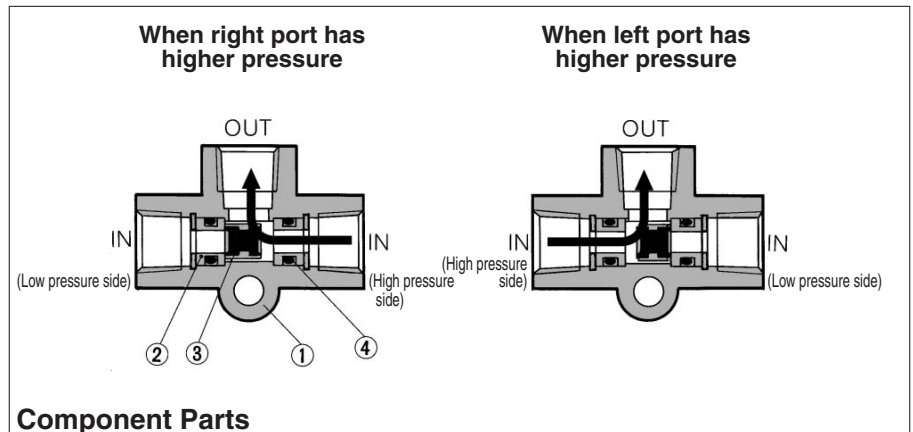
VM

VR

VH

VHS

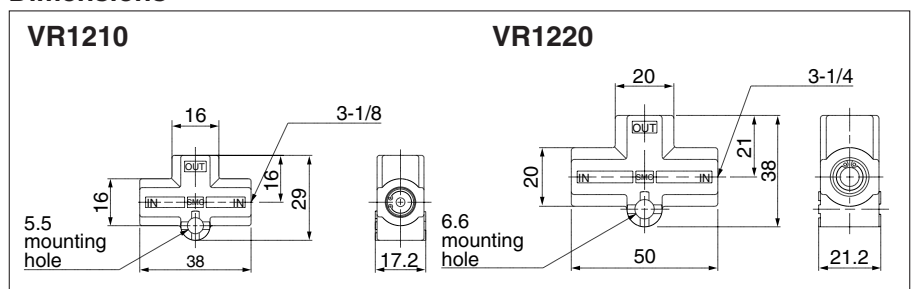
Construction



Component Parts

No.	Description	Material	Note	No.	Description	Material	Note
①	Body	ADC	Metallic plated	③	Valve	Brass, NBR	
②	Valve seat	Brass		④	O-ring	NBR	

Dimensions



Series VR1210/1220

How to Order

VR2110-01-□

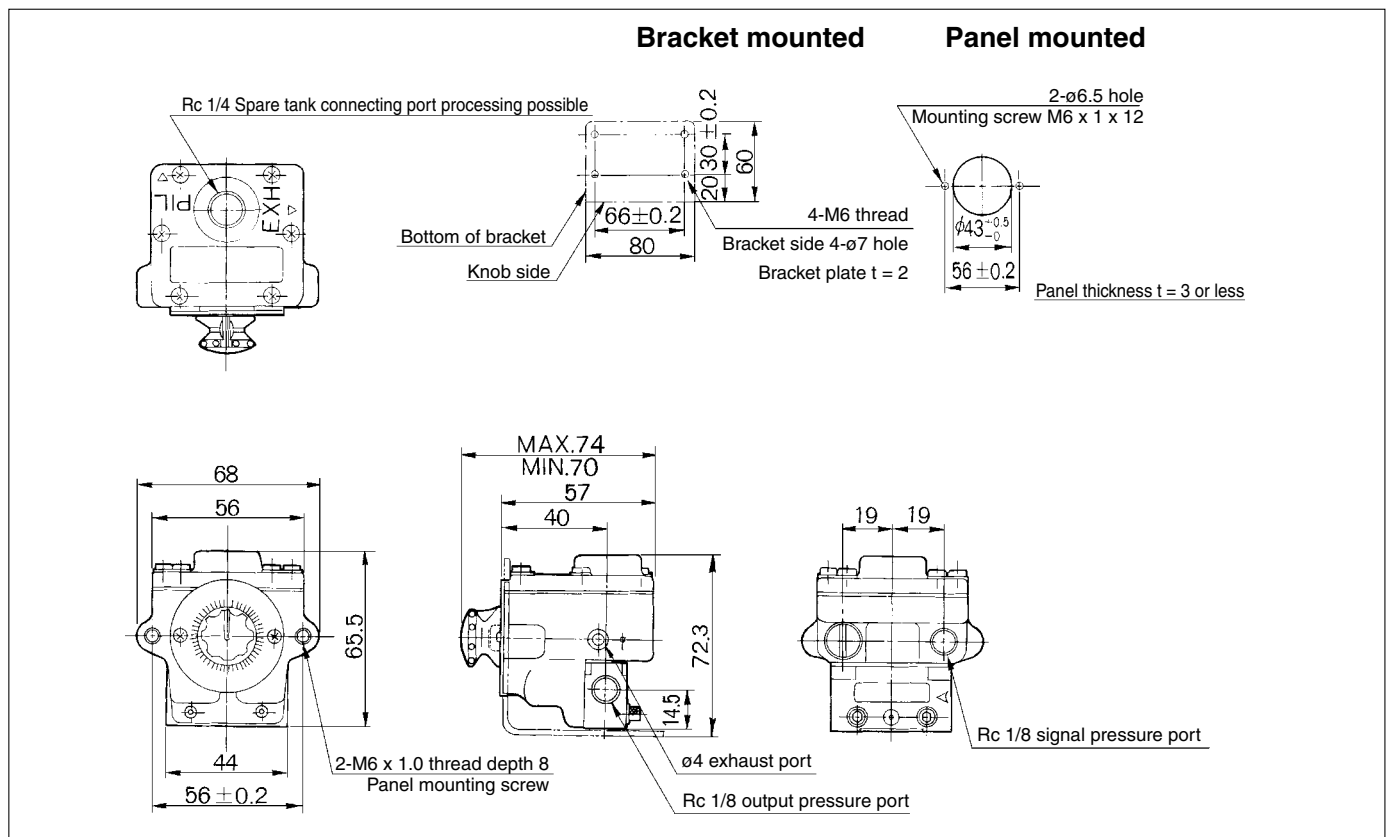
Option

X3	Secondary tank connection board Rc1/4
X102	N.O. N.C. common type (With VM430)

Port size

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

Dimensions



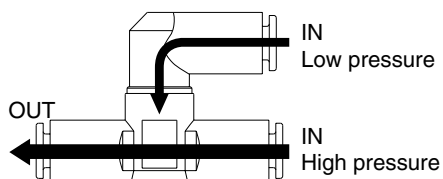
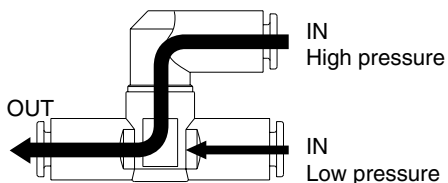


Transmitters: Shuttle Valve with One-touch Fittings VR1210F/1220F

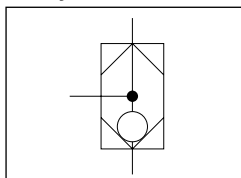
Relay valves for controlling pneumatic signal lines



The air of higher pressure side constantly flows to the OUT side.



JIS Symbol



Model

Model	Applicable tubing diameter									
	Metric size					Inch size				
	3.2	4	6	8	10	1/8"	5/32"	1/4"	5/16"	3/8"
VR1210F	●	●	●	●		●	●	●	●	
VR1220F			●	●	●			●	●	●

Specifications

Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.05 MPa
Ambient and fluid temperature	-5 to 60°C (No freezing)
Applicable tubing material ⁽¹⁾	Nylon, Soft nylon, Polyurethane

Note 1) Use caution about the maximum operating pressure when soft nylon and polyurethane is used. (Refer to "Best Pneumatics Vol. 15".)

Note 2) Brass components are all electroless nickel plated as standard.
(Copper-free)

Flow Rate and Effective Area

Model		VR1210F				VR1220F		
Applicable tubing O.D.	Metric size	ø3.2	ø4	ø6	ø8	ø6	ø8	ø10
	Inch size	ø1/8"	ø5/32"	ø1/4"	ø5/16"	ø1/4"	ø5/16"	ø3/8"
IN → OUT	Flow rate (l/min (ANR))	150	210	420	480	440	680	1000
	Effective area (mm ²)	2.3	3.2	6.4	7.3	6.7	10.4	15.2

Note) Flow rate is the value measured under a pressure of 0.5 MPa and a temperature of 20°C.

How to Order

VR 12 **1** 0 F — **06**

Body size

1	1/8 standard
2	1/4 standard

Shuttle valve

With One-touch fittings

Applicable tubing diameter

Metric size		Inch size	
23	ø3.2*	01	ø1/8"
04	ø4	03	ø5/32"
06	ø6	07	ø1/4"
08	ø8	09	ø5/16"
10	ø10	11	ø3/8"

* For ø3.2, use ø1/8" tubing.

S□A

V□A

S□A

V□A

VM

VR

VH

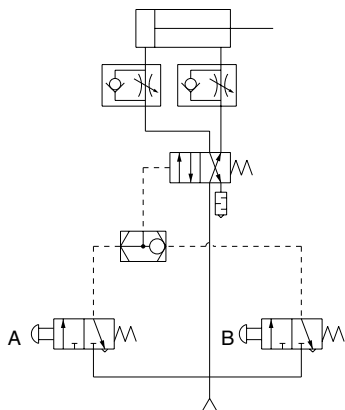
VHS

Series VR1210F/1220F

Example of Operating Circuit

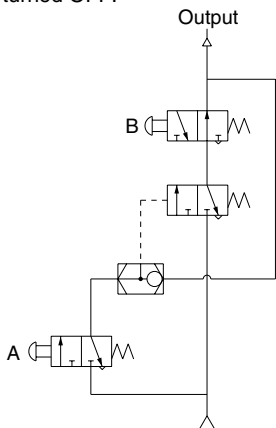
OR circuit

- If either A or B is turned ON, cylinder is actuated.



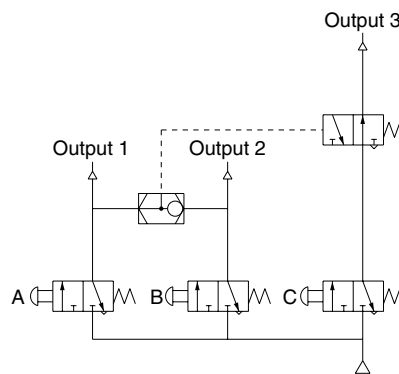
Self-hold circuit

- If A is turned ON, the output turns ON.
- Even though A is turned OFF, the output remains in ON state.
- If B is turned ON in 2. state, the output is turned OFF.

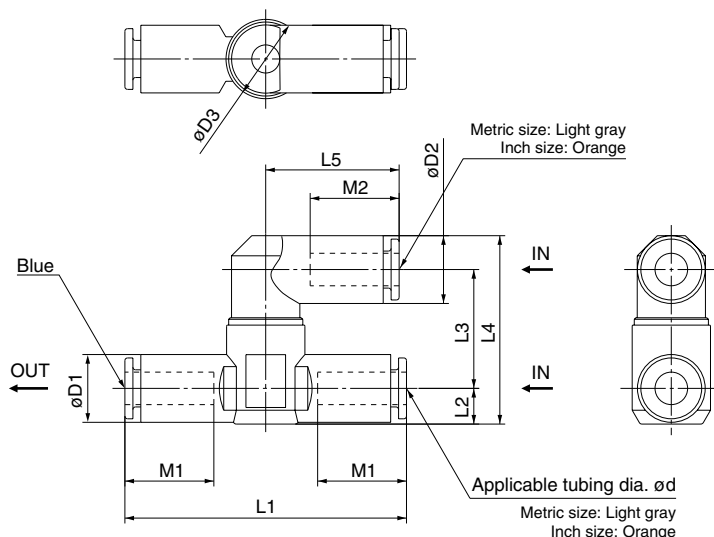


Interlock circuit

- When either A or B is turned ON, even though C turns ON, the output 3 will not be turned ON.



Dimensions



Metric Size

Model	d	D1	D2	D3	L1	L2	L3	L4	L5	M1	M2	Weight (g)
VR1210F-23	3.2	11.4	8.4	14.8	52	6.2	19.4	29.8	17.5	12.7	12.9	21.4
VR1210F-04	4	12.8	10.4		56	6.8	20.3	32.2	21.9	15.7	15.8	25.2
VR1210F-06	6	12.8	12.8		53.2	8.1	22.5	35.6	25.2	16.8	16.8	23.0
VR1210F-08	8	15.2	15.2		60.4			38.2	28.2	18.7	18.7	24.0
VR1220F-06	6	12.8	12.8	19.8	59	7.4	23.9	37.7	25.2	16.8	16.8	27.2
VR1220F-08	8	15.2	15.2		65	8.2		39.7	28.2	18.7	18.7	31.9
VR1220F-10	10	18.5	18.5		71.6	9.8	25.8	44.8	31	20.8	20.8	43.2

Inch Size

Model	d	D1	D2	D3	L1	L2	L3	L4	L5	M1	M2	Weight (g)
VR1210F-01	1/8"	11.4	8.4	14.8	52	6.2	19.4	29.8	17.5	12.7	12.9	21.4
VR1210F-03	5/32"	12.8	10.4		56	6.8	20.3	32.2	21.9	15.7	15.8	25.2
VR1210F-07	1/4"	13.2	13.2		54.4	7.1	22.5	36.2	25.6	16.8	16.8	23.5
VR1210F-09	5/16"	15.2	15.2		60.4	8.1		38.2	28.2	18.7	18.7	24.0
VR1220F-07	1/4"	13.2	13.2	19.8	59	7.4	23.9	37.9	25.6	16.8	16.8	31.4
VR1220F-09	5/16"	15.2	15.2		65	8.2		39.7	28.2	18.7	18.7	31.9
VR1220F-11	3/8"	17.9	18.5		69.8	9.5	25.8	44.5	31	20.8	20.8	53.0



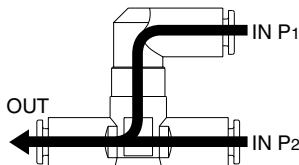
Transmitters: AND Valve with One-touch Fittings VR1211F

Relay valves for controlling pneumatic signal lines

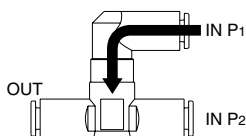
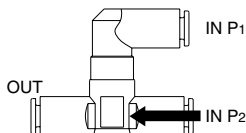


Only when air is supplied to both P₁ and P₂ does air flow to the OUT side.

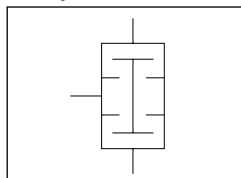
When air pressure differs, pressure in the lower amount flows to the OUT side.



If air is only supplied only to either P₁ or P₂ it, does not flow to the OUT side.



JIS Symbol



Model

Model	Applicable tubing diameter					
	Metric size			Inch size		
	3.2	4	6	1/8"	5/32"	1/4"
VR1211F	●	●	●	●	●	●

Specifications

Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.05 MPa
Ambient temperature and operating fluid temperature	-5 to 60°C (No freezing)
Applicable tubing material ⁽¹⁾	Nylon, Soft nylon, Polyurethane

Note 1) Use caution about the maximum operating pressure when soft nylon and polyurethane is used. (Refer to "Best Pneumatics Vol. 15".)

Note 2) Brass components are all electroless nickel plated as standard. (Copper-free)

Flow Rate and Effective Area

Model		VR1211F			
Applicable tubing O.D.	Metric size	ø3.2	ø4	ø6	—
	Inch size	ø1/8"	ø5/32"	—	ø1/4"
IN → OUT	Flow rate (l/min(ANR))	100	120	150	170
	Effective area (mm ²)	1.5	1.8	2.3	2.6

Note) Flow rate is the value measured under a pressure of 0.5 MPa and a temperature of 20°C.

How to Order

VR 12 1 1 F — 06

Body size
1 1/8 standard

AND valve

With One-touch fittings

Applicable tubing diameter

Metric size	Inch size
23 ø3.2 *	01 ø1/8"
04 ø4	03 ø5/32"
06 ø6	07 ø1/4"

* For ø3.2, use ø1/8" tubing.

S□A

V□A

S□A

V□A

VM

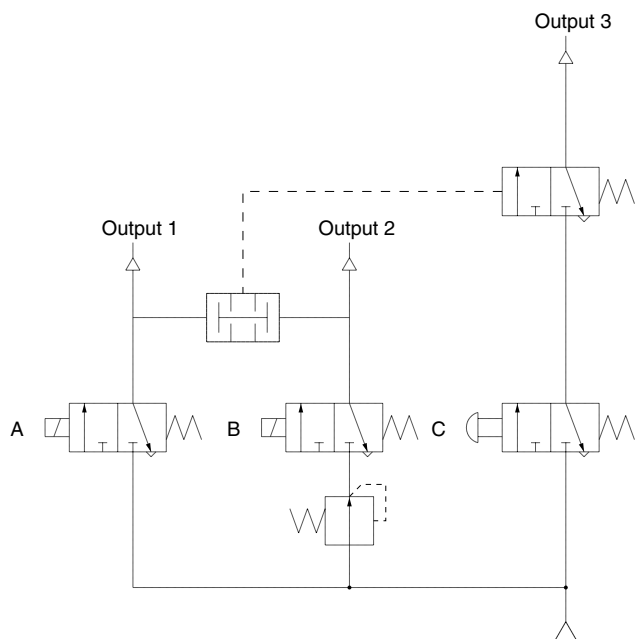
VR

VH

VHS

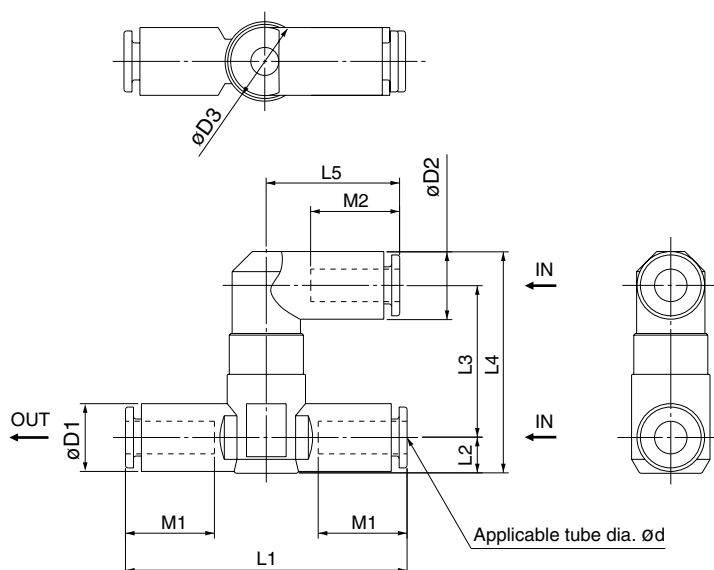
Series VR1211F

Example of Operating Circuit



- If both A and B are turned ON, which are in different pressure conditions, both output 1 and 2 will turn ON.
- Only when output 1 and 2 are in the ON state, and C turns ON, will output 3 turn ON.
- If either A or B is turned OFF, output 3 will not be turned ON, even if C is turned ON.

Dimensions



Metric Size

Model	d	D1	D2	D3	L1	L2	L3	L4	L5	M1	M2	Weight (g)
VR1211F-23	3.2	11.4	8.4	14.8	52	6.2	25.7	36.1	17.5	12.7	12.9	26.4
VR1211F-04	4	12.8	10.4		56	6.8	26.6	38.5	21.9	15.7	15.8	30.4
VR1211F-06	6	12.8	12.8		53.2		28.8	41.9	25.2	16.8	16.8	25.0

Inch Size

Model	d	D1	D2	D3	L1	L2	L3	L4	L5	M1	M2	Weight (g)
VR1211F-01	1/8"	11.4	8.4	14.8	52	6.2	25.7	36.1	17.5	12.7	12.9	26.4
VR1211F-03	5/32"	12.8	10.4		56	6.8	26.6	38.5	21.9	15.7	15.8	30.4
VR1211F-07	1/4"	13.2	13.2		54.4		7.1	28.8	42.5	25.6	16.8	16.8

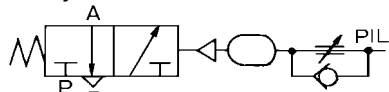


Transmitters: Time Delay Valve VR2110

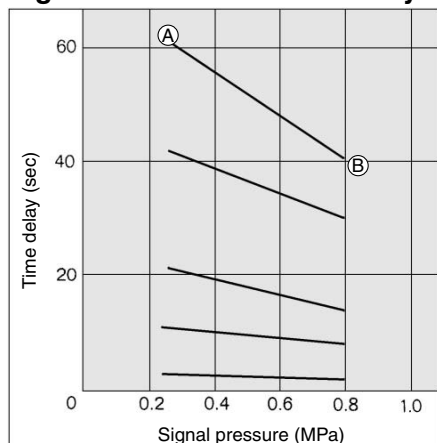
Combination of adjustable orifice and fixed flow allows transmission of a pneumatic signal after a fixed time period.



JIS Symbol

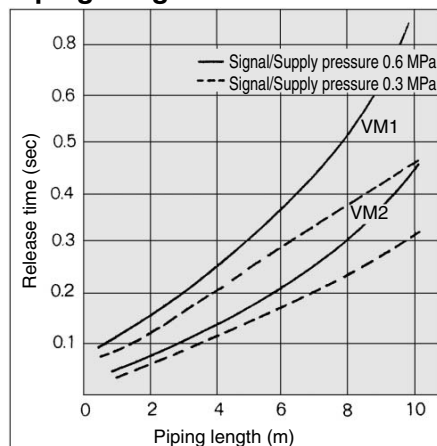


Signal Pressure vs. Time Delay



Example) Ⓐ is the point, which is set by the input signal pressure 0.25 MPa, with a delay time of 60 sec. With the same status, if the input signal pressure is increased to 0.8 MPa, the delay time varies to the Ⓑ point (≒ 40 sec).

Piping Length vs. Release Time



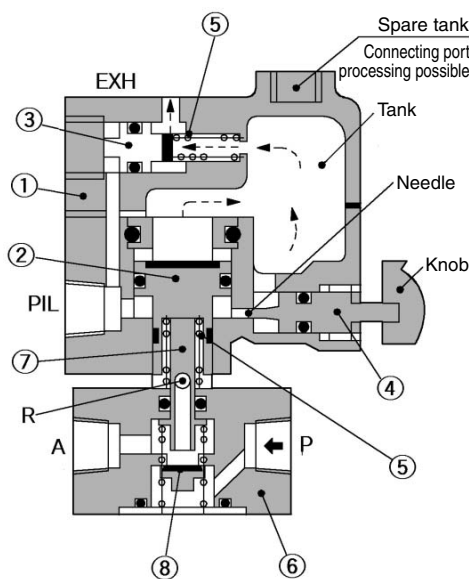
If the input signal (PIL) is turned OFF, the release time of the time delay valve changes depending upon the effective area of the valve and the length of piping. Please refer to the above graph for the standard values.

Model/Specifications

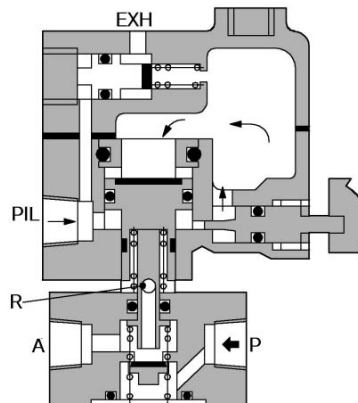
Model	VR2110-01
Supply pressure	0.1 to 1.0 MPa
Signal pressure	0.25 to 0.8 MPa
Time delay	0.5 to 60 s
Repeatability	±10% F.S.
Operating and fluid temperature	-5 to 60°C (No freezing)
Effective area	2.5 mm ²
Port size	1/8
Weight	500 g

Construction

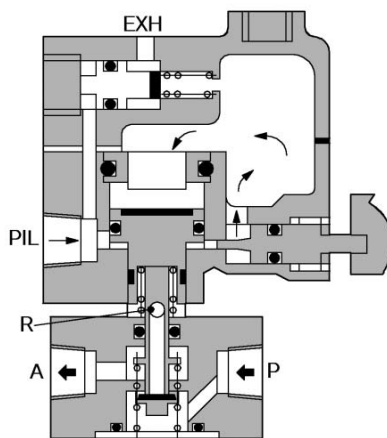
Non-actuated



Actuated before time set



Actuated after time set



Component Parts

No.	Description	Material	Note	No.	Description	Material	Note
①	Body	ADC	Metallic plated	⑤	Spring	Steel	
②	Piston	Brass, NBR	Rubber lined	⑥	Body	ZDC	Metallic plated
③	Piston	Brass, NBR	Rubber lined	⑦	Plunger	Stainless steel	
④	Needle	Brass		⑧	Valve	Brass, NBR	Rubber lined

S□A

V□A

S□A

V□A

VM

VR

VH

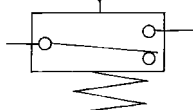
VHS

Transmitters: Pneumatic-electric Relay VR3200/3201

Pneumatic-electric relay converts pneumatic signal to electric relay.



JIS Symbol



⚠ Precautions

Be sure to read before handling. Refer to pages 5-11-2 to 6 for Safety Instruction and Solenoid Valve Precautions.

Piping

⚠ Warning

When connecting a pipe fitting to the IN port, place the wrench over the hexagon portion of the lid.

If the wrench is placed over the microswitch body, the neck of the microswitch could break.

Model/Specifications

Model	VR3200-01	VR3201-01
Construction	Open type	Splashproof (IP44 equivalent)
Weight	130 g	260 g
Operating pressure	0.1 to 1.0 MPa	
Ambient and fluid temperature	-5 to 60°C (No freezing)	
Contacts	1 ab	
Port size	1/8	

Microswitch Rating

Voltage	Non-inductive load (A)				Inductive load (A)			
	Resistance load		Light load		Inductive load		Electric motor load	
	N.C.	N.O.	N.C.	N.O.	N.C.	N.O.	N.C.	N.O.
125 VAC	15	15	4	2	10	10	4	2
250 VAC	15	15	3	1.5	10	10	3	1.5
8 VDC	15	15	3	1.5	15	15	5	2.5
14 VDC	15	15	3	1.5	10	10	5	2.5
30 VDC	6	6	3	1.5	5	5	5	2.5
125 VDC	0.5	0.5	0.3	0.3	0.05	0.05	0.05	0.05
250 VDC	0.25	0.25	0.2	0.2	0.03	0.03	0.03	0.03

How to Order

VR320 0 01

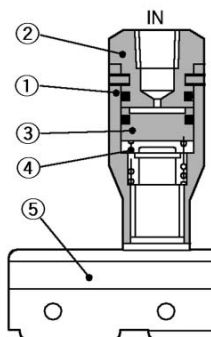
• Port size

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

• Construction

0	Open type
1	Splashproof (IP44 equivalent)

Construction

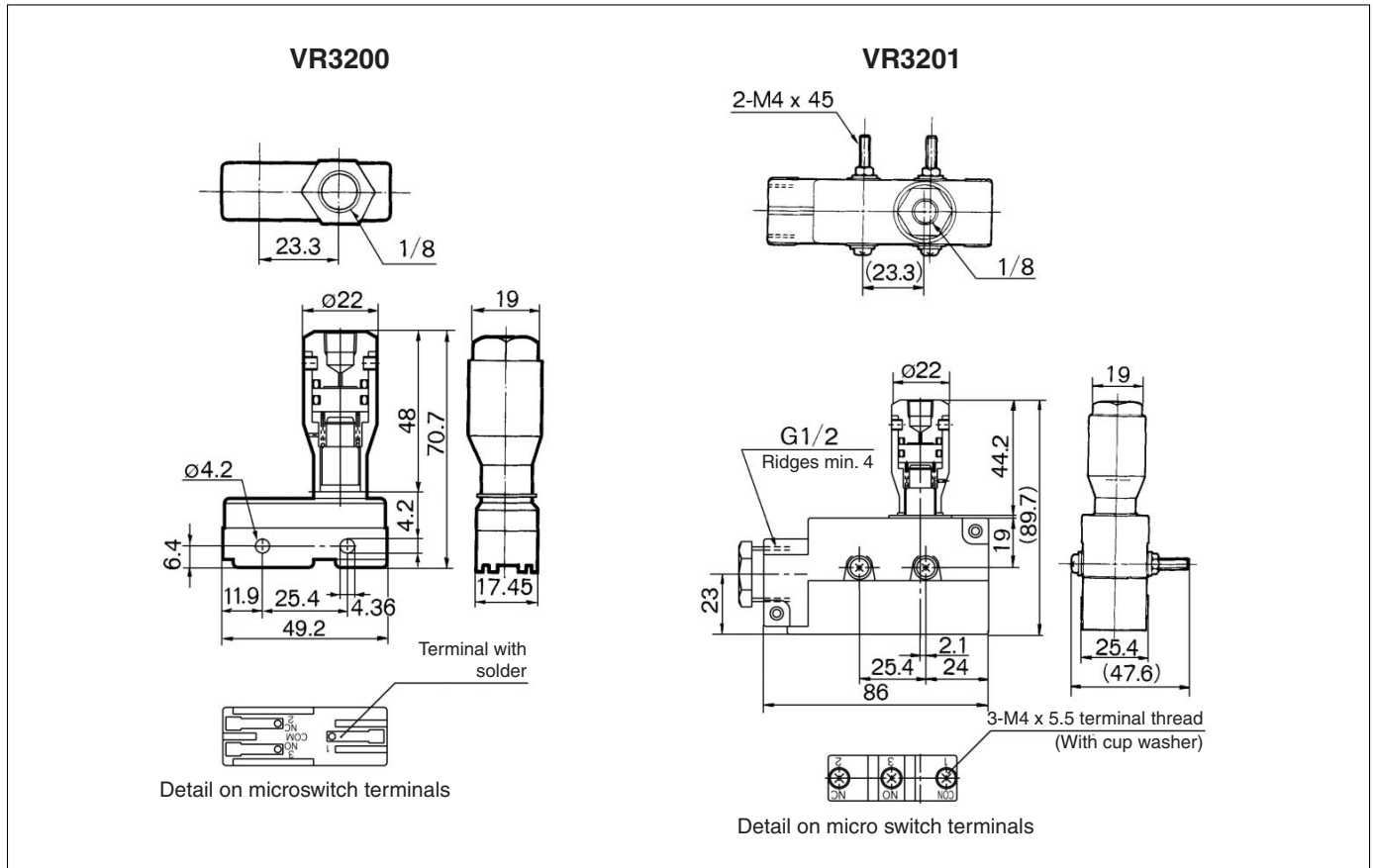


Component Parts

No.	Description	Material	Note	No.	Description	Material	Note
①	Body	Brass		④	Spring	Stainless steel	
②	Cap	Brass		⑤	Microswitch		Contacts 1 ab
③	Piston	POM					

Series VR3200/3201

Dimensions



Transmitters: Pneumatic Indicator VR3100

Indicates the presence of pneumatic pressure. It is equivalent to the pilot lamp of an electrical system.



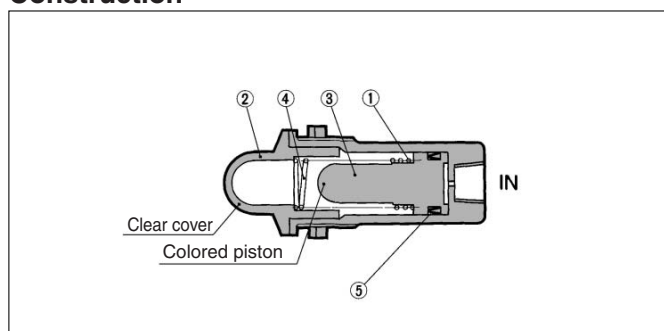
JIS Symbol



Model/Specifications

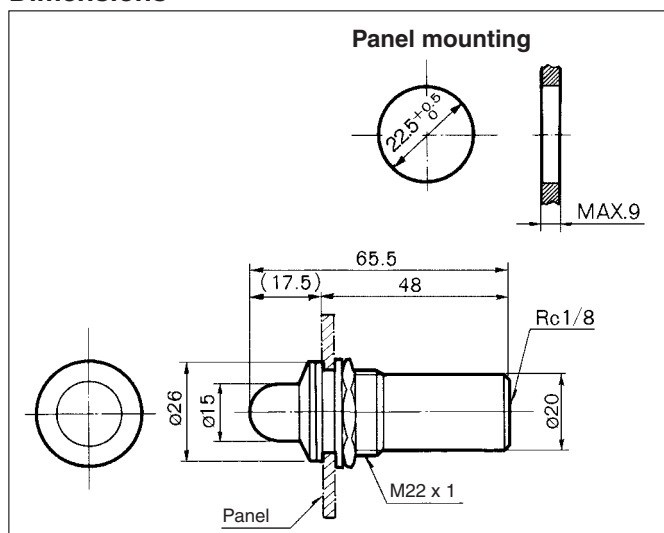
Model	VR3100-01R	VR3100-01G	VR3100-01O
Operating pressure	0.1 to 0.8 MPa		
Ambient and fluid temp.	-5 to 60°C (No freezing)		
Frequency	100 c.p.m. or less		
Color of indicator	Red	Green	Orange
Port size	Rc 1/8		
Weight	40 g		

Construction



No.	Description	Material	Note
①	Body	Aluminum alloy	
②	Indicator window	Acrylic	
③	Piston	POM	
④	Spring	Stainless steel	
⑤	Packing	NBR	

Dimensions



Transmitters: Miniature Pneumatic Indicator VR3110

This is an ultra-compact air indicator light to monitor the presence of air pressure. It is equivalent to the pilot lamp of an electrical system.



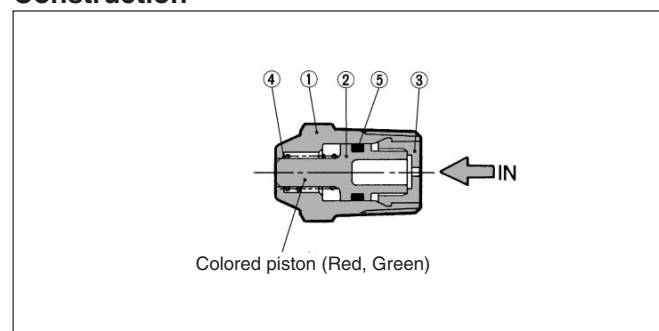
JIS Symbol



Model/Specifications

Model	VR3110-01R	VR3110-01G
Color of indicator	Red	Green
Operation	Piston style	
Operating pressure	0.15 to 1.0 MPa	
Ambient and fluid temp.	-5 to 60°C (No freezing)	
Frequency	300 c.p.m. or less	
Port size	R 1/8	
Weight	6 g	

Construction



No.	Description	Material	Note
①	Body	Brass	
②	Piston A	POM	
③	Plug	PE	
④	Spring	Stainless steel	
⑤	O-ring	NBR	

Dimensions

