



Mechanical Valve Series VM

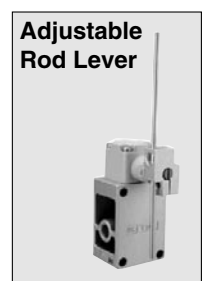
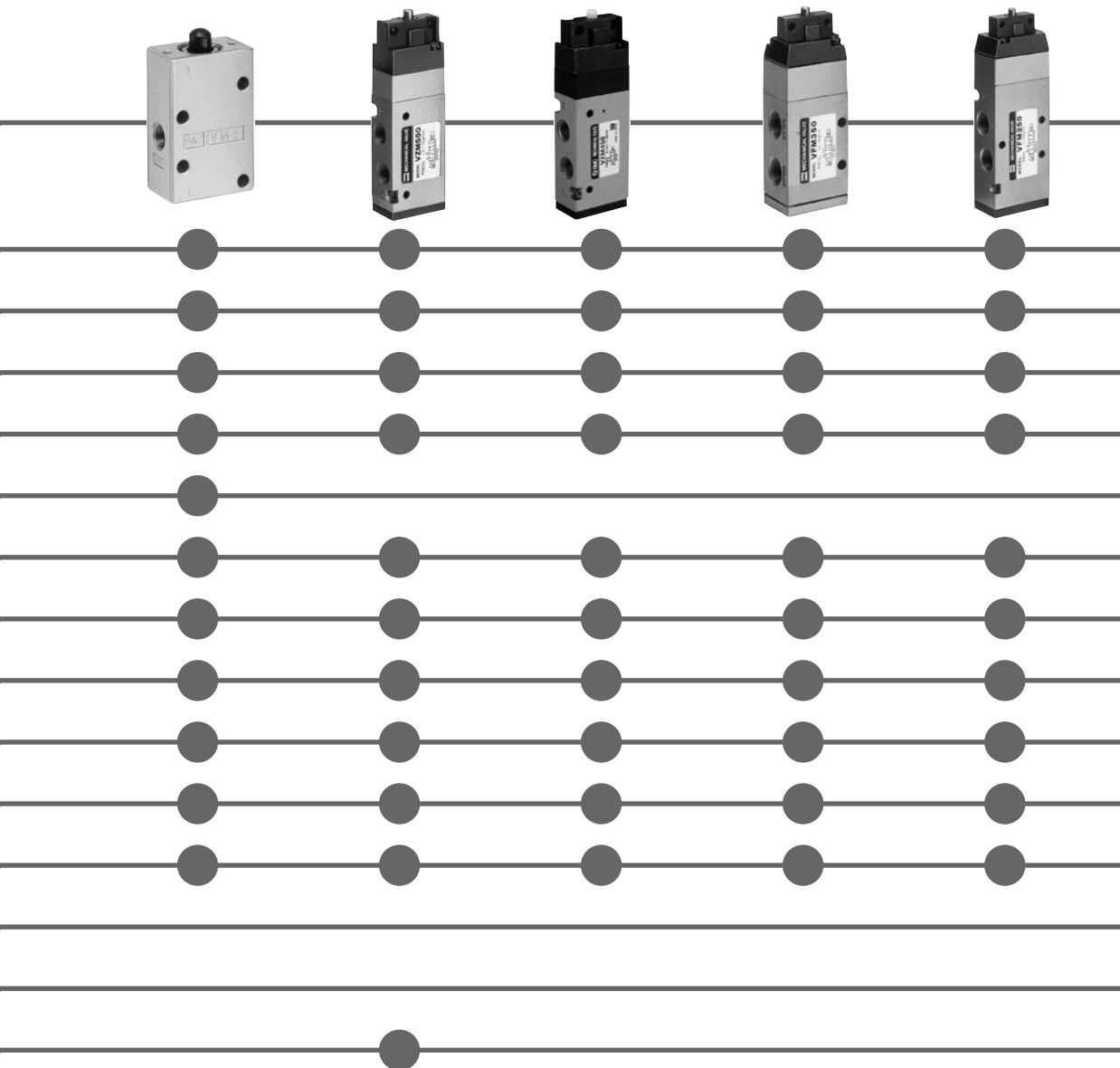
Model	VM1000	VM100	VM200
Dimensions (mm)	Side piping 11 X 36 X 16 Bottom piping 11 X 28 X 25	Side piping 17 X 44 X 25 Bottom piping 17 X 44 X 30	25 X 40 X 52

	VM1000	VM100	VM200
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		●	●

	P2-44	P2-48	P2-56
Effective Area (Nl/min)	1 (49.03)	2.5 (124.81)	19 (891.50)
Number of Ports	2, 3	2, 3	2, 3
Function	Poppet 	Poppet 	Poppet

Mechanical Valve


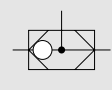


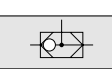

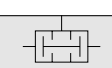

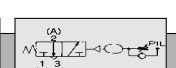





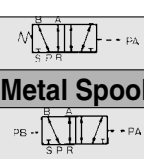

VM400 21 X 35 X 53	VZM500 18 X 28 X 87	VZM400 18 X 30 X 91	VFM300 26 X 35 X 94	VFM200 23 X 40 X 115	VM800 30 X 40 X 57
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P2-62 7 (338.77) 3 Balanced Poppet 	P2-77 10.8 (534.90) 5 Rubber Spool 	P2-71 9.9 (490.33) 5 Metal Spool 	P2-84 18 (891.50) 5 Rubber Spool 	P2-90 18 (891.50) 5 Metal Spool 	P2-68 6 (294.20) 3 Balanced Poppet
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* Dual pressure available only on external pilot.

Related Products

			Effective Area (mm ²) (NI/min)	No. of Ports	Function
Shuttle Valve Dimensions (mm) VR1210: 17.2 X 38 X 29 VR1220: 21.2 X 50 X 38	VR1210		7 (338.77)	3	
	VR1220		15 (722.12)	3	
Shuttle valve With One-Touch Fittings	VR12□0F			3	
AND valve With One-Touch Fittings	VR1211F			3	
Time Delay Valve Dimensions (mm) 70 X 68 X 66	VR2110		2.5 (124.81)	3	
Pneumatic Indicator Dimensions (mm) ø26 X 66	VR3100		-	-	
Miniature Pneumatic Indicator Dimensions (mm) ø12 X 17	VR3110		-	-	
Relay Valve Dimensions (mm) Side piping: 30 X 53 X 91 Bottom piping: 30 X 48 X 91	VR4151		7 (338.77)	5	Metal Spool 
	VR4152				

⚠ Precautions

Mounting

⚠ Warning

① Conditions for mechanical operation

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

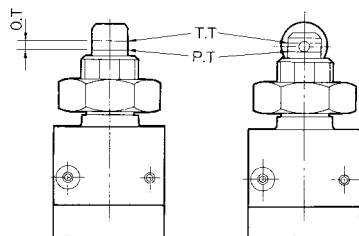
• Actuator Stroke

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

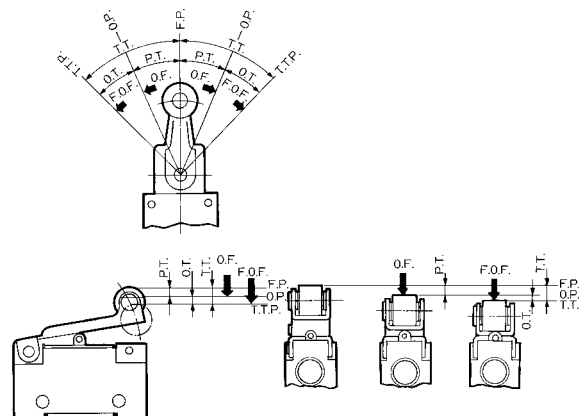
Operating stroke: P.T. + 0.5 X O.T.

Series	Actuator	Actuator Stroke (mm)
VM1000	Basic	T.T.=4.8mm (T.T.=2.5mm)
	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
VM200	Basic	4.0 to 4.9
	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
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 styles, there is a groove indicating P.T. and T.T. for stroke adjustment.



Definition of Symbols



- 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 operating 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.

Air Flow Calculation

Refer to the p.0-36 for air flow calculations.

$$Q = 22.25 \sqrt{P_L(P_H - P_L)} \sqrt{\frac{273}{\theta + 273}} \dots\dots\dots(1 \text{ formula})$$

Cautions

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

⚠️ Precautions

Mounting

⚠️ Warning

② Conditions for mechanical operation

● Cam and dog angle and maximum speed

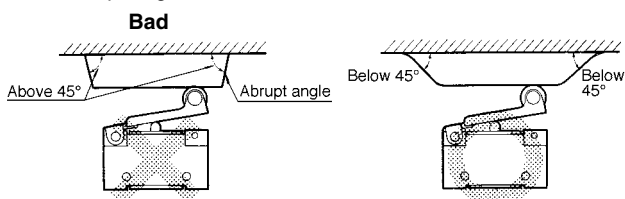
Select the angle and the maximum speed of the operating cam and the dog of the mechanism from within the selection range given in the table below.

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

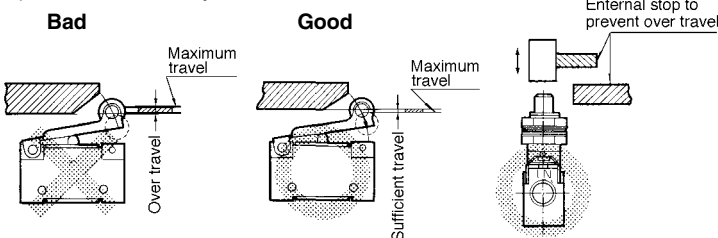
Series	Actuator	Angle limit switch actuator	Max. speed limit switch actuator m/s
VM1000	Roller lever	30°	0.7
		45°	0.3
	One way roller lever	30°	0.7
		45°	0.3
VM100 VM200 VM400	Roller lever	30°	0.7
		45°	0.3
	One way roller lever	30°	0.7
		45°	0.3
	Straight plunger	—	0.2
	Roller plunger	30°	0.3
	Cross 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	

Installation recommendations

1) Avoid abrupt angles on limit switch actuator.



2) Avoid unnecessary travel.



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 styles, the selector styles, and the flip toggle styles 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.

Environment

⚠️ Cautions

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.

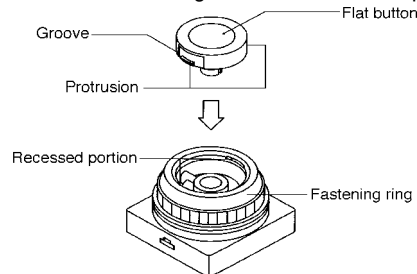
Failure to observe this precaution could lead to unsafe operation, such

How to Change the Button

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

① Push button (Flush style)

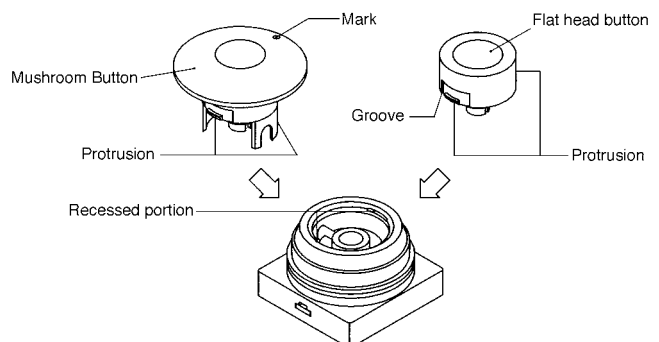
- Installation ... Of the four colors, red, green, black, and yellow, select and align the protruding portion of the button with the recessed portion of the body and push in.
- Removal ... Remove the fastening ring and insert the tip of a small flat screwdriver into the groove of the button to pry it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



② Push Button (Mushroom and extended styles)

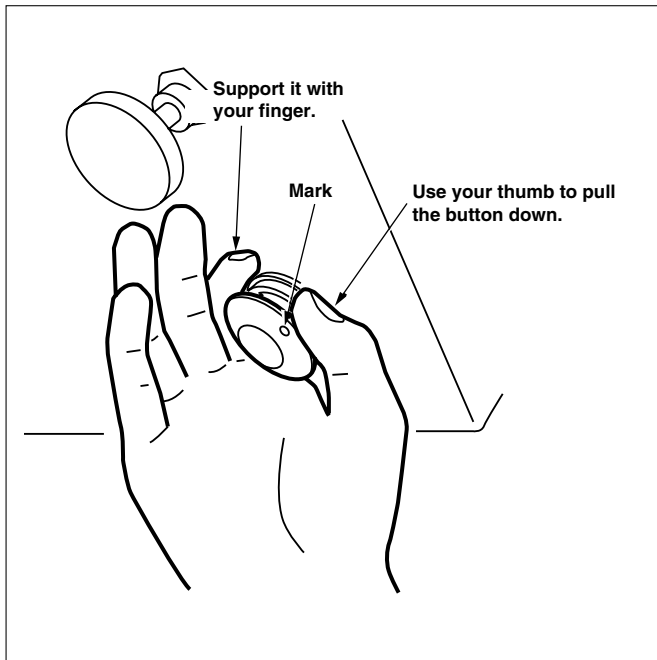
At the time of shipment, only 1 button of the color that you specified is attached to the body.

	Mushroom style	Extended style
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 button 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

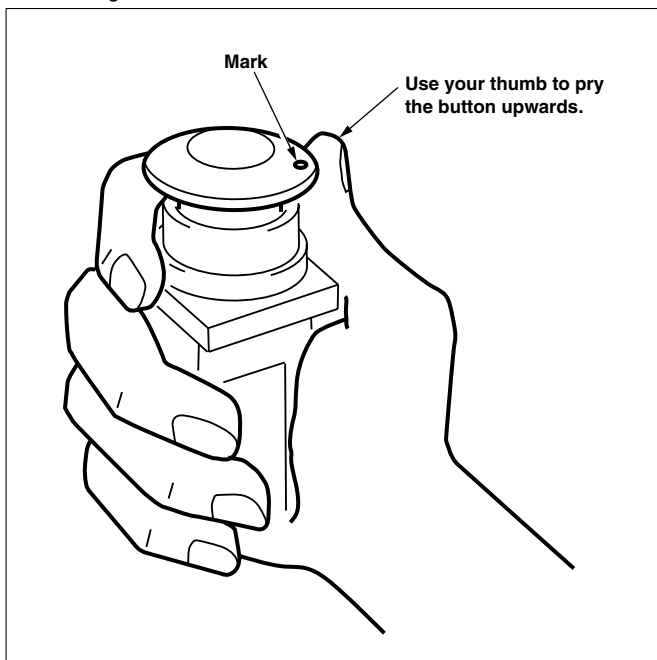


Replacement Parts

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

Removing the valve as a unit.



Micro Mechanical Valve

Series VM1000

Miniature structure requires little mounting space.

Built-in hose nipple connection.

Porting options: Side Porting

Bottom Porting

Over Travel after actuation

(mechanical operated styles).



Specifications

Style of valve	N.C. poppet
Number of ports	2 or 3
Total travel	4.8mm (Basic)
Piping	Side or bottom
Fluid	Air
Operating pressure	0 to 0.8MPa
Ambient and fluid temperature	-5 to 60°C (No freezing)
Effective area (Nl/min)	1mm ² (49.03)
Lubrication	Not required/Turbine oil #1 (ISO VG32)
Fitting	With hose nipple
Weight (Basic)	6g

Options

Total travel (T.T.)	2.5mm (Basic)
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- 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. styles.
- T.T. 2.5mm is available for basic style only.

Model

	Actuator	Piping	No. of ports	Applicable tube		Notes	
				T0425	TU0425/T0403		
Mechanical operation	Basic	Side	3	VM1000-4N-00	VM1000-4NU-00		
			2	VM1100-4N-00	VM1100-4NU-00		
		Bottom	3	VM1010-4N-00	VM1010-4NU-00		
			2	VM1110-4N-00	VM1110-4NU-00		
	Roller lever	Side	3	VM1000-4N-01	VM1000-4NU-01		
			2	VM1100-4N-01	VM1100-4NU-01		
		Bottom	3	VM1010-4N-01	VM1010-4NU-01		
			2	VM1110-4N-01	VM1110-4NU-01		
	One way roller lever	Side	3	VM1000-4N-02	VM1000-4NU-02		
			2	VM1100-4N-02	VM1100-4NU-02		
		Bottom	3	VM1010-4N-02	VM1010-4NU-02		
			2	VM1110-4N-02	VM1110-4NU-02		
Manual operation	Toggle lever	Side	3	VM1000-4N-08	VM1000-4NU-08		
			2	VM1100-4N-08	VM1100-4NU-08		
		Bottom	3	VM1010-4N-08	VM1010-4NU-08		
			2	VM1110-4N-08	VM1110-4NU-08		
	Push button	Side	3	VM1000-4N-32R	VM1000-4NU-32R	Red	
			2	VM1100-4N-32R	VM1100-4NU-32R	Red	
			Bottom	3	VM1010-4N-32R	VM1010-4NU-32R	Red
				2	VM1110-4N-32R	VM1110-4NU-32R	Red
		Side	3	VM1000-4N-32B	VM1000-4NU-32B	Black	
			2	VM1100-4N-32B	VM1100-4NU-32B	Black	
			Bottom	3	VM1010-4N-32B	VM1010-4NU-32B	Black
				2	VM1110-4N-32B	VM1110-4NU-32B	Black
		Side	3	VM1000-4N-32G	VM1000-4NU-32G	Green	
			2	VM1100-4N-32G	VM1100-4NU-32G	Green	
			Bottom	3	VM1010-4N-32G	VM1010-4NU-32G	Green
				2	VM1110-4N-32G	VM1110-4NU-32G	Green

How To Order

VM1 0 0 0 - 4N - 00 R

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

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

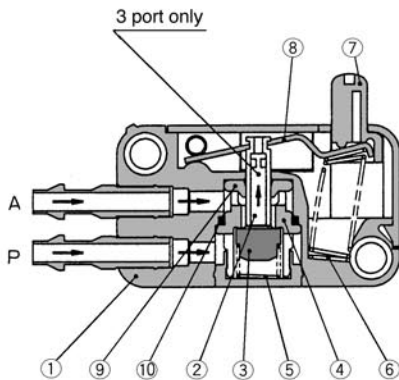
*Basic only.

• Piping	
0	Side
1	Bottom

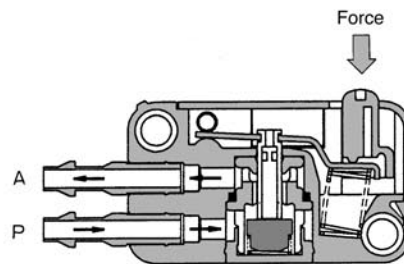
• Number of ports	
0	3 ports
1	2 ports

Construction

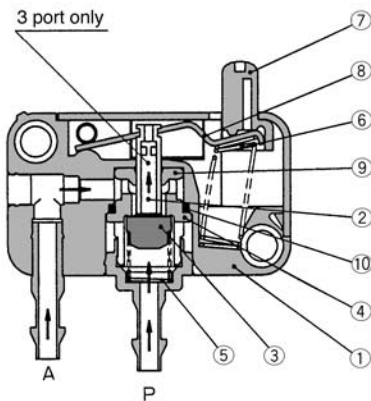
Side Piping/Non-actuated



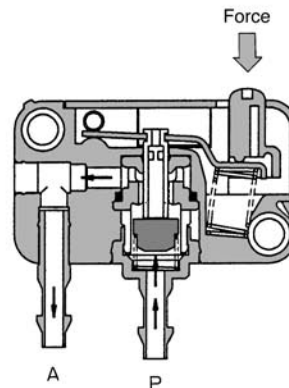
Side Piping/Actuated



Bottom Piping



Bottom Piping/Actuated



Component Parts

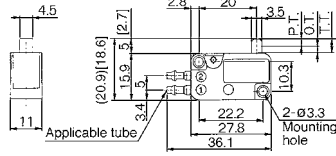
No.	Description	Material	Notes
①	Body	PBT	
②	Valve rod	Polyacetal	
③	Valve	NBR	
④	Retainer	Polyacetal	
⑤	Spring	Stainless steel	

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

VM1000

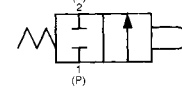
Series VM1000/Side Piping

Basic/VM1000-4N-00, VM1000-4NU-00
VM1100-4N-00, VM1100-4NU-00

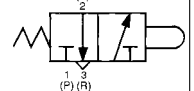


[]: T.T.=2.5mm

JIS Symbol/2 port



3 port

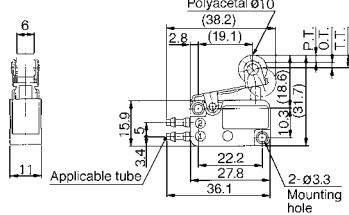


* 0.5MPa supply

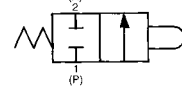
		Applicable tube	
		T0425	TU0425, T0403, TS0425
Side piping	3 ports	VM1000-4N-00	VM1000-4NU-00
	2 ports	VM1100-4N-00	VM1100-4NU-00
F.O.F.*		6N	
P.T.		2.5mm[2mm]	
O.T.		2.3mm[0.5mm]	
T.T.		4.8mm[2.5mm]	

Roller Lever/VM1000-4N-01, VM1000-4NU-01

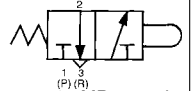
VM1100-4N-01, VM1100-4NU-01



JIS Symbol/2 port



3 port

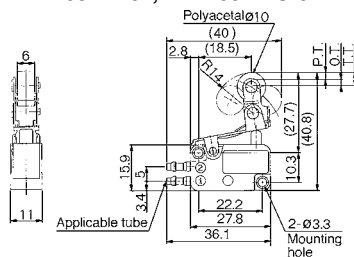


* 0.5MPa supply

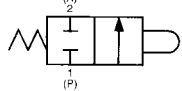
		Applicable tube	
		T0425	TU0425, T0403, TS0425
Side piping	3 ports	VM1000-4N-01	VM1000-4NU-01
	2 ports	VM1100-4N-01	VM1100-4NU-01
F.O.F.*		6N	
P.T.		2.5mm	
O.T.		2mm	
T.T.		4.5mm	

One Way Roller Lever/VM1000-4N-02, VM1000-4NU-02

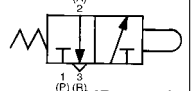
VM1100-4N-02, VM1100-4NU-02



JIS Symbol/2 port



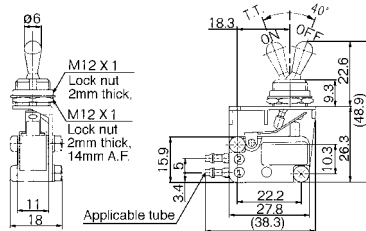
3 port



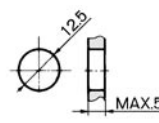
* 0.5MPa supply

		Applicable tube	
		T0425	TU0425, T0403, TS0425
Side piping	3 ports	VM1000-4N-02	VM1000-4NU-02
	2 ports	VM1100-4N-02	VM1100-4NU-02
F.O.F.*		6N	
P.T.		2.5mm	
O.T.		2mm	
T.T.		4.5mm	

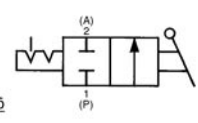
Toggle Lever/VM1000-4N-08, VM1000-4NU-08
VM1100-4N-08, VM1100-4NU-08



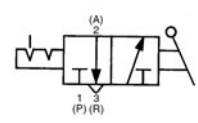
Panel mounted hole



JIS Symbol/2 port



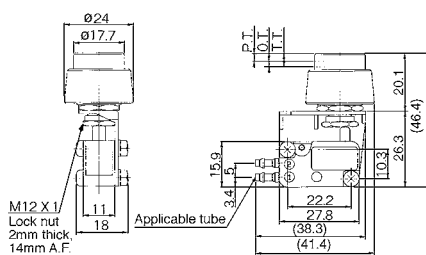
3 port



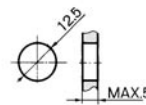
* 0.5MPa supply

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

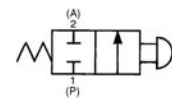
Push Button/VM1000-4N-32, VM1000-4NU-32
VM1100-4N-32, VM1100-4NU-32



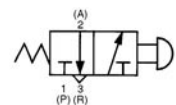
Panel mounted hole



JIS Symbol/2 port



3 port

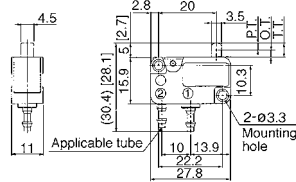


* 0.5MPa supply

		Applicable tube	
		T0425	TU0425, T0403, TS0425
Side piping	3 ports	VM1000-4N-32	VM1000-4NU-32
	2 ports	VM1100-4N-32	VM1100-4NU-32
F.O.F.*		6N	
P.T.		2.5mm	
O.T.		2mm	
T.T.		4.5mm	

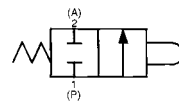
Series VM1000/Bottom Piping

Basic/VM1010-4N-00, VM1010-4NU-00
VM1110-4N-00, VM1110-4NU-00

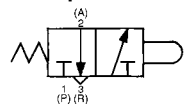


[]: T.T.=2.5mm

JIS Symbol/2 port



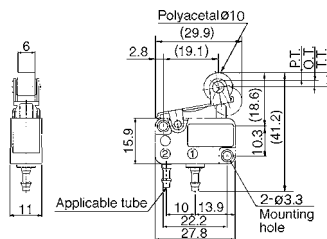
3 port



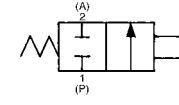
* 0.5MPa supply

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

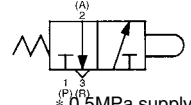
Roller Lever/VM1010-4N-01, VM1010-4NU-01
VM1110-4N-01, VM1110-4NU-01



JIS Symbol/2 port



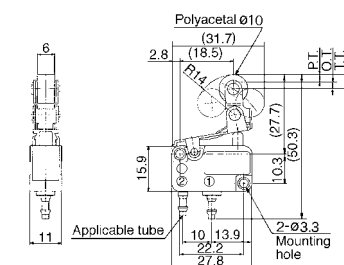
3 port



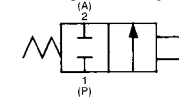
* 0.5MPa supply

		Applicable tube	
		T0425	TU0425, T0403, TS0425
Bottom piping	3 ports	VM1010-4N-01	VM1010-4NU-01
	2 ports	VM1110-4N-01	VM1110-4NU-01
F.O.F.*		6N	
P.T.		2.5mm	
O.T.		2mm	
T.T.		4.5mm	

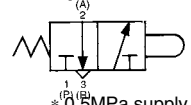
One Way Roller Lever/VM1010-4N-02, VM1010-4NU-02
VM1110-4N-02, VM1110-4NU-02



JIS Symbol/2 port



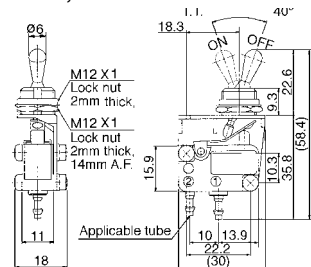
3 port



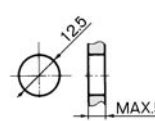
* 0.5MPa supply

		Applicable tube	
		T0425	TU0425, T0403, TS0425
Bottom piping	3 ports	VM1010-4N-02	VM1010-4NU-02
	2 ports	VM1110-4N-02	VM1110-4NU-02
F.O.F.*		6N	
P.T.		2.5mm	
O.T.		2mm	
T.T.		4.5mm	

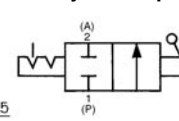
Toggle Lever/VM1010-4N-08, VM1010-4NU-08
VM1110-4N-08, VM1110-4NU-08



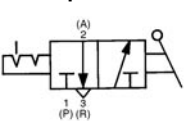
Panel mounted hole



JIS Symbol/2 port



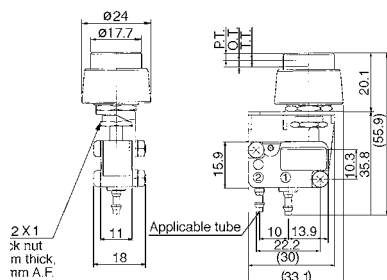
3 port



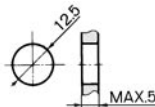
* 0.5MPa supply

		Applicable tube	
		T0425	TU0425, T0403, TS0425
Bottom piping	3 ports	VM1010-4N-08	VM1010-4NU-08
	2 ports	VM1110-4N-08	VM1110-4NU-08
F.O.F.*		4N	
T.T.		40°	

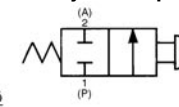
Push Button/VM1010-4N-32, VM1010-4NU-32
VM1110-4N-32, VM1110-4NU-32



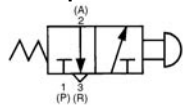
Panel mounted hole



JIS Symbol/2 port



3 port



* 0.5MPa supply

		Applicable tube	
		T0425	TU0425, T0403, TS0425
Bottom piping	3 ports	VM1010-4N-32	VM1010-4NU-32
	2 ports	VM1110-4N-32	VM1110-4NU-32
F.O.F.*		6N	
P.T.		2.5mm	
O.T.		2mm	
T.T.		4.5mm	

2/3 Port Mechanical Valve

Series VM100

Compact size.

Porting options: Side porting

Bottom porting

A variety of actuator styles.



Specifications

Piping	Side piping	Bottom piping
Fluid	Air	
Operating pressure	-100kPa to 1.0MPa	
Ambient and fluid temperature	-5 to 60°C (No freezing)	
Effective area (N _e /min)	2.5mm ² (124.81)	
Recommended lubricant	Not required/Turbine oil #1 (ISO VG32)	
Port size	1/8	M5 X 0.8
Weight (Basic)	95g	110g

Model

		Side piping		Bottom piping		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	—	
	VM131-01-35R	VM151-01-35R	VM133-M5-35R	VM153-M5-35R	—	Red	
Twist selector (3 position)	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) Actuator replacement is available for all styles except for roller lever, one way roller lever, and 3 position selector.

How To Order

E VM1 **3** **1** **01** **01** **S** **Z**

Area code

-	Japan, Asia, Australia, England
E	Europe
N	North America

Port size

01	1/8
M5	M5 X 0.8 (Female thread)

Thread

-	Rc(PT)
F	G(PF)
N	NPT
T	NPTF

Piping direction and plunger length

0	Long	Side
1	Short	
2	Long	Bottom
3	Short	

Number of ports

2	2 ports
3	3 ports

Actuator

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 (Flash)
34	Twist selector (2 position)
36	Key selector (2 position)
35	Twist selector (3 position)

Suffix of actuator

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

Indicator

Z	W/ miniature indicator (Bottom piping only.)
----------	--

Possible combination: ○, Impossible combination: ×

Actuator	Plunger length	Side		Bottom	
		Long	Short	Long	Short
Basic	00	○	○	○	○
Roller lever	01	×	○	×	○
One way roller lever	02	×	○	×	○
Straight plunger	05	○	×	○	×
Roller plunger	06	○	×	○	×
Cross roller plunger	07	○	×	○	×
Toggle lever	08	○	×	○	×
Push button (Mushroom)	30	○	×	○	×
Push button (Extended)	32	○	×	○	×
Push button (Flash)	33	○	×	○	×
Twist selector (2 position)	34	○	×	○	×
Key selector (2 position)	36	○	×	○	×
Twist selector (3 position)	35	×	○	×	○

Construction

Side piping

Bottom piping

Component Parts

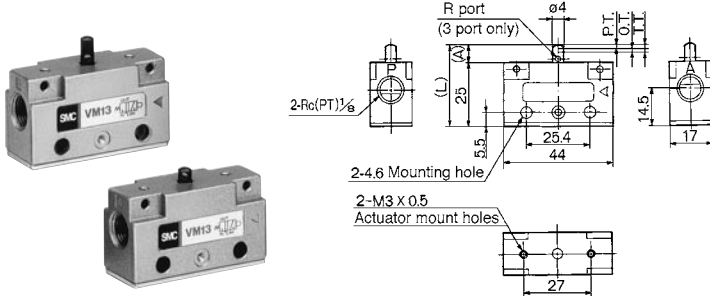
No.	Description	Material	Notes
①	Body	Zinc alloy	Metallic plated
②	Plunger	Polyacetal	
③	Valve seat	Polyacetal	
④	Valve	NBR	
⑤	Spring	Stainless steel	

No.	Description	Material	Notes
⑥	Gasket	NBR	
⑦	Cover	Rolled steel	
⑧	Subplate	Zinc alloy	Metallic plated
⑨	Hexagon socket head plug	Rolled steel	

VM100

Series VM100/Side Piping

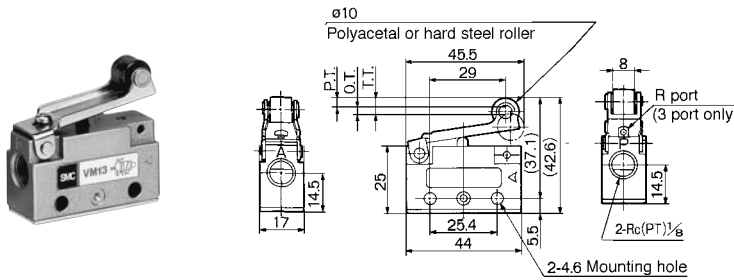
Basic/VM120-01-00, VM130-01-00
VM121-01-00, VM131-01-00



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

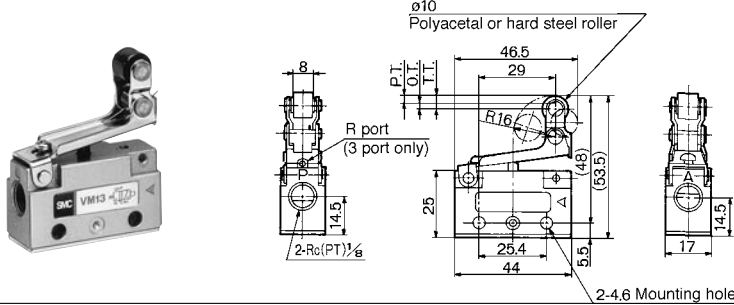
JIS Symbol	2(A)
2 port	
3 port	
* 0.5MPa supply	
F.O.F.*	20N
P.T.	1.5mm
O.T.	1.5mm
T.T.	3mm

Roller Lever/VM121-01-01, VM131-01-01
VM121-01-01S, VM131-01-01S



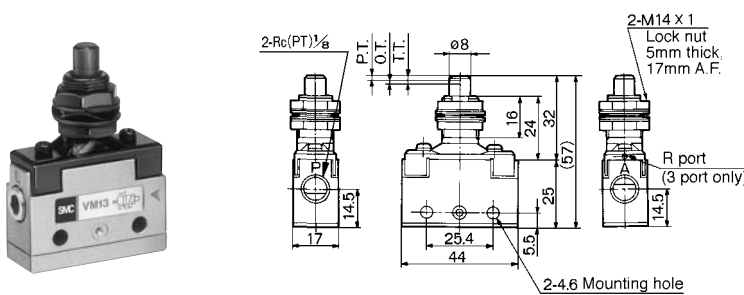
JIS Symbol	2(A)
2 port	
3 port	
* 0.5MPa supply	
F.O.F.*	10N
P.T.	3.2mm
O.T.	2.3mm
T.T.	5.5mm

One Way Roller Lever/VM121-01-02, VM131-01-02
VM121-01-02S, VM131-01-02S



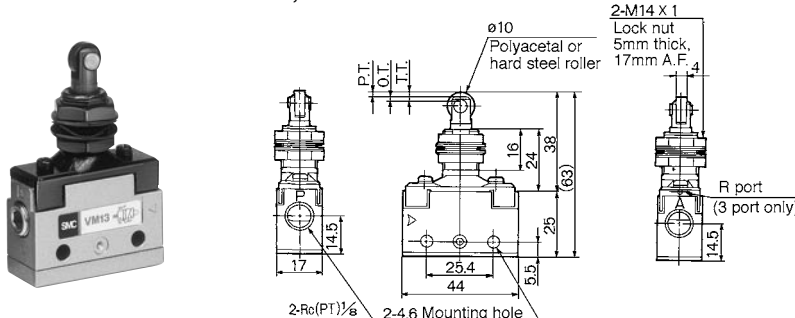
JIS Symbol	2(A)
2 port	
3 port	
* 0.5MPa supply	
F.O.F.*	10N
P.T.	3.2mm
O.T.	2.3mm
T.T.	5.5mm

Straight Plunger/VM120-01-05, VM130-01-05



JIS Symbol	2(A)
2 port	
3 port	
* 0.5MPa supply	
F.O.F.*	23N
P.T.	2mm
O.T.	1.5mm
T.T.	3.5mm

Roller Plunger/VM120-01-06, VM130-01-06
VM120-01-06S, VM130-01-06S

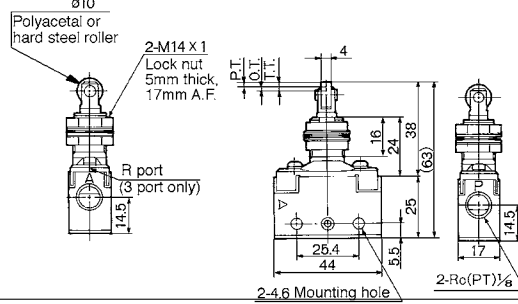


JIS Symbol	2(A)
2 port	
3 port	
* 0.5MPa supply	
F.O.F.*	23N
P.T.	2mm
O.T.	1.5mm
T.T.	3.5mm

Series VM100/Side Piping

Cross Roller Plunger/VM120-01-07, VM130-01-07

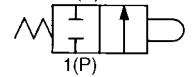
VM120-01-07S, VM130-01-07S



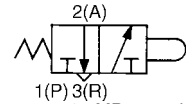
Panel mounted hole

JIS Symbol

2 port

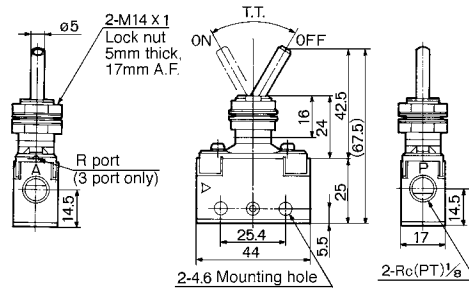


3 port



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

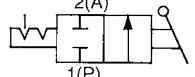
Toggle Lever/VM120-01-08, VM130-01-08



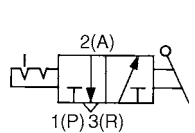
Panel mounted hole

JIS Symbol

2 port

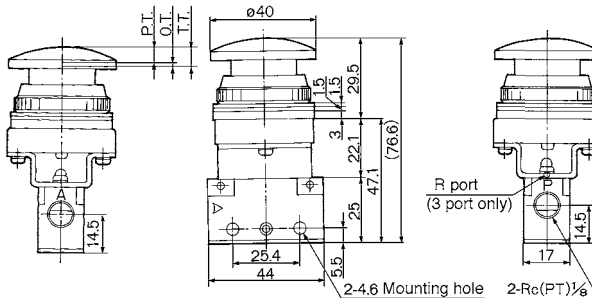


3 port



F.O.F.*	10N
T.T.	60°

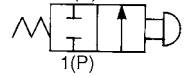
Push Button (Mushroom)/VM120-01-30R, B, G, Y/VM130-01-30R, B, G, Y



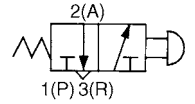
Panel mounted hole

JIS Symbol

2 port

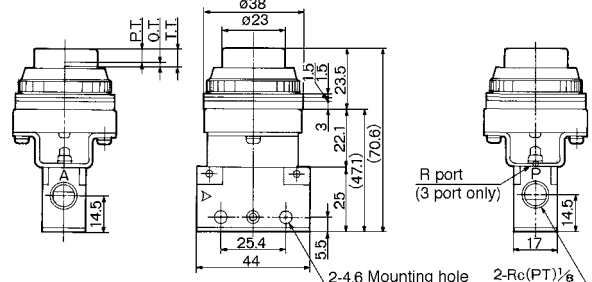


3 port



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

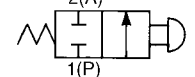
Push Button (Extended)/VM120-01-32R, B, G, Y/VM130-01-32R, B, G, Y



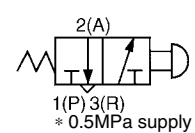
Panel mounted hole

JIS Symbol

2 port

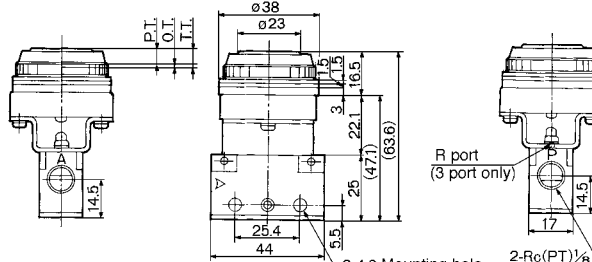


3 port



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

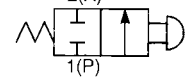
Push Button (Flush)/VM120-01-33, VM130-01-33



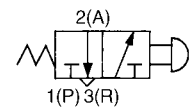
Panel mounted hole

JIS Symbol

2 port



3 port

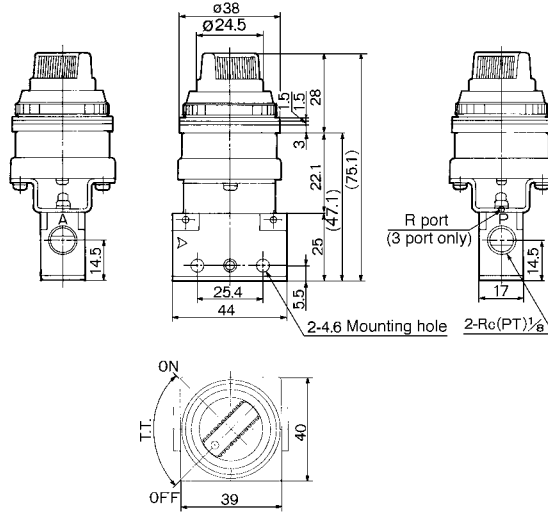


F.O.F.*	21N
P.T.	4.9mm
O.T.	1.6mm
T.T.	6.5mm

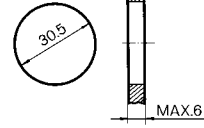
VM100

Series VM100/Side Piping

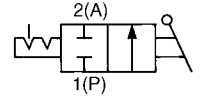
Twist Selector (2 position)/VM120-01-34R, B, G, Y/VM130-01-34R, B, G, Y



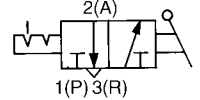
Panel mounted hole



JIS Symbol
2 port



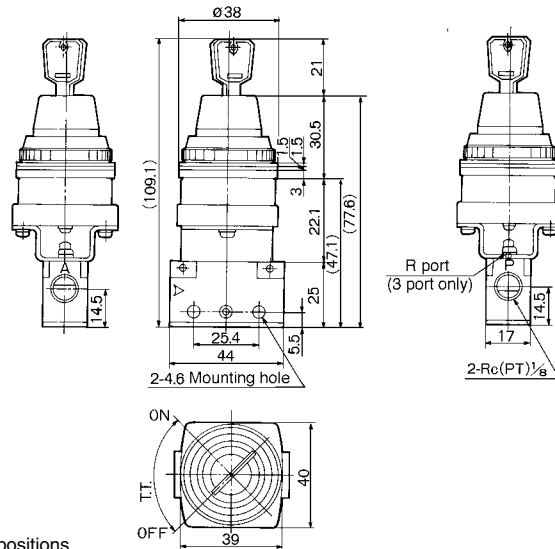
3 port



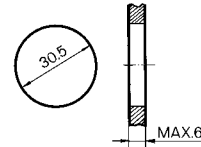
* 0.5MPa supply

F.O.F.*	15N
T.T.	90°

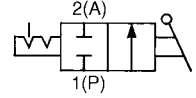
Key Selector (2 position)/VM120-01-36, VM130-01-36



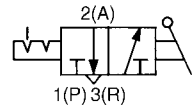
Panel mounted hole



JIS Symbol
2 port



3 port

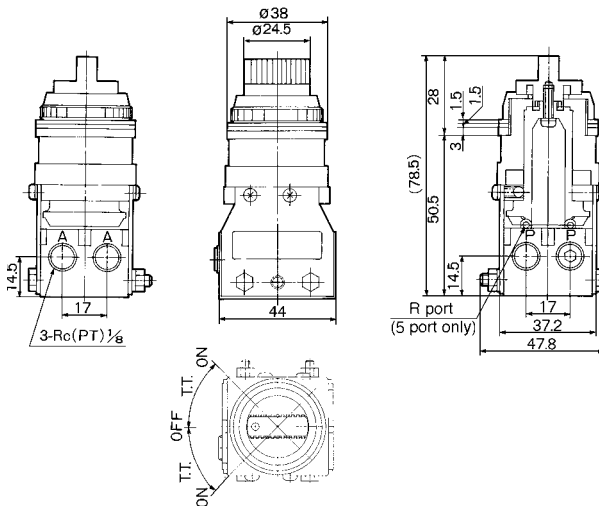


* 0.5MPa supply

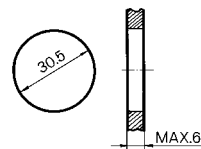
F.O.F.*	15N
T.T.	90°

Key can be removed in "on" and "off" positions.

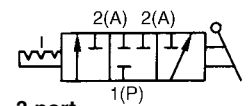
Twist Selector (3 position)/VM131-01-35R, B, G, Y/VM151-01-35R, B, G, Y



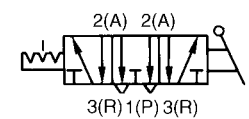
Panel mounted hole



JIS Symbol
2 port



3 port

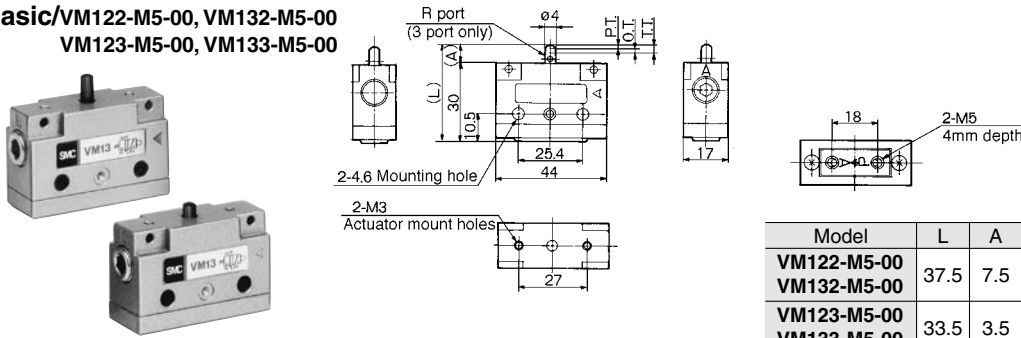


* 0.5MPa supply

F.O.F.*	15N
T.T.	45°

Series VM100/Bottom Piping

Basic/VM122-M5-00, VM132-M5-00 VM123-M5-00, VM133-M5-00



JIS Symbol

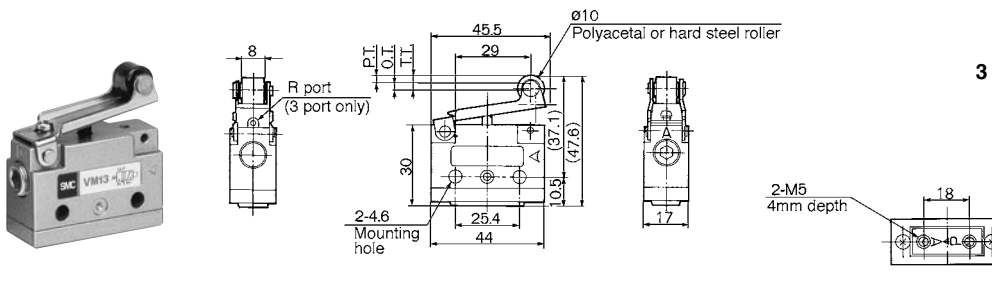
2 port

3 port

* 0.5MPa supply

F.O.F.*	20N
P.T.	1.5mm
O.T.	1.5mm
T.T.	3mm

Roller Lever/VM123-M5-01, VM133-M5-01 VM123-M5-01S, VM133-M5-01S



JIS Symbol

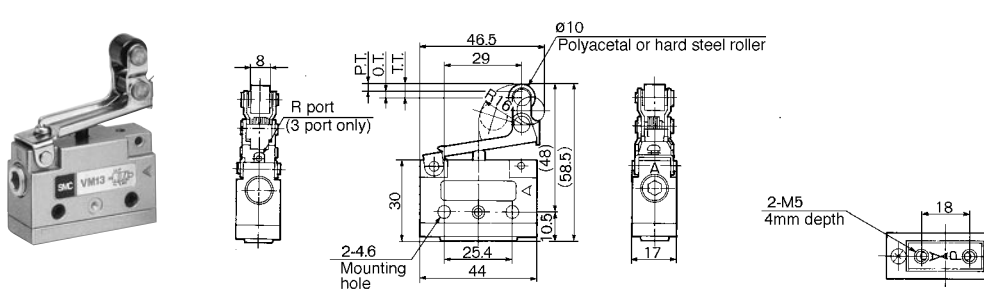
2 port

3 port

* 0.5MPa supply

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

One Way Roller Lever/VM123-M5-02, VM133-M5-02 VM123-M5-02S, VM133-M5-02S



JIS Symbol

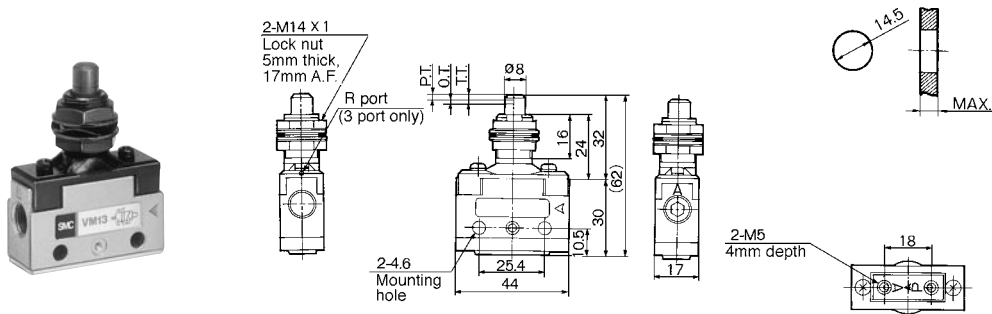
2 port

3 port

* 0.5MPa supply

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

Straight Plunger/VM122-M5-05, VM132-M5-05



JIS Symbol

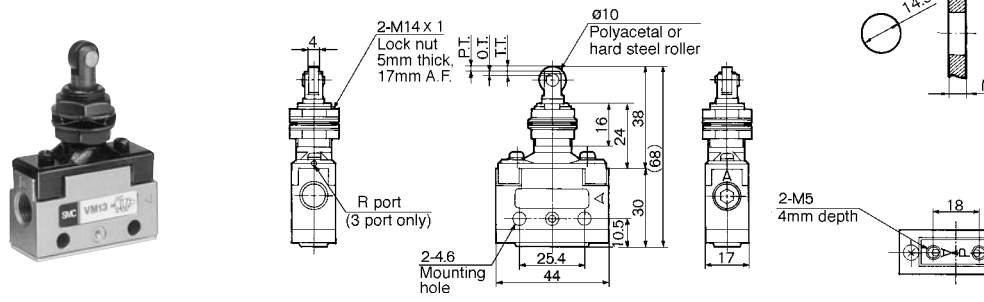
2 port

3 port

* 0.5MPa supply

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

Roller Plunger/VM122-M5-06, VM132-M5-06 VM122-M5-06S, VM132-M5-06S



JIS Symbol

2 port

3 port

* 0.5MPa supply

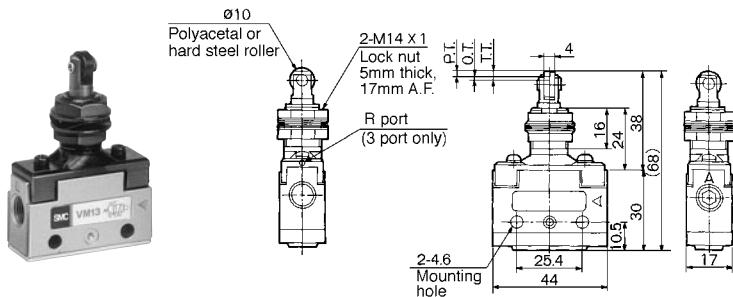
F.O.F.*	23N
P.T.	2mm
O.T.	1.5mm
T.T.	3.5mm

VM100

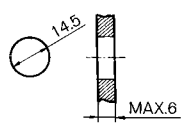
Series VM100/Bottom Piping

Cross Roller Plunger/VM122-M5-07, VM132-M5-07

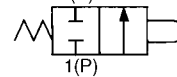
VM122-M5-07S, VM132-M5-07S



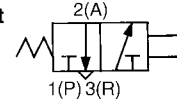
Panel mounted hole



JIS Symbol
2 port



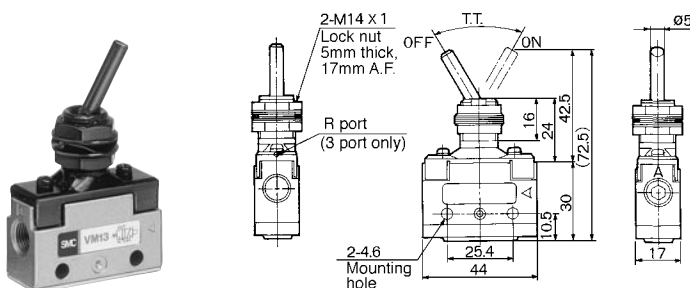
3 port



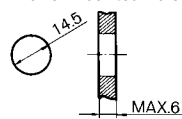
* 0.5MPa supply

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

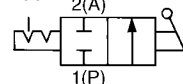
Toggle Lever/VM122-M5-08, VM132-M5-08



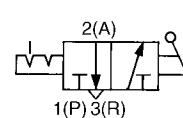
Panel mounted hole



JIS Symbol
2 port



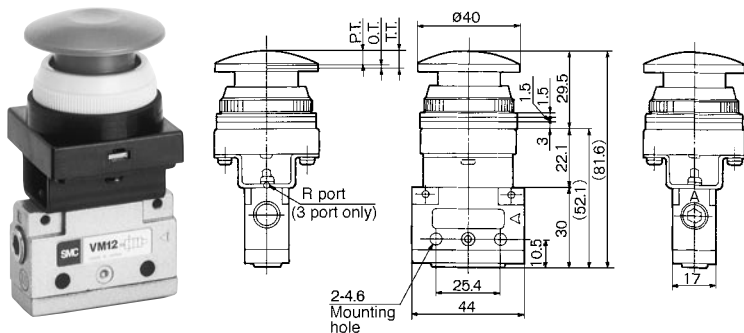
3 port



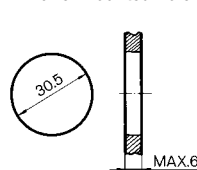
* 0.5MPa supply

F.O.F.*	10N
P.T.	60°

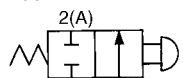
Push Button (Mushroom)/VM122-M5-30R, B, G, Y/VM132-M5-30R, B, G, Y



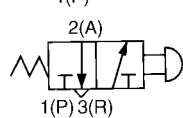
Panel mounted hole



JIS Symbol
2 port



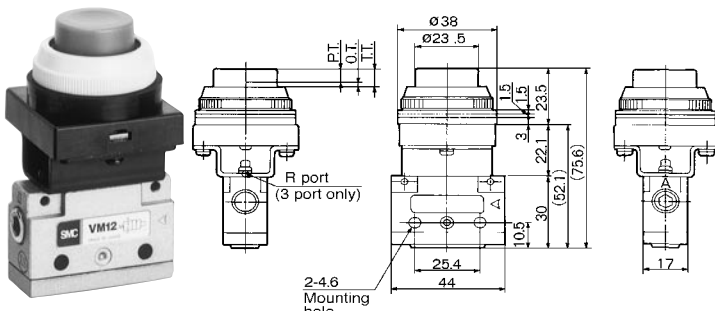
3 port



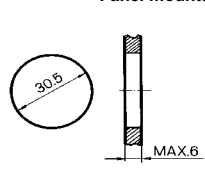
* 0.5MPa supply

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

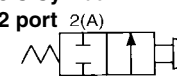
Push Button (Extended)/VM122-M5-32R, B, G, Y/VM132-M5-32R, B, G, Y



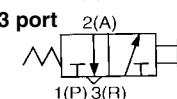
Panel mounted hole



JIS Symbol
2 port



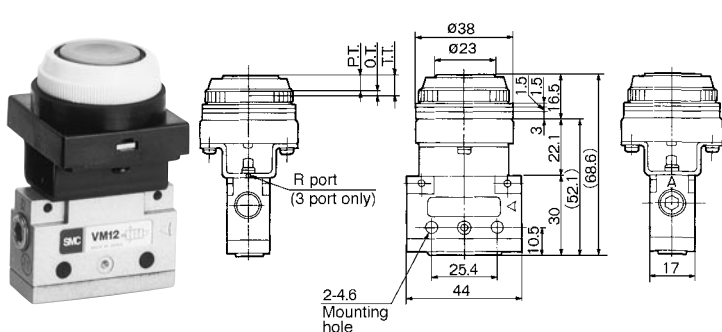
3 port



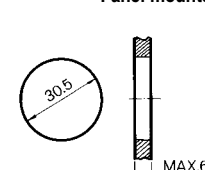
* 0.5MPa supply

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

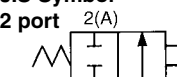
Push Button (Flush)/VM122-M5-33, VM132-M5-33



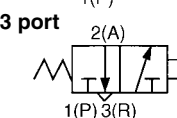
Panel mounted hole



JIS Symbol
2 port



3 port

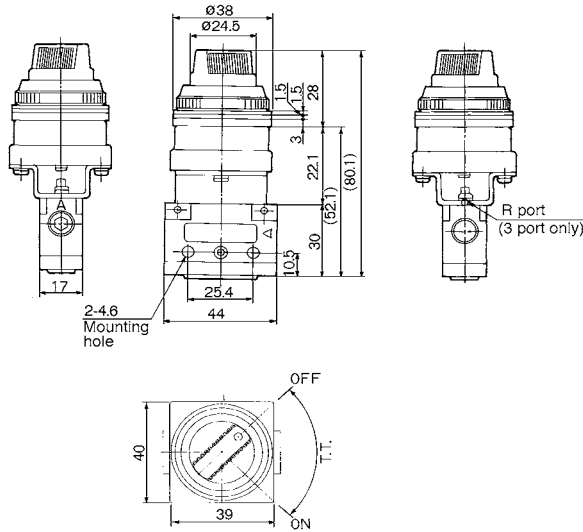


* 0.5MPa supply

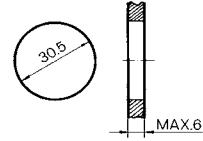
F.O.F.*	21N
P.T.	4.9mm
O.T.	1.6mm
T.T.	6.5mm

Series VM100/Bottom Piping

Twist Selector (2 position)/VM122-M5-34R, B, G, Y/VM132-M5-34R, B, G, Y

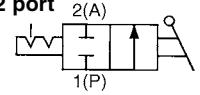


Panel mounted hole

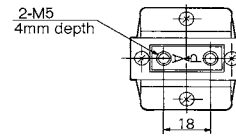
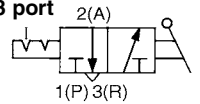


JIS Symbol

2 port



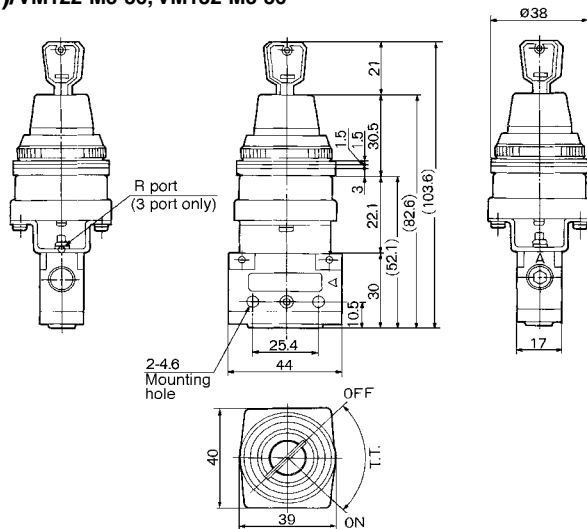
3 port



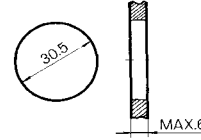
* 0.5MPa supply

F.O.F.*	15N
T.T.	90°

Key Selector (2 position)/VM122-M5-36, VM132-M5-36

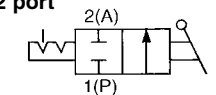


Panel mounted hole

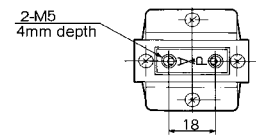
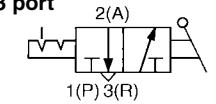


JIS Symbol

2 port



3 port

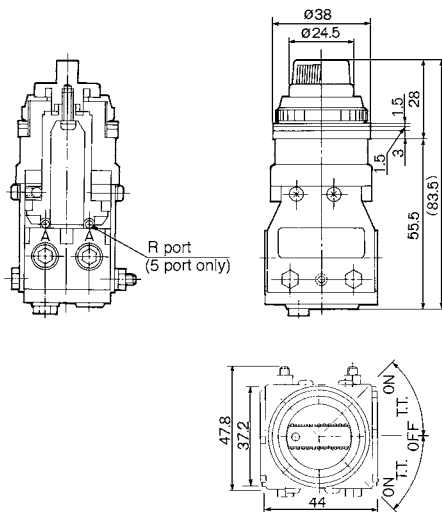


* 0.5MPa supply

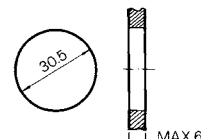
F.O.F.*	15N
T.T.	90°

Key can be removed in "on" and "off" positions.

Twist Selector (3 position)/VM133-M5-35R, B, G, Y/VM153-M5-35R, B, G, Y

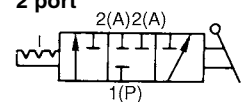


Panel mounted hole

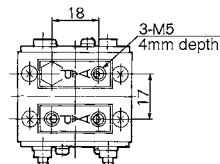
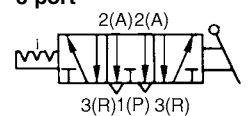


JIS Symbol

2 port



3 port



* 0.5MPa supply

F.O.F.*	20N
T.T.	45°

2/3 Port Mechanical Valve

Series VM200

Large flow capacity.

A variety of actuator styles.




Specifications

Fluid	Air
Operating pressure	0 to 1.0MPa
Fluid temperature	-5 to 60°C (No freezing)
Effective area (N _e /min)	19mm ² (891.50)
Recommended lubricant	No required/Turbine oil #1 (ISO VG32)
Port size	1/4
Weight (Basic)	111g

Model

		No. of ports		Actuator part No.	Application
Actuator		2 port	3 port		
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
		VM220-02-32Y	VM230-02-32Y	VM-32AY	Yellow
	Push button (Flush)	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) Actuator replacement is available for all styles except twist selector (3 position) and foot pedal.

How To Order

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

Area code

-	Japan, Asia, Australia, England
E	Europe
N	North America

Thread

-	Rc(PT)
F	G(PF)
N	NPT
T	NPTF

Port size

02	1/4
-----------	-----

Actuator

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 (Flash)
34	Twist selector (2 position)
36	Key selector (2 position)
35	Twist selector (3 position)
40	Foot pedal

Suffix of actuator

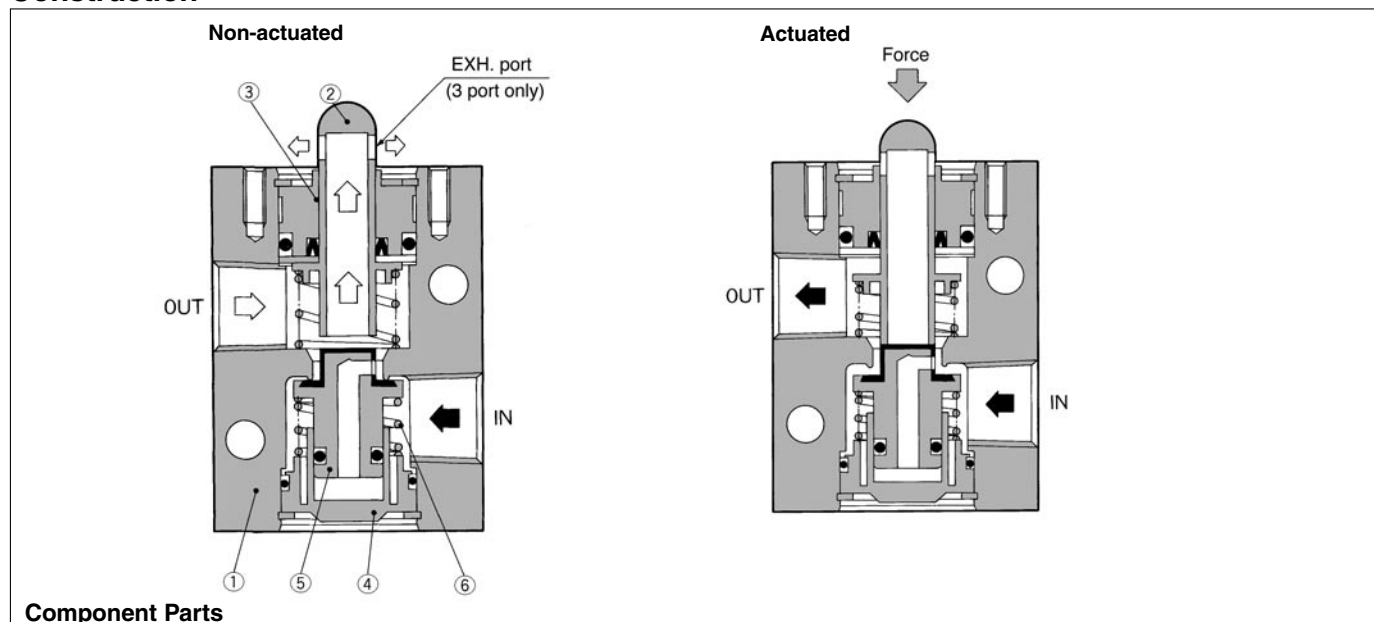
S	Hard steel roller
R	Red
B	Black
G	Green
Y	Yellow

Colour of push button

Number of ports

2	2 ports
3	3 ports

Construction



Component Parts

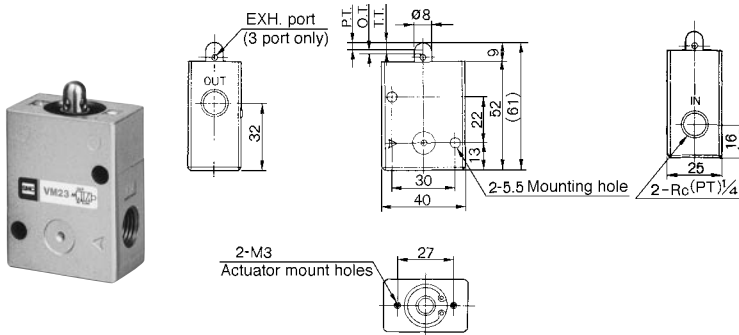
No.	Description	Material	Notes
①	Body	Aluminum alloy	Metallic plated
②	Plunger	Polyacetal	
③	Plunger retainer	PBT	

No.	Description	Material	Notes
④	Cover	Polyacetal	
⑤	Valve	Brass, NBR	
⑥	Spring	Steel wire	

VM200

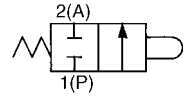
Series VM200

Basic/VM220-02-00, VM230-02-00

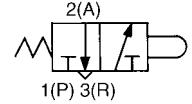


JIS Symbol

2 port



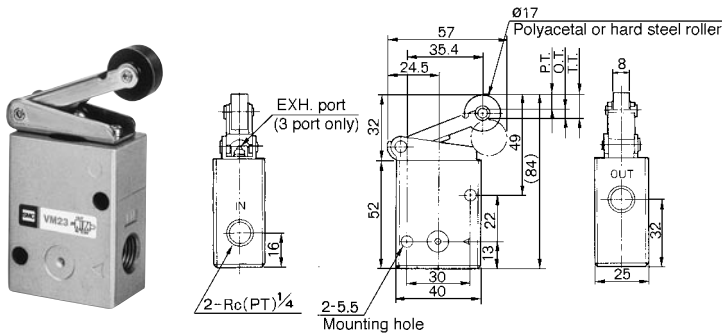
3 port



* 0.5MPa supply

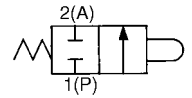
F.O.F.*	52N
P.T.	3mm
O.T.	2mm
T.T.	5mm

Roller Lever/VM220-02-01, VM230-02-01 VM220-02-01S, VM230-02-01S

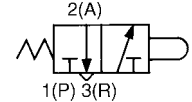


JIS Symbol

2 port



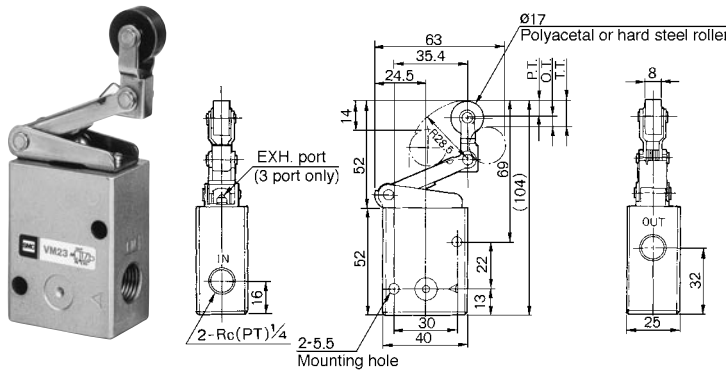
3 port



* 0.5MPa supply

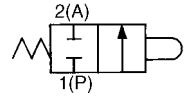
F.O.F.*	24N
P.T.	6.5mm
O.T.	4.5mm
T.T.	11mm

One Way Roller Lever/VM220-02-02, VM230-02-02 VM220-02-02S, VM230-02-02S

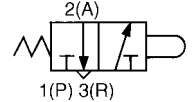


JIS Symbol

2 port



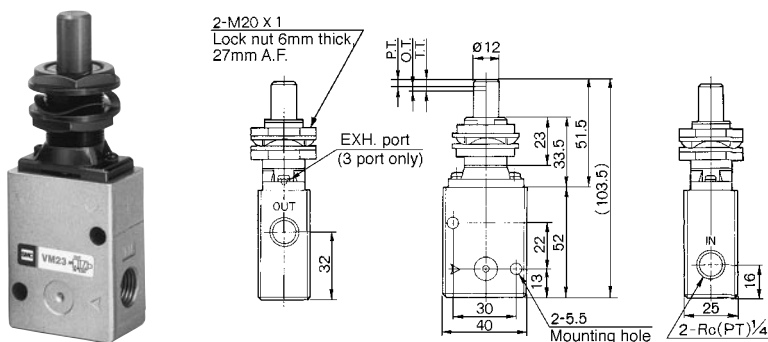
3 port



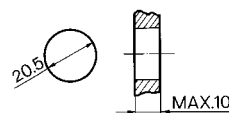
* 0.5MPa supply

F.O.F.*	22N
P.T.	7mm
O.T.	5mm
T.T.	12mm

Straight Plunger/VM220-02-05, VM230-02-05

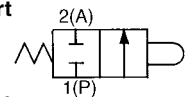


Panel mounted hole

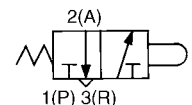


JIS Symbol

2 port



3 port

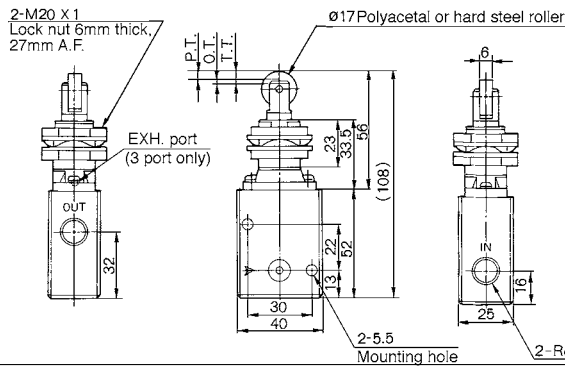


* 0.5MPa supply

F.O.F.*	56N
P.T.	3.5mm
O.T.	2mm
T.T.	5.5mm

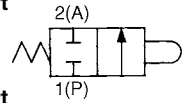
Series VM200

Roller Plunger/VM220-02-06, VM230-02-06 VM220-02-06S, VM230-02-06S

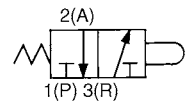


Panel mounted hole

JIS Symbol
2 port



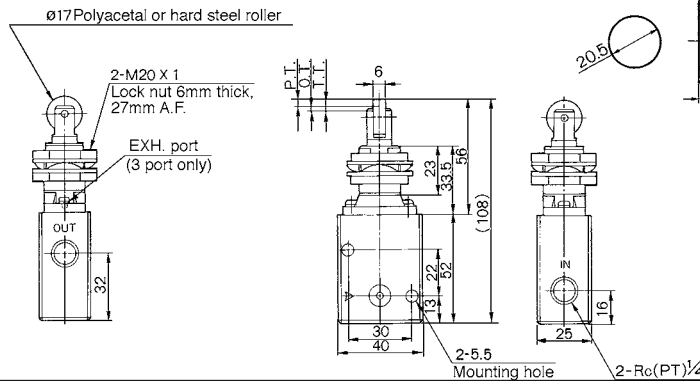
3 port



* 0.5MPa supply

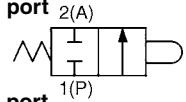
F.O.F.*	56N
P.T.	3.5mm
O.T.	2mm
T.T.	5.5mm

Cross Roller Plunger/VM220-02-07, VM230-02-07 VM220-02-07S, VM230-02-07S

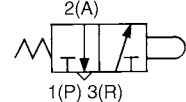


Panel mounted hole

JIS Symbol
2 port



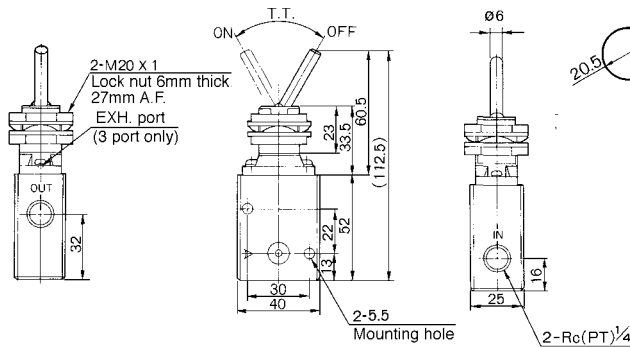
3 port



* 0.5MPa supply

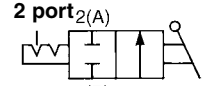
F.O.F.*	56N
P.T.	3.5mm
O.T.	2mm
T.T.	5.5mm

Toggle Lever/VM220-02-08, VM230-02-08

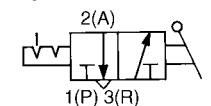


Panel mounted hole

JIS Symbol



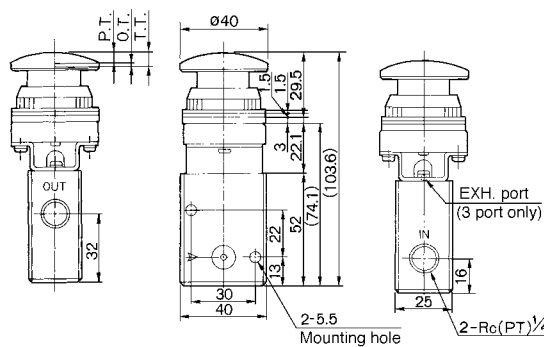
3 port



* 0.5MPa supply

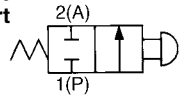
F.O.F.*	12N
T.T.	60°

Push Button (Mushroom)/VM220-02-30R, B, G, Y/VM230-02-30R, B, G, Y

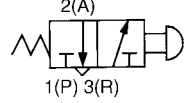


Panel mounted hole

JIS Symbol
2 port



3 port



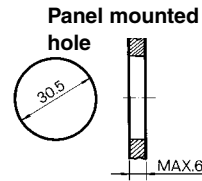
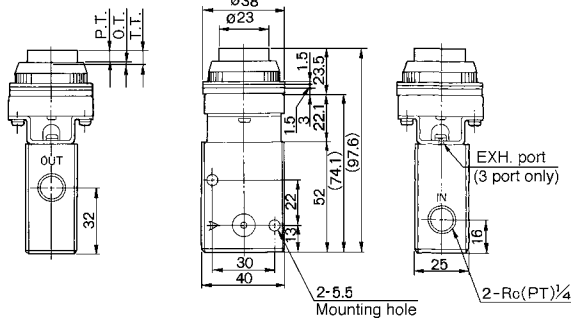
* 0.5MPa supply

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

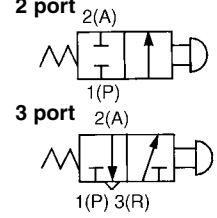
VM200

Series VM200

Push Button (Extended)/VM220-02-32R, B, G, Y/VM230-02-32R, B, G, Y



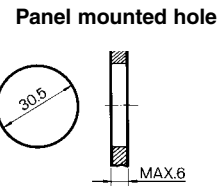
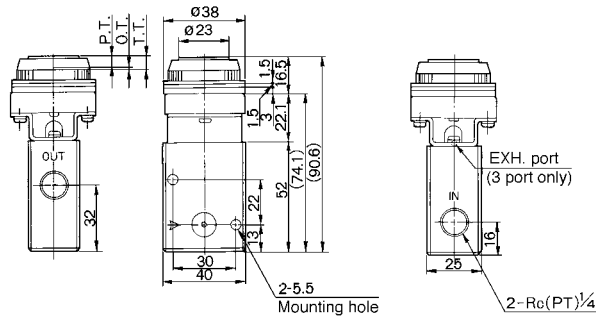
JIS Symbol



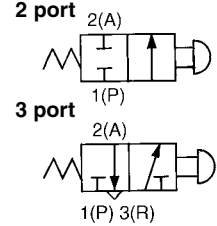
* 0.5MPa supply

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

Push Button (Flush)/VM220-02-33, VM230-02-33



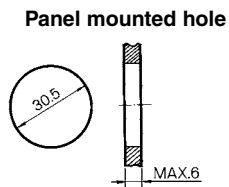
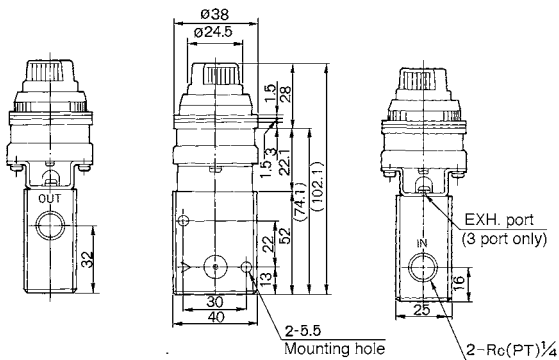
JIS Symbol



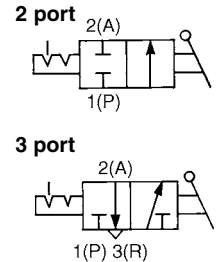
* 0.5MPa supply

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

Twist Selector (2 position)/VM220-02-34R, B, G, Y/VM230-02-34R, B, G, Y

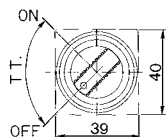


JIS Symbol



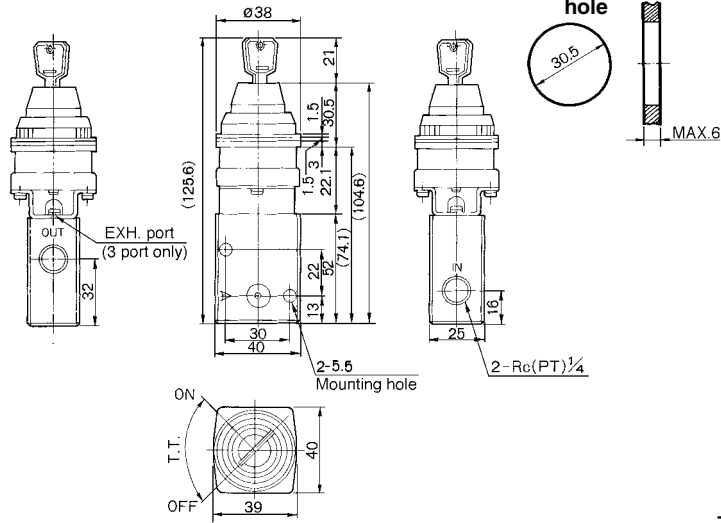
* 0.5MPa supply

F.O.F.*	32N
T.T.	90°

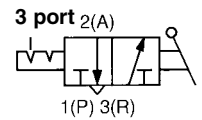
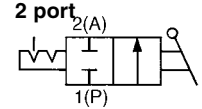


Series VM200

Key Selector (2 position)/VM220-02-36, VM230-02-36



JIS Symbol

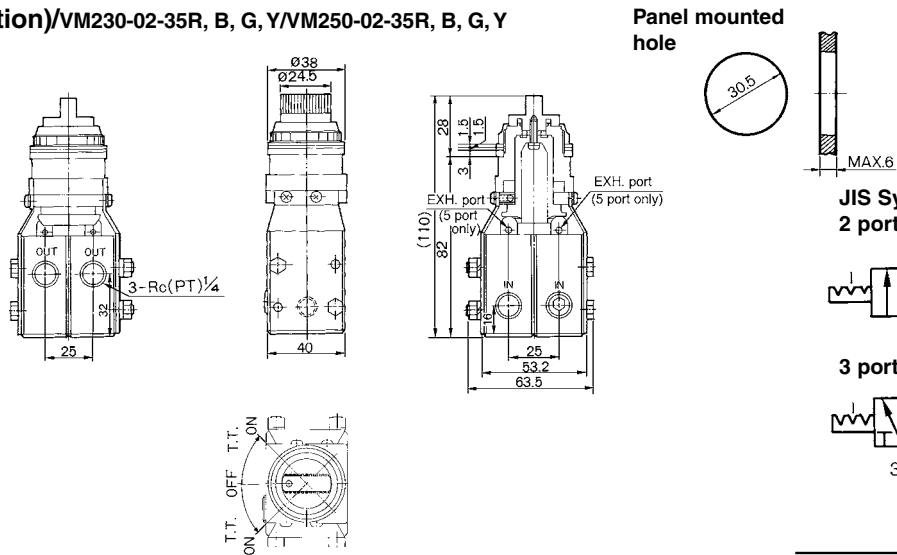


* 0.5MPa supply

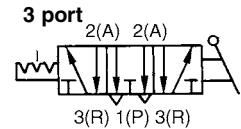
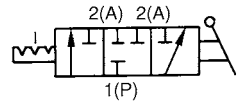
F.O.F.*	32N
T.T.	90°

Key can be removed in "on" and "off" positions.

Twist Selector (3 position)/VM230-02-35R, B, G, Y/VM250-02-35R, B, G, Y



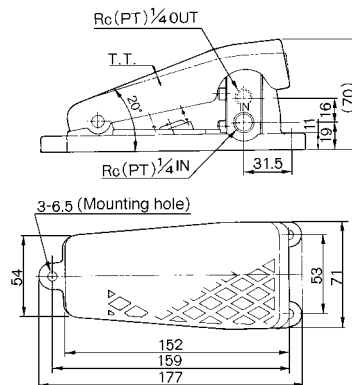
JIS Symbol



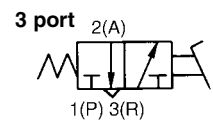
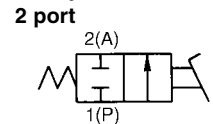
* 0.5MPa supply

F.O.F.*	40N
T.T.	45°

Foot Pedal/VM220-02-40, VM230-02-40



JIS Symbol



* 0.5MPa supply

F.O.F.*	65N
T.T.	1.2°

3 Port Mechanical Valve

Series VM400

NC or NO models 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
Operating pressure	-100kPa to 1.0MPa
Ambient and fluid temperature	-5 to 60°C (No freezing)
Effective area (Nl/min)	7mm ² (338.77)
Lubrication	Not required/Turbine oil #1 (ISO VG32)
Port size	1/8
Weight (Basic)	110g

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
		VM430-01-32Y	VM-32AY	Yellow
	Push button (Flush)	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) Actuator replacement is available for all styles.

How To Order

E VM4 3 0 - **01** - **01** **S**

Area code

-	Japan, Asia, Australia, England
E	Europe
N	North America

Number of ports

3	3 ports
----------	---------

Thread

-	Rc(PT)
F	G(PF)
N	NPT
T	NPTF

Port size

01	1/8
-----------	-----

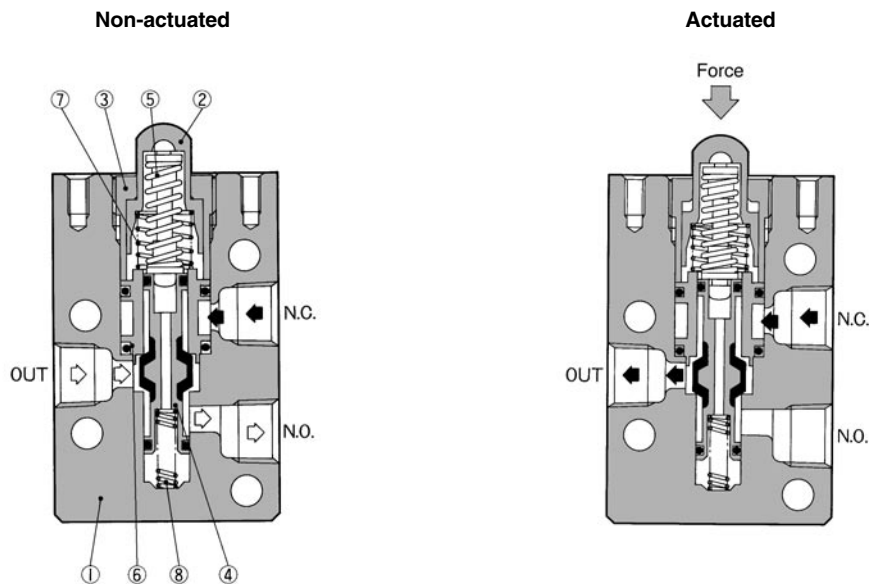
Actuator

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 of actuator

S	Hard steel roller	Colour of push button
R	Red	
B	Black	
G	Green	
Y	Yellow	

Construction



Component Parts

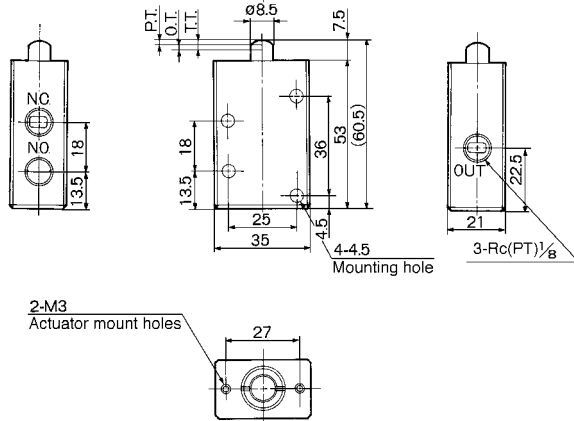
No.	Description	Material	Notes
①	Body	Aluminum alloy	Metallic plated
②	Plunger	Polyacetal	
③	Plunger retainer	Brass	Black zinc chromate treated
④	Spool valve	Aluminum alloy	Rubber lined

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

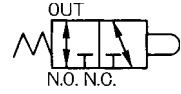
VM400

Series VM400

Basic/VM430-01-00

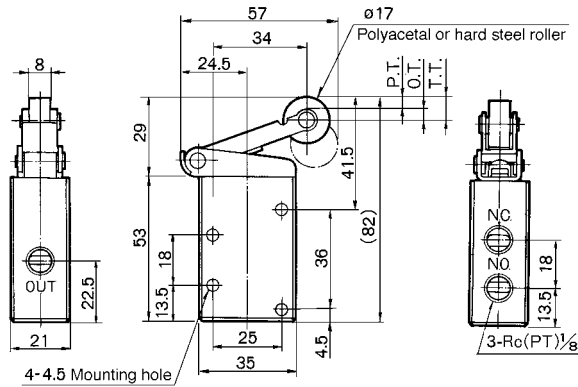


JIS Symbol



F.O.F.	26N
P.T.	1.5mm
O.T.	2mm
T.T.	3.5mm

Roller Lever/VM430-01-01, VM430-01-01S

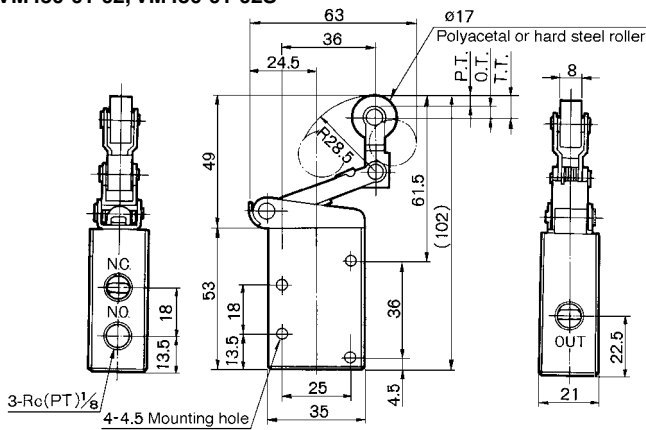


JIS Symbol



F.O.F.	12N
P.T.	4mm
O.T.	4.5mm
T.T.	8.5mm

One Way Roller Lever/VM430-01-02, VM430-01-02S

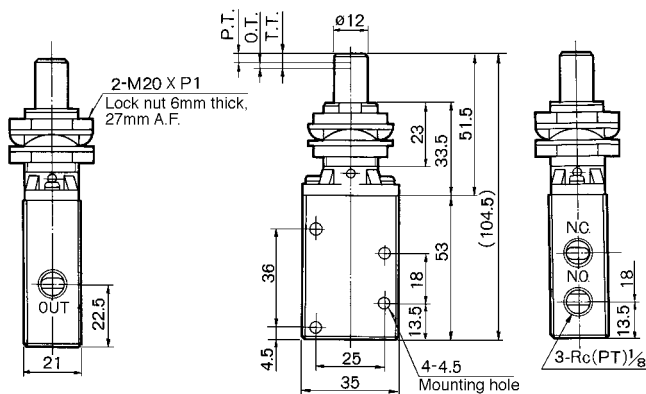


JIS Symbol

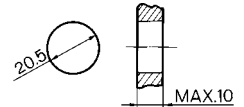


F.O.F.	11N
P.T.	4mm
O.T.	5mm
T.T.	9mm

Straight Plunger/VM430-01-05



Panel mounted hole



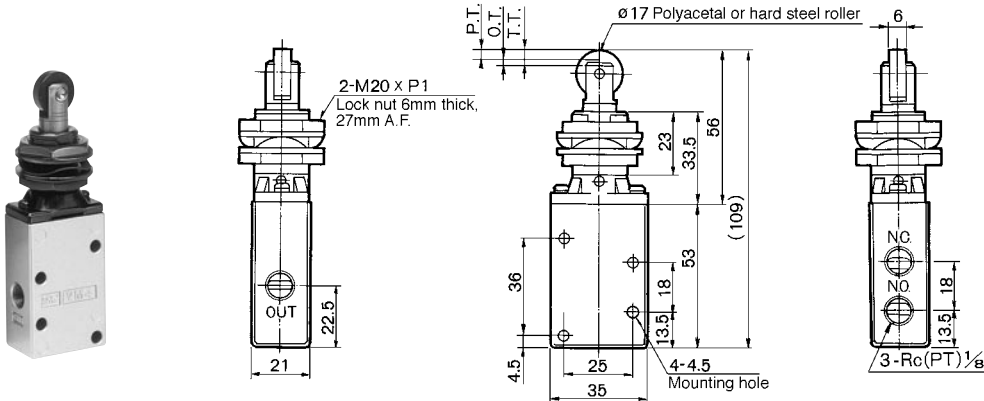
JIS Symbol



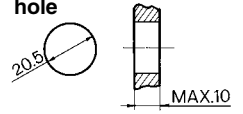
F.O.F.	30N
P.T.	3.5mm
O.T.	2mm
T.T.	5.5mm

Series VM400

Roller Plunger/VM430-01-06, VM430-01-06S



Panel mounted hole

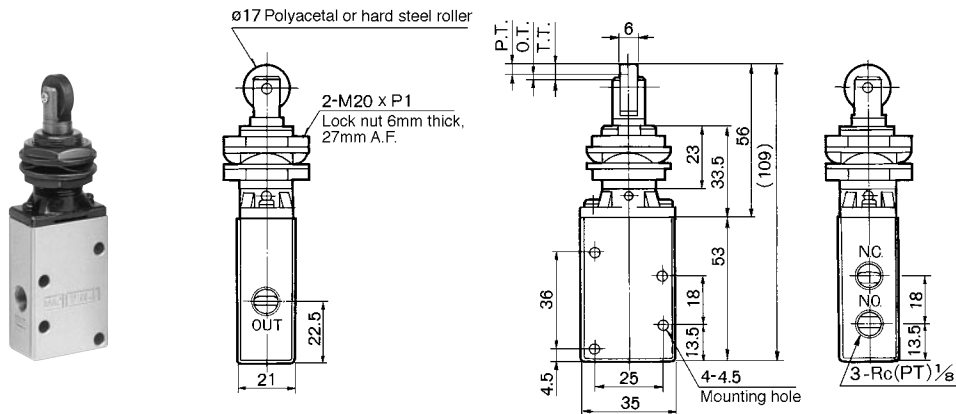


JIS Symbol

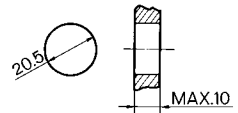


F.O.F.	30N
P.T.	3.5mm
O.T.	2mm
T.T.	5.5mm

Cross Roller Plunger/VM430-01-07, VM430-01-07S



Panel mounted hole

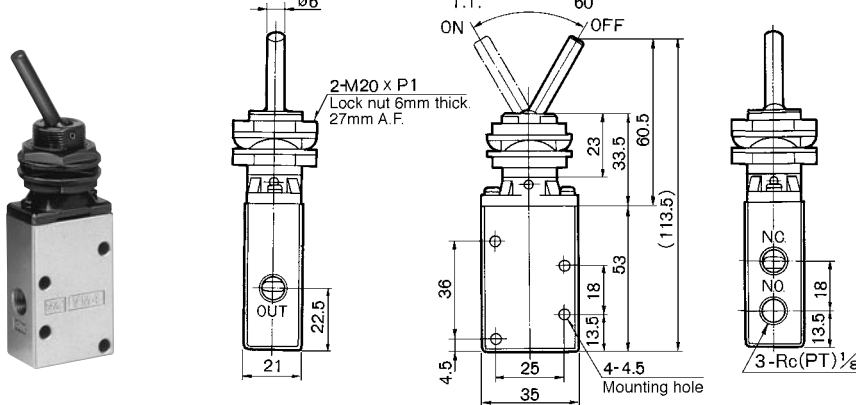


JIS Symbol

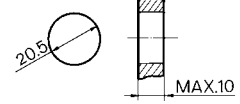


F.O.F.	30N
P.T.	3.5mm
O.T.	2mm
T.T.	5.5mm

Toggle Lever/VM430-01-08



Panel mounted hole

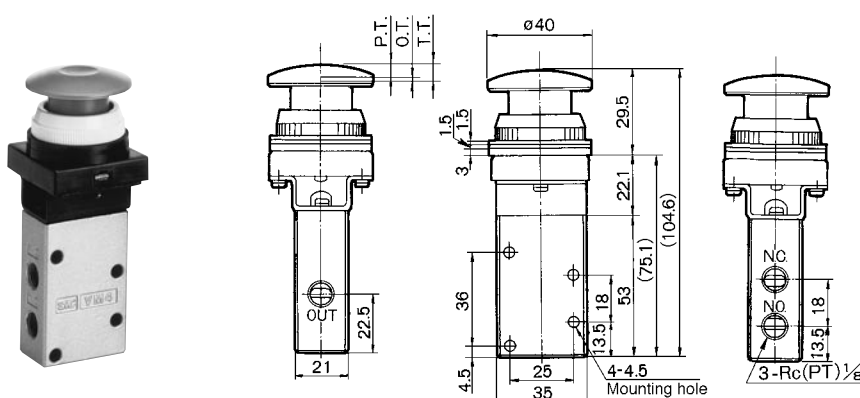


JIS Symbol

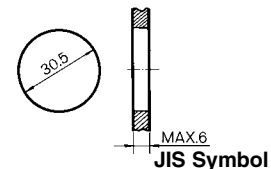


F.O.F.	7N
T.T.	60°

Push Button (Mushroom)/VM430-01-30R, B, G, Y



Panel mounted hole



JIS Symbol

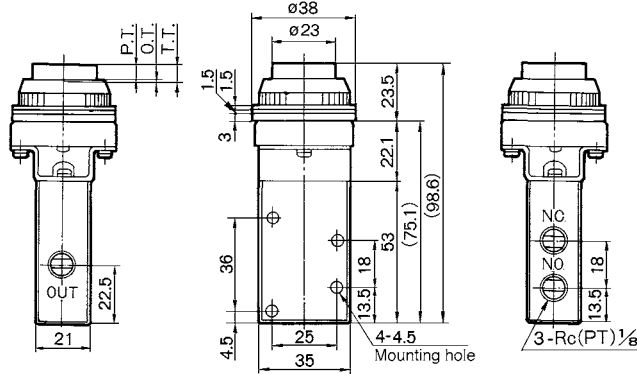


F.O.F.	26N
P.T.	4.6mm
O.T.	1.6mm
T.T.	6.5mm

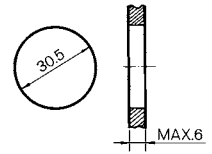
VM400

Series VM400

Push Button (Extended)/VM430-01-32R, B, G, Y



Panel mounted hole

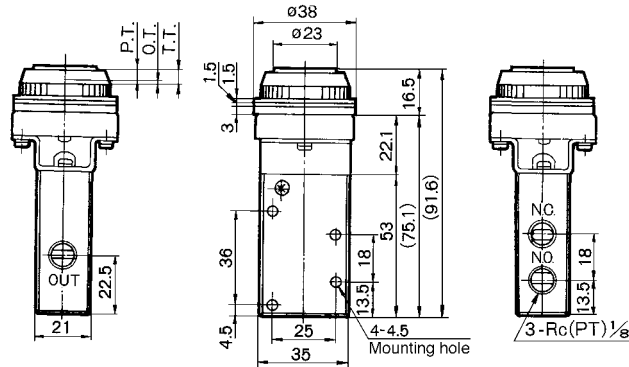


JIS Symbol

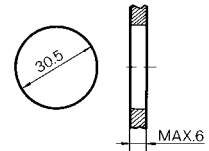


F.O.F.	26N
P.T.	5.4mm
O.T.	1.6mm
T.T.	6.5mm

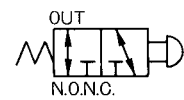
Push Button (Flush)/VM430-01-33



Panel mounted hole

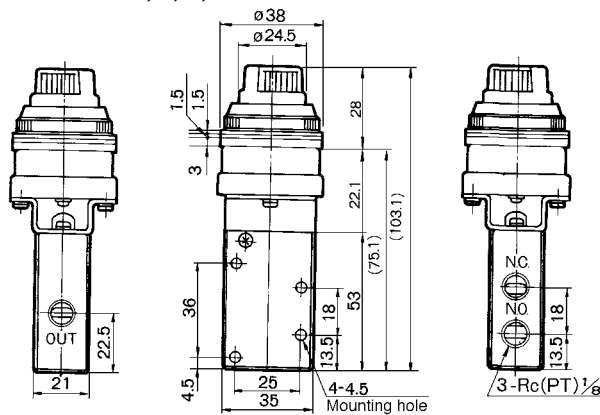


JIS Symbol

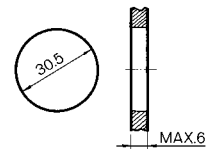


F.O.F.	26N
P.T.	4.9mm
O.T.	1.6mm
T.T.	6.5mm

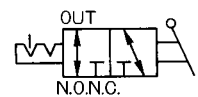
Twist Selector (2 position)/VM430-01-34R, B, G, Y



Panel mounted hole



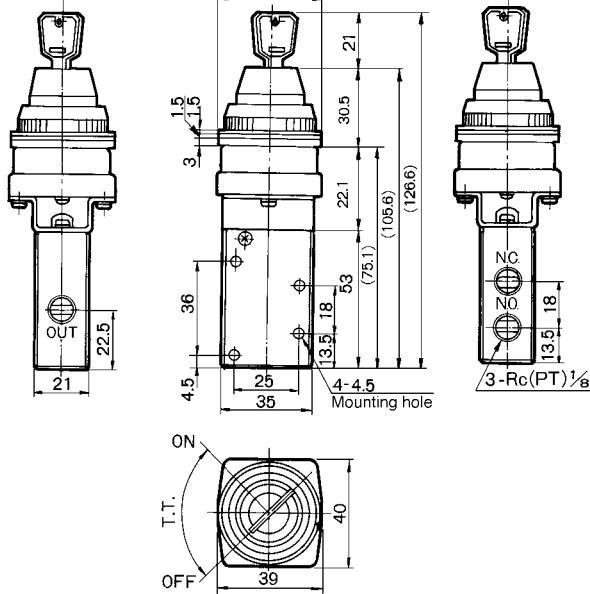
JIS Symbol



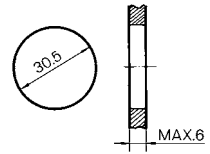
F.O.F.	20N
T.T.	90°

Series VM400

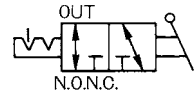
Key Selector (2 position)/VM430-01-36



Panel mounted hole



JIS Symbol



Key can be removed in "on" and "off" positions.

F.O.F.	20N
T.T.	90°

3 Port Mechanical Valve/Heavy Duty Style

Series VM800

Sturdy Construction.
NC and NO models available.
Piping possible to any port.
Many actuator positions and orientation options.



Specifications

Fluid	Air
Operating pressure	-100kPa to 1.0MPa
Ambient and fluid temperature	-5 to 60°C (No freezing)
Effective area (Nl/min)	6mm ² (294.20)
Lubrication	Not required/Turbine oil #1 (ISO VG32)
Port size	1/8
Weight (Basic)	180g

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

E VM8 3 0 - **01** - **01**

Area code

-	Japan, Asia, Australia, England
E	Europe
N	North America

Number of ports

3	3 ports
----------	---------

Thread

-	Rc(PT)
F	G(PF)
N	NPT
T	NPTF

Port size

01	1/8
-----------	-----

Actuator

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

Applications

Movement is changeable

Standard movements: Actuated, Actuated, Free travel, Actuated. Stepped plunger.

Roller can be mounted to inside of lever. Undo screw to reverse lever.

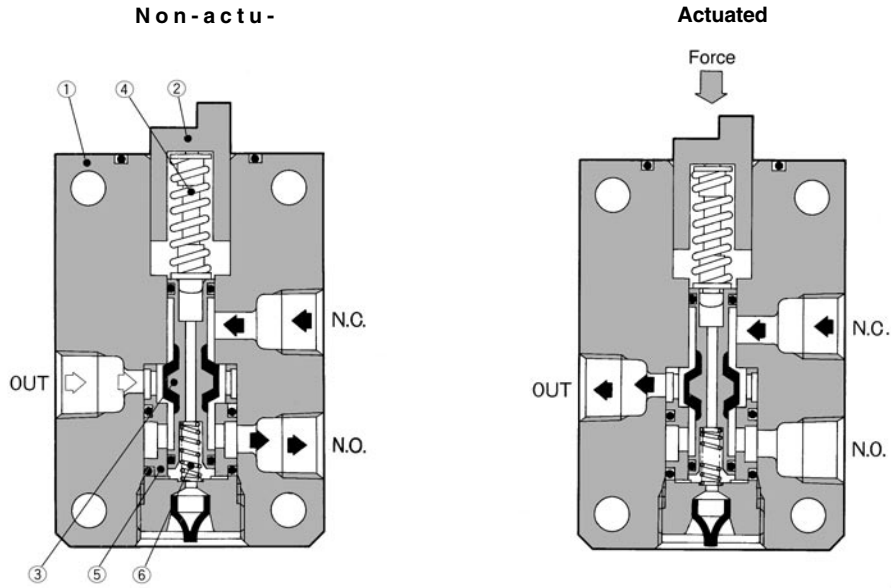
Lever length adjustment

Lever location can be changed. Undo screw to adjust through.

Head direction can be changed. Loosen the hexagon socket bolt to adjust the lever. MAX X89 MIN X28.

Undo screw to adjust rod length. It can be operated by bending the rod. In this case, make sure that the minimum bending radius of the rod is 10R or more. MAX 1412.

Construction



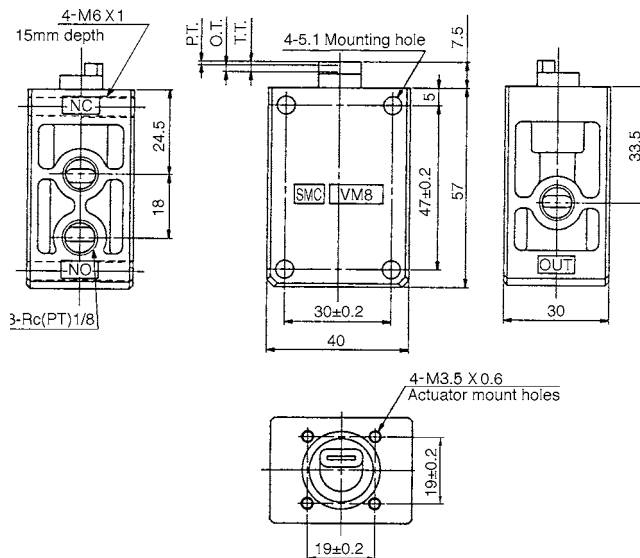
Component Parts

No.	Description	Material	Notes
①	Body	Aluminum alloy	Metallic plated
②	Plunger	Polyacetal	
③	Spool valve	Aluminum alloy, NBR	Rubber lined

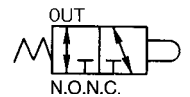
No.	Description	Material	Notes
④	Over travel spring	Stainless steel	
⑤	Retainer	Brass	
⑥	Spring	Steel	Zinc chromate

Series VM800

Basic/VM830-01-00



JIS Symbol

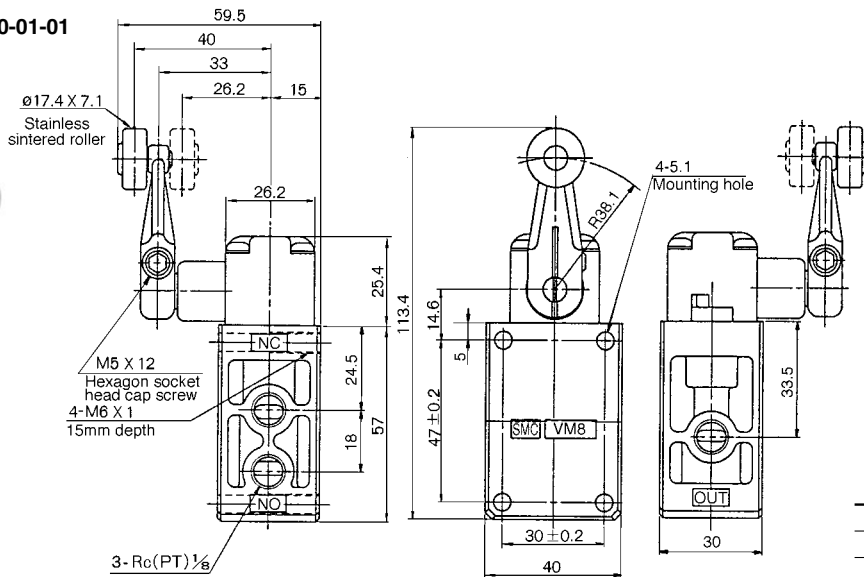


F.O.F.	23N
P.T.	1mm
O.T.	2mm
T.T.	3mm

VM800

Series VM800

Roller Lever/VM830-01-01

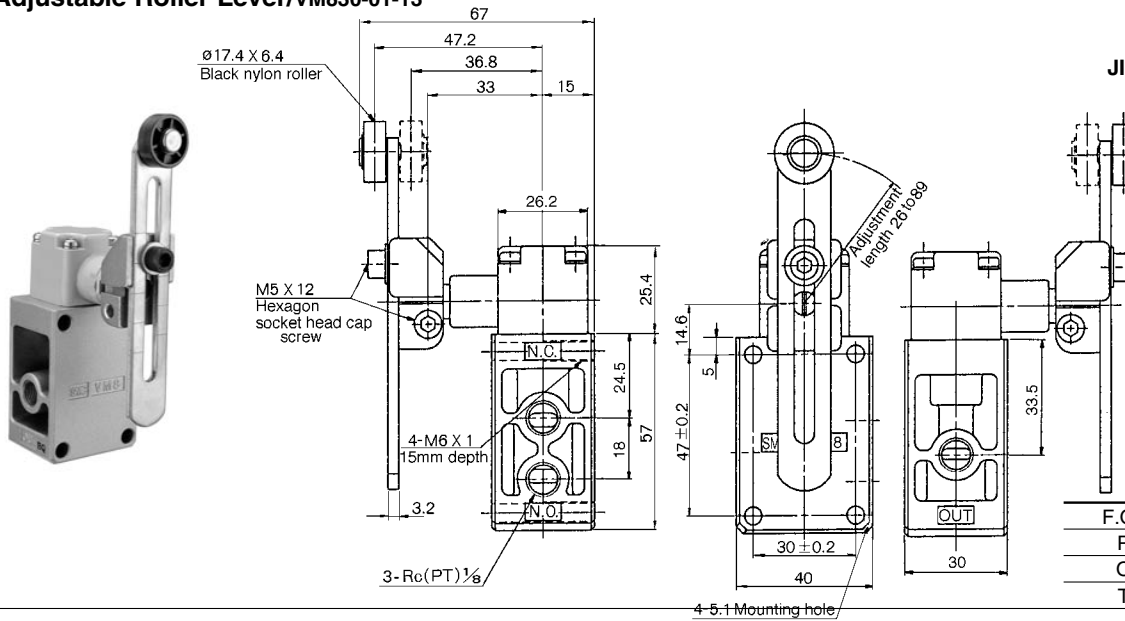


JIS Symbol

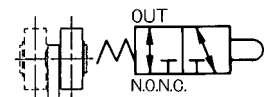


F.O.F.	20N
P.T.	20°
O.T.	30°
T.T.	50°

Adjustable Roller Lever/VM830-01-13



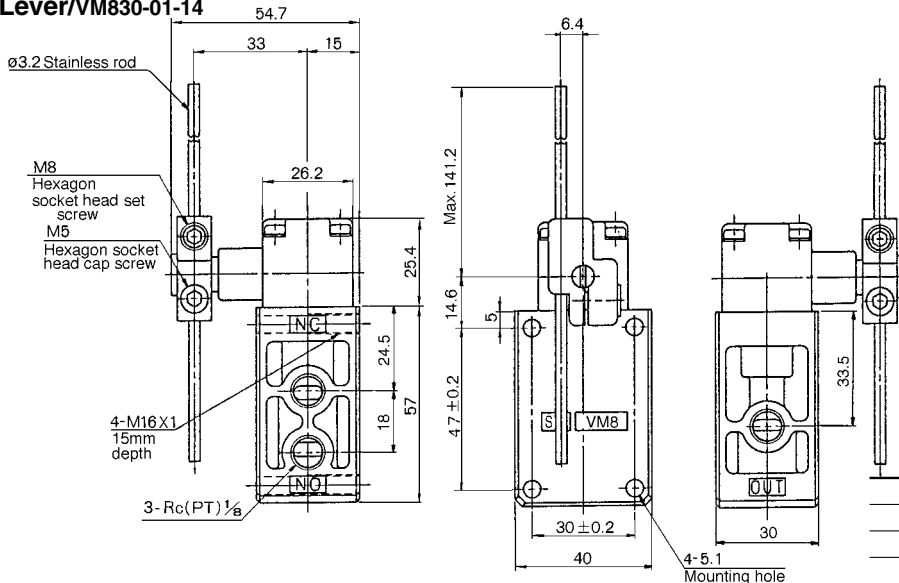
JIS Symbol



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

* At lever length 38.1mm

Adjustable Rod Lever/VM830-01-14



JIS Symbol



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

* At lever length 141.2mm

5 Port Mechanical Valve/Metal Seal

Series **VZM400**

**Compact design,
Large flow capacity
High cycle rate,
Long life/300c.p.m.**

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 1.0MPa ⁽¹⁾
Ambient and fluid temperature	-5 to 60°C (No freezing)
Effective area (Nl/min)	9.9mm ² (490.33)
Maximum frequency (Mechanical operation style)	300 c.p.m or less
Lubrication	Not required/Turbine oil #1 (ISO VG32)
Port size	Main valve 1/8
	Pilot valve (EXH)/M5
Option	Foot bracket ⁽²⁾
Weight (Basic)	150g



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

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

Model

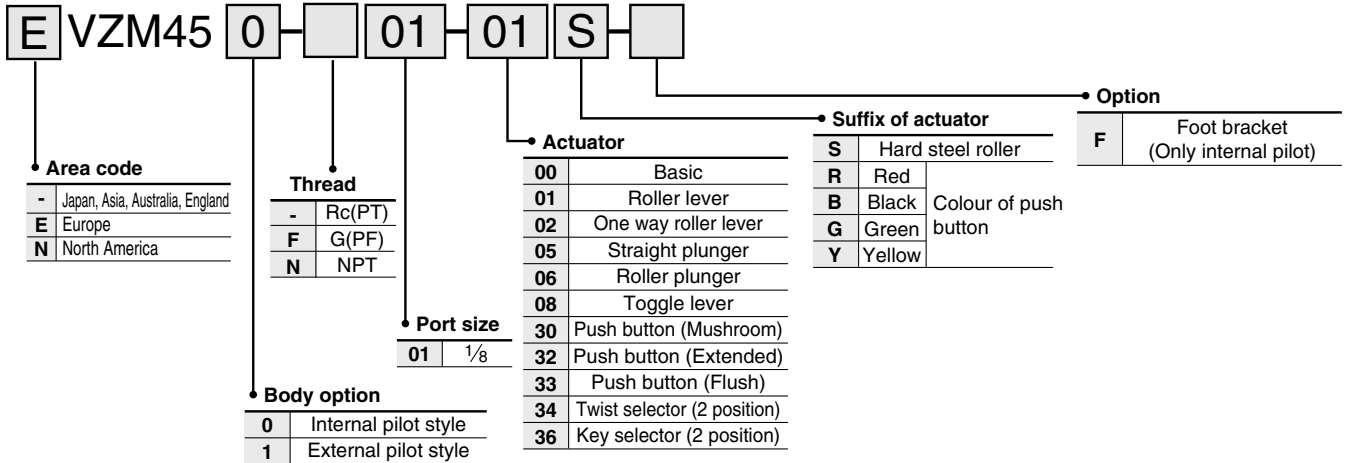
	Actuator	Model	Actuator part No.	Application
Mechanical operation	Basic	VZM450-01-00	—	—
	Roller lever	VZM450-01-01	VM-01C	Polyacetal roller
		VZM450-01-01S	VM-01CS	Hard steel roller
	One way roller lever	VZM450-01-02	VM-02C	Polyacetal roller
		VZM450-01-02S	VM-02CS	Hard steel roller
	Straight plunger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



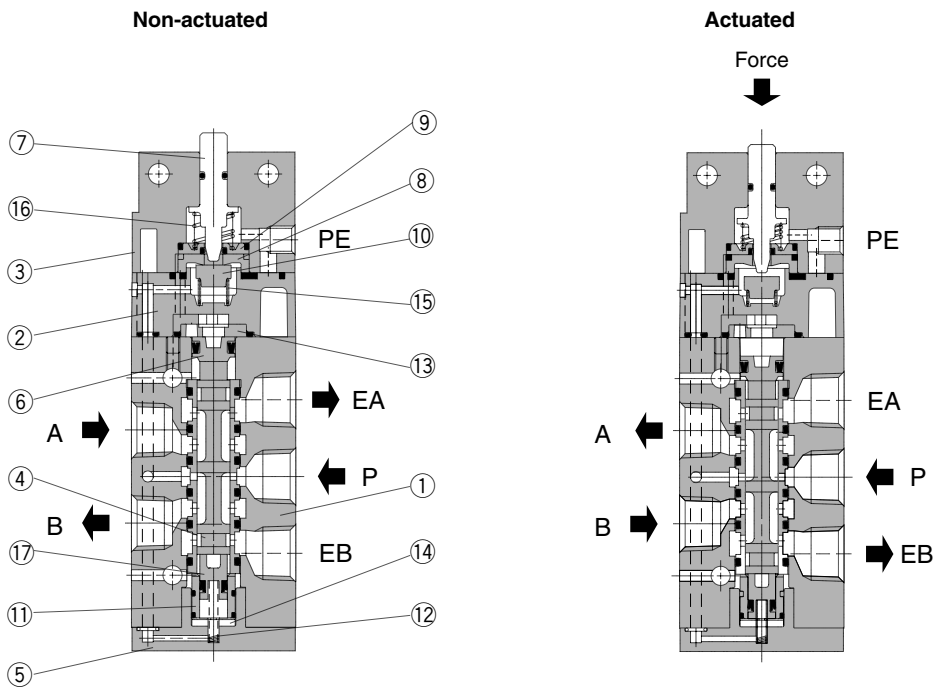
Note) Actuator replacement is available for all styles.

VZM400

How to Order



Construction



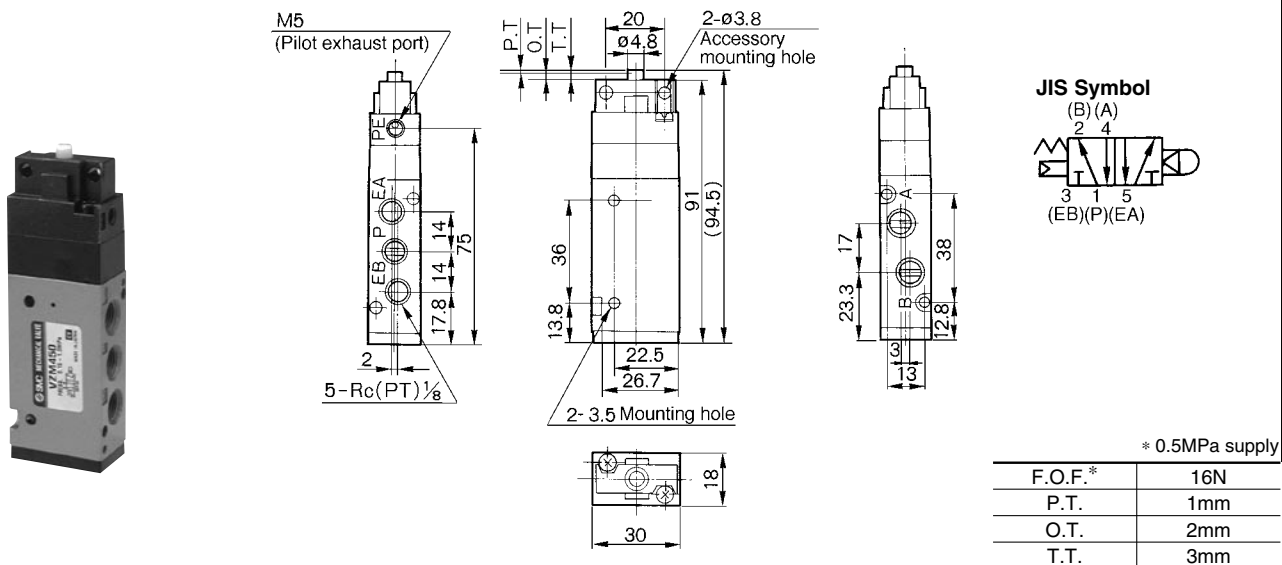
Component Parts

No.	Description	Material	Notes
①	Body	ADC	Metallic plated
②	Pilot body	PBT	Only external pilot style: ZDC
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	

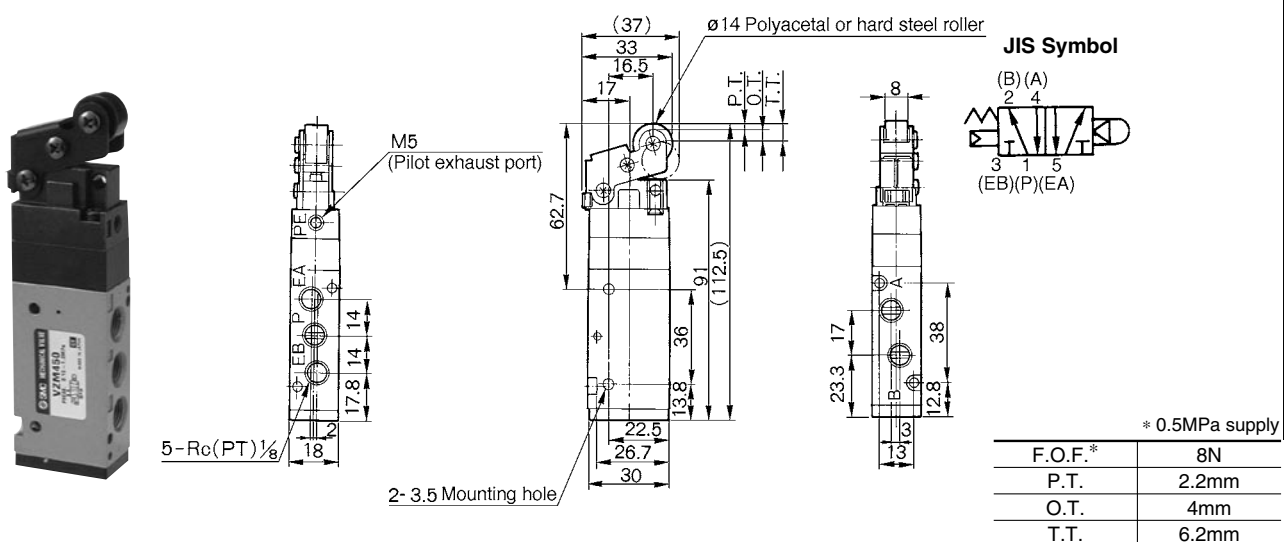
No.	Description	Material	Notes
⑩	Valve	NBR	
⑪	Piston guide B	Aluminum alloy	
⑫	Return spring	Stainless steel	
⑬	Cushion	Rubber	
⑭	Cushion	Rubber	
⑮	Valve spring	Stainless steel	
⑯	Return spring	Stainless steel	
⑰	Piston B	POM	

Series VZM400

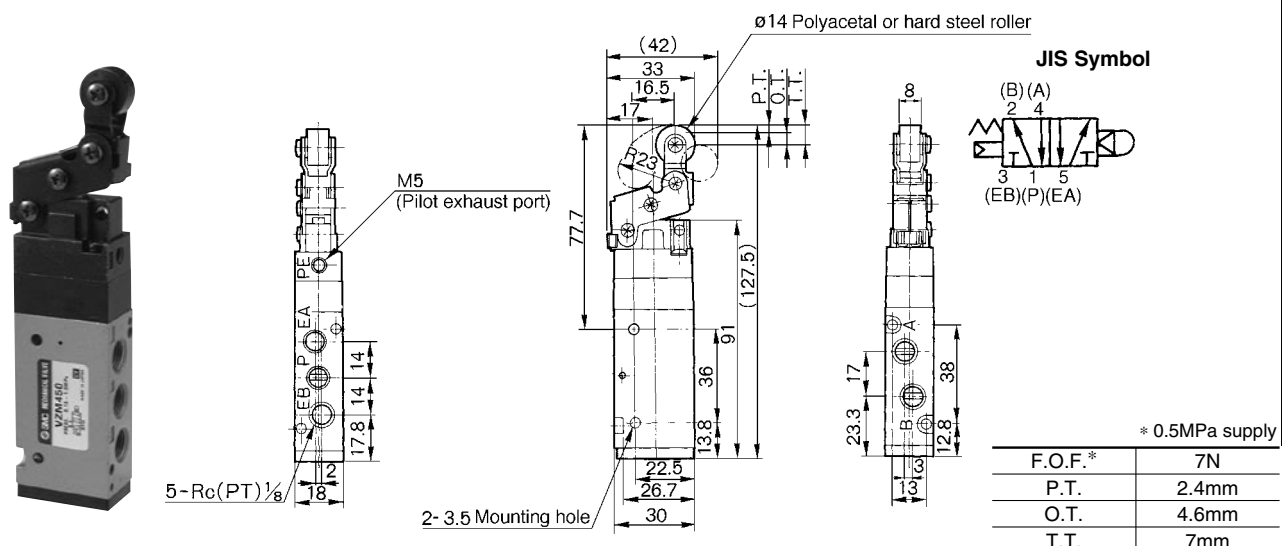
Basic/VZM450-01-00



Roller Lever/VZM450-01-01, VZM450-01-01S



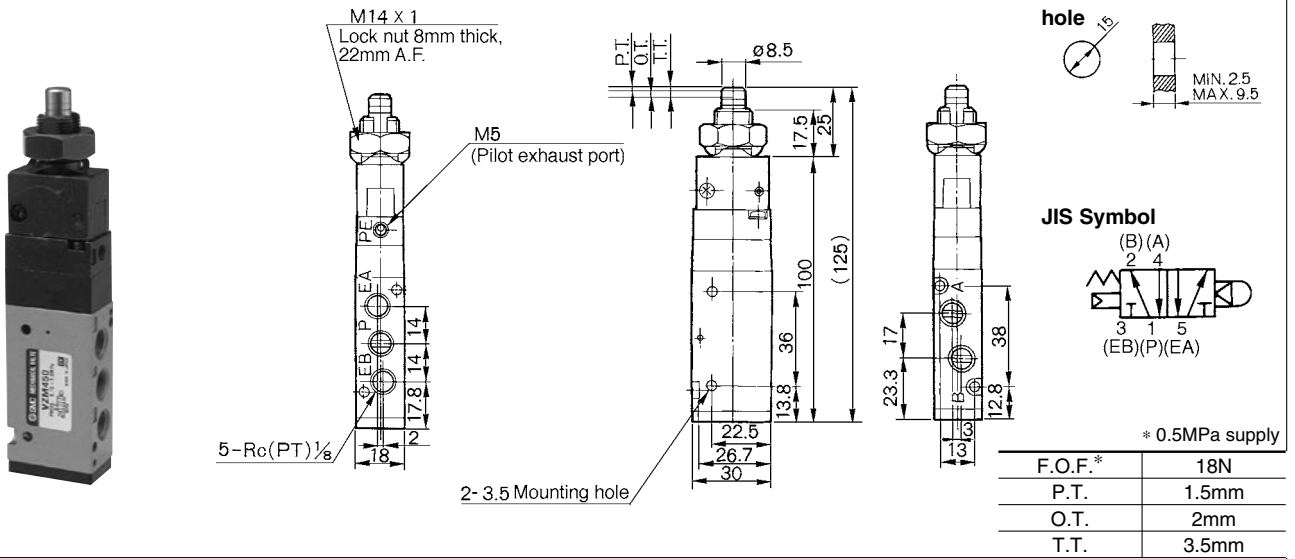
One Way Roller Lever/VZM450-01-02, VZM450-01-02S



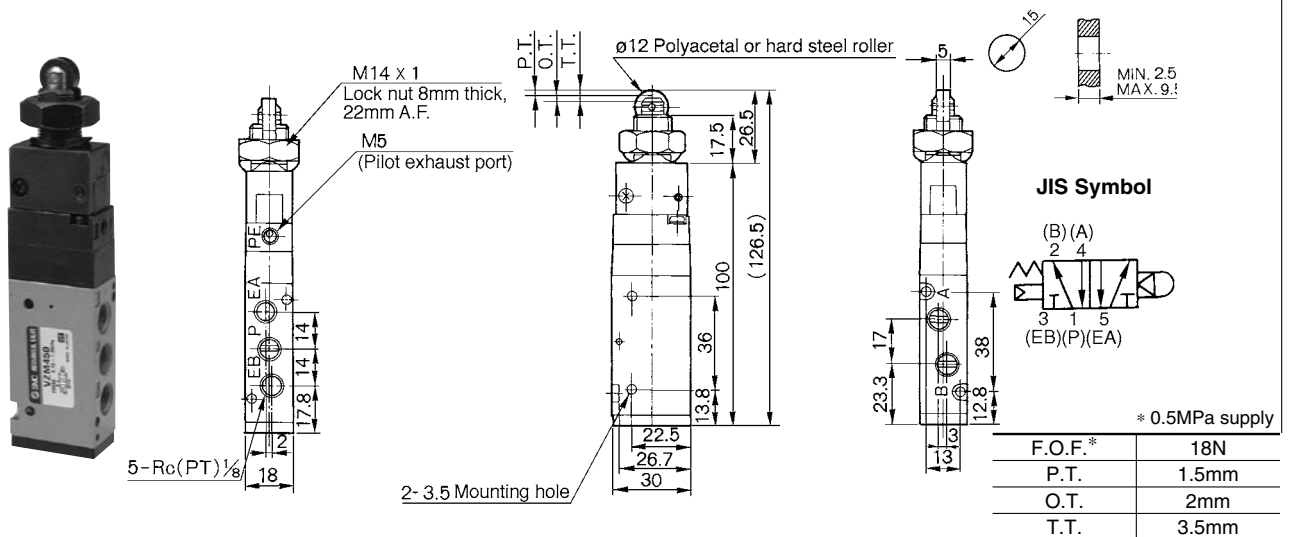
VZM400

Series VZM400

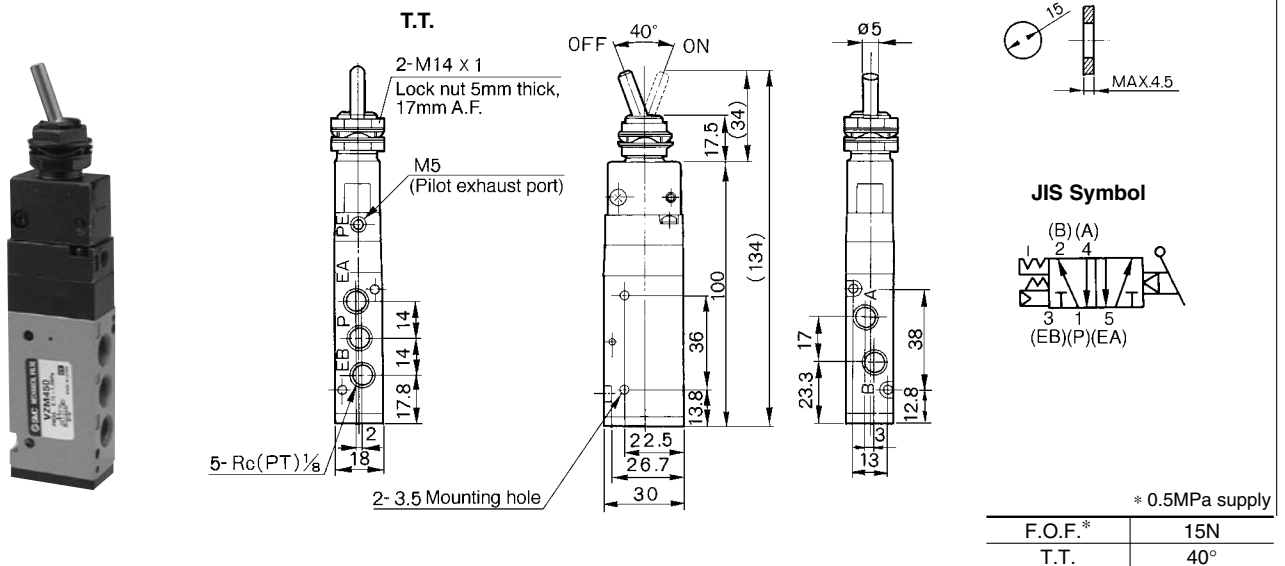
Straight Plunger/VZM450-01-05



Roller Plunger/VZM450-01-06, VZM450-01-06S

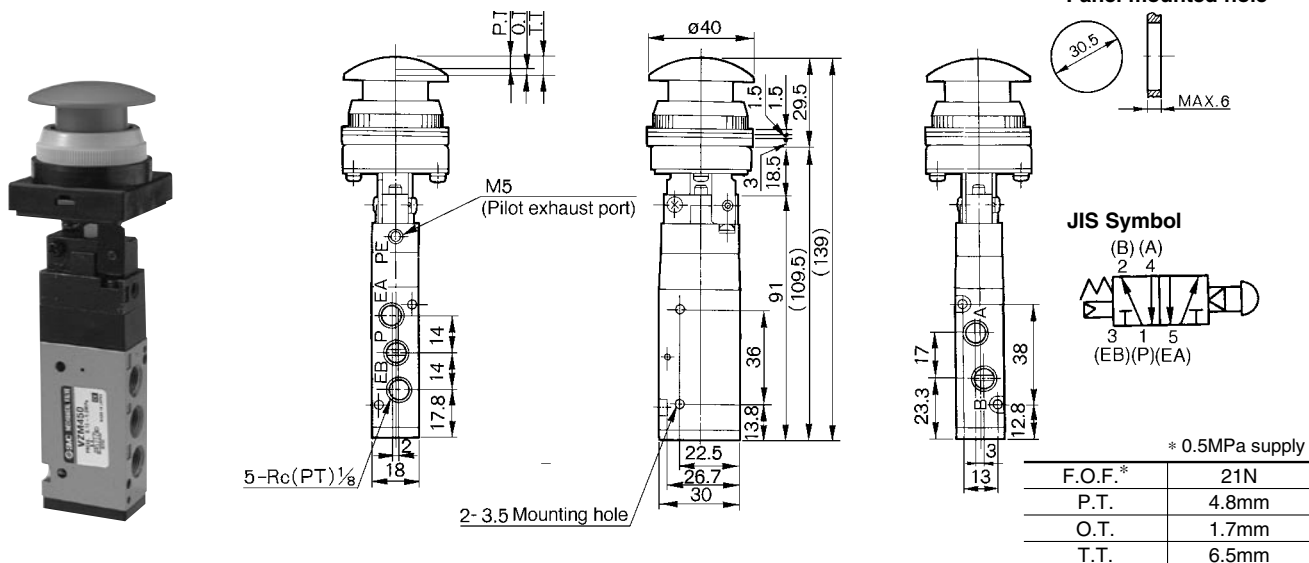


Toggle Lever/VZM450-01-08

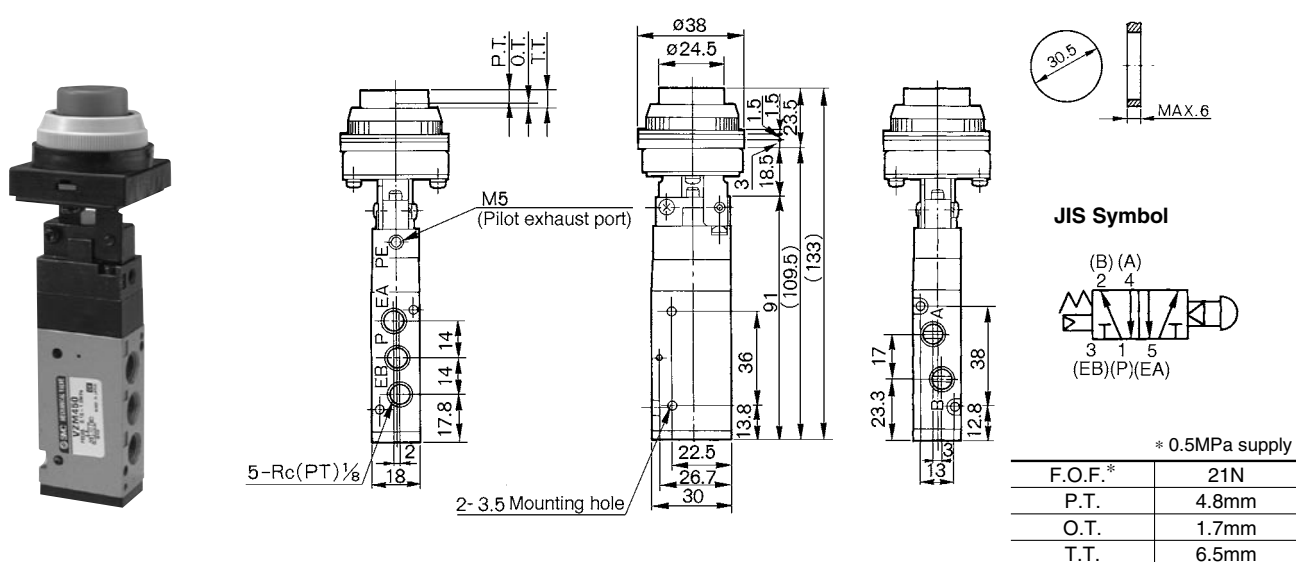


Series VZM400

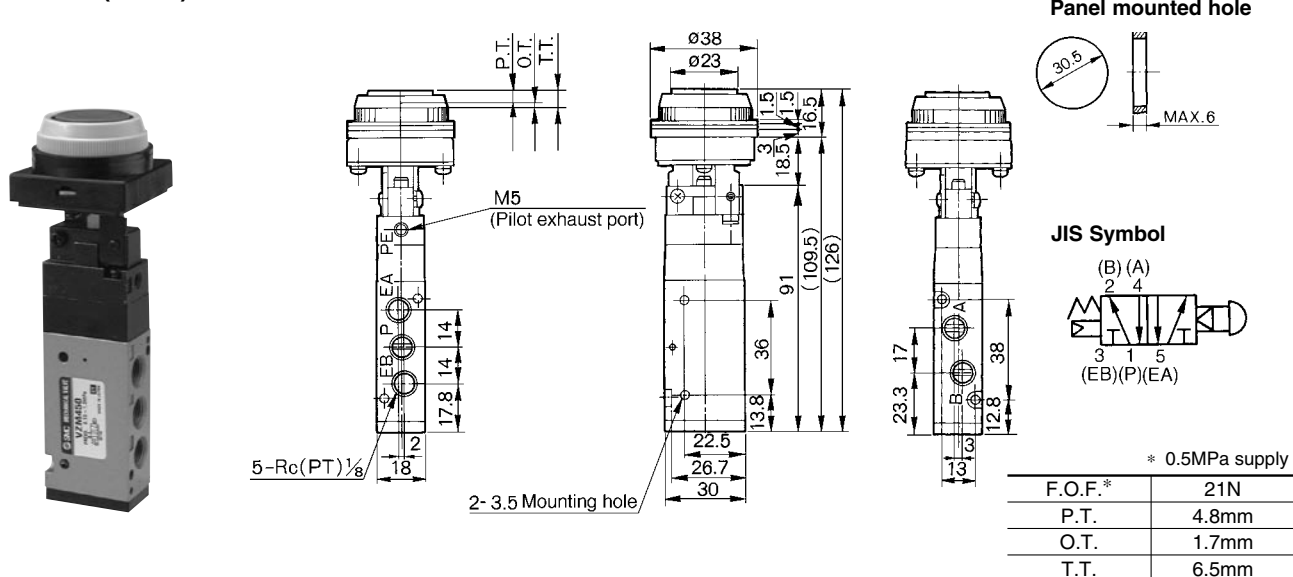
Push Button (Mushroom)/VZM450-01-30R, B, G, Y



Push Button (Extended)/VZM450-01-32R, B, G, Y



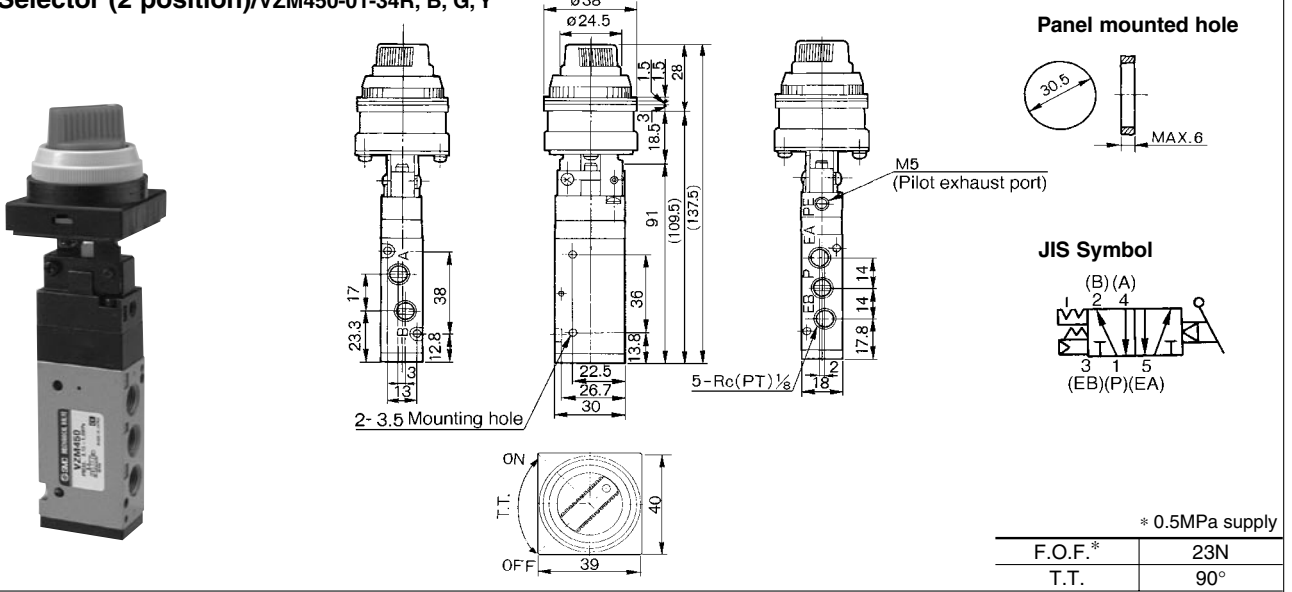
Push Button (Flush)/VZM450-01-33



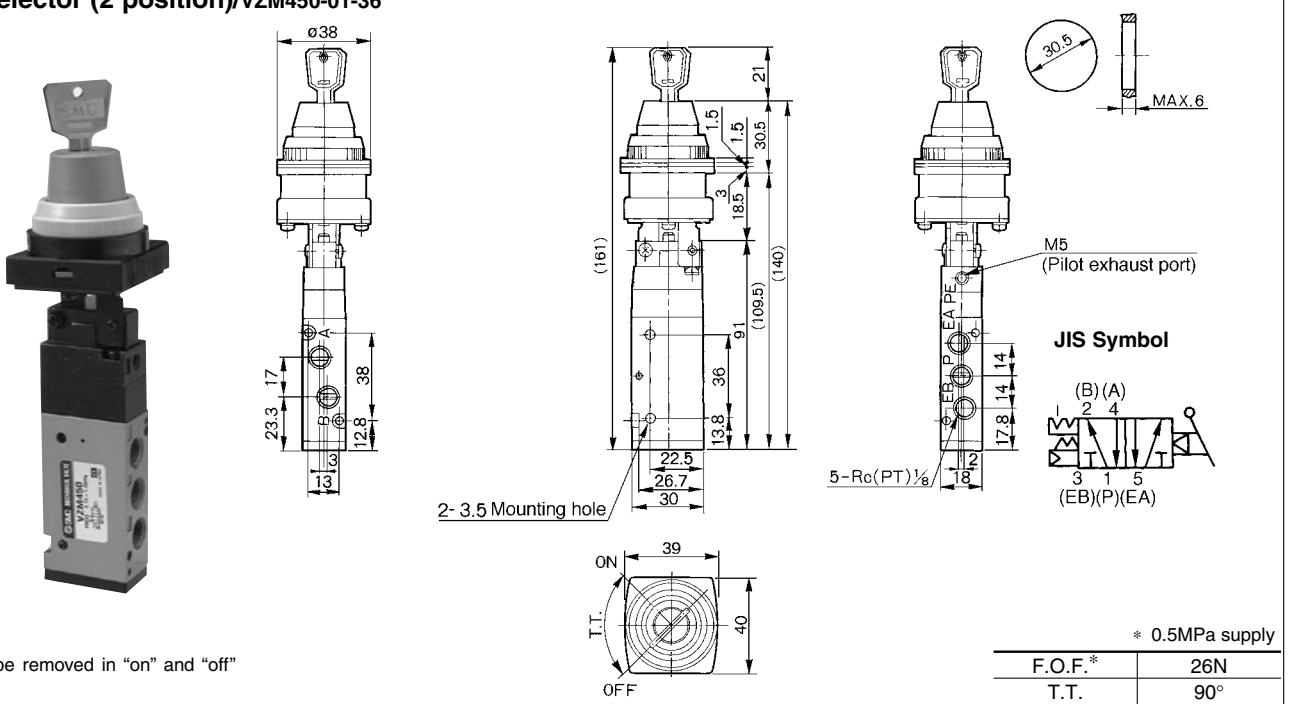
VZM400

Series VZM400

Twist Selector (2 position)/VZM450-01-34R, B, G, Y

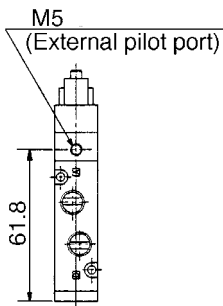


Key Selector (2 position)/VZM450-01-36

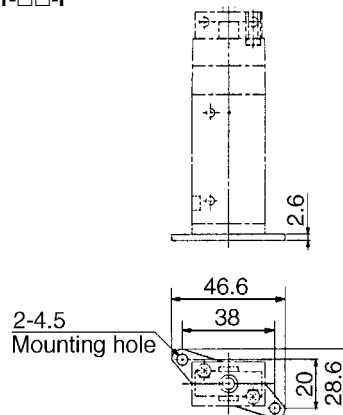


Key can be removed in "on" and "off" positions.

External Pilot Style VZM451 Type



With Foot Bracket VZM450-01-□□-F



5 Port Mechanical Valve

Series **VZM500**

**Compact design,
Large flow capacity/N/min: 589**

**High cycle rate,
Long life/300c.p.m.**

Piping possible to any EXH port.

Proper countermeasures can be taken for applications in which the fouling or 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 0.7MPa ⁽¹⁾
Ambient and fluid temperature	-5 to 60°C (No freezing)
Effective area (N/min)	10.8mm ² (534.90)
Maximum frequency (Mechanical operation style)	300 c.p.m or less
Lubrication	Not required/Turbine oil #1 (ISO VG32)
Port size	Main valve 1/8
	Pilot valve (EXH)/M5
Option	Foot bracket ⁽²⁾
Weight (Basic)	130g

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

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
Toggle lever	VZM550-01-08	VM-08C	—	
Manual operation	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
	Push button (Flush)	VZM550-01-32Y	VM-32CY	Yellow
		VZM550-01-33	VM-33C	With a set of red, black, green, yellow
		Twist selector (2 position)	VZM550-01-34R	VM-34CR
	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) Actuator replacement is available for all styles. (Except for push-pull)

VZM500

How to Order

E VZM55 **0** **01** **01** **S** **Option**

Area code

-	Japan, Asia, Australia, England
E	Europe
N	North America

Thread

-	Rc(PT)
F	G(PF)
N	NPT
T	NPTF

Port size

01	1/8
-----------	-----

Actuator

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 (Flash)
34	Twist selector (2 position)
36	Key selector (2 position)
37	Push-pull

Suffix of actuator

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

Colour of push button

Option

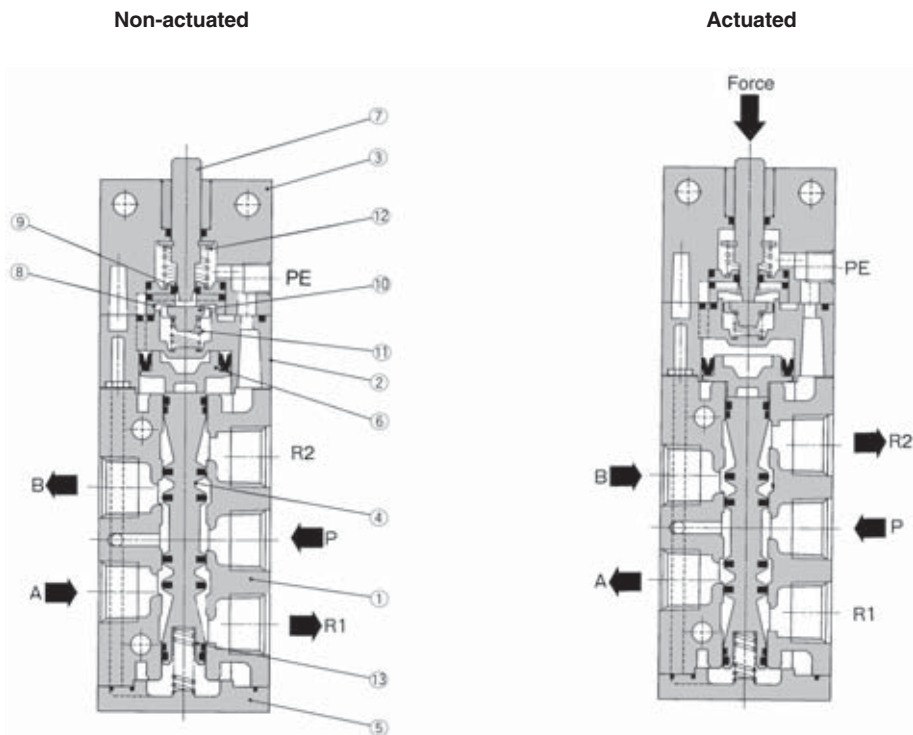
F	Foot bracket
----------	--------------

Body option

0	Standard
1*	External pilot style

* Except for VZM550-01-37

Construction



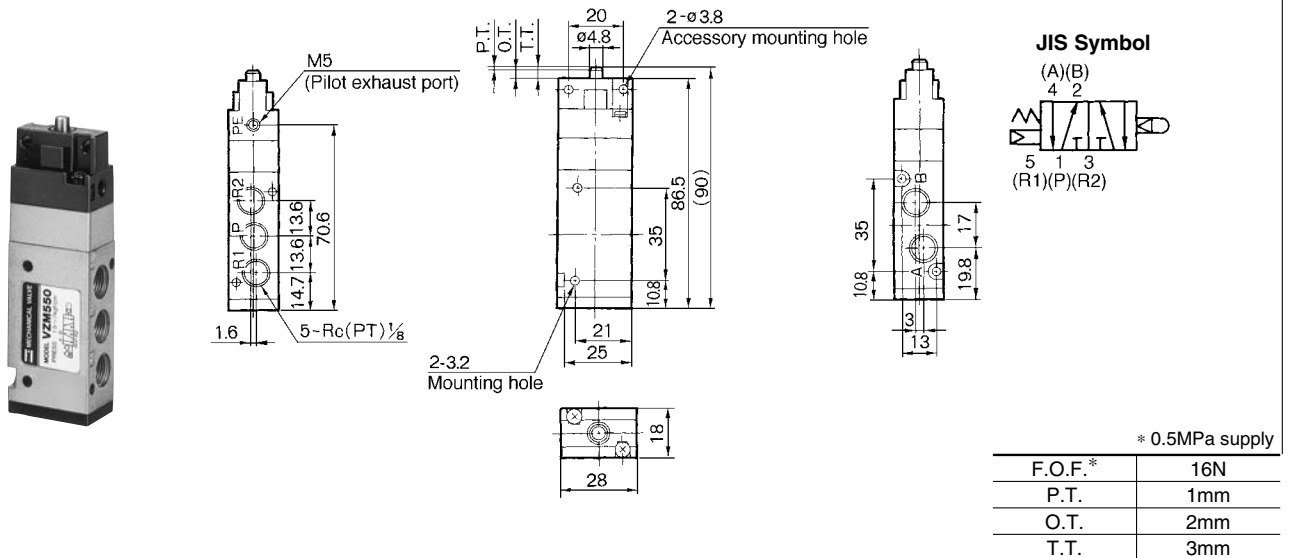
Component Parts

No.	Description	Material	Notes
①	Body	ADC	Platinum silver
②	Pilot body	PBT	ZDC only for external pilot type
③	Head cover	ZDC	Black zinc chromate
④	Spool assembly		
⑤	End cover	ZDC	Matt-black
⑥	Piston	POM	
⑦	Plunger	POM	

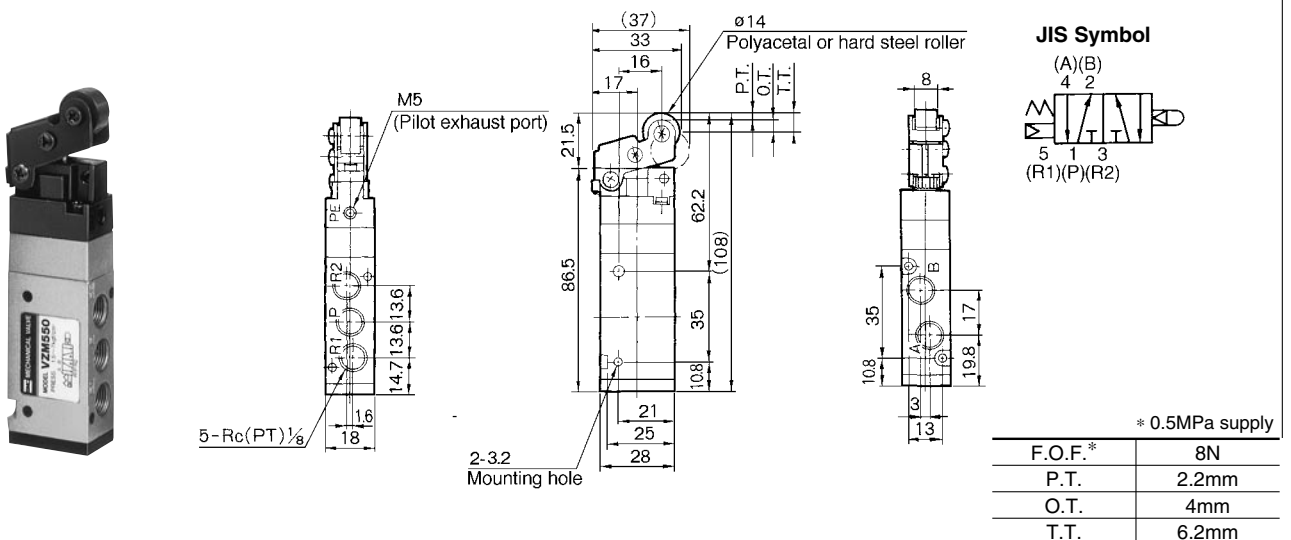
No.	Description	Material	Notes
⑧	Valve seat (A)	POM	
⑨	Valve seat (B)	POM	
⑩	Valve assembly	NBR	
⑪	Valve spring	Stainless steel	
⑫	Return spring	Stainless steel	
⑬	Spool spring	Stainless steel	

Series VZM500

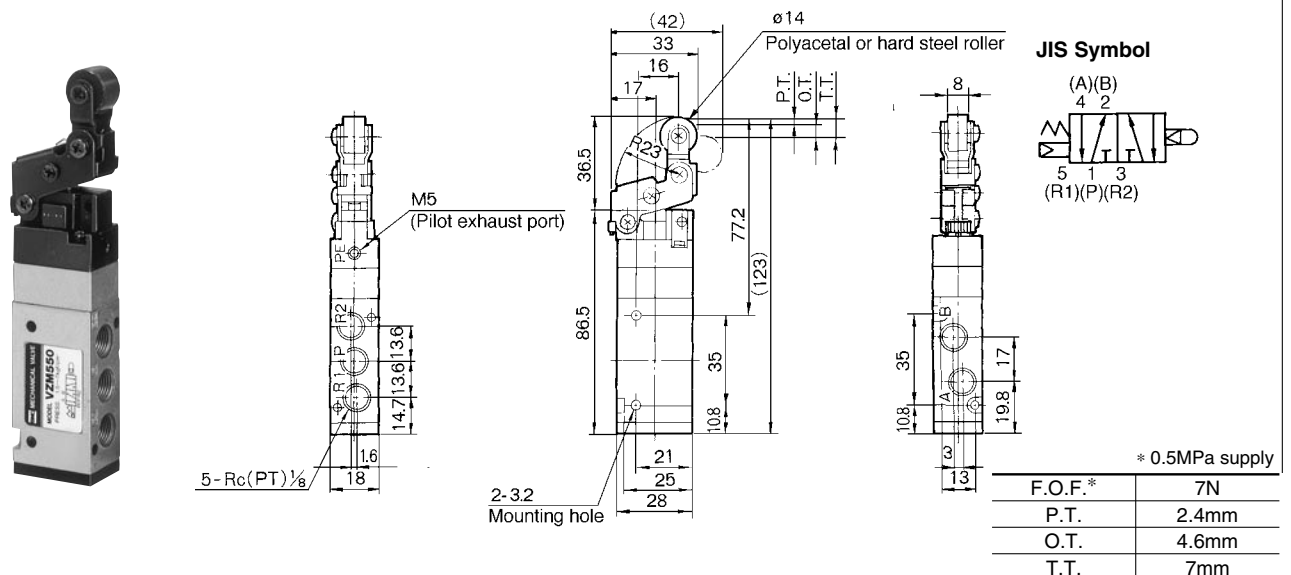
Basic/VZM550-01-00



Roller Lever/VZM550-01-01, VZM550-01-01S



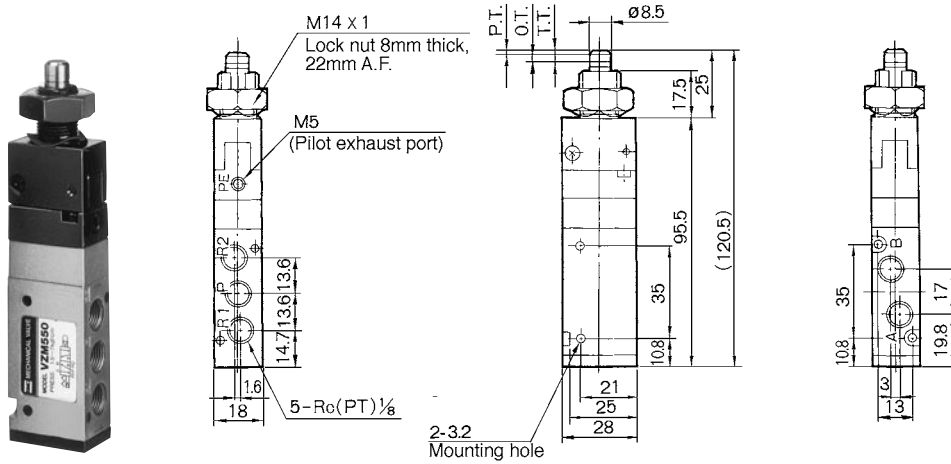
One Way Roller Lever/VZM550-01-02, VZM550-01-02S



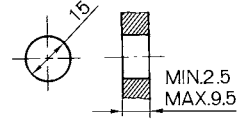
VZM500

Series VZM500

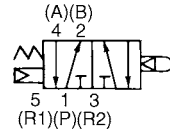
Straight Plunger/VZM550-01-05



Panel mounted hole



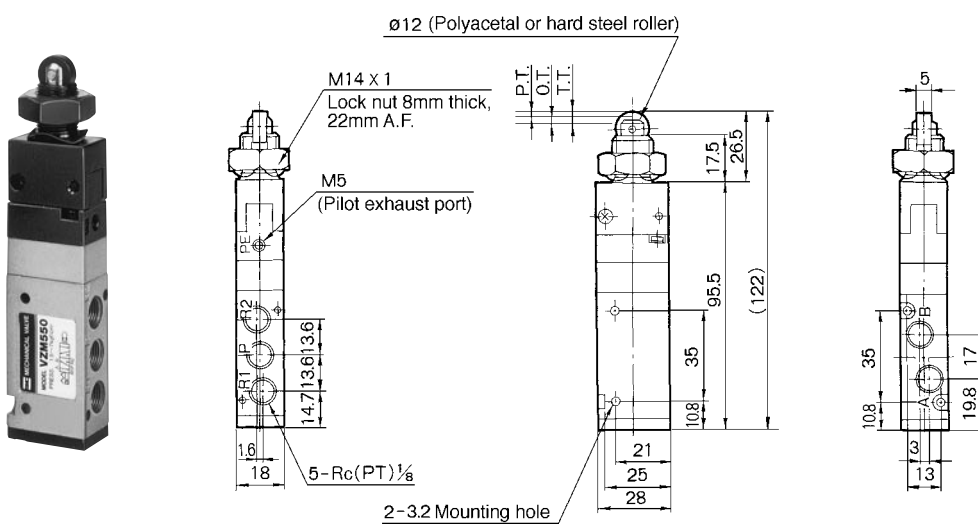
JIS Symbol



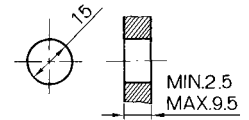
* 0.5MPa supply

F.O.F.*	18N
P.T.	1.5mm
O.T.	2mm
T.T.	3.5mm

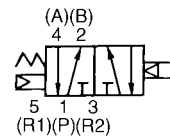
Roller Plunger/VZM550-01-06, VZM550-01-06S



Panel mounted hole



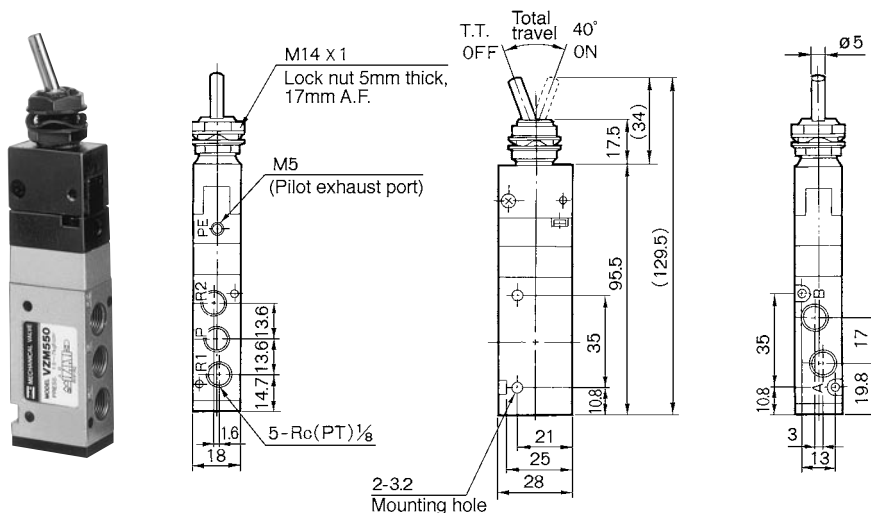
JIS Symbol



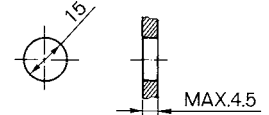
* 0.5MPa supply

F.O.F.*	18N
P.T.	1.5mm
O.T.	2mm
T.T.	3.5mm

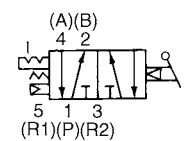
Toggle Lever/VZM550-01-08



Panel mounted hole



JIS Symbol

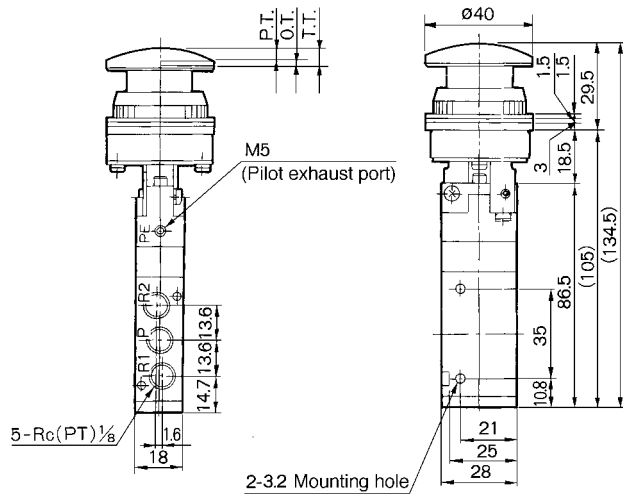


* 0.5MPa supply

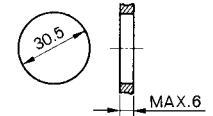
F.O.F.*	15N
T.T.	40°

Series VZM500

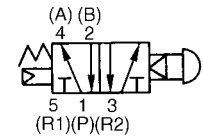
Push Button (Mushroom)/VZM550-01-30R, B, G, Y



Panel mounted hole



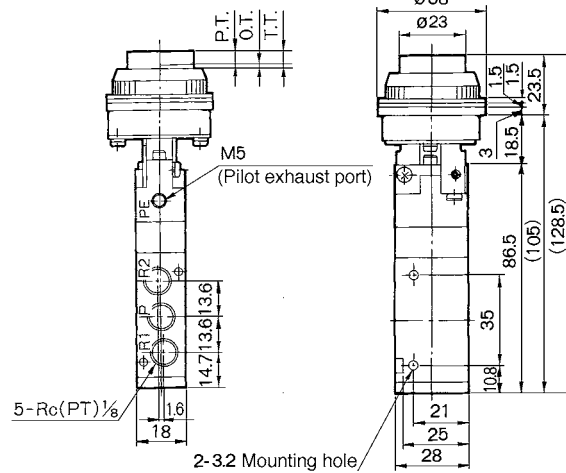
JIS Symbol



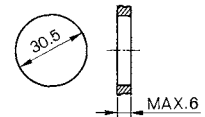
* 0.5MPa supply

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

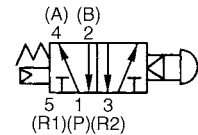
Push Button (Extended)/VZM550-01-32R, B, G, Y



Panel mounted hole



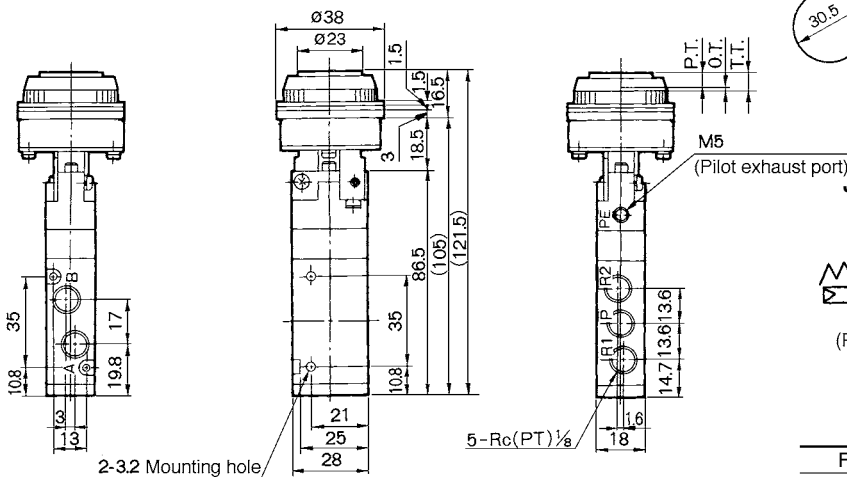
JIS Symbol



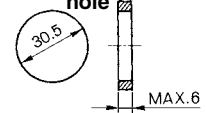
* 0.5MPa supply

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

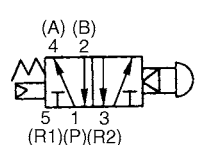
Push Button (Flush)/VZM550-01-33



Panel mounted hole



JIS Symbol



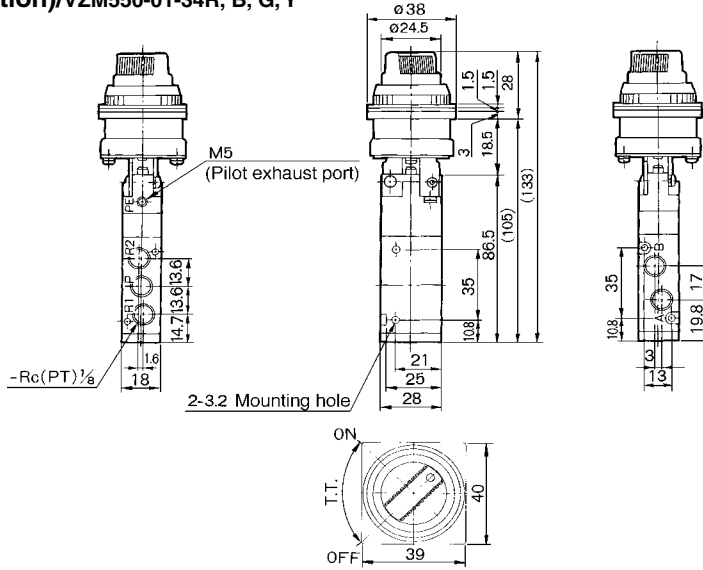
* 0.5MPa supply

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

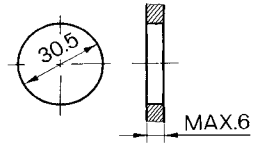
VZM500

Series VZM500

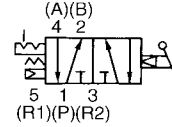
Twist Selector (2 position)/VZM550-01-34R, B, G, Y



Panel mounted hole



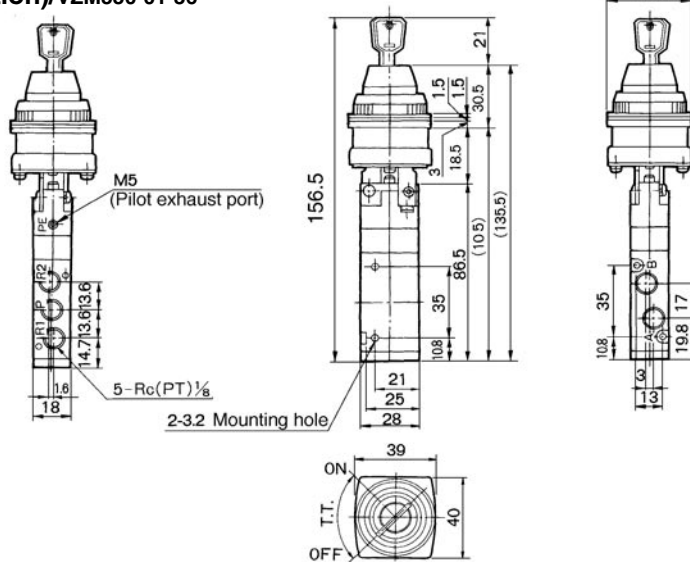
JIS Symbol



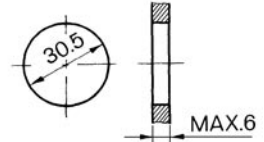
* 0.5MPa supply

F.O.F.*	23N
T.T.	90°

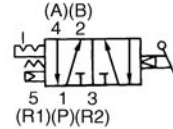
Key Selector (2 position)/VZM550-01-36



Panel mounted hole



JIS Symbol

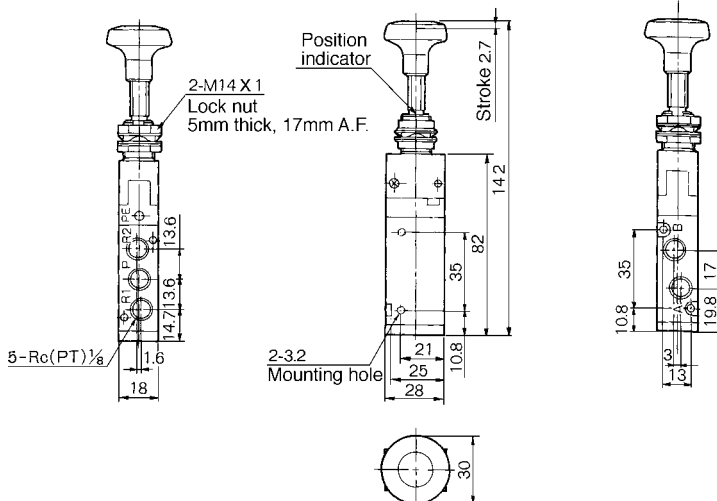


* 0.5MPa supply

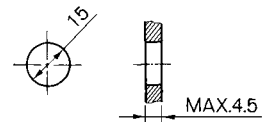
F.O.F.*	26N
T.T.	90°

Key can be removed in "on" and "off" positions.

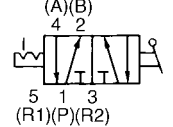
Push-pull/VZM550-01-37



Panel mounted hole

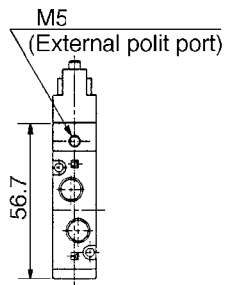


JIS Symbol

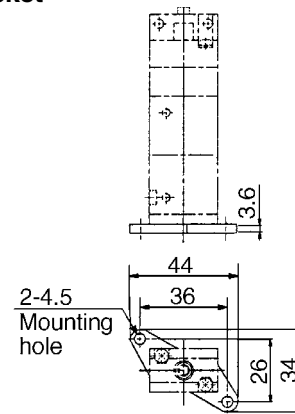


F.O.F.	20N
T.T.	2.7mm

External Pilot Style VZM551 Type



With Foot Bracket VZM55□-01-□□-F



5 Port Mechanical Valve/Rubber Seal

Series VFM300

RoHS

**Compact design,
large flow capacity
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.

**Pilot type is selectable.
(Internal pilot and external pilot)**



Specifications

Fluid	Air/Inert gas				
Operating pressure	0.15 to 0.9 MPa ⁽¹⁾				
Ambient and fluid temperature	-5 to 60°C (No freezing)				
Flow characteristics	C[dm ³ /(s·bar)]	b	Cv	Q [l/min] (ANR) ⁽²⁾	
	1(P)→2(C2)/4(C1)	4.0	0.36	1.0	1.0
	2(C2)/4(C1)→3(E2)/5(E1)	3.1	0.32	0.75	0.75
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/1P, 4A, 2B port 1/4, 5EA/3EB port 1/8				
	Pilot valve (EXH)/M5 x 0.8				
Option	Foot bracket ⁽³⁾				

Note 1) External pilot type Main valve: 0 to 0.9 MPa
Pilot valve: 0.15 to 0.9 MPa

Note 2) These values have been calculated according to ISO 6358 and indicate the flow rate under standard conditions with an inlet pressure of 0.6 MPa (relative pressure) and a pressure drop of 0.1 MPa.

Note 3) The standard body can not be retrofitted with a foot bracket.

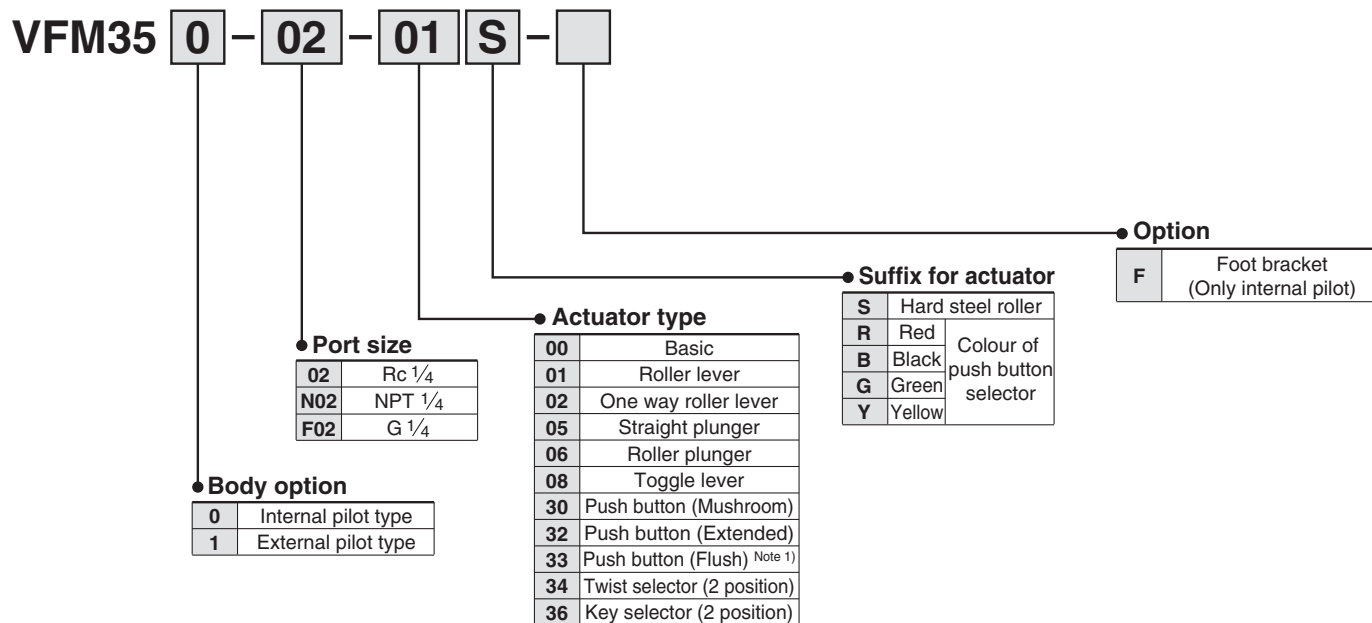
Model

	Actuator	Model	Actuator part no.	Application	Weight (g)
Mechanical operation	Basic	VFM350-02-00	—	—	190
	Roller lever	VFM350-02-01	VM-01C	Polyacetal roller	270
		VFM350-02-01S	VM-01CS	Hard steel roller	280
	One way roller lever	VFM350-02-02	VM-02C	Polyacetal roller	280
		VFM350-02-02S	VM-02CS	Hard steel roller	290
	Straight plunger	VFM350-02-05	VM-05D	—	380
Roller plunger	VFM350-02-06	VM-06D	Polyacetal roller	370	
	VFM350-02-06S	VM-06DS	Hard steel roller	380	
Manual operation	Toggle lever	VFM350-02-08	VM-08D	—	360
	Push button (Mushroom)	VFM350-02-30R	VM-30CR	Red	309
		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	302
		VFM350-02-32B	VM-32CB	Black	
		VFM350-02-32G	VM-32CG	Green	
	Push button (Flush)	VFM350-02-32Y	VM-32CY	Yellow	307
		VFM350-02-33	VM-33C	With a set of red, black, green, yellow	
	Twist selector (2 position)	VFM350-02-34R	VM-34CR	Red	308
		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	—	327	

Note 1) Actuator replacement is available for all types.

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

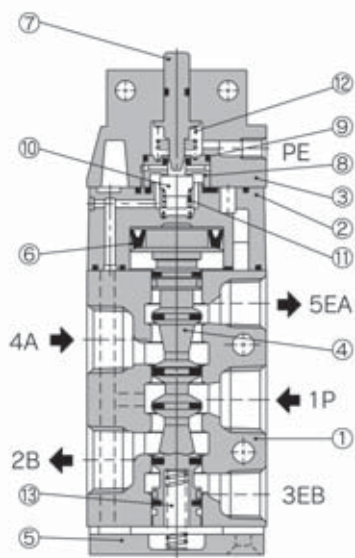
How to Order



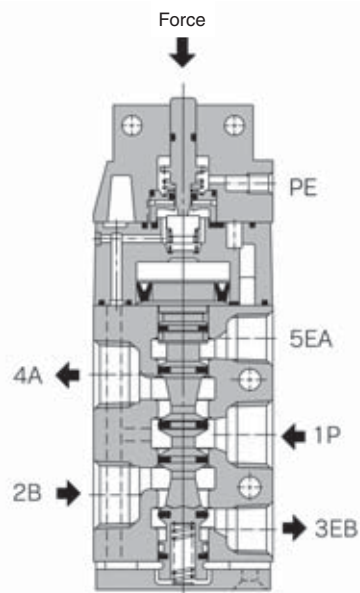
Note 1) When selecting the flush type, it is not necessary to select the suffix for the actuator.

Construction

Non-actuated



Actuated



Component Parts

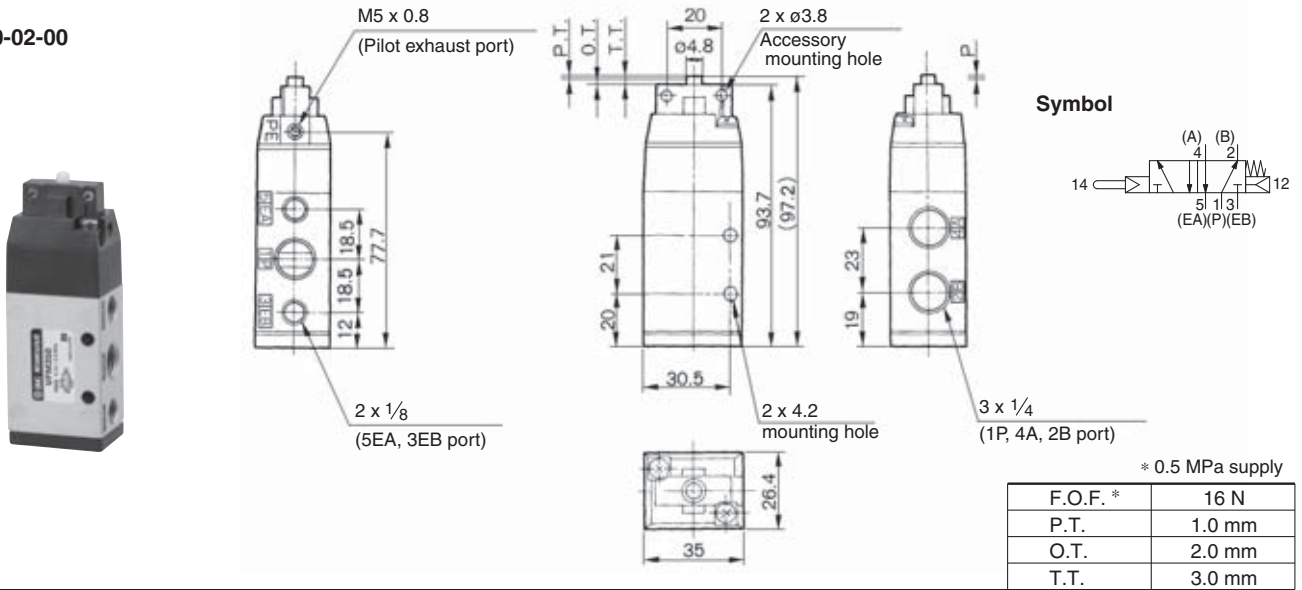
No.	Description	Material	Note
1	Body	ADC	Platinum silver
2	Pilot body	PBT	ZDC only for external pilot type
3	Head cover	ZDC	Black zinc chromated
4	Spool valve assembly		
5	End cover	ADC	Matt-black
6	Piston	POM	
7	Plunger	POM	

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	

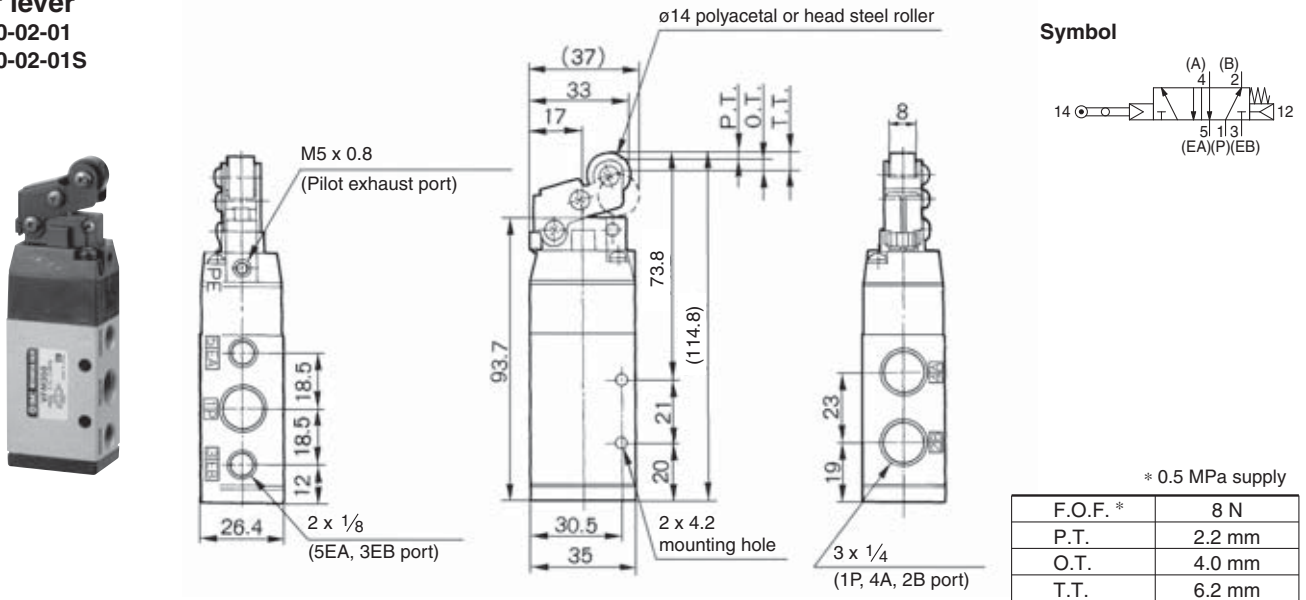
VFM300

Series VFM300

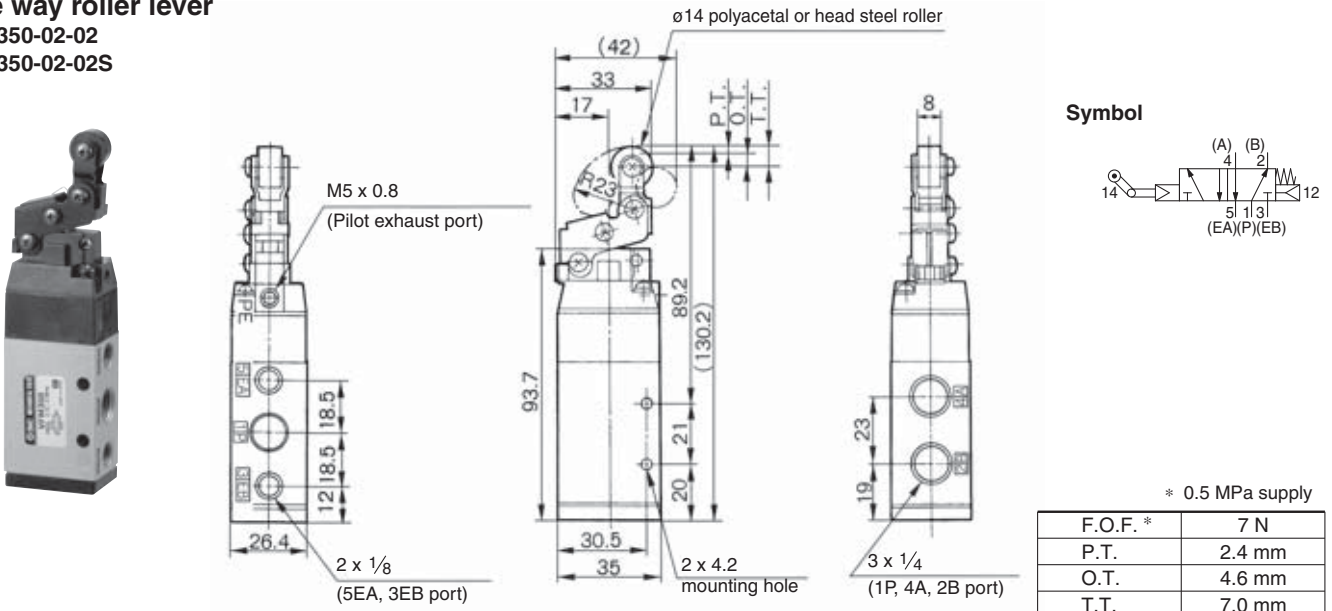
Basic VFM350-02-00



Roller lever VFM350-02-01 VFM350-02-01S

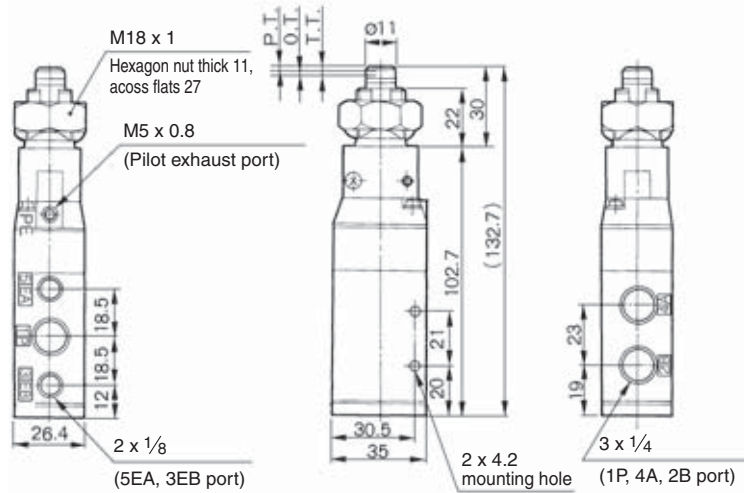


One way roller lever VFM350-02-02 VFM350-02-02S



Series VFM300

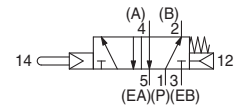
Straight plunger VFM350-02-05



Panel mounting hole



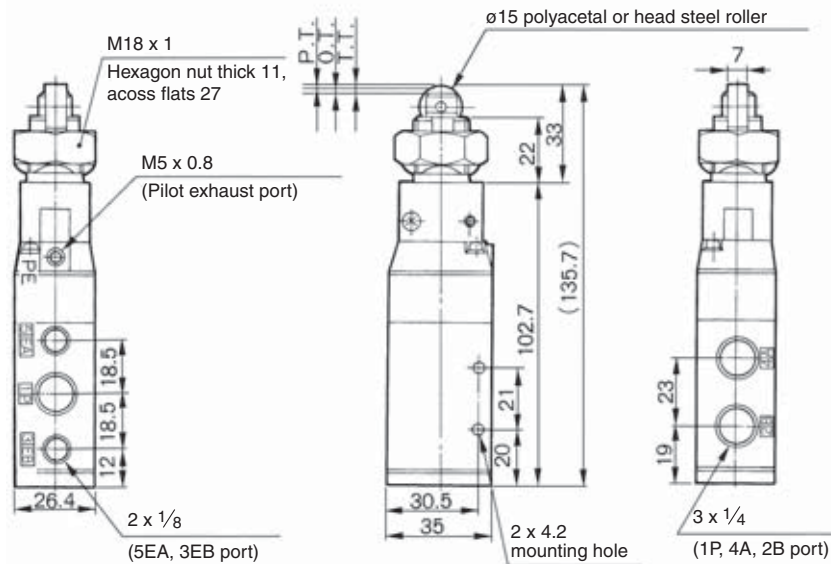
Symbol



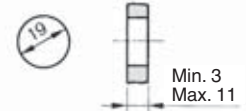
* 0.5 MPa supply

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

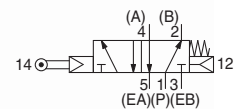
Roller plunger VFM350-02-06 VFM350-02-06S



Panel mounting hole



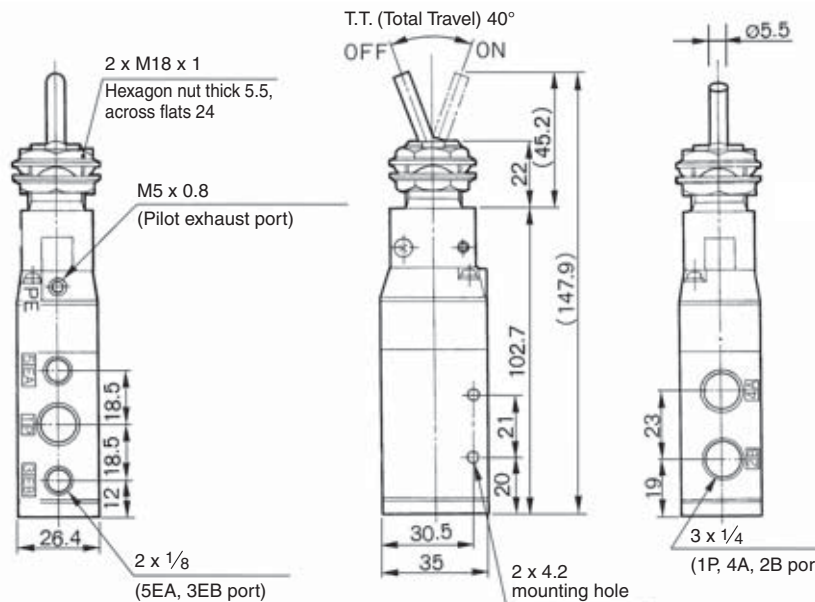
Symbol



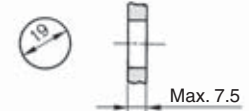
* 0.5 MPa supply

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

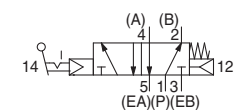
Toggle lever VFM350-02-08



Panel mounting hole



Symbol



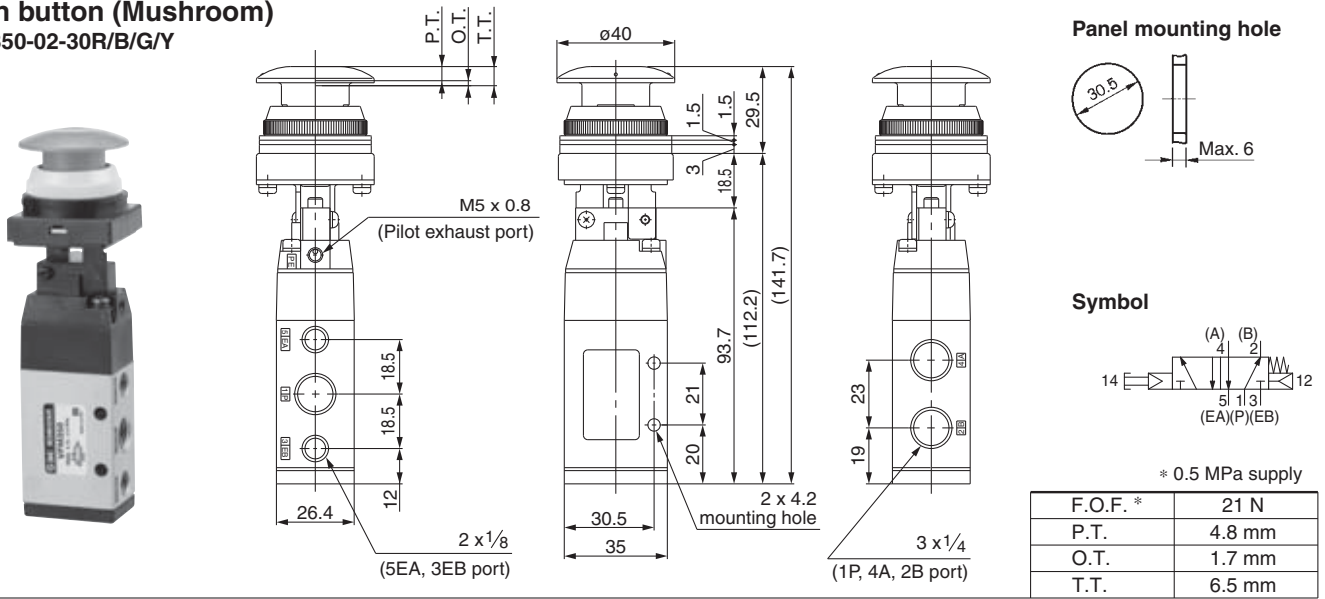
* 0.5 MPa supply

F.O.F. *	15 N
T.T.	40°

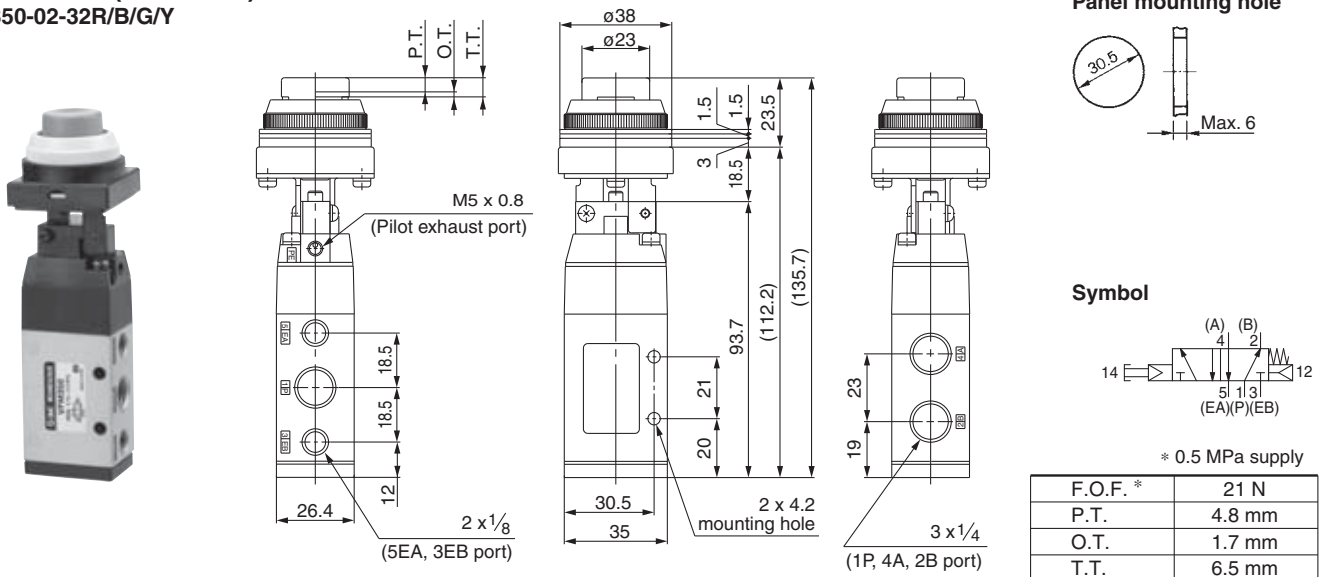
VFM300

Series VFM300

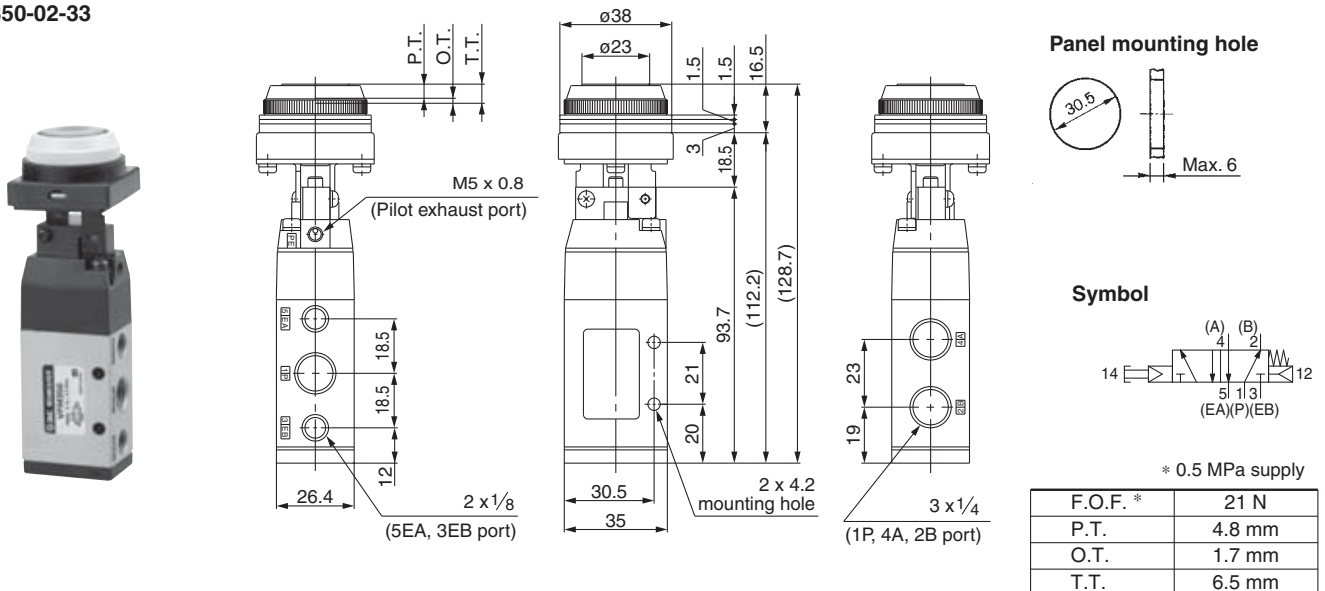
Push button (Mushroom) VFM350-02-30R/B/G/Y



Push button (Extended) VFM350-02-32R/B/G/Y

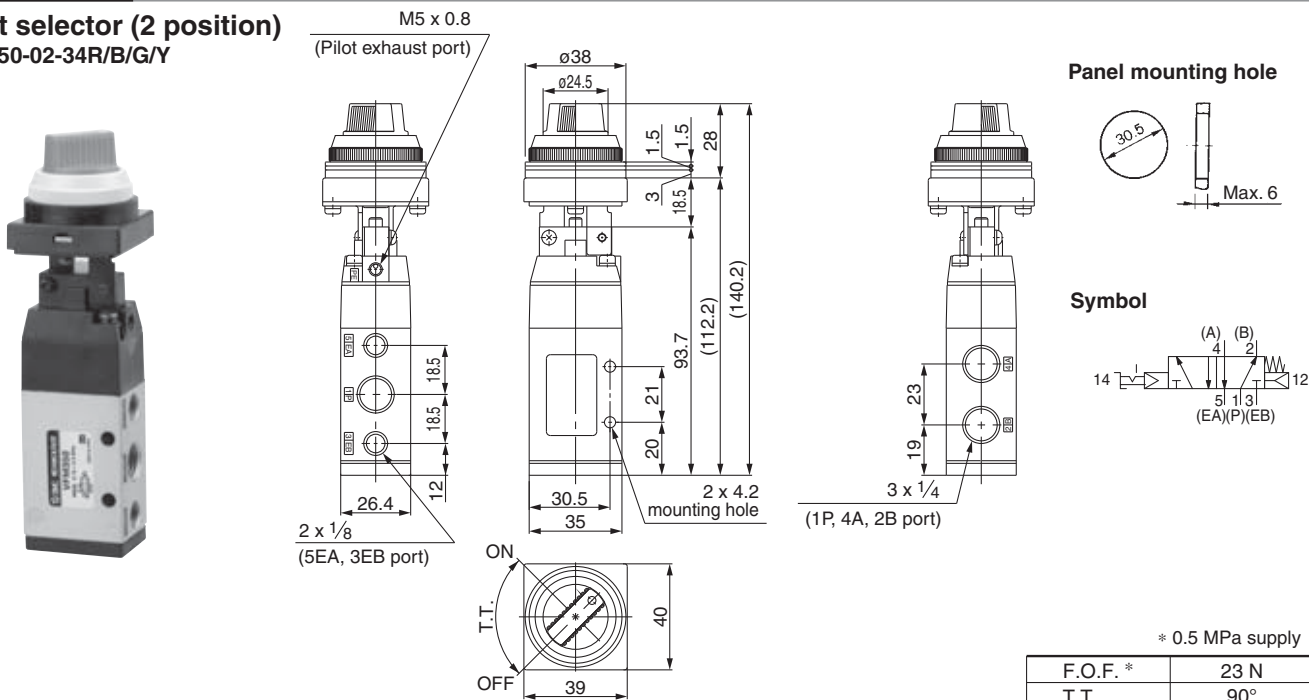


Push button (Flush) VFM350-02-33

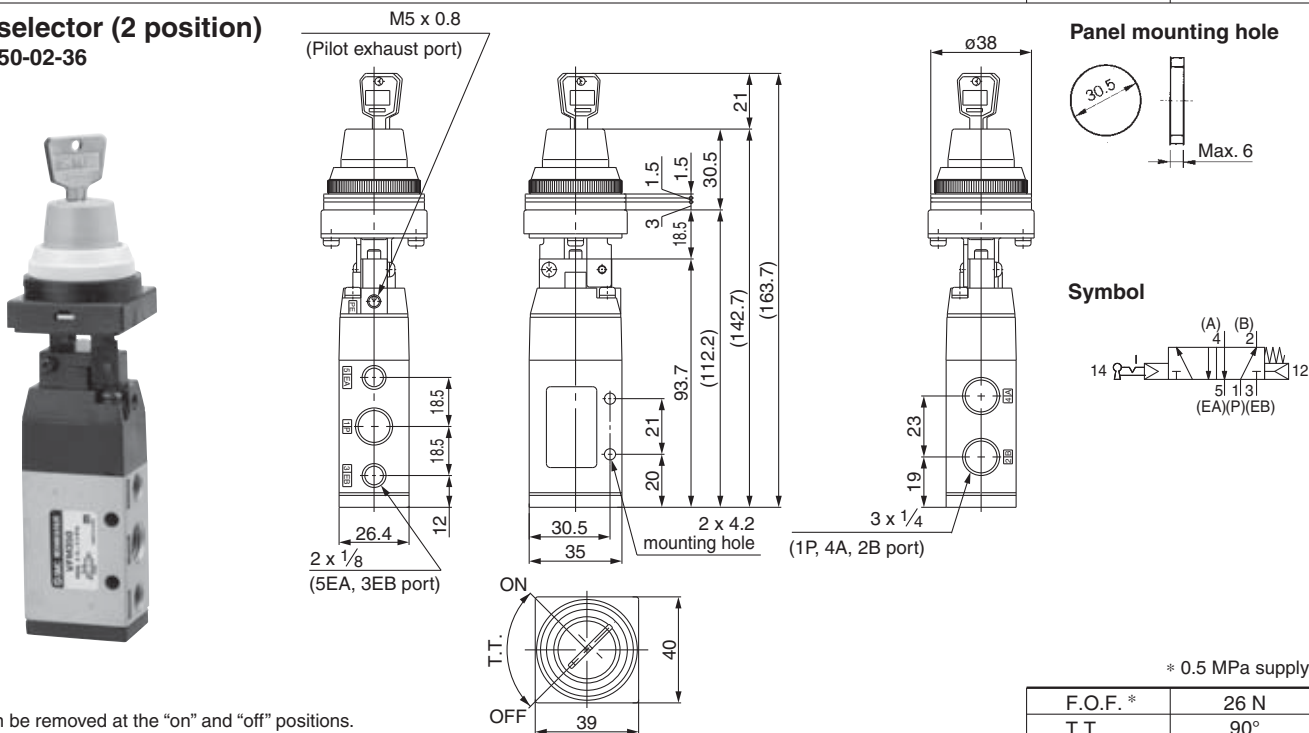


Series VFM300

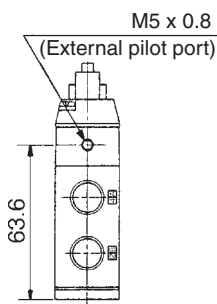
Twist selector (2 position) VFM350-02-34R/B/G/Y



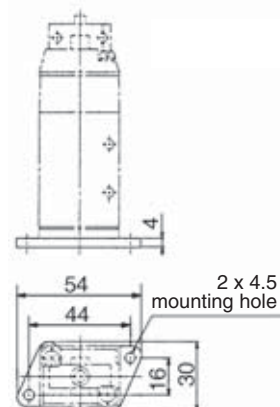
Key selector (2 position) VFM350-02-36



External pilot type VFM351 type



With foot bracket VFM350-02-□□-F



5 Port Mechanical Valve/Metal Seal

Series **VFM200**

**Compact design,
Large flow capacity/
N_d/min: 982**

**High cycle rate,
Long life/300c.p.m.**

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 1.0MPa ⁽¹⁾
Ambient and fluid temperature	-5 to 60°C (No freezing)
Effective area (N _d /min)	18mm ² (891.50)
Maximum frequency (Mechanical operation style)	300 c.p.m or less
Lubrication	Not required/Turbine oil #1 (ISO VG32)
Port size	Main valve 1/4
	Pilot valve (EXH)/M5
Option	Foot bracket ⁽²⁾
Weight (Basic)	300g



* Contact SMC for manifold mounting style.

Note 1) External pilot style Main valve: 0 to 1.0MPa
Pilot valve: 0.1 to 1.0MPa

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) Actuator replacement is available for all styles.

How to Order

E VFM25 **0** **02** **01** **S** **F**

• **Area code**

-	Japan, Asia, Australia, England
E	Europe
N	North America

• **Port size**

02	1/4
-----------	-----

• **Thread**

-	Rc(PT)
F	G(PF)
N	NPT
T	NPTF

• **Body option**

0	Internal pilot style
1	External pilot style

• **Actuator**

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)

• **Suffix of actuator**

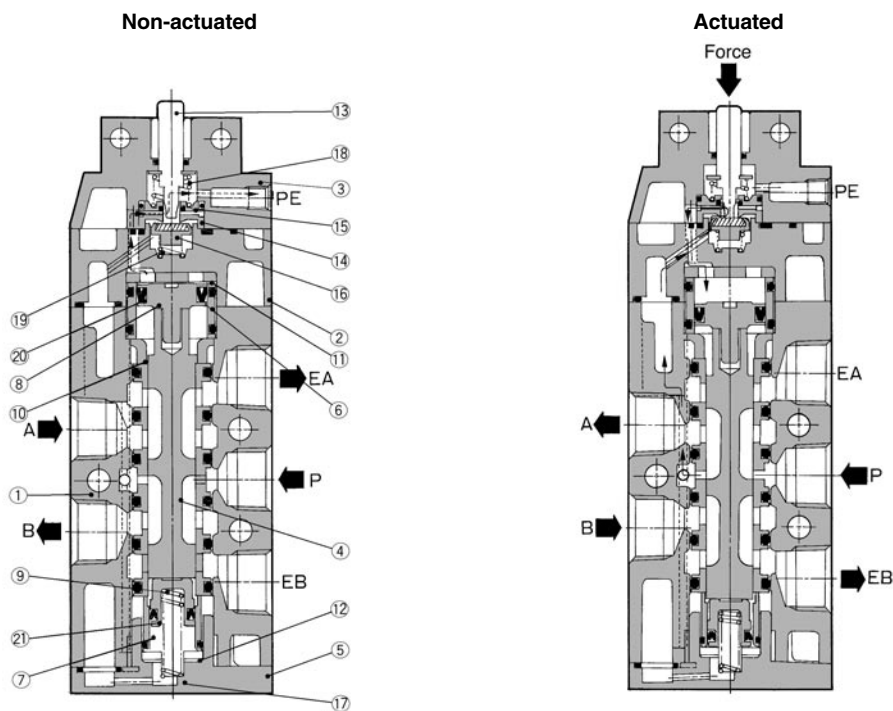
S	Hard steel roller
R	Red
B	Black
G	Green
Y	Yellow

Colour of push button

• **Option**

F	Foot bracket (Only internal pilot)
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Construction



Component Parts

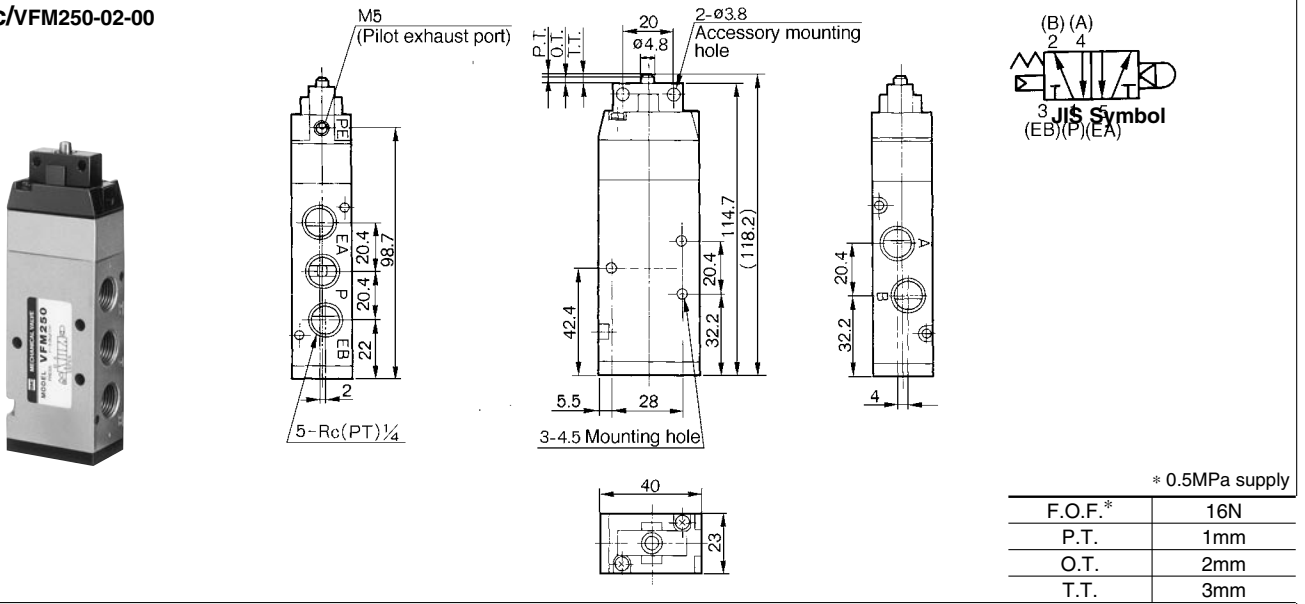
No.	Description	Material	Notes
①	Body	Aluminum alloy	Metallic plated
②	Pilot body	Zinc alloy	Metallic plated
③	Head cover	Zinc alloy	Black zinc chromate
④	Spool/sleeve	Stainless steel	
⑤	End cover	Polyacetal	
⑥	Piston guide	Brass	
⑦	Piston guide for end cover	Brass	
⑧	Piston	Polyacetal	
⑨	Piston for end cover	Polyacetal	
⑩	Guide bushing	Polyacetal	
⑪	Cushion	Urethane rubber	

No.	Description	Material	Notes
⑫	Cushion for end cover	Urethane rubber	
⑬	Plunger	Stainless steel	
⑭	Valve seat (A)	Brass	
⑮	Valve seat (B)	Brass	
⑯	Valve	NBR, Brass	
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	

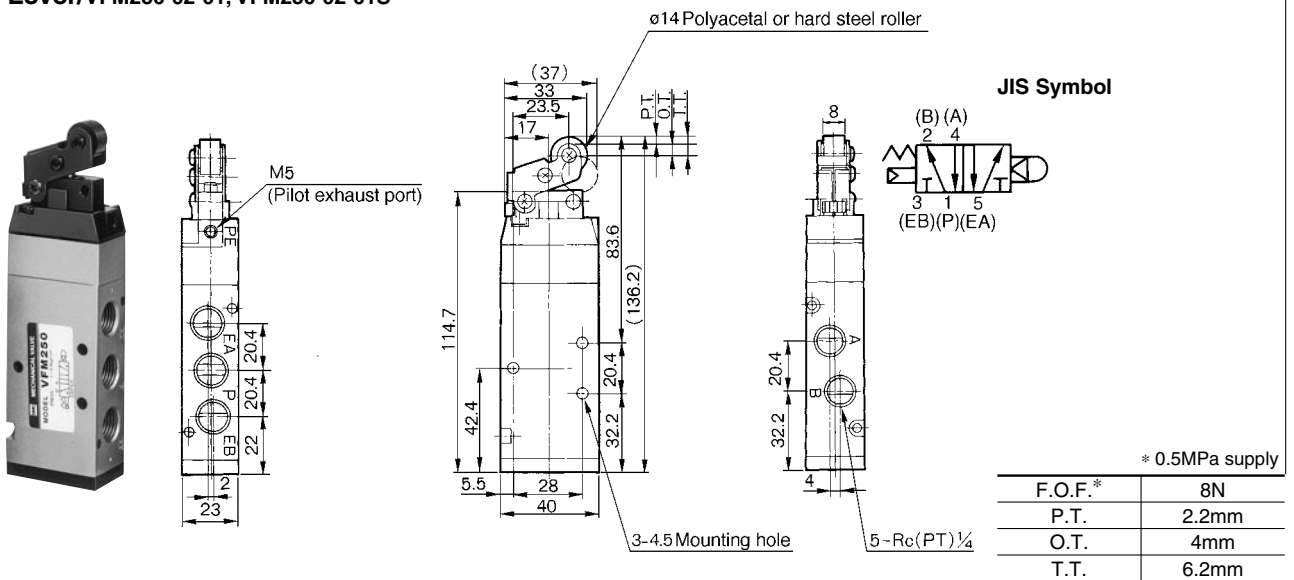
VFM200

Series VFM200

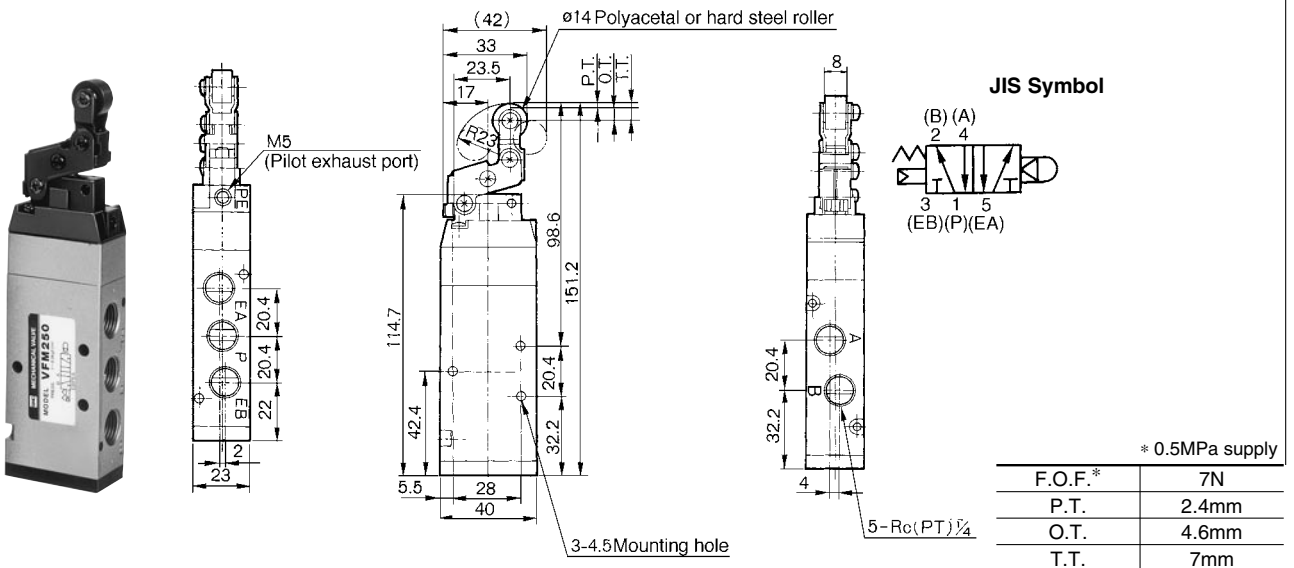
Basic/VFM250-02-00



Roller Lever/VFM250-02-01, VFM250-02-01S

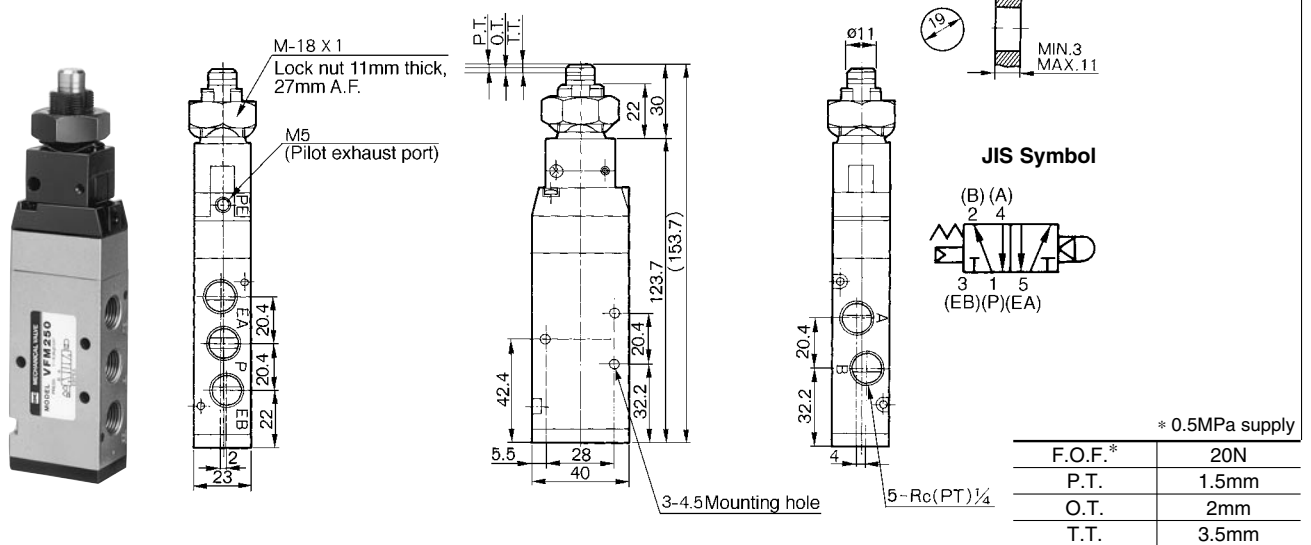


One Way Roller Lever/VFM250-02-02, VFM250-02-02S

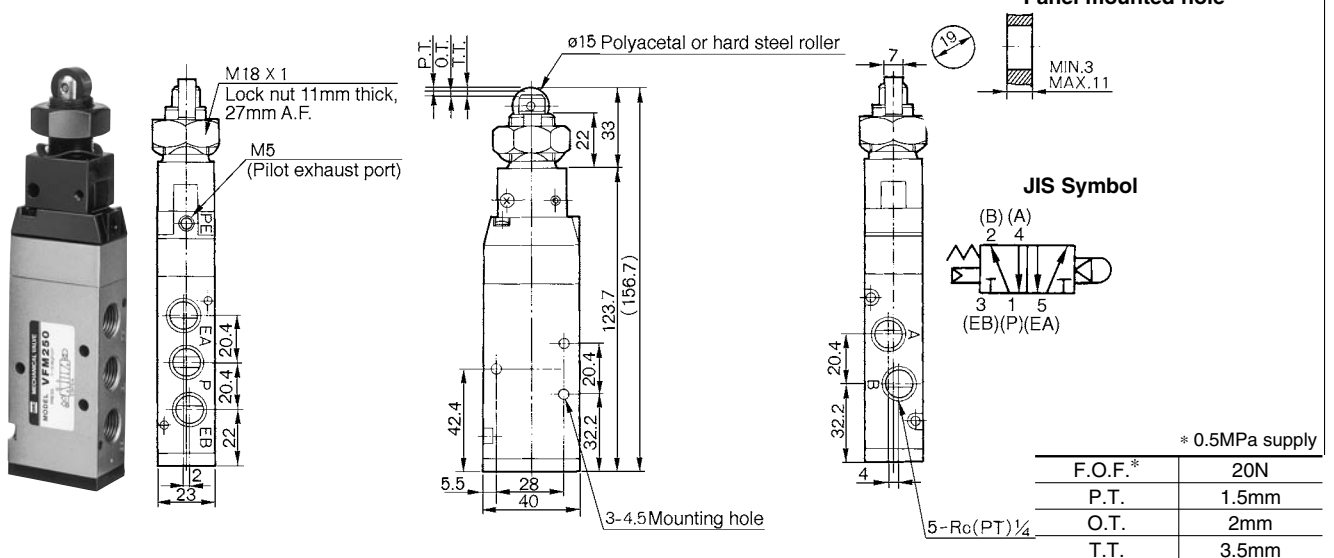


Series VFM200

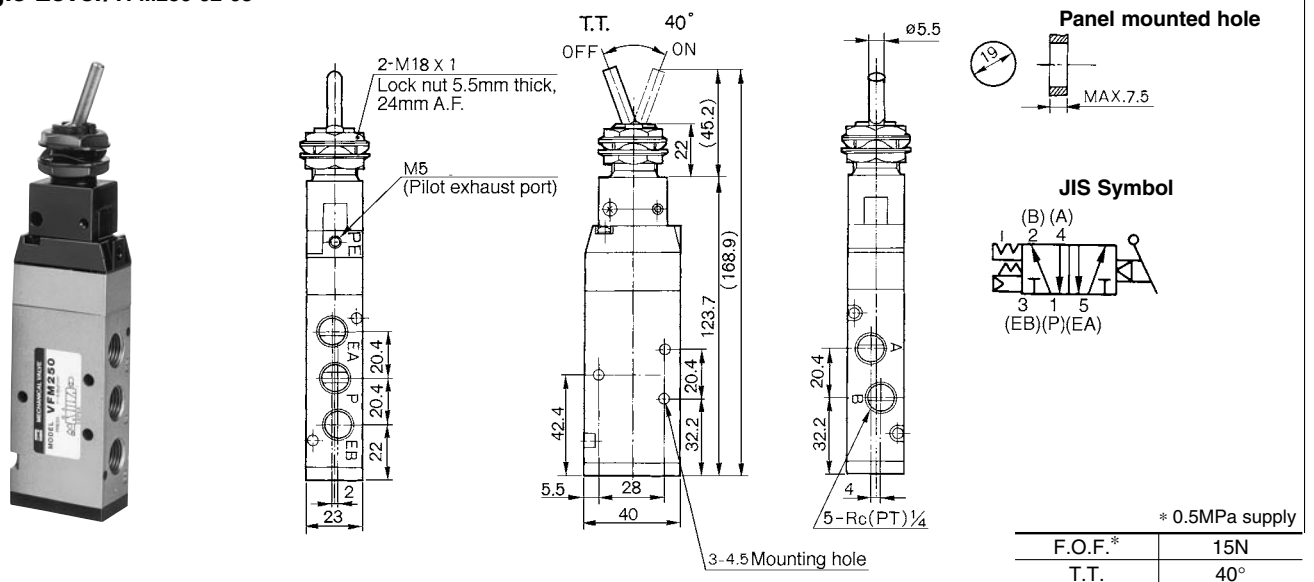
Straight Plunger/VFM250-02-05



Roller Plunger/VFM250-02-06, VFM250-02-06S



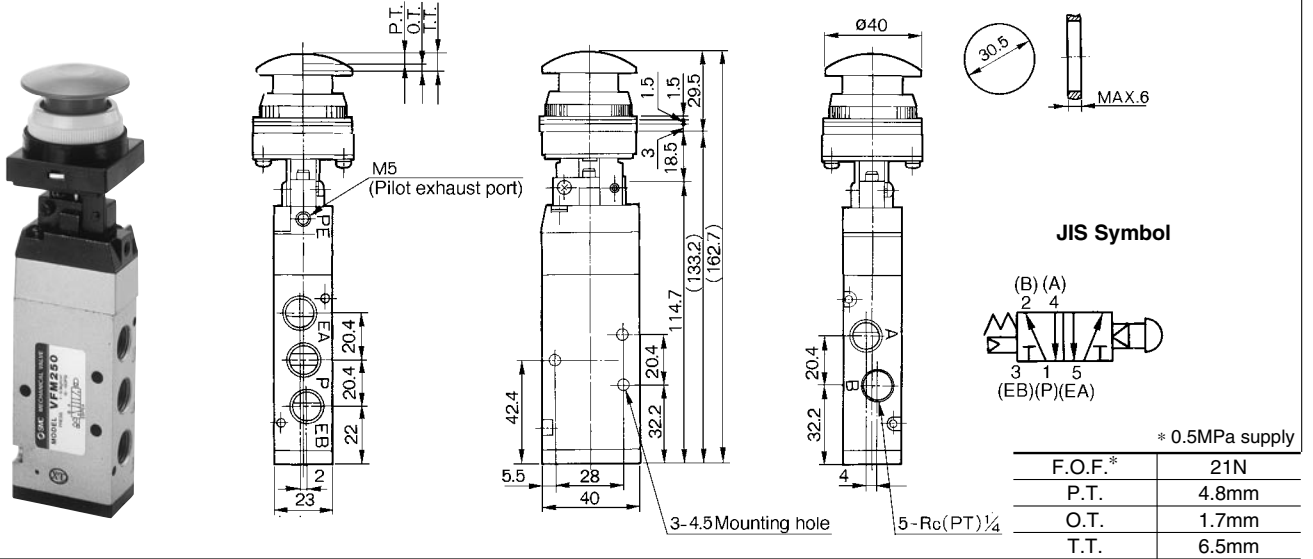
Toggle Lever/VFM250-02-08



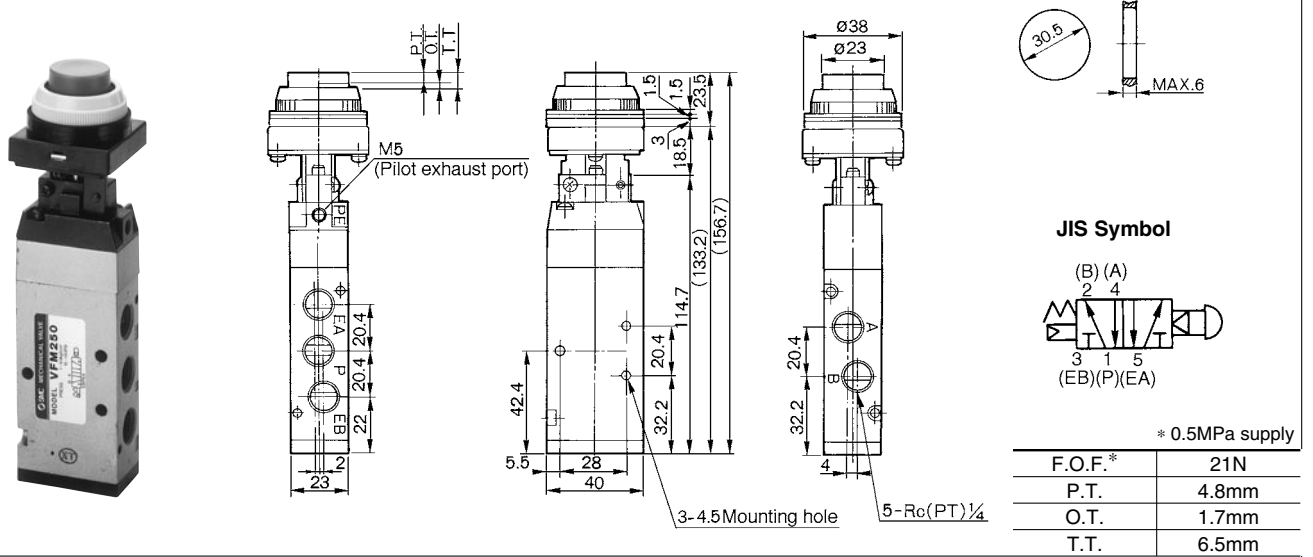
VFM200

Series VFM200

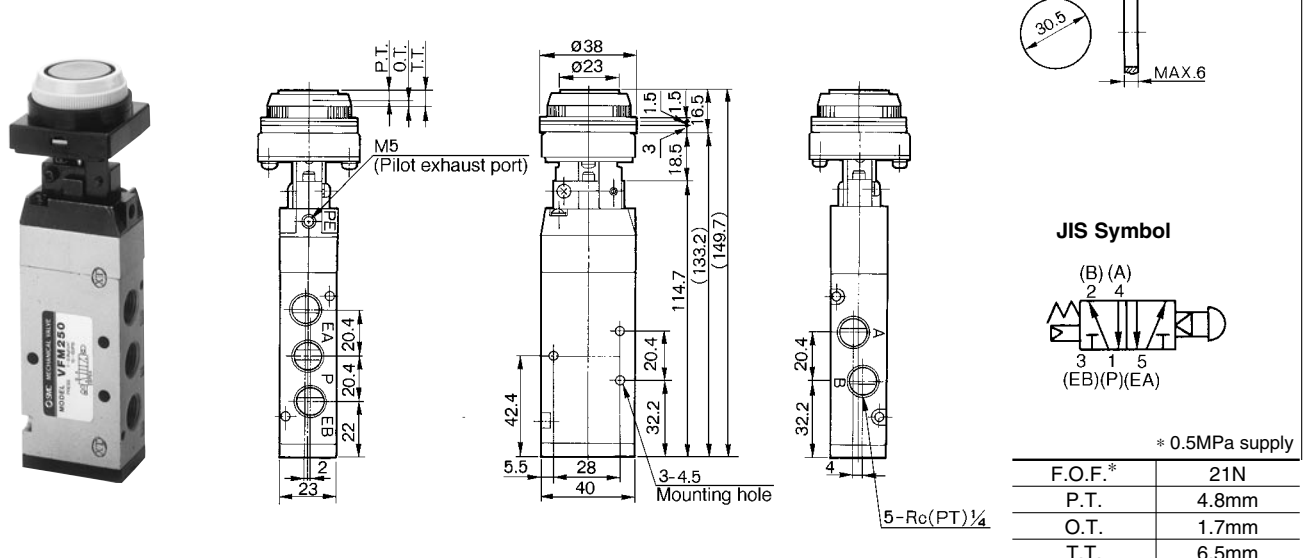
Push Button (Mushroom)/VFM250-02-30R, B, G, Y



Push Button (Extended)/VFM250-02-32R, B, G, Y

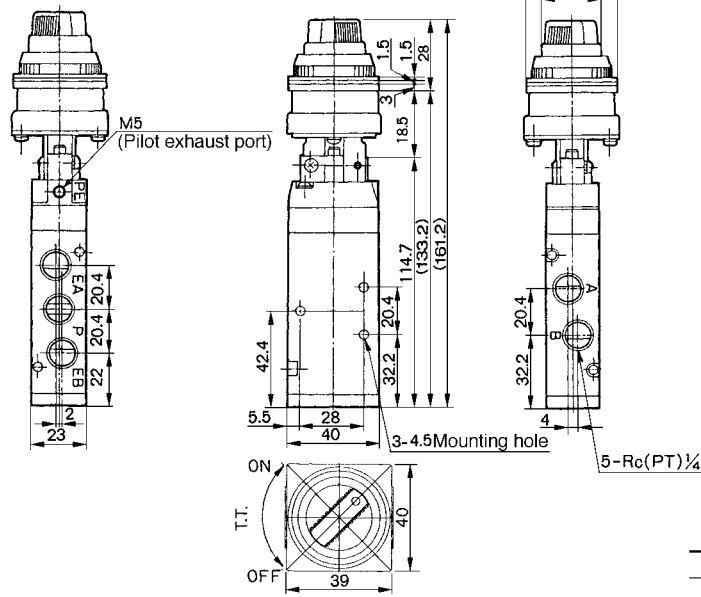


Push Button (Flush)/VFM250-02-33

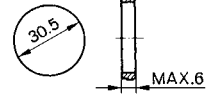


Series VFM200

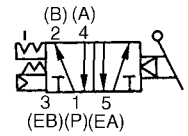
Twist Selector (2 position)/ VFM250-02-34R, B, G, Y



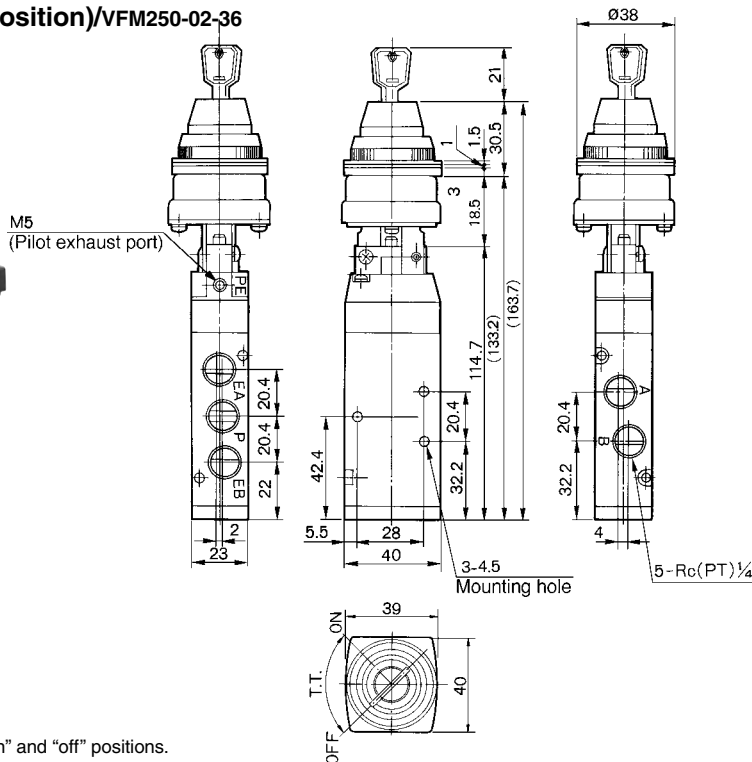
Panel mounted hole



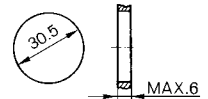
JIS Symbol



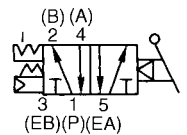
Key Selector (2 position)/VFM250-02-36



Panel mounted hole

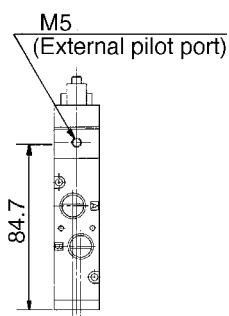


JIS Symbol

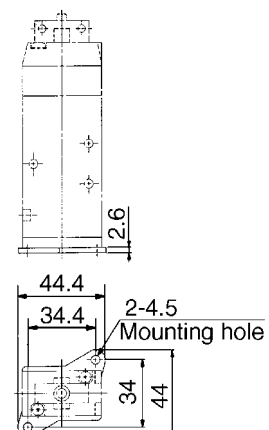


Key can be removed in "on" and "off" positions.

External Pilot Style VFM251 Type



With Foot Bracket VFM250-02-□□-F



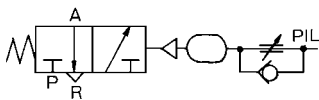
Related Products *VR2110*

Time Delay Valve

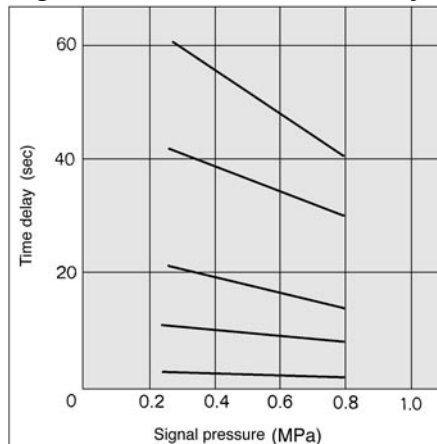
Combination of adjustable orifice and fixed flow allows transmission of a pneumatic signal after a fixed time period.



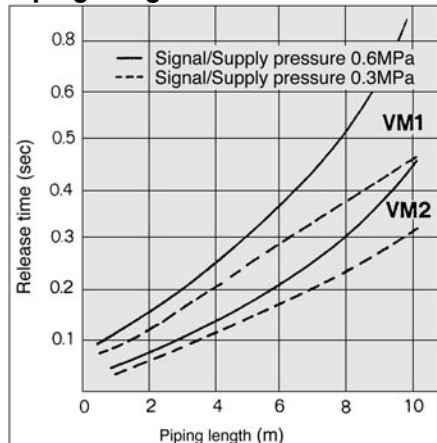
Symbol



Signal Pressure vs. Time Delay



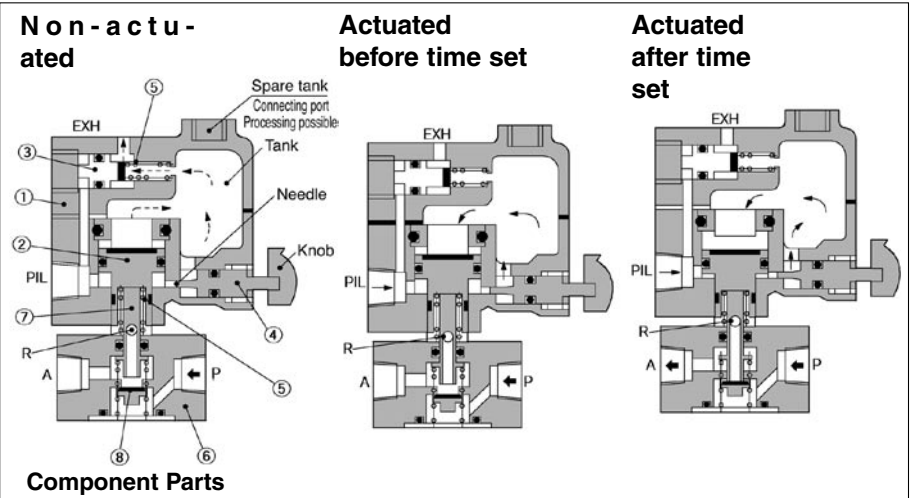
Piping Length vs. Release Time



Model/Specifications

EVR2110-01	
Supply pressure	0 to 1.0MPa
Signal pressure	0.25 to 0.8MPa
Time delay	0.5 to 60s
Repeatability	±10% F.S.
Operating and fluid temperature	-5 to 60°C (No freezing)
Effective area(Nl/min)	2.5mm ² (124.81)
Port size	1/8
Weight	500g

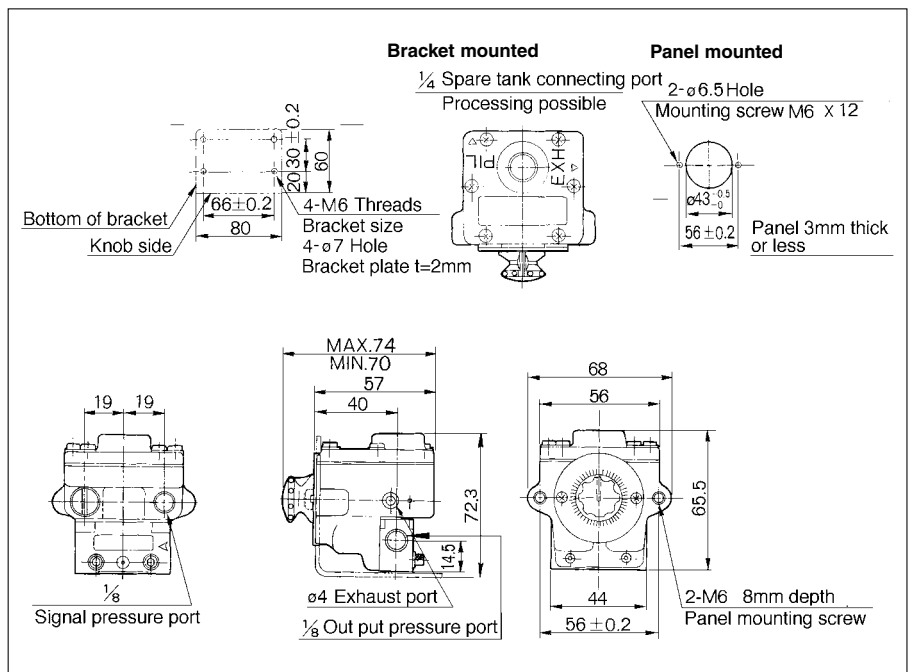
Construction



Component Parts

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

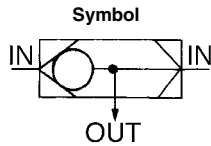
Dimensions



Related Products *VR1210/1220*

Shuttle Valve

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



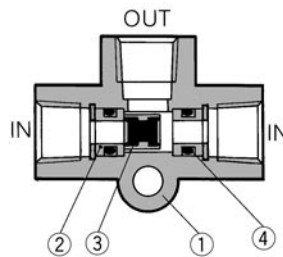
Model/Specifications

	EVR1210-01	EVR1220-02
Max. operating pressure	1.0MPa	
Min. operating pressure	0.05MPa	
Min. pressure differential	0.05MPa	
Ambient and fluid temperature	-5 to 60°C (No freezing)	
Effective area(Nl/min)	7mm ² (338.77)	15mm ² (722.12)
Port size	1/8	1/4
Weight	48g	95g

Construction

When right port has higher pres-

When left port has higher pressure



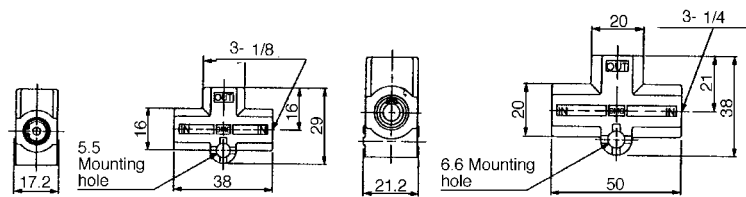
Component Parts

No.	Description	Material	Notes	No.	Description	Material	Notes
①	Body	Aluminum alloy	Metallic alloy	③	Valve	Brass, NBR	
②	Valve seat	Brass		④	O ring	NBR	

Dimensions

VR1210

VR1220

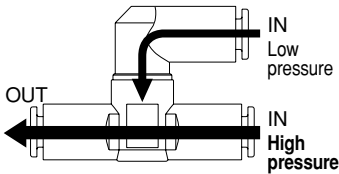
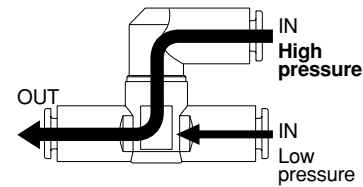


Shuttle Valve with One-Touch Fittings Series VR1210F, VR1220F

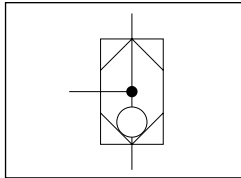


Shuttle valve/VR12□0F

The high pressure air is always output to the OUT side.



Symbol



Models

Model	Applicable tubing outside 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	1.5MPa
Maximum operating pressure	1MPa
Minimum operating pressure	0.05MPa
Ambient and fluid temperature	-5 to 60°C (with no freezing)
Applicable tubing material ^{Note 1)}	Nylon, Soft nylon, Polyurethane

Note 1) Use caution regarding the maximum operating pressure with soft nylon and polyurethane.

Note 2) On standard products all brass parts are electroless nickel plated.
(Suitable for copper free applications.)

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 Nℓ/min	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 1) Flow rate values are at a pressure of 0.5MPa and temperature of 20°C.

How to Order

VR 12 1 0 F — 06

Body size

1	1/8 standard
2	1/4 standard

Applicable tubing outside diameter

Metric sizes		Inch sizes	
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"

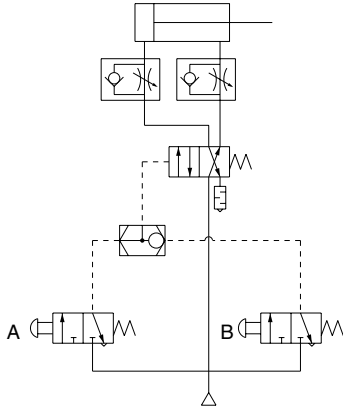
* Use ø1/8" tubing for ø3.2.

With One-touch fitting

Application Circuit Examples

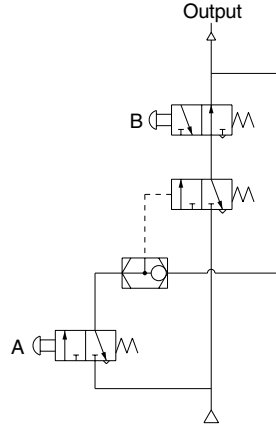
OR circuit

- The cylinder operates if either "A" or "B" is ON.



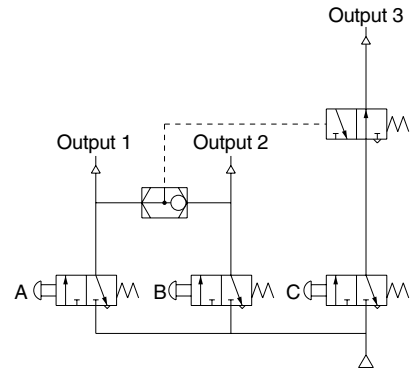
Self holding circuit

- When "A" is turned ON, output goes ON.
- The output ON state is maintained even if "A" is turned OFF.
- The output goes OFF when "B" is turned ON in condition 2.

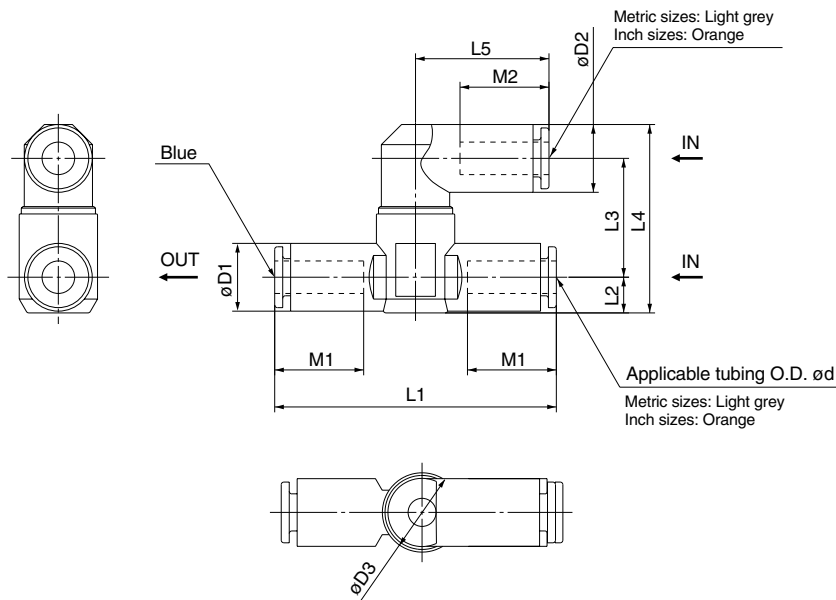


Interlock circuit

- When either "A" or "B" are ON, output 3 does not go ON even if "C" is turned ON.
- Output 3 goes ON if "C" is turned ON, only when both "A" and "B" are OFF.



Dimensions



Metric sizes

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	11	10.4		53	6.8	20.3	31.5	21.9	15.7	15.8	15.6
VR1210F-06	6	12.8	12.8		53.2	22.5	35.6	25.2	16.8	16.8	23.0	
VR1210F-08	8	15.2	15.2		60.4		8.1	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 sizes

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"	11	10.4		53	6.8	20.3	31.5	21.9	15.7	15.8	15.6
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

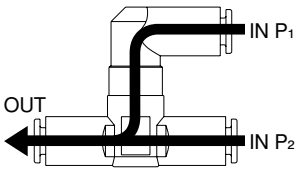
AND Valve with One-Touch Fittings Series VR1211F



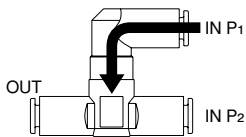
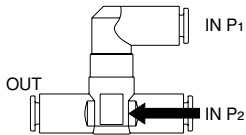
AND valve/VR1211F

There is output to the OUT side only when air is supplied to both P₁ and P₂.

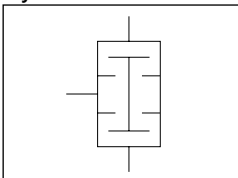
In case of different pressures, the lower pressure is output to the OUT side.



There is no output to the OUT side if air is supplied to only one of P₁ and P₂.



Symbol



Models

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

Specifications

Proof pressure	1.5MPa
Maximum operating pressure	1MPa
Minimum operating pressure	0.05MPa
Ambient and fluid temperature	-5 to 60°C (with no freezing)
Applicable tubing material ^{Note 1)}	Nylon, Soft nylon, Polyurethane

Note 1) Use caution regarding the maximum operating pressure with soft nylon and polyurethane.

Note 2) On standard products all brass parts are electroless nickel plated.

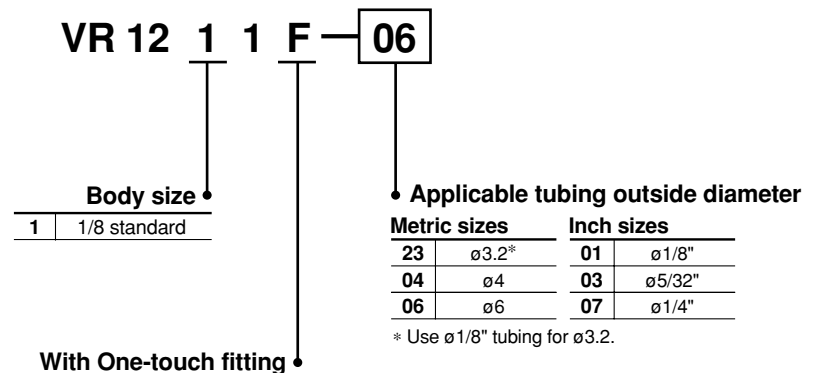
(Suitable for copper free applications.)

Flow Rate and Effective Area

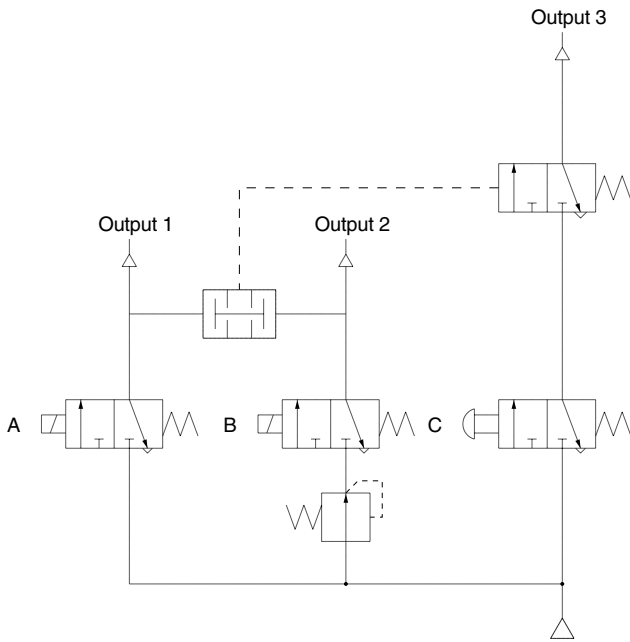
Model	VR1211F				
	Metric size	ø3.2	ø4	ø6	—
Applicable tubing O.D.	Inch size	ø1/8"	ø5/32"	—	ø1/4"
	Flow rate Nl/min	100	120	150	170
IN→OUT	Effective area mm ²	1.5	1.8	2.3	2.6

Note 1) Flow rate values are at a pressure of 0.5MPa and temperature of 20°C.

How to Order

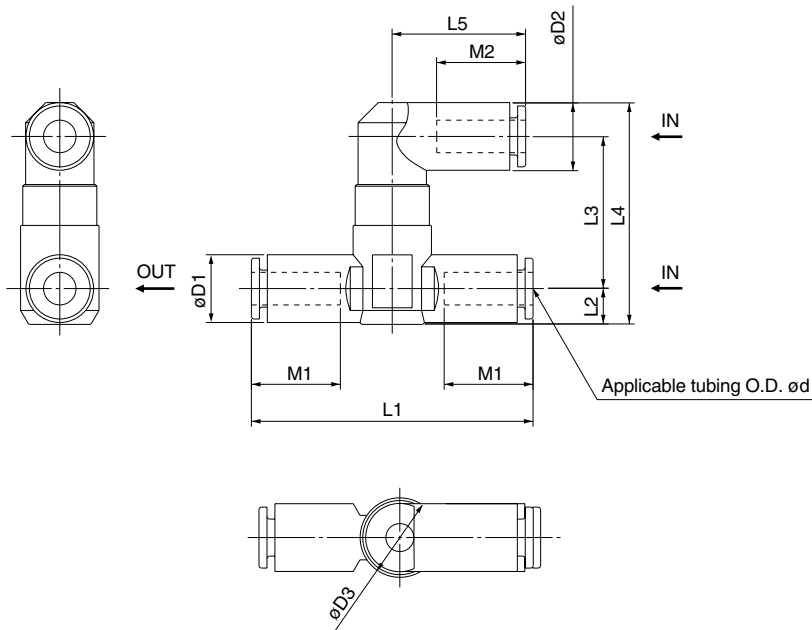


Application Circuit Example



- When "A" and "B" having different pressure conditions are turned ON, output 1 and output 2 go ON.
- Output 3 goes ON if "C" is turned ON, only when output 1 and output 2 are in an ON state.
- If either "A" or "B" is OFF, output 3 does not go ON even if "C" is turned ON.

Dimensions



Metric sizes

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	11	10.4		53							
VR1211F-06	6	12.8	12.8		53.2	6.8	28.8	41.9	25.2	16.8	16.8	25.0

Inch sizes

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"	11	10.4		53							
VR1211F-07	1/4"	13.2	13.2		54.4	7.1	28.8	42.5	25.6	16.8	16.8	27.0

Related Products

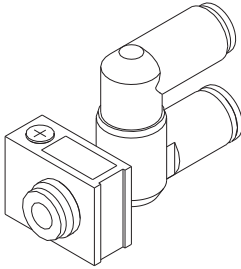
Holder Series TMH

This holder is used to secure the AND valve and shuttle valve with One-touch fittings.

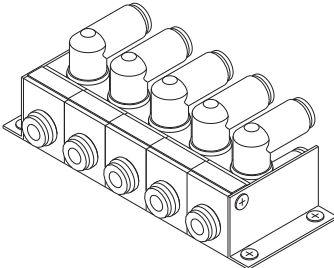
Allows highly flexible mounting.



Single unit secured using holder

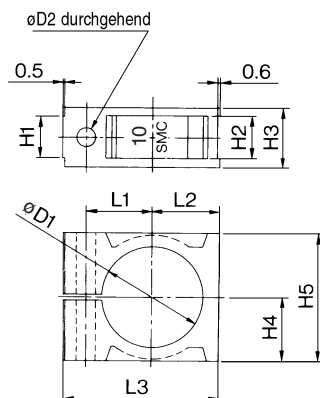


Manifolding is possible



Note) Mounting brackets are not available. This is an application example only.

Dimensions



Specifications

Ambient temperature	-20 to 60°C
Material	Polypropylene
Color	White
Accessories/Round head Phillips mounting screw (black zinc chromated)	

Model		Size (nominal size x length)	Qty.
Metric size	Inch size		
—	TMH-05	M3 x 20	1
TMH-06	TMH-07	M4 x 25	
TMH-08	TMH-09		
TMH-10	TMH-11	M4 x 35	

Shuttle Valve/AND Valve and Holder Compatibility

Metric sizes

Model		Applicable tubing outside diameter				
Shuttle valve	AND valve	ø3.2	ø4	ø6	ø8	ø10
VR1210F	VR1211F	TMH-05	TMH-06J	TMH-06	TMH-08	—
VR1220F	—	—	—			TMH-10

Inch sizes

Model		Applicable tubing outside diameter				
Shuttle valve	AND valve	ø1/8"	ø5/32"	ø1/4"	ø5/16"	ø3/8"
VR1210F	VR1211F	TMH-05	TMH-06	TMH-07	—	—
VR1220F	—	—	—		TMH-09	TMH-11

Model		D1	D2	H1	H2	H3	H4	H5	L1	L2	L3
Metric size	Inch size										
TMH-06J	TMH-05	11.7	3.3	6.3	6.4	9.3	7.7	15.4	8.5	8.3	21
TMH-06	—	13.1	4.3	7.1	7.2	11	10	20	11	10.6	26.5
	TMH-07	13.5									
TMH-08	TMH-09	15.5	4.3	9.5	9.6	14	14	28	14.2	14.6	34
TMH-10	—	18.5									
—	TMH-11	18.8									

Related Products VR3100 Pneumatic Indicator

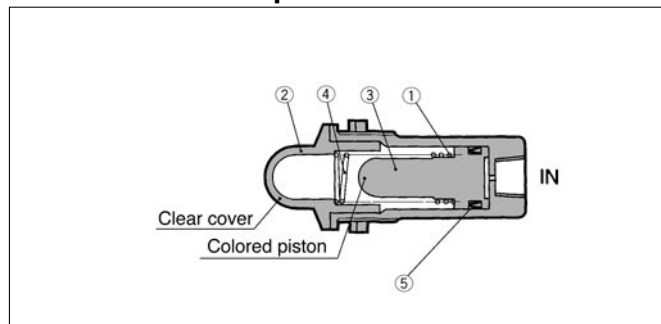
Indicates the presence of pneumatic pressure. It is equivalent to the pilot lamp of an electrical system.



Model/Specifications

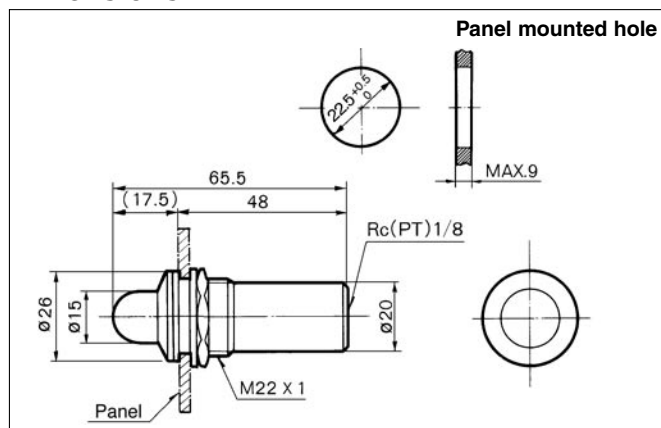
	VR3100-01R	VR3100-01G	VR3100-01O
Operating pressure	0.1 to 0.8MPa		
Ambient and fluid temp.	-5 to 60°C (No freezing)		
Frequency	100 c.p.m or less		
Color of indicator	Red	Green	Orange
Port size (Nominal size)	Rc(PT) 1/8 (6A)		
Weight	40g		

Construction/Component Parts



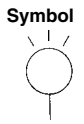
No.	Description	Material	Notes
①	Body	Aluminum alloy	
②	Indicator window	Acrylic	
③	Piston	Polyacetal	
④	Spring	Stainless steel	
⑤	Packing	NBR	

Dimensions



Related Products VR3110 Miniature Pneumatic Indicator

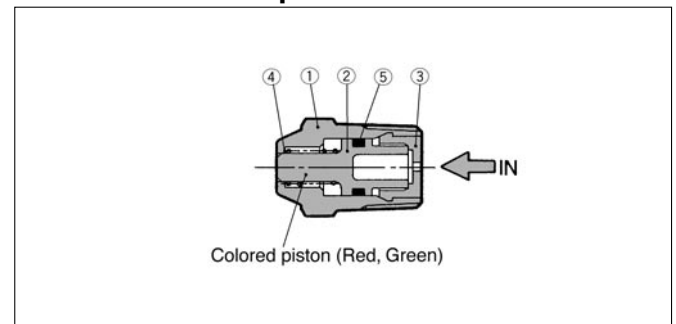
This is an ultra-compact air indicator light to monitor the presence of air pressure. It is equivalent to the pilot lamp of an electrical system.



Model/Specifications

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

Construction/Component Parts



No.	Description	Material	Notes
①	Body	Brass	
②	Piston A	Polyacetal	
③	Plug	Polyethelene	
④	Spring	Stainless steel	
⑤	O ring	NBR	

Dimensions

