



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



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

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



S□A

V□A

S□A

V□A

VM/VR

VH

Roller Lever



Adjustable Roller Lever



Adjustable Rod Lever



P3.5-25

P3.5-40

P3.5-34.

P3.5-47

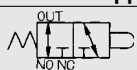
P3.5-53

P3.5-31

7 (338.77)

3

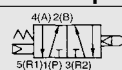
Balanced Poppet



10.8 (534.90)

5

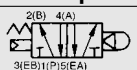
Rubber Spool



9.9 (490.33)

5

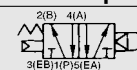
Metal Spool



18 (891.50)

5

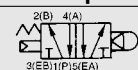
Rubber Spool



18 (891.50)

5

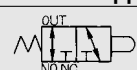
Metal Spool



6 (294.20)

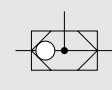
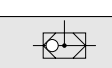
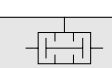
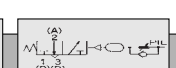
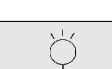
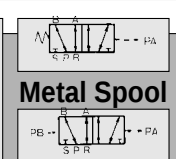
3

Balanced Poppet



* Dual pressure available only on external pilot.

Related Products

			Effective Area (mm ²) (Nl/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				

INDEX

Mechanical valve	Page	Related Products	Page
Series VM1000	P.3.5-7	Relay Valve	P.3.5-59
Series VM100	P.3.5-11	Time Delay Valve	P.3.5-61
Series VM200	P.3.5-19	Shuttle Valve	P.3.5-62
Series VM400	P.3.5-25	Shuttle / AND valve	P.3.5-65
Series VZM500	P.3.5-40	Pneumatic Indicator	P.3.5-68
Series VZM400	P.3.5-34		
Series VFM300	P.3.5-47		
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Series VM800	P.3.5-31		

⚠ Precautions

Be sure to read before handling. Refer to p.0-33 to 0-36 for Safety Instructions and common 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.

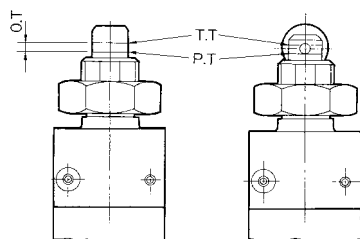
• Actuator Stroke

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

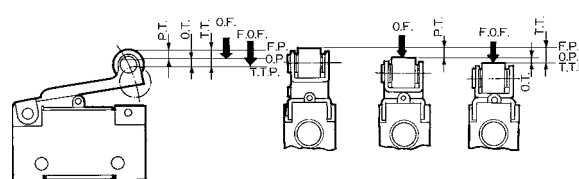
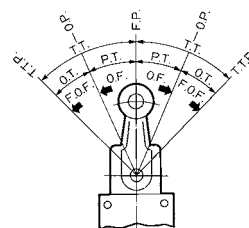
Operating stroke: P.T. + 0.5 X O.T.

Series	Actuator		Actuator Stroke (mm)
VM1000	Basic	T.T.=4.8mm (T.T.=2.5mm)	3.7 to 4.7 (2.2 to 2.4)
	Roller lever		3.5 to 4.4
	One way roller lever		3.5 to 4.4
VM100	Basic		2.2 to 2.9
	Roller lever		4.3 to 5.3
	One way roller lever		4.3 to 5.3
	Straight plunger		2.7 to 3.4
	Roller plunger		2.7 to 3.4
	Cross roller plunger		2.7 to 3.4
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.

$$Q = 22.2S \sqrt{P_L(P_H - P_L)} \sqrt{\frac{273}{\theta + 273}} \dots\dots\dots(1 \text{ formula})$$

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

Be sure to read before handling. Refer to p.0-33 to 0-36 for Safety Instructions and common precautions.

Mounting

⚠ Warning

② Conditions for mechanical operation

● Cam and dog angle and maximum speed

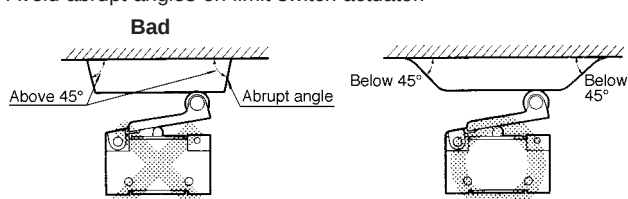
Select the angle and the maximum speed of the operating cam and the dog of the mechanism from within the selection range given in the table below.

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

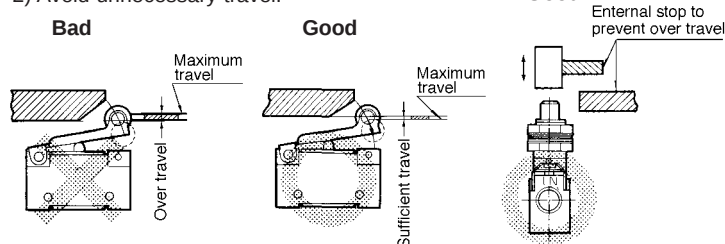
Series	Actuator	Angle limit switch actuator	Max. speed limit switch actuator m/s
VM1000	Roller lever	30°	0.7
	One way roller lever	45°	0.3
		30°	0.7
VM100 VM200 VM400	Roller lever	30°	0.7
	One way roller lever	45°	0.3
		30°	0.7
		45°	0.3
	Straight plunger	—	0.2
	Roller plunger	30°	0.3
VZM500 VZM400 VFM300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

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

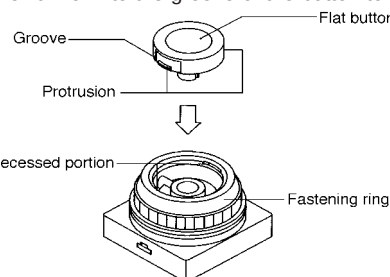
① Perform inspections on a regular basis as necessary, such as at the beginning of an operation, to make sure that the mechanical valve operates properly. Failure to observe this precaution could lead to unsafe operation, such as unintended operation or malfunction.

How to Change the Button

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

① Push button (Flush style)

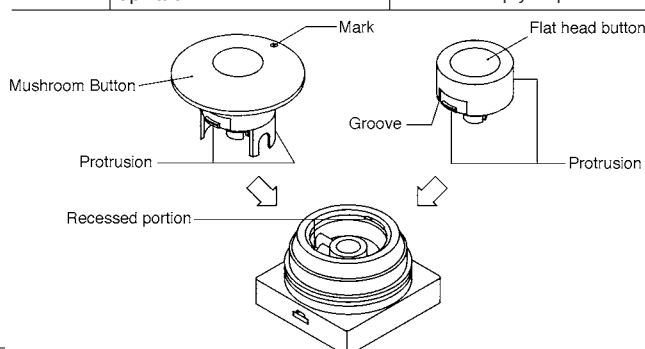
- Installation ----Of the four colors, red, green, black, and yellow, select and align the protruding portion of the button with the recessed portion of the body and push in.
- Removal-----Remove the fastening ring and insert the tip of a small flat screwdriver into the groove of the button to pry it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



② Push Button (Mushroom and extended styles)

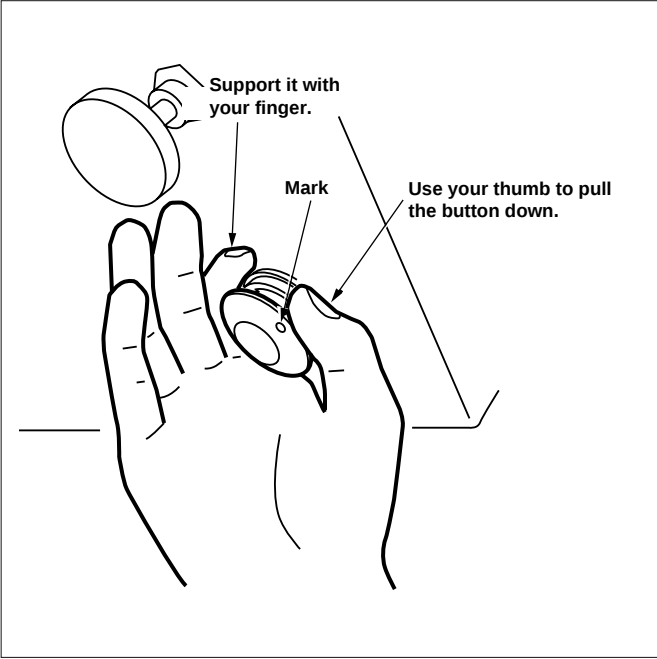
At the time of shipment, only 1 button of the color that you specified is attached to the body.

	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

S□A

V□A

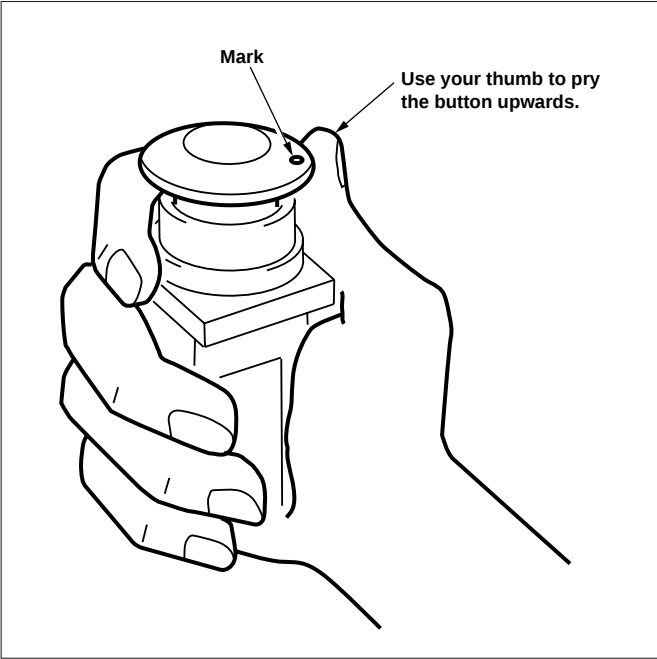
S□A

V□A

VM/VR

VH

Removing the valve as a unit.



Micro Mechanical Valve

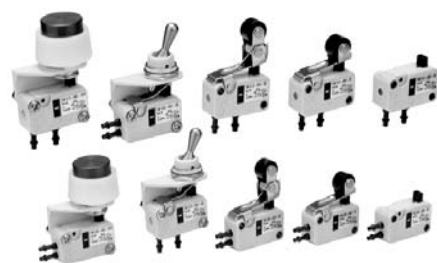
Series VM1000

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	5 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

• Applicable tube (Material/Size)

4N	Nylon ø4/2.5 (T0425)
	Nylon ø4/3 (T0403)
4NU	Soft Nylon ø4/2.5 (TS0425)
	Polyurethane ø2.5 (TU0425)

• Actuator

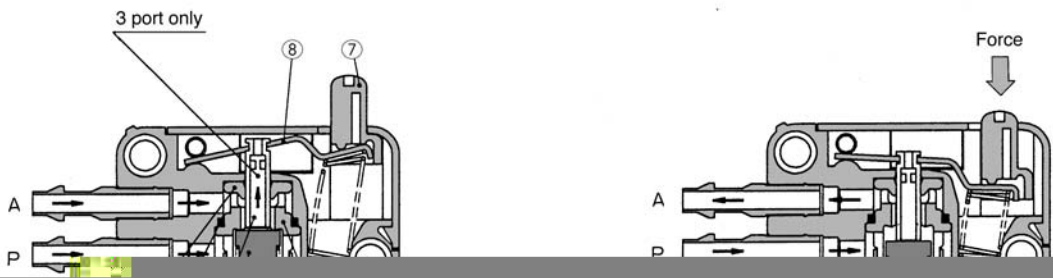
00	Basic
01	Roller lever
02	One way roller lever
08	Toggle lever
32	Push button

R	Red
G	Green
B	Black

• Number of ports

0	3 ports
1	2 ports

Construction

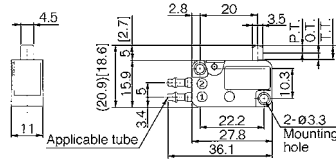


Component Parts

VM1000

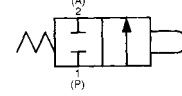
Series VM1000/Side Piping

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

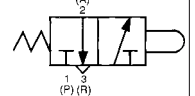


[]: T.T.=2.5mm

JIS Symbol/2 port



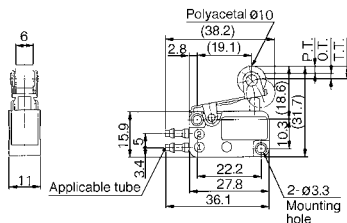
3 port



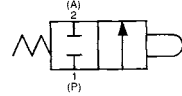
* 0.5MPa supply

		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]	

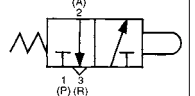
Roller Lever/VM1000-4N-01, VM1000-4NU-01
VM1100-4N-01, VM1100-4NU-01



JIS Symbol/2 port



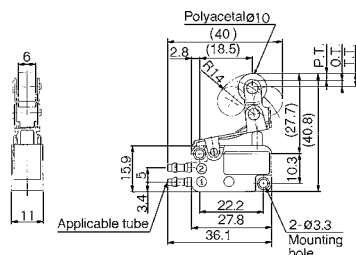
3 port



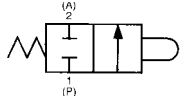
* 0.5MPa supply

		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	

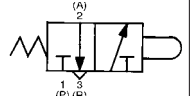
One Way Roller Lever/VM1000-4N-02, VM1000-4NU-02
VM1100-4N-02, VM1100-4NU-02



JIS Symbol/2 port



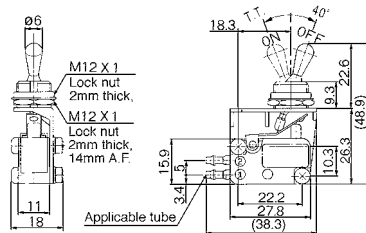
3 port



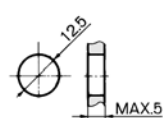
* 0.5MPa supply

		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	

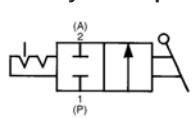
Toggle Lever/VM1000-4N-08, VM1000-4NU-08
VM1100-4N-08, VM1100-4NU-08



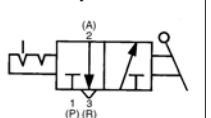
Panel mounted hole



JIS Symbol/2 port



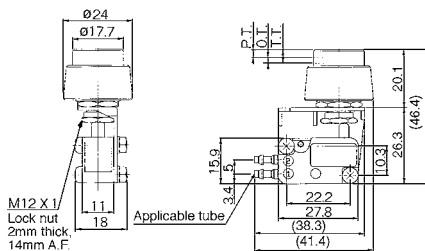
3 port



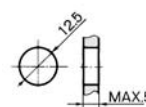
* 0.5MPa supply

		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°	

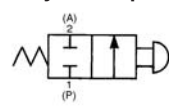
Push Button/VM1000-4N-32, VM1000-4NU-32
VM1100-4N-32, VM1100-4NU-32



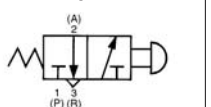
Panel mounted hole



JIS Symbol/2 port



3 port

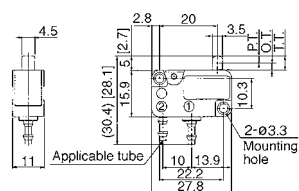


* 0.5MPa supply

		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	

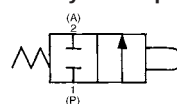
Series VM1000/Bottom Piping

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

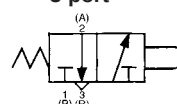


[]: T.T.=2.5mm

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]	

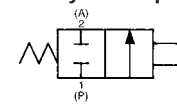
S□A

V□A

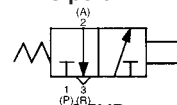
Roller Lever/VM1010-4N-01, VM1010-4NU-01 VM1110-4N-01, VM1110-4NU-01



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	

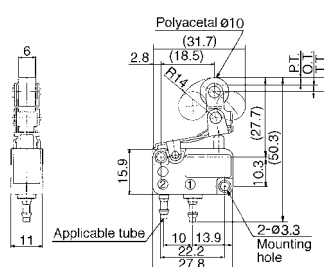
S□A

V□A

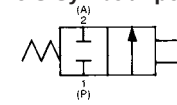
VM/VR

VH

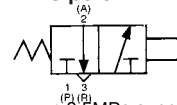
One Way Roller Lever/VM1010-4N-02, VM1010-4NU-02 VM1110-4N-02, VM1110-4NU-02



JIS Symbol/2 port



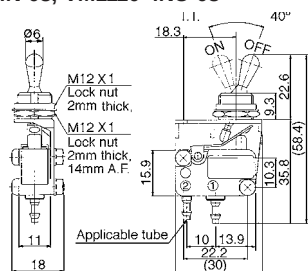
3 port



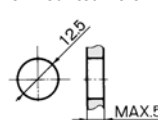
* 0.5MPa supply

		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	

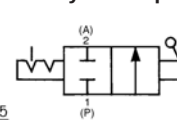
Toggle Lever/VM1010-4N-08, VM1010-4NU-08 VM1110-4N-08, VM1110-4NU-08



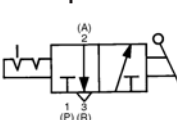
Panel mounted hole



JIS Symbol/2 port



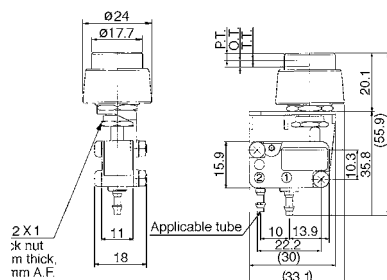
3 port



* 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°	

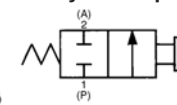
Push Button/VM1010-4N-32, VM1010-4NU-32 VM1110-4N-32, VM1110-4NU-32



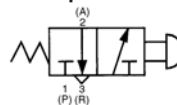
Panel mounted hole



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 _d /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		
VM120-01	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
	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 (Flush)						Red Black Green Yellow	
	VM120-01-33	VM130-01-33	VM122-M5-33	VM132-M5-33	VM-33A		
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		VM-34AG	Green	
	VM120-01-34Y	VM130-01-34Y	VM122-M5-34Y		VM-34AY	Yellow	
					— — — —	Red Black Green Yellow	

How To Order

E

VM1

3

1

01

01

S

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

Colour of push button

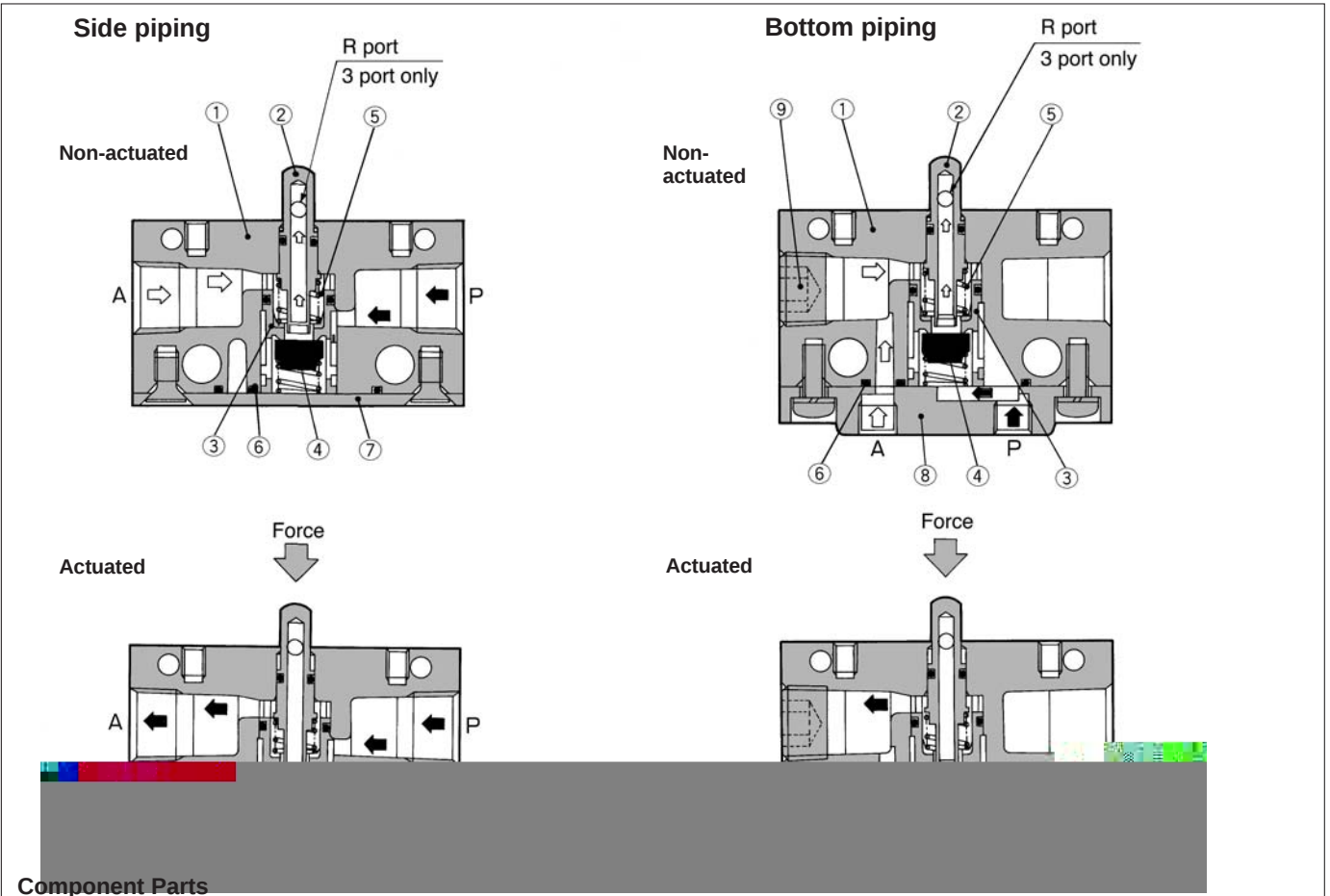
Indicator

Z	W/ miniature indicator (Bottom piping only.)
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Possible combination: , Impossible combination:

Actuator	Plunger length	
	Side	Bottom
Basic	00	
Roller lever		
One way roller lever		
Straight plunger		
Roller plunger		
Cross roller plunger		
Toggle lever		
Push button (Mushroom)		
Push button (Extended)		
Push button (Flash)		
Twist selector (2 position)		
Key selector (2 position)		
Twist selector (3 position)		

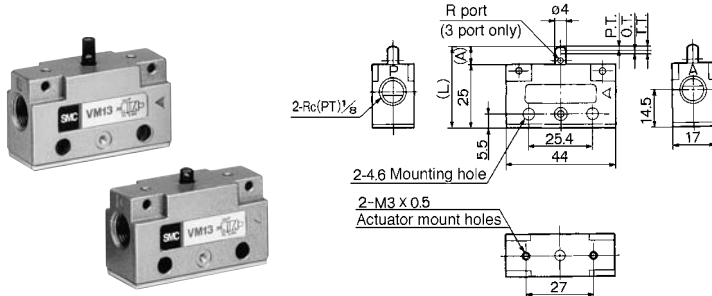
Construction



VM100

Series VM100/Side Piping

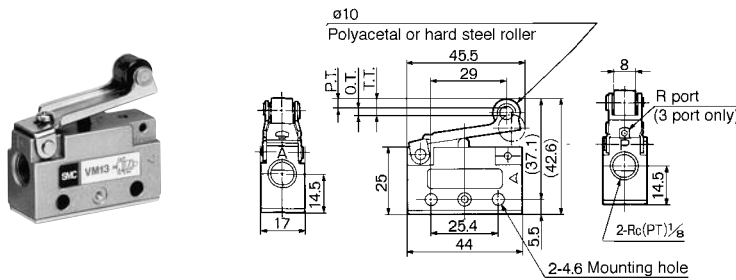
Basic/VM120-01-00, VM130-01-00 VM121-01-00, VM131-01-00



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

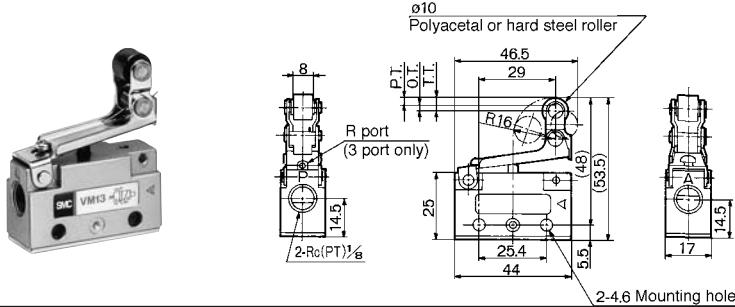
JIS Symbol	
2 port	
3 port	
* 0.5MPa supply	
F.O.F.*	20N
P.T.	1.5mm
O.T.	1.5mm
T.T.	3mm

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



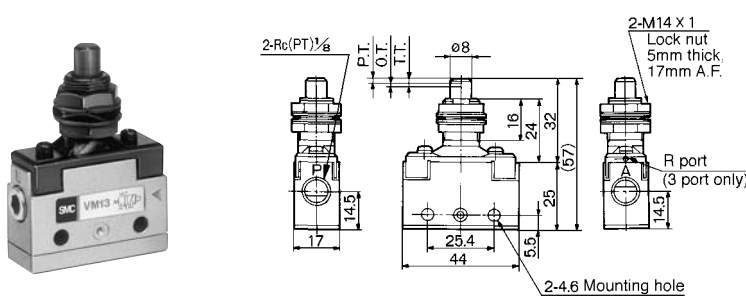
JIS Symbol	
2 port	
3 port	
* 0.5MPa supply	
F.O.F.*	10N
P.T.	3.2mm
O.T.	2.3mm
T.T.	5.5mm

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



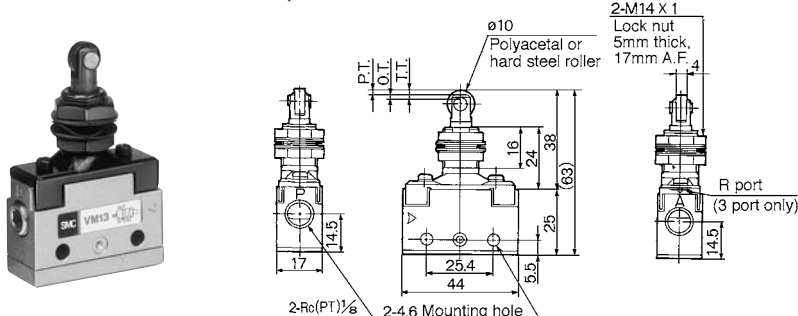
JIS Symbol	
2 port	
3 port	
* 0.5MPa supply	
F.O.F.*	10N
P.T.	3.2mm
O.T.	2.3mm
T.T.	5.5mm

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



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

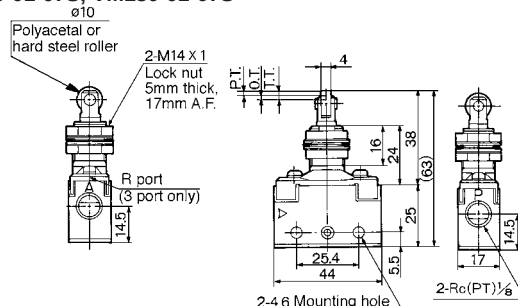
Roller Plunger/VM120-01-06, VM130-01-06 VM120-01-06S, VM130-01-06S



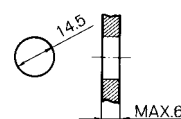
JIS Symbol	
2 port	
3 port	
* 0.5MPa supply	
F.O.F.*	23N
P.T.	2mm
O.T.	1.5mm
T.T.	3.5mm

Series VM100/Side Piping

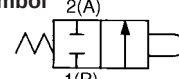
Cross Roller Plunger/VM120-01-07, VM130-01-07 VM120-01-07S, VM130-01-07S



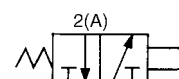
Panel mounted hole



JIS Symbol 2 port



3 port



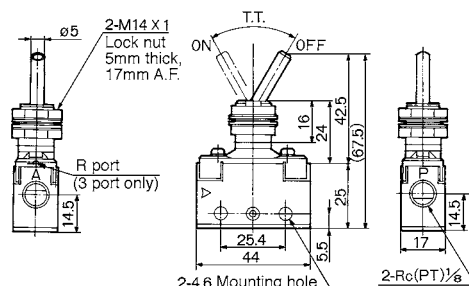
* 0.5MPa supply

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

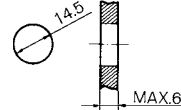
S□A

V□A

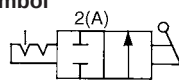
Toggle Lever/VM120-01-08, VM130-01-08



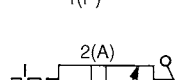
Panel mounted hole



JIS Symbol 2 port



3 port



* 0.5MPa supply

F.O.F.*	10N
T.T.	60°

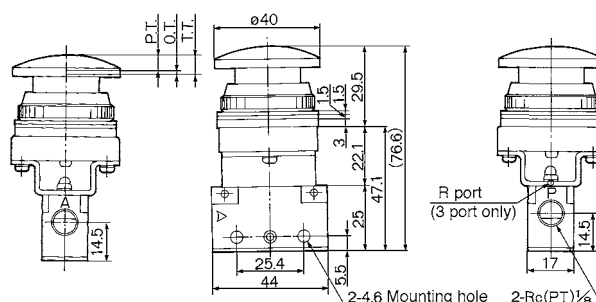
S□A

V□A

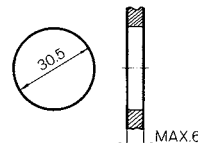
VM/VR

VH

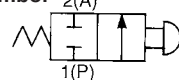
Push Button (Mushroom)/VM120-01-30R, B, G, Y/VM130-01-30R, B, G, Y



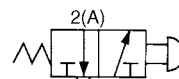
Panel mounted hole



JIS Symbol 2 port



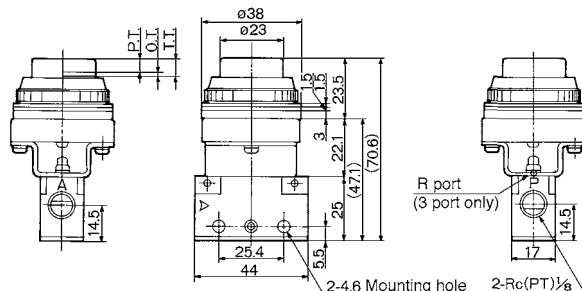
3 port



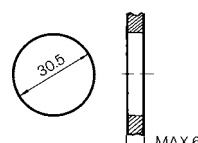
* 0.5MPa supply

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

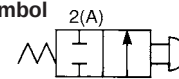
Push Button (Extended)/VM120-01-32R, B, G, Y/VM130-01-32R, B, G, Y



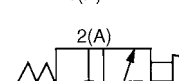
Panel mounted hole



JIS Symbol 2 port



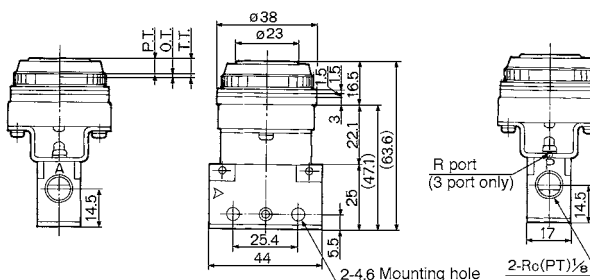
3 port



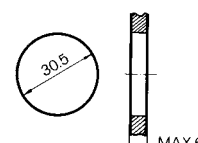
* 0.5MPa supply

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

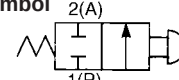
Push Button (Flush)/VM120-01-33, VM130-01-33



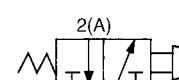
Panel mounted hole



JIS Symbol 2 port



3 port



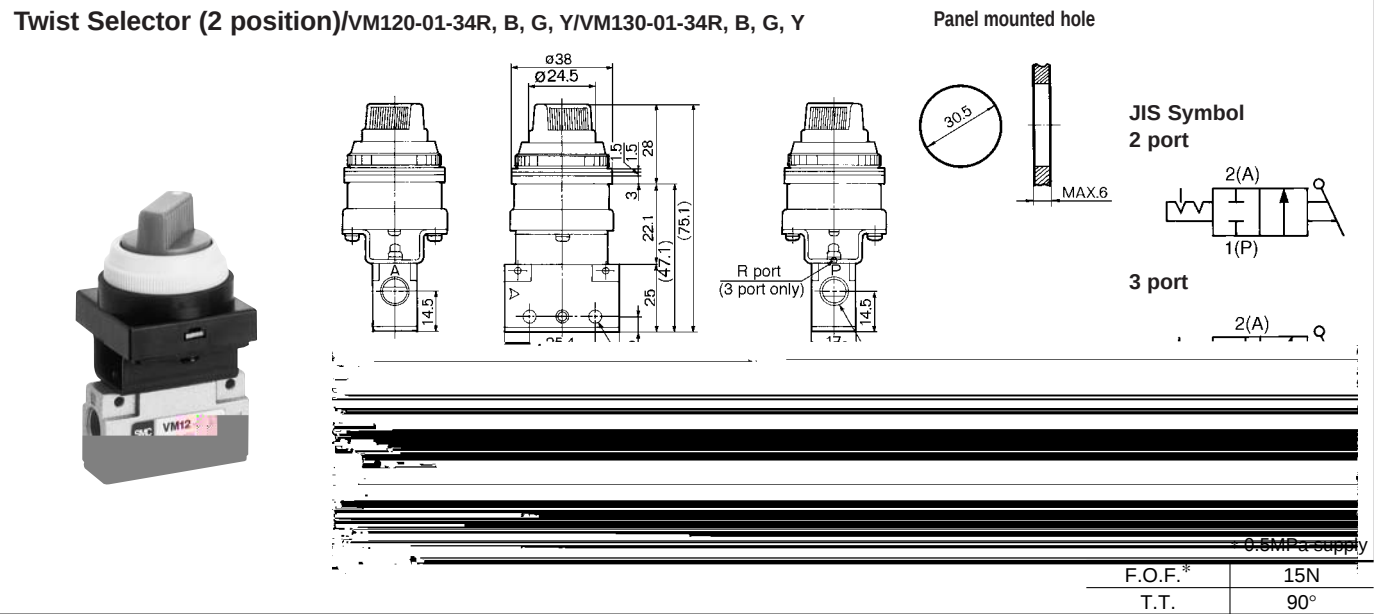
* 0.5MPa supply

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

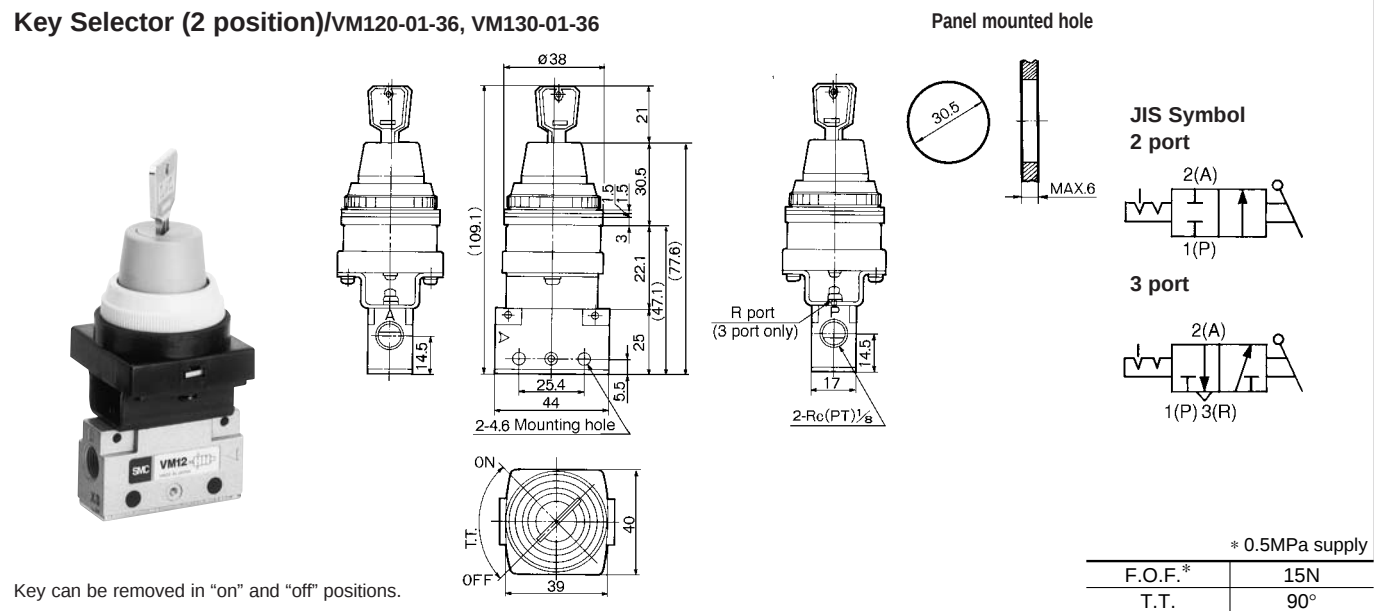
VM100

Series VM100/Side Piping

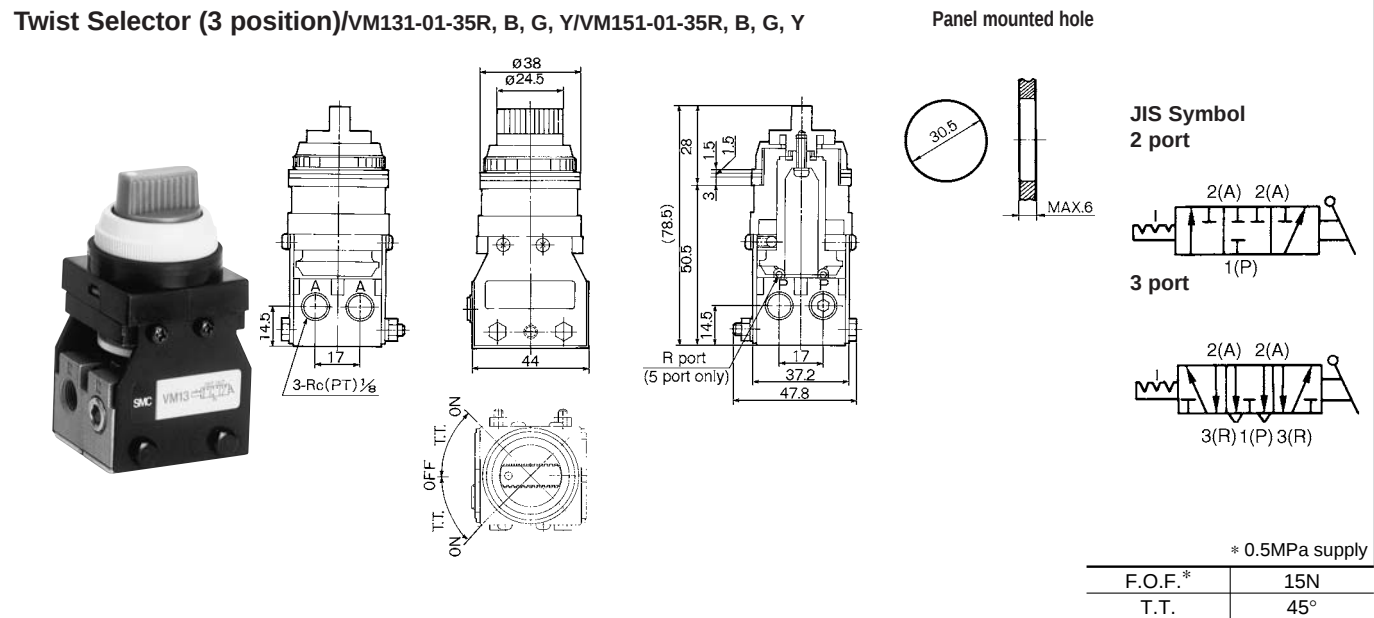
Twist Selector (2 position)/VM120-01-34R, B, G, Y/VM130-01-34R, B, G, Y



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



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

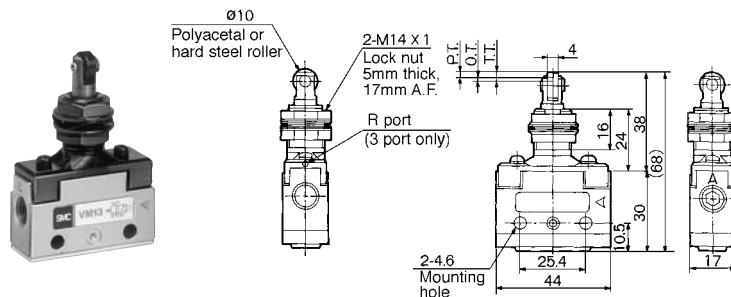


VM100

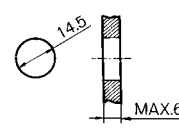
Series VM100/Bottom Piping

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

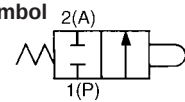
VM122-M5-07S, VM132-M5-07S



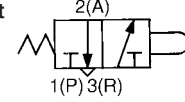
Panel mounted hole



JIS Symbol
2 port



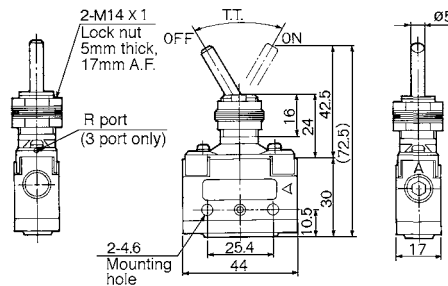
3 port



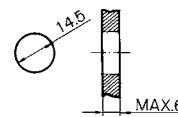
* 0.5MPa supply

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

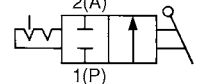
Toggle Lever/VM122-M5-08, VM132-M5-08



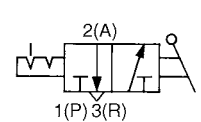
Panel mounted hole



JIS Symbol
2 port



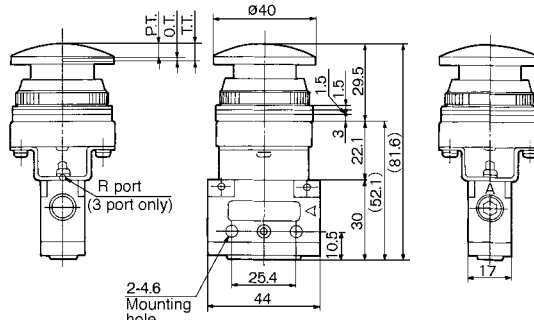
3 port



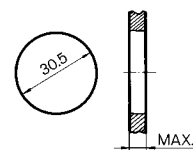
* 0.5MPa supply

F.O.F.*	10N
P.T.	60°

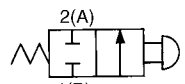
Push Button (Mushroom)/VM122-M5-30R, B, G, Y/VM132-M5-30R, B, G, Y



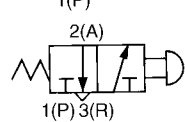
Panel mounted hole



JIS Symbol
2 port



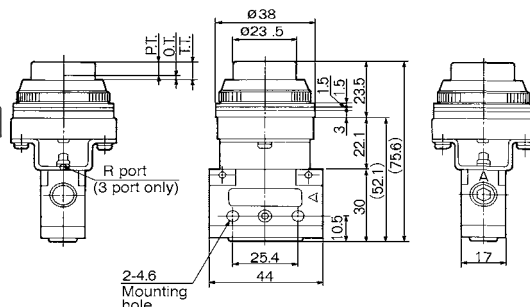
3 port



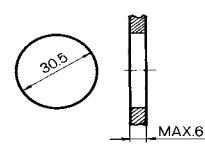
* 0.5MPa supply

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

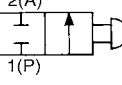
Push Button (Extended)/VM122-M5-32R, B, G, Y/VM132-M5-32R, B, G, Y



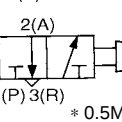
Panel mounted hole



JIS Symbol
2 port



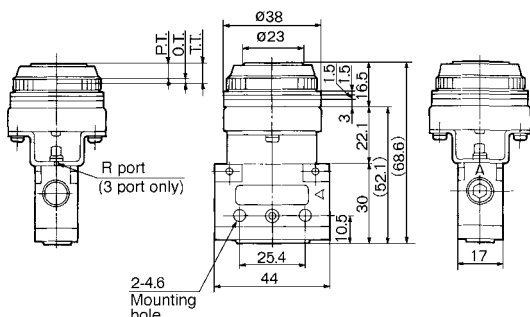
3 port



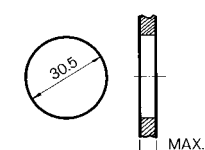
* 0.5MPa supply

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

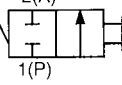
Push Button (Flush)/VM122-M5-33, VM132-M5-33



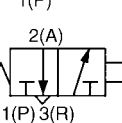
Panel mounted hole



JIS Symbol
2 port



3 port

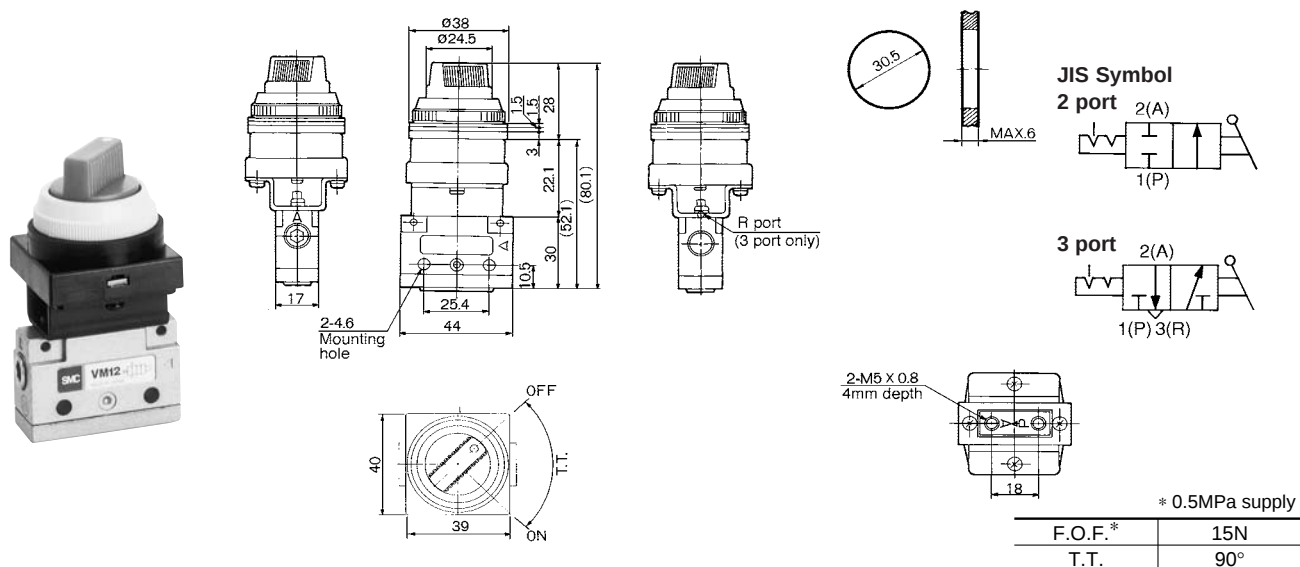


* 0.5MPa supply

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



S□A

V□A

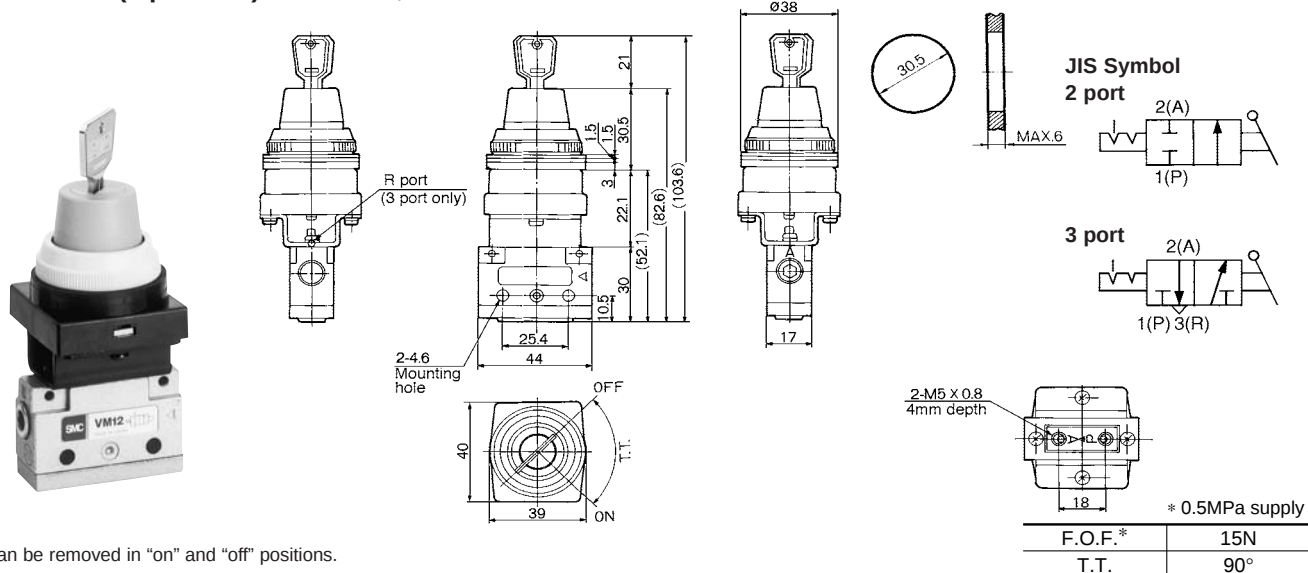
S□A

V□A

VM/MR

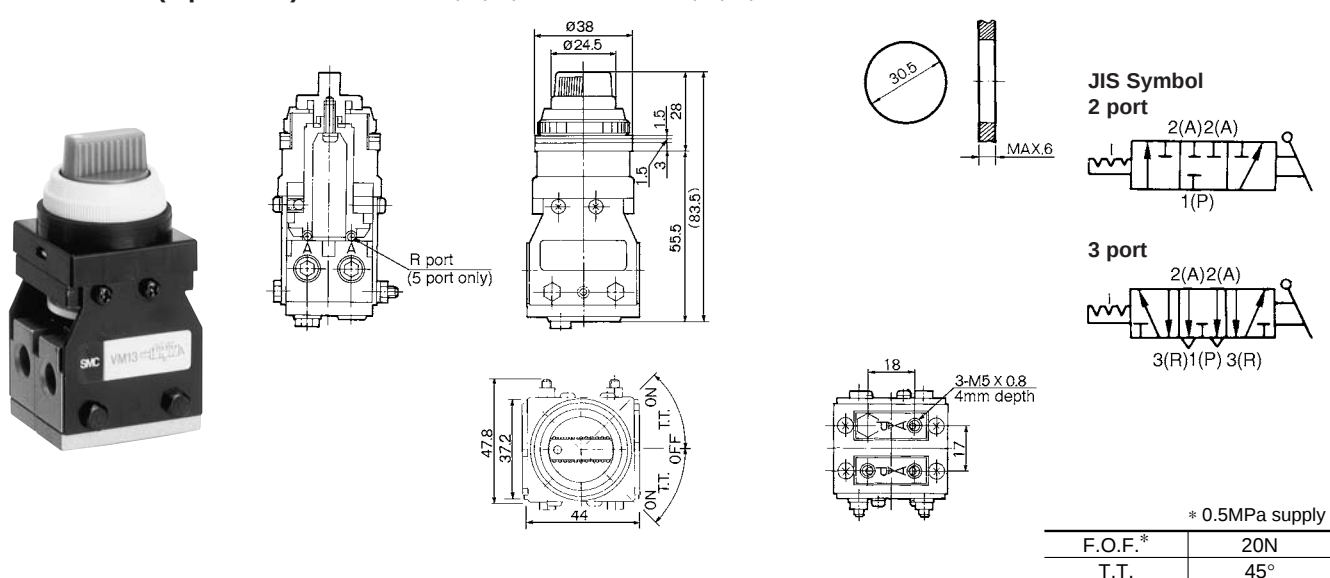
VH

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



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



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 (Nl/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		2 port	3 port	Actuator part No.	Application
Mechanical operation	Actuator				
	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	—
	Twist Selector (3 position)	VM230-02-35R	VM250-02-35R	—	Red
		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

Number of ports

2	2 ports
3	3 ports

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

S□A

V□A

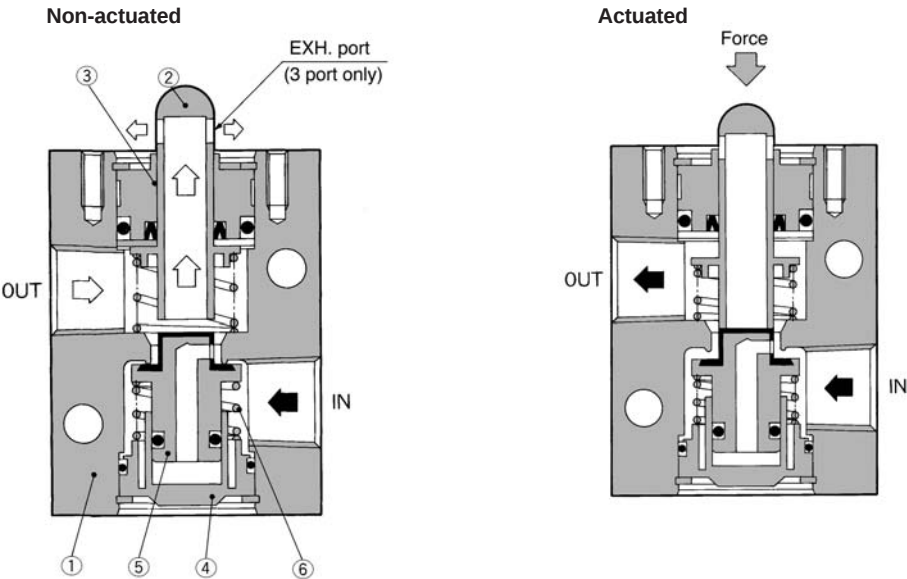
S□A

V□A

VM/VR

VH

Construction



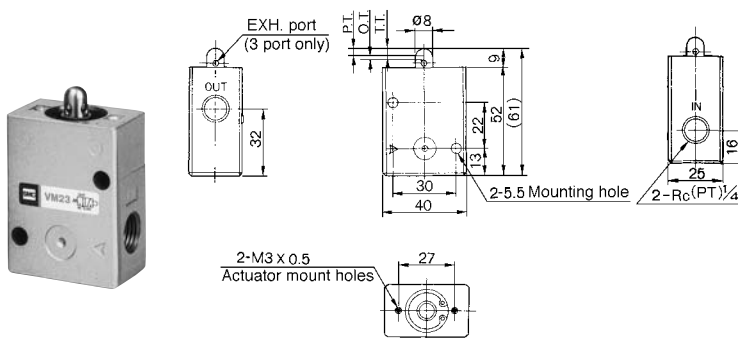
Component Parts

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	

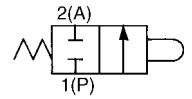
Series VM200

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

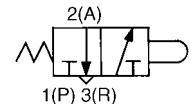


JIS Symbol

2 port



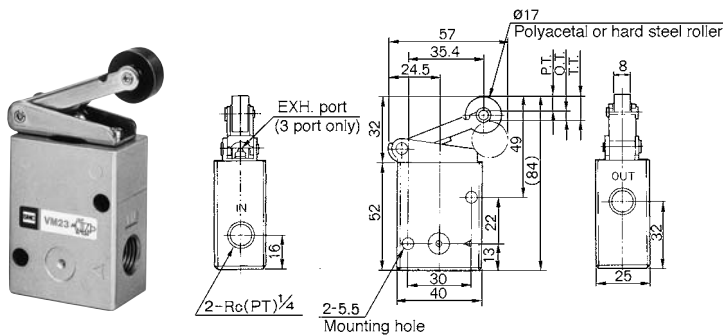
3 port



* 0.5MPa supply

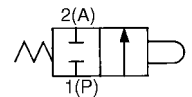
F.O.F.*	52N
P.T.	3mm
O.T.	2mm
T.T.	5mm

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

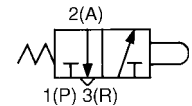


JIS Symbol

2 port



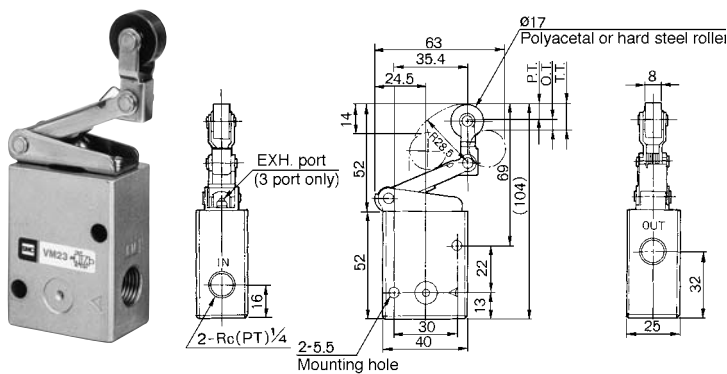
3 port



* 0.5MPa supply

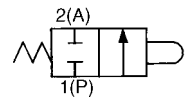
F.O.F.*	24N
P.T.	6.5mm
O.T.	4.5mm
T.T.	11mm

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

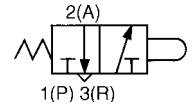


JIS Symbol

2 port



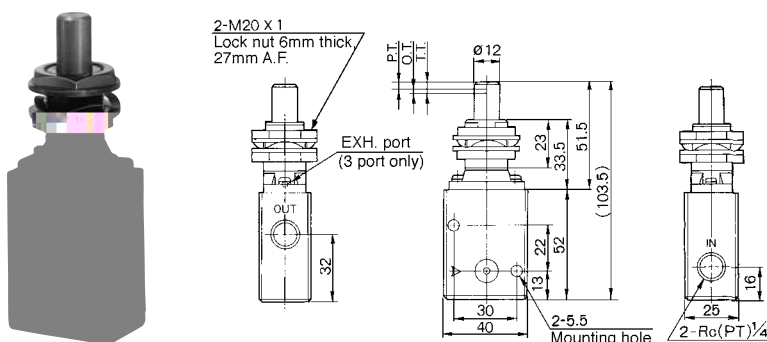
3 port



* 0.5MPa supply

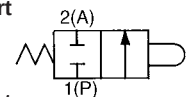
F.O.F.*	22N
P.T.	7mm
O.T.	5mm
T.T.	12mm

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

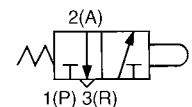


Panel mounted hole JIS Symbol

2 port



3 port

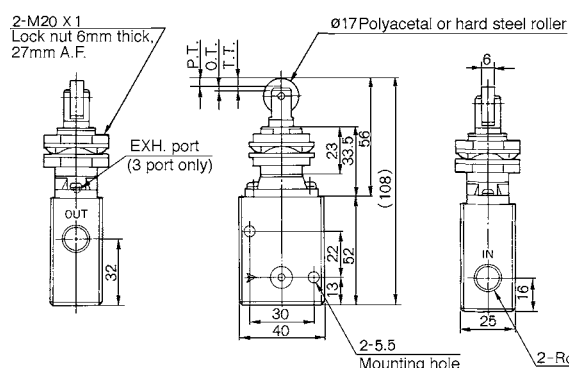


* 0.5MPa supply

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

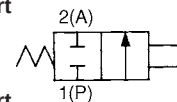
Series VM200

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

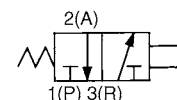


Panel mounted hole

JIS Symbol
2 port



3 port



* 0.5MPa supply

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

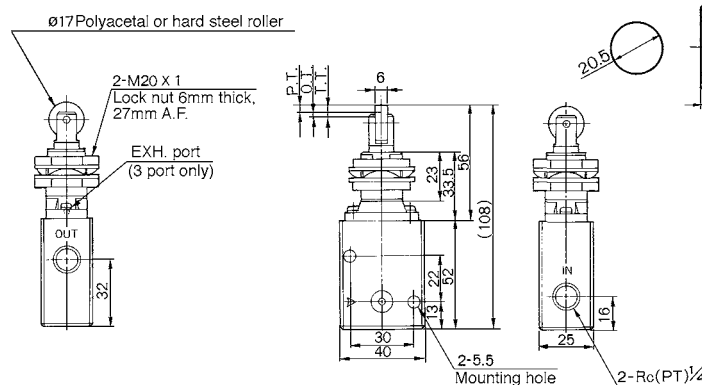
S□A

V□A

S□A

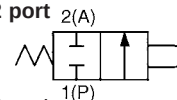
V□A

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

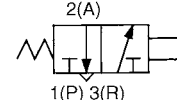


Panel mounted hole

JIS Symbol
2 port



3 port



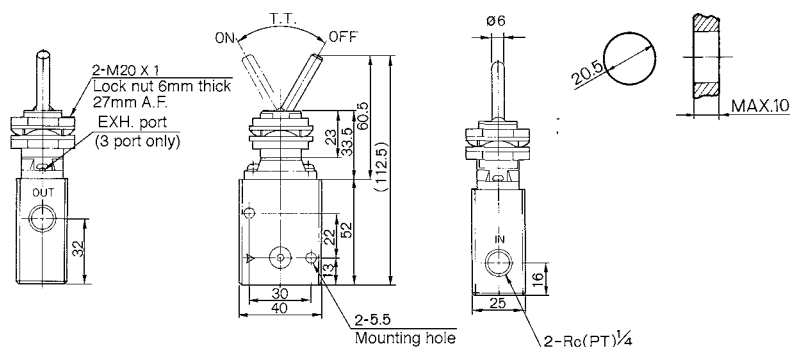
* 0.5MPa supply

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

VM/VR

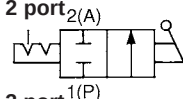
VH

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

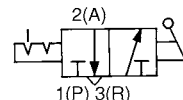


Panel mounted hole

JIS Symbol
2 port



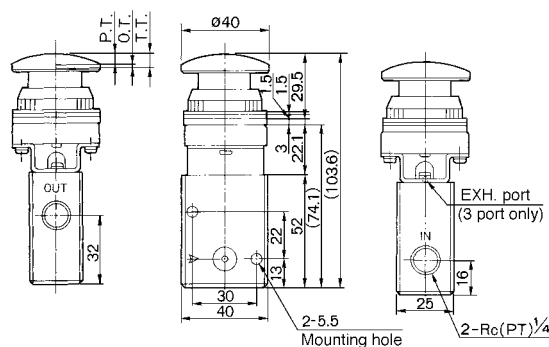
3 port



* 0.5MPa supply

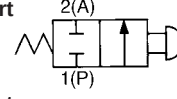
F.O.F.*	12N
T.T.	60°

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

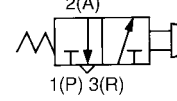


Panel mounted hole

JIS Symbol
2 port



3 port



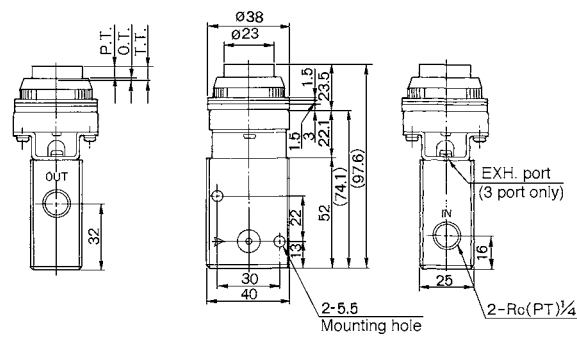
* 0.5MPa supply

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

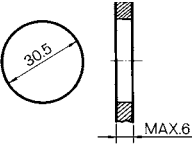
VM200

Series VM200

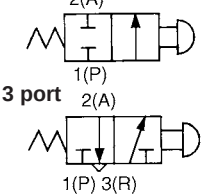
Push Button (Extended)/VM220-02-32R, B, G, Y/VM230-02-32R, B, G, Y



Panel mounted hole

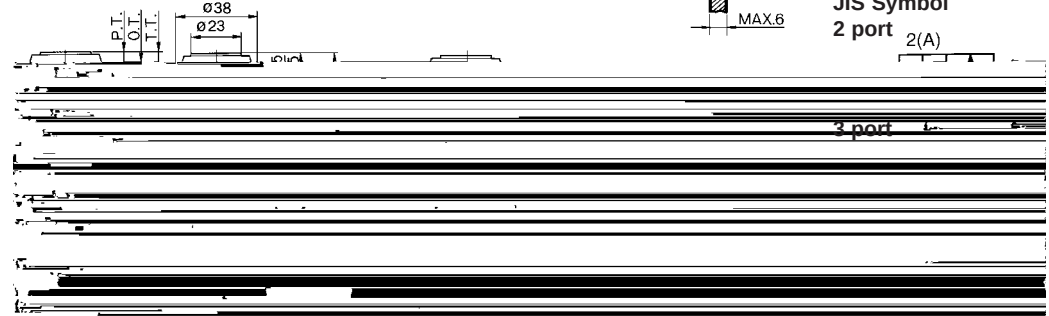


JIS Symbol

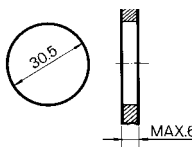


* 0.5MPa supply	
F.O.F.*	52N
P.T.	4.9mm
O.T.	1.6mm
T.T.	6.5mm

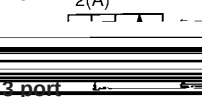
Push Button (Flush)/VM220-02-33, VM230-02-33



Panel mounted hole

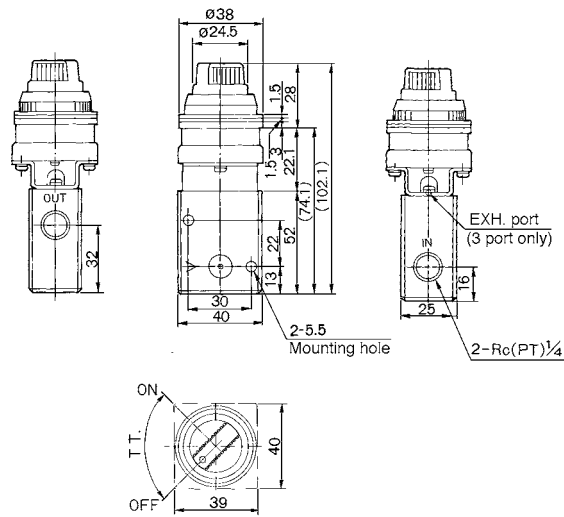


JIS Symbol

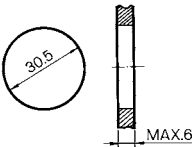


* 0.5MPa supply	
F.O.F.*	52N
P.T.	4.9mm
O.T.	1.6mm
T.T.	6.5mm

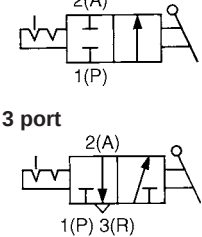
Twist Selector (2 position)/VM220-02-34R, B, G, Y/VM230-02-34R, B, G, Y



Panel mounted hole



JIS Symbol



* 0.5MPa supply	
F.O.F.*	32N
T.T.	90°



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
Manual operation	Cross roller plunger	VM430-01-07	VM-07A	Polyacetal roller
		VM430-01-07S	VM-07AS	Hard steel roller
	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

Port size

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

Thread

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

Number of 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 (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

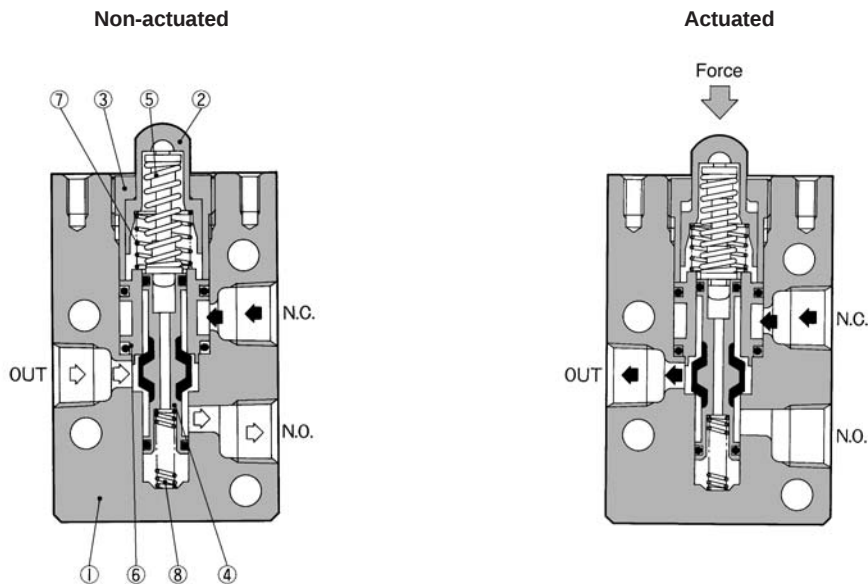
S□A

V□A

S□A

V□A

Construction



Component Parts

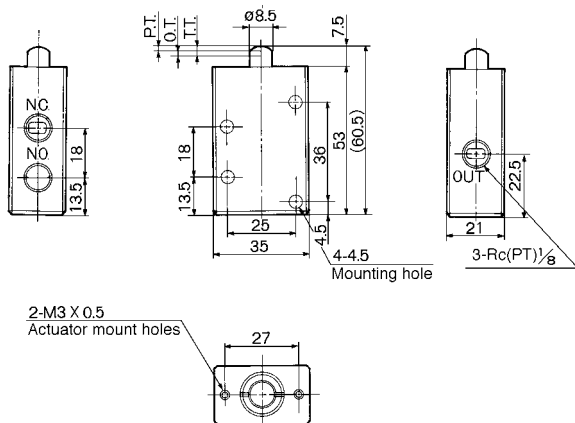
No.	Description	Material	Notes
①	Body	Aluminum alloy	Metallic plated
②	Plunger	Polyacetal	
③	Plunger retainer	Brass	Black zinc chromate treated
④	Spool valve	Aluminum alloy	Rubber lined

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

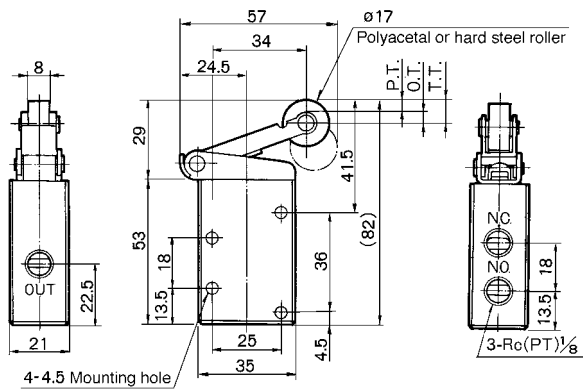


JIS Symbol



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

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

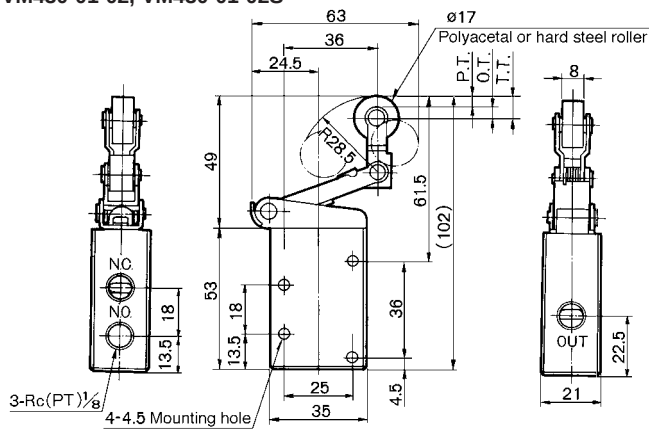


JIS Symbol



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

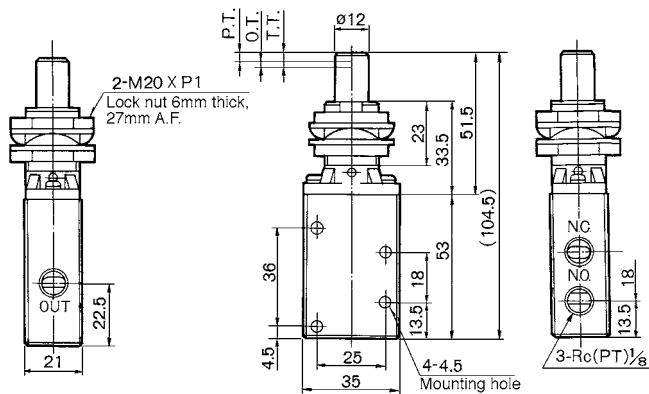


JIS Symbol

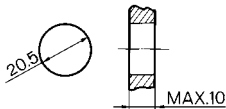


F.O.F.	11N
P.T.	4mm
O.T.	5mm
T.T.	9mm

Straight Plunger/VM430-01-05



Panel mounted hole



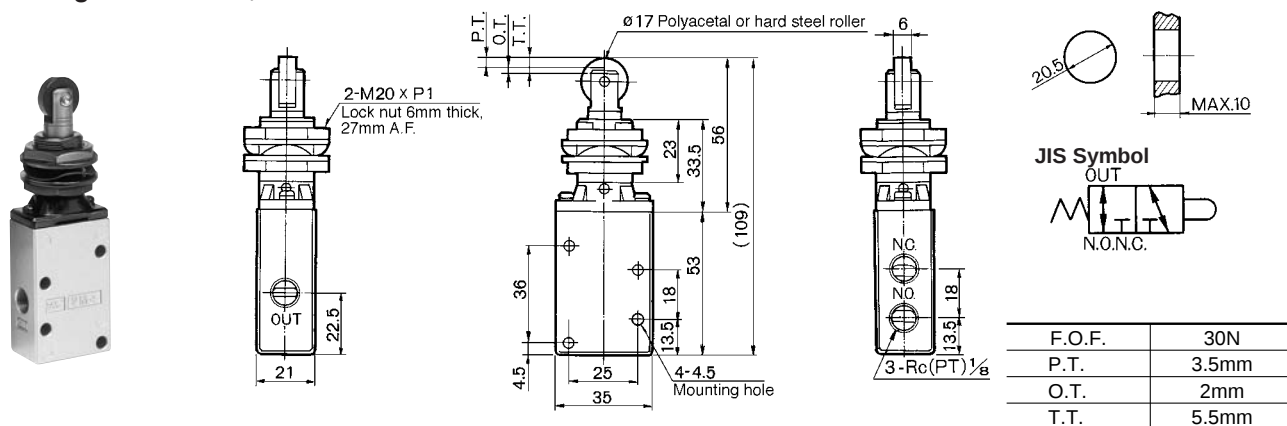
JIS Symbol



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



S□A

V□A

S□A

V□A

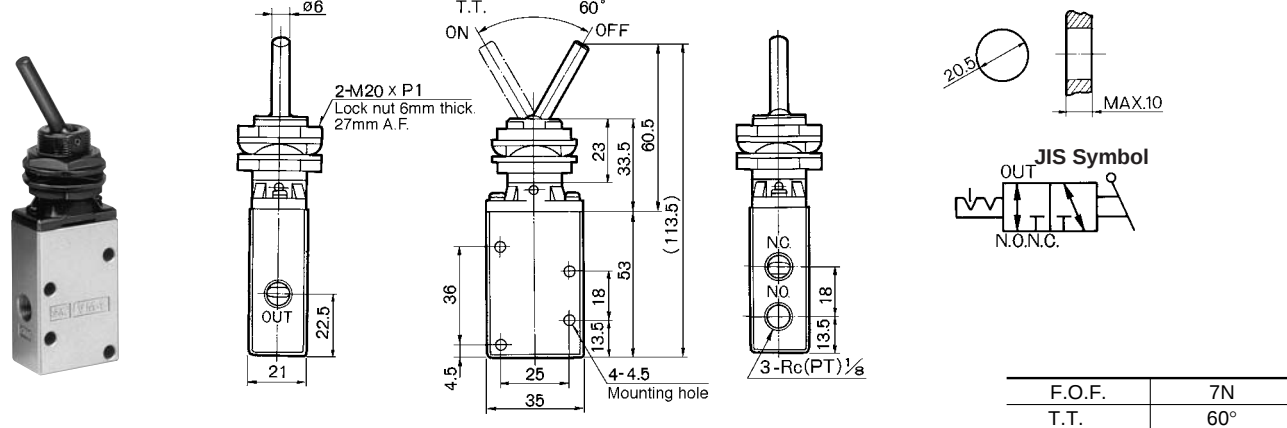
Cross Roller Plunger/VM430-01-07, VM430-01-07S



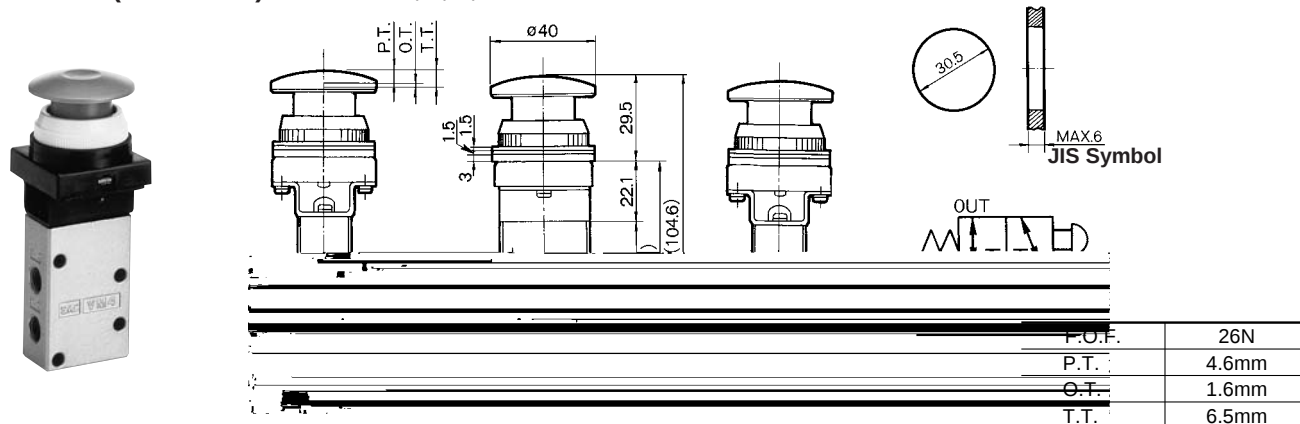
VM/VR

VH

Toggle Lever/VM430-01-08



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

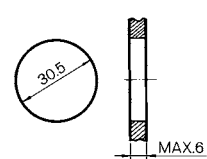
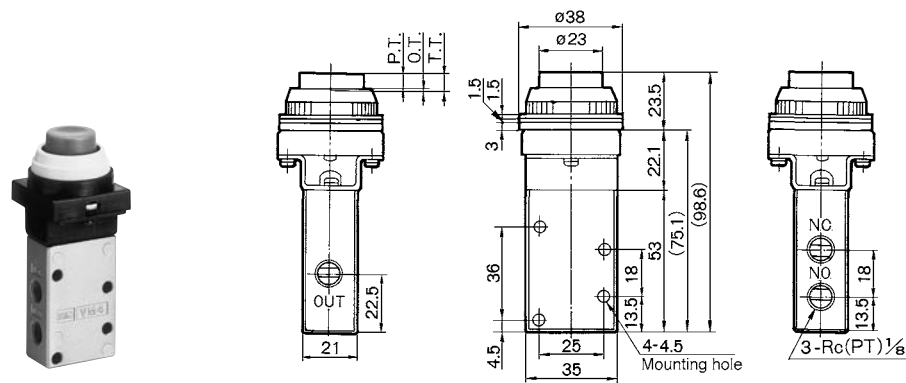


VM400

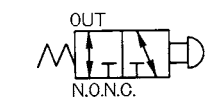
Series VM400

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

Panel mounted hole



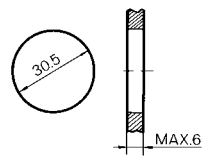
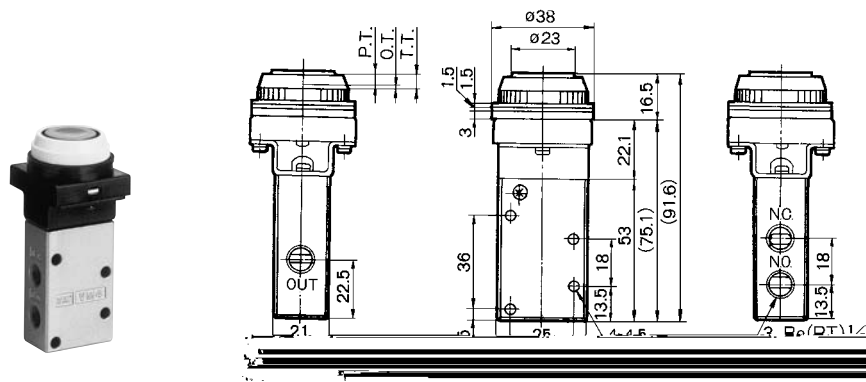
JIS Symbol



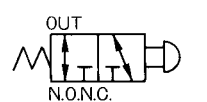
F.O.F.	26N
P.T.	5.4mm
O.T.	1.6mm
T.T.	6.5mm

Push Button (Flush)/VM430-01-33

Panel mounted hole



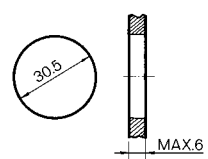
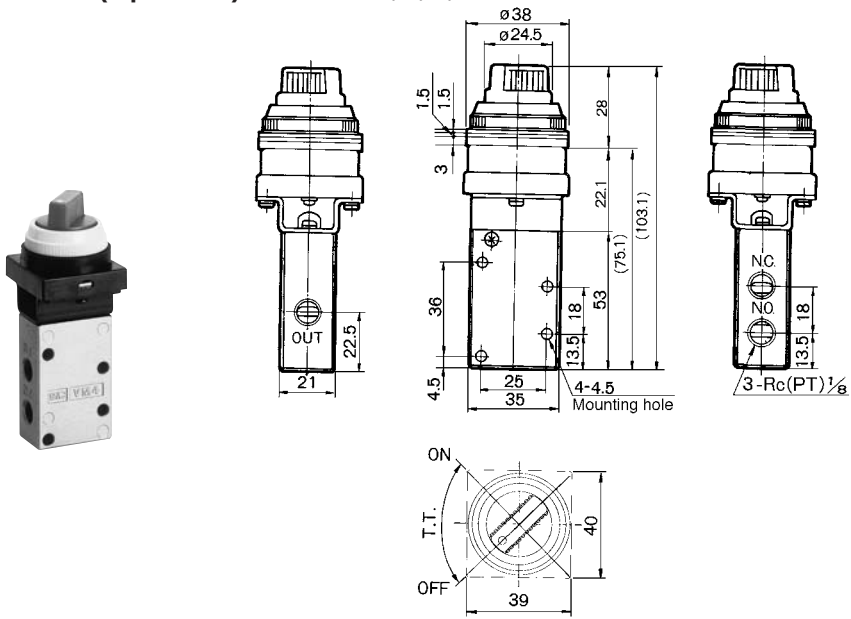
JIS Symbol



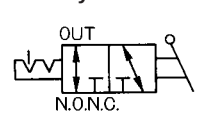
F.O.F.	26N
P.T.	4.9mm
O.T.	1.6mm
T.T.	6.5mm

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

Panel mounted hole



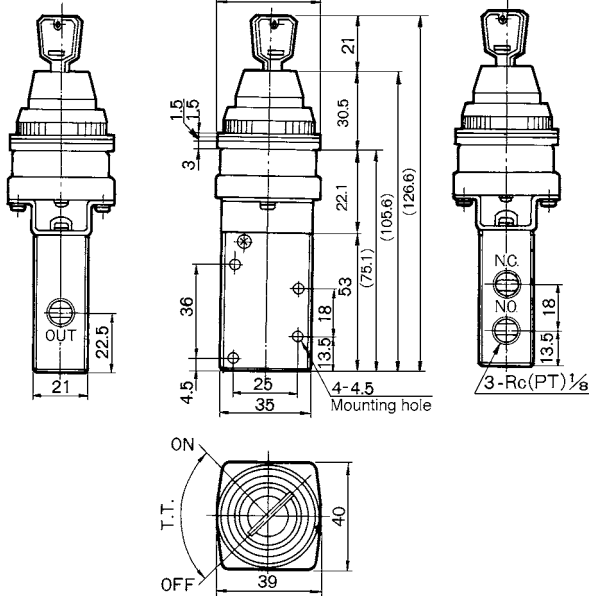
JIS Symbol



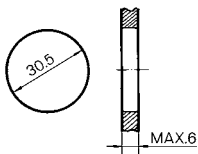
F.O.F.	20N
T.T.	90°

Series VM400

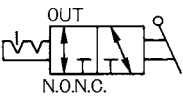
Key Selector (2 position)/VM430-01-36



Panel mounted hole



JIS Symbol



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

F.O.F.	20N
T.T.	90°

S□A

V□A

S□A

V□A

VM/VR

VH

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 (N/dmin)	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

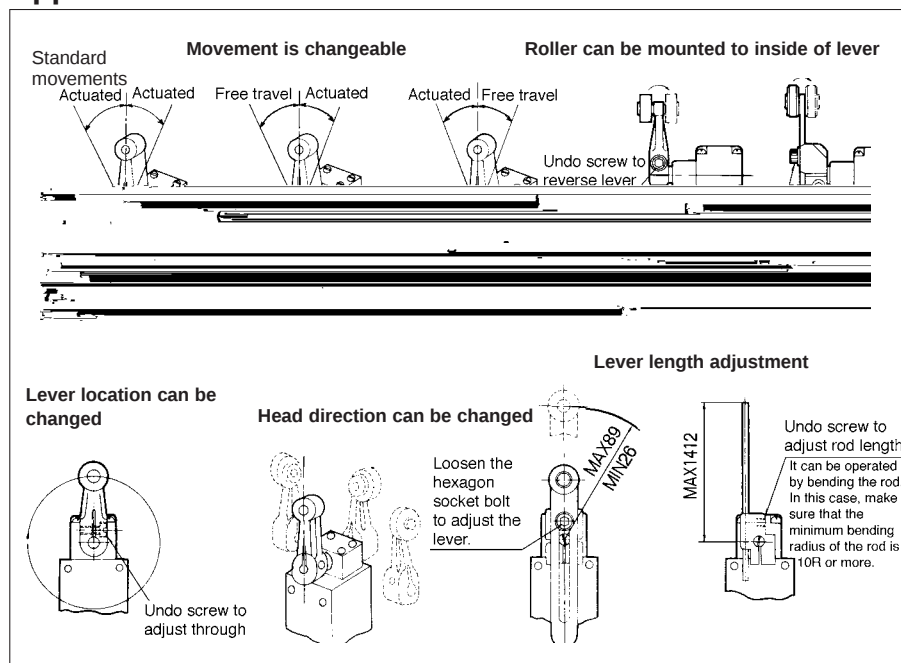


Actuator replacement is available.

How to Order

E	VM8	3	0	01	01	Actuator
						Port size
						01 1/8
						Thread
						- Rc(PT)
						F G(PF)
						N NPT
						T NPTF
						Number of ports
						3 3 ports
						Area code
						- Japan, Asia, Australia, England
						E Europe
						N North America

Applications



Construction

Non-actuated

Actuated

S□A

V□A

S□A

V□A

VM/VR

VH

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

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 X 0.8
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.

S□A

V□A

S□A

V□A

VM/VR

VH

Model

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



Note) Actuator replacement is available for all styles.

VZM400

How to Order

E

VZM45

0

01

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

01

1/8

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

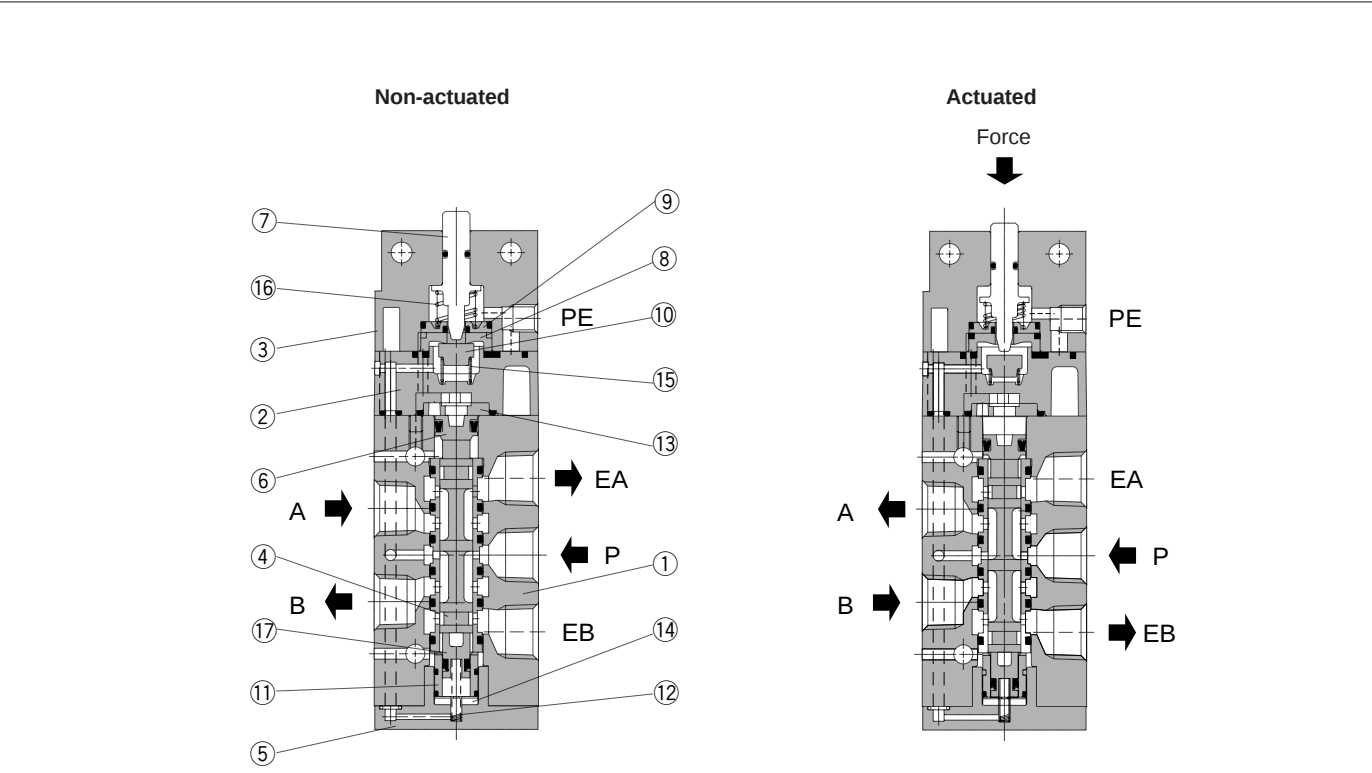
Colour of push button

Option

F

Foot bracket (Only internal pilot)

Construction



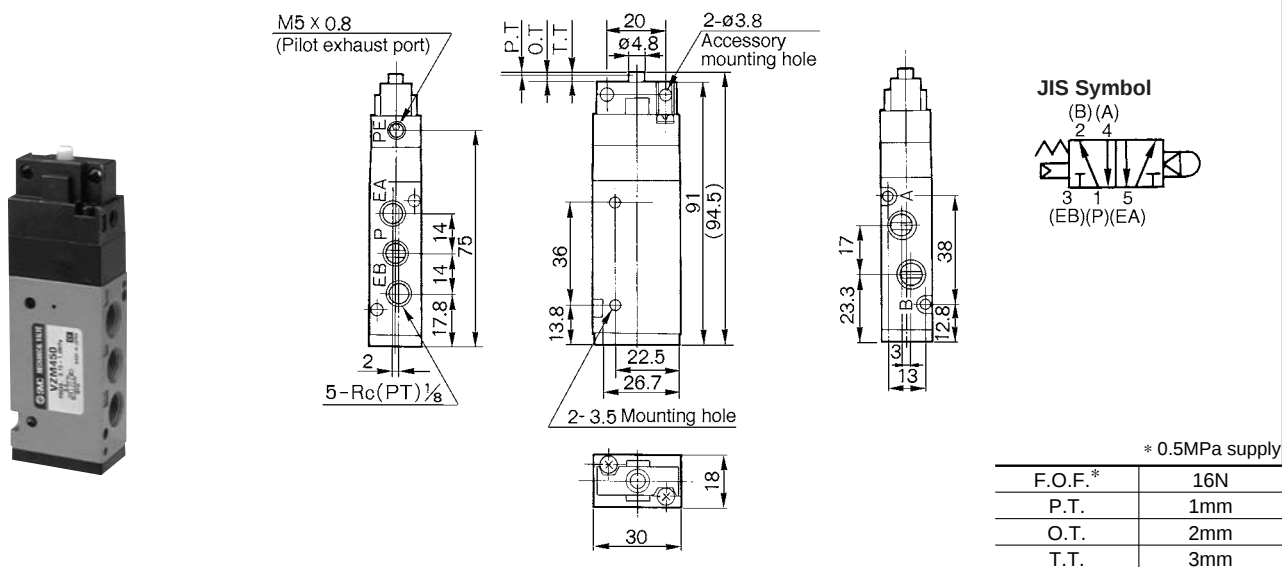
Componet Parts

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



S□A

V□A

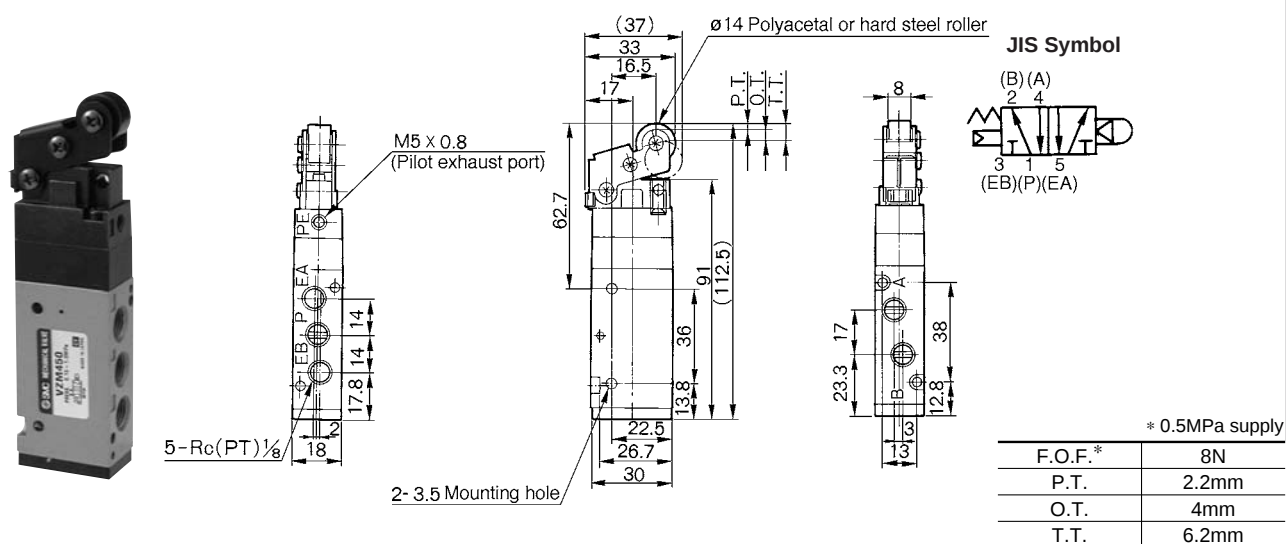
S□A

V□A

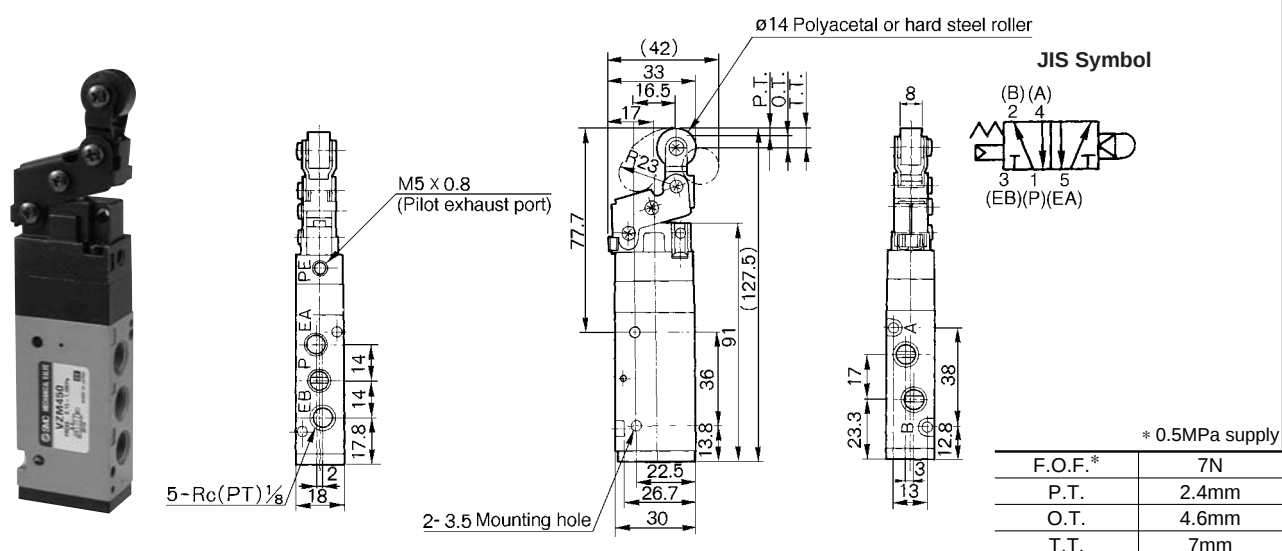
VM/VR

VH

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



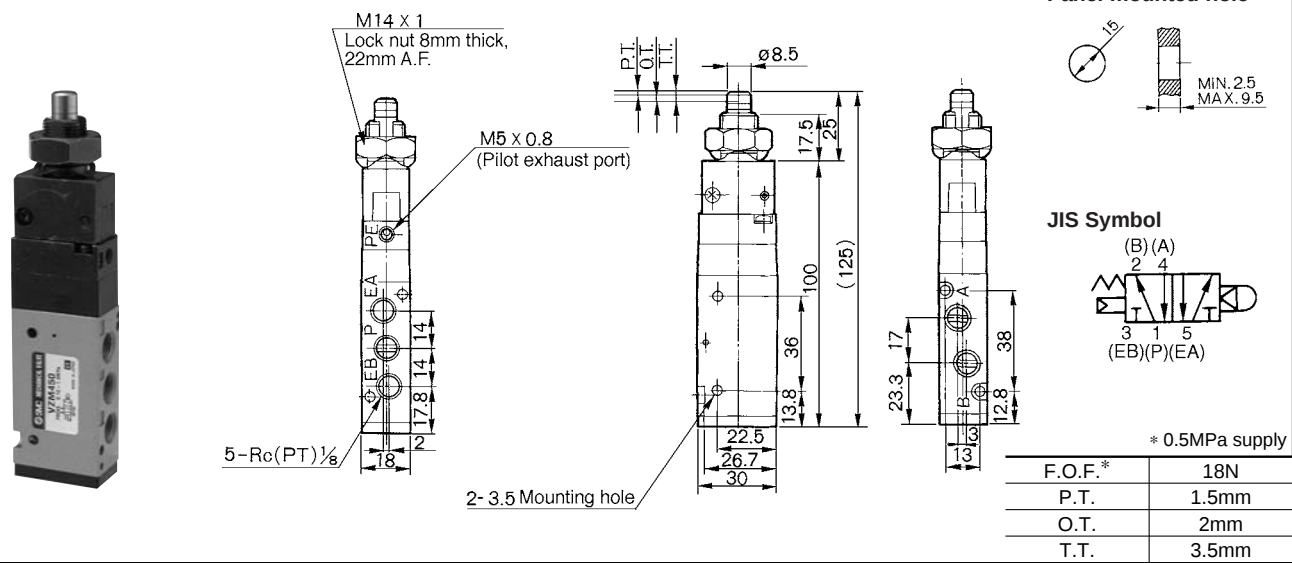
One Way Roller Lever/VZM450-01-02, VZM450-01-02S



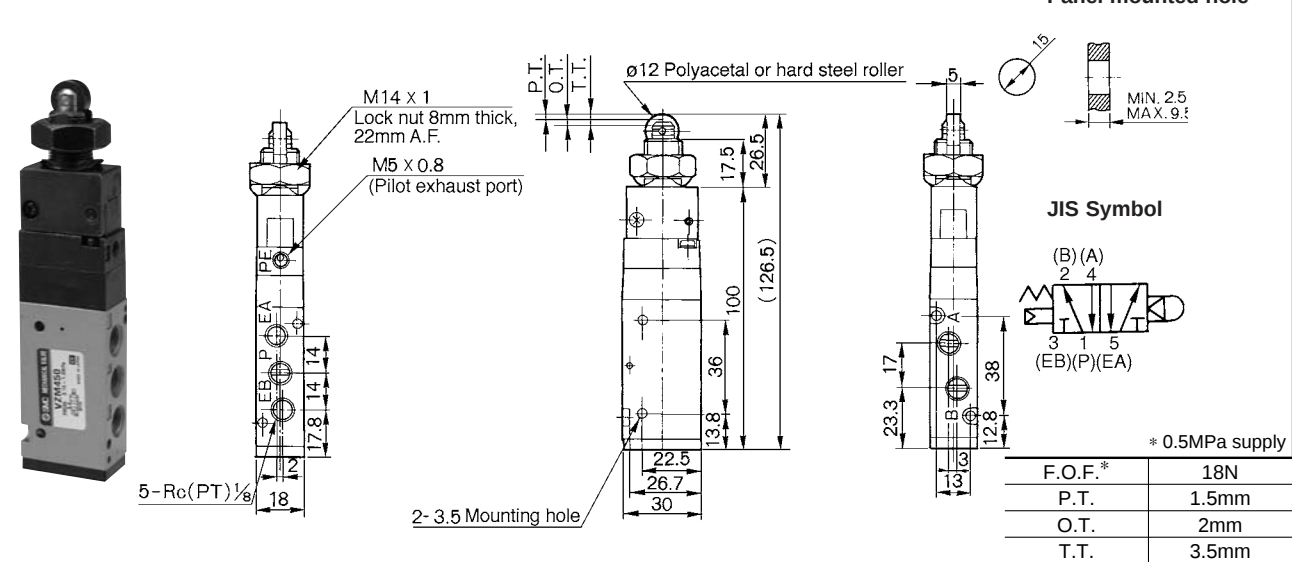
VZM400

Series VZM400

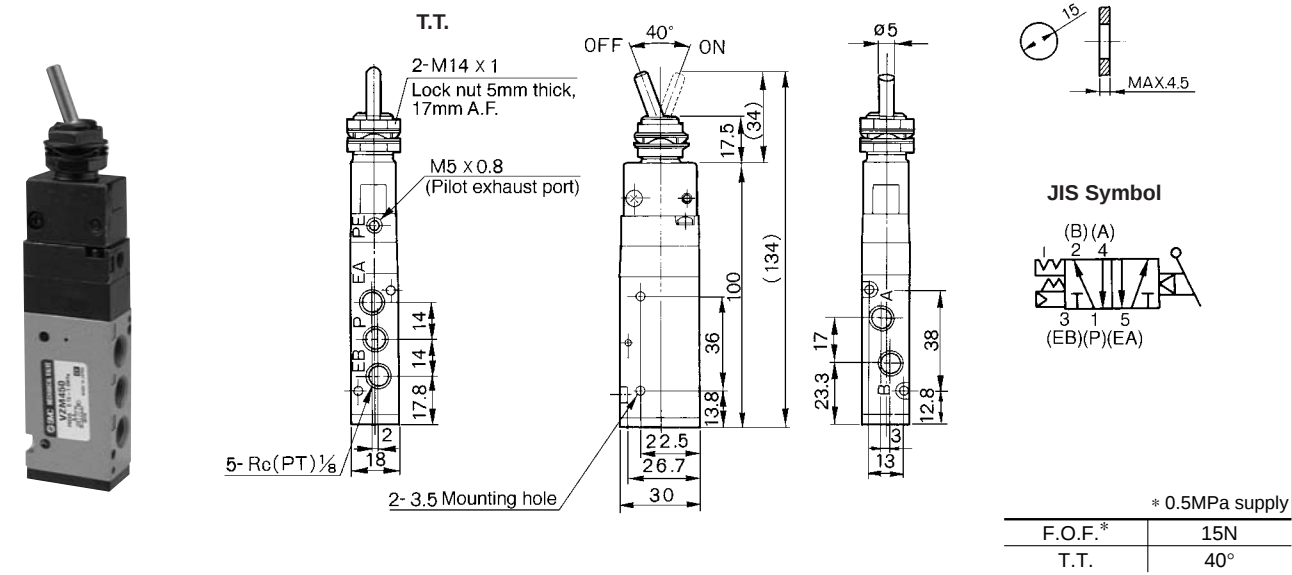
Straight Plunger/VZM450-01-05



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

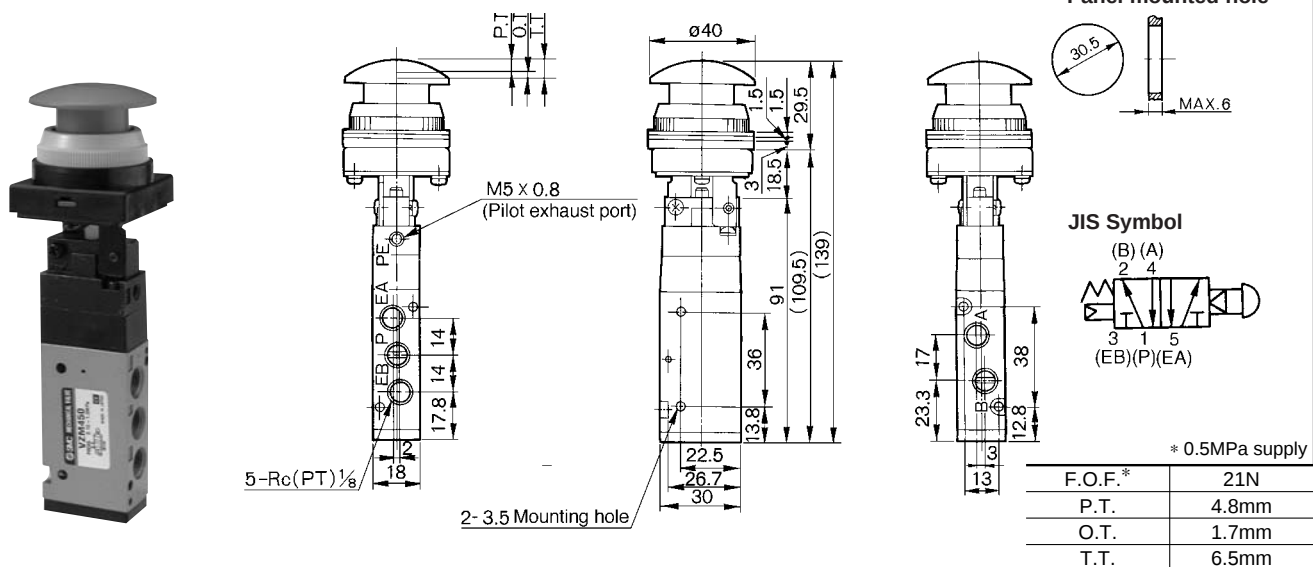


Toggle Lever/VZM450-01-08



Series VZM400

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



S□A

V□A

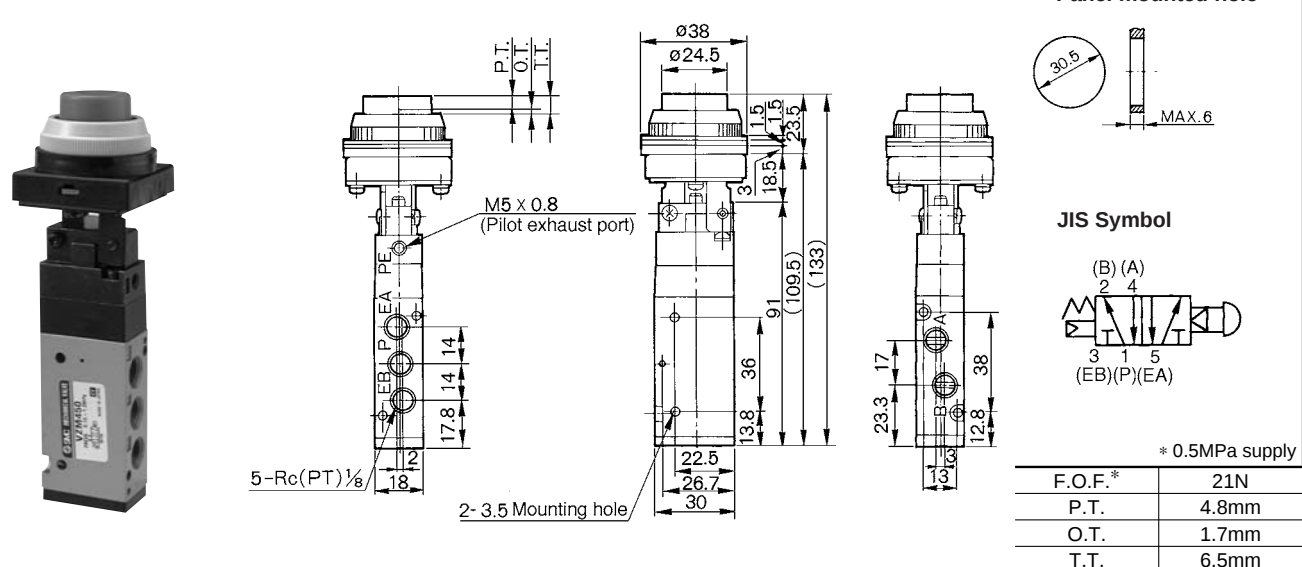
S□A

V□A

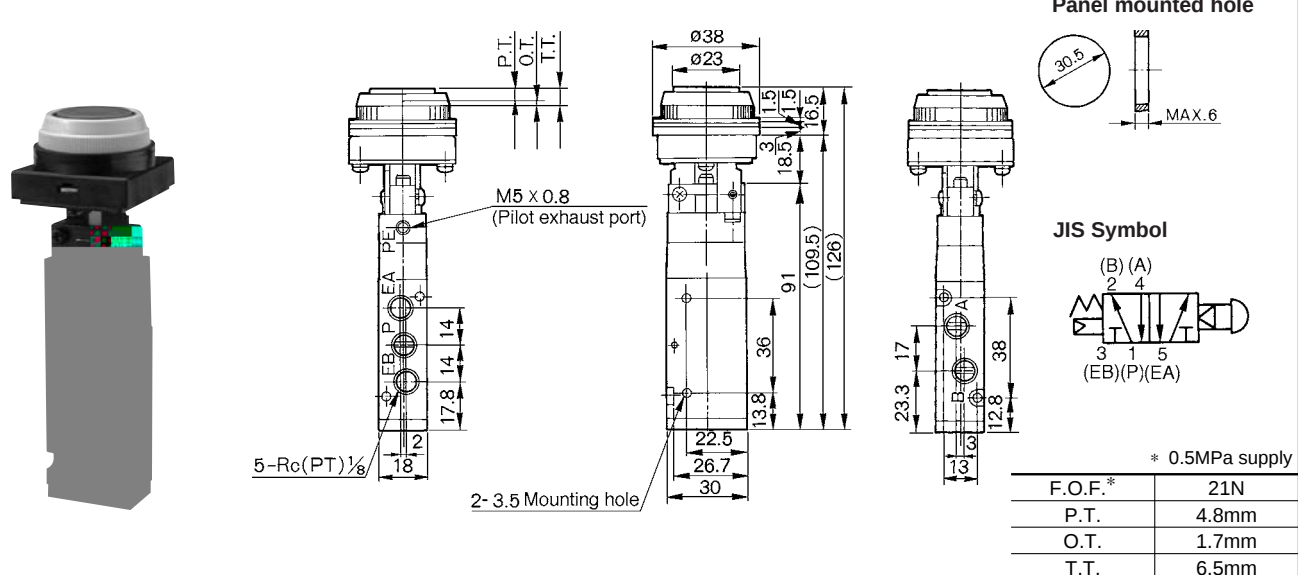
VM/MR

VH

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



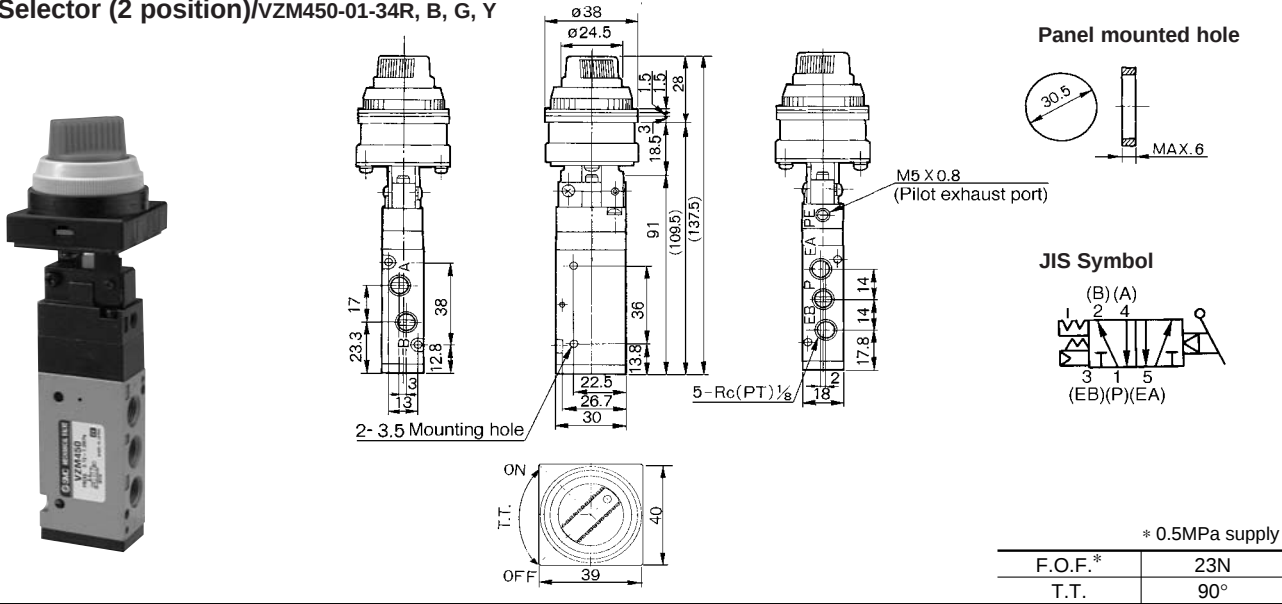
Push Button (Flush)/VZM450-01-33



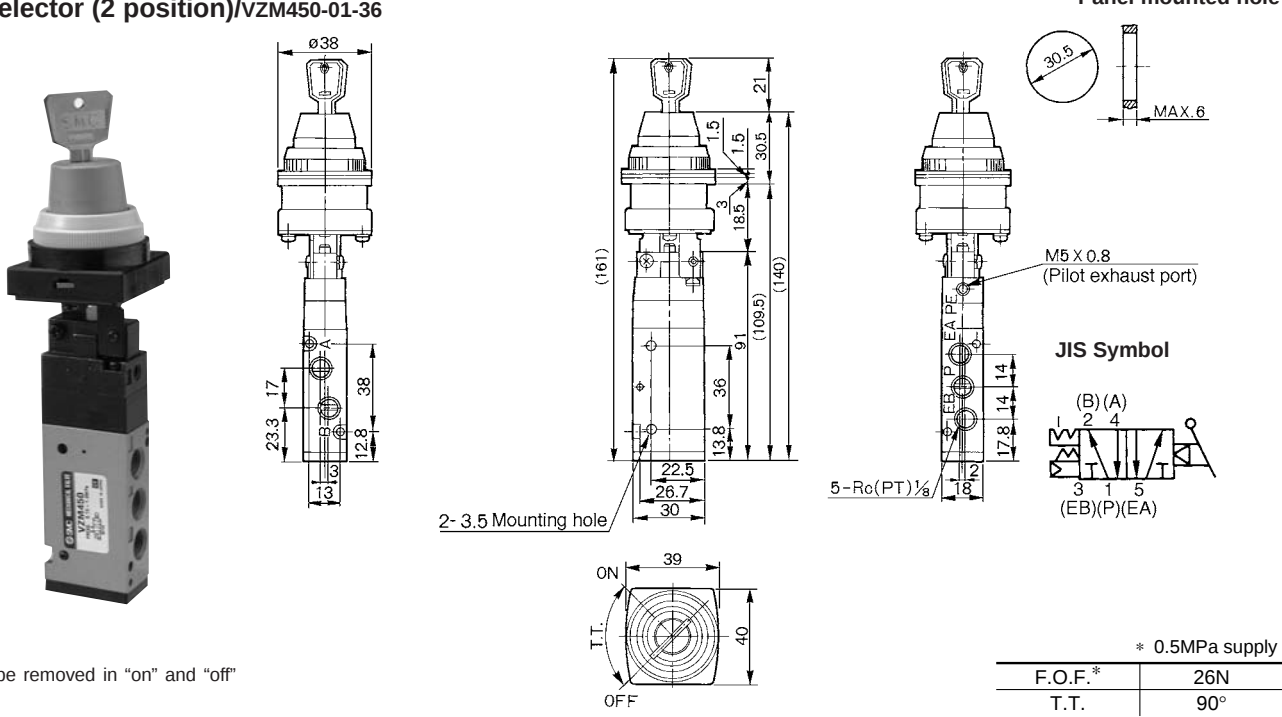
VZM400

Series VZM400

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

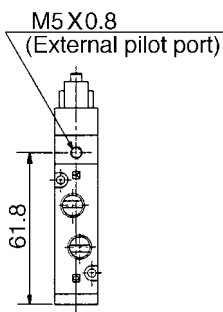


Key Selector (2 position)/VZM450-01-36

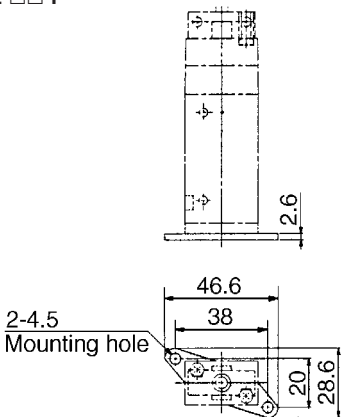


Key can be removed in "on" and "off" positions.

External Pilot Style VZM451 Type



With Foot Bracket VZM450-01-□□-F



5 Port Mechanical Valve

Series VZM500

**Compact design,
Large flow capacity/N_d/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 _d /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 X 0.8
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
Manual operation	Toggle lever	VZM550-01-08	VM-08C	—
	Push button (Mushroom)	VZM550-01-30R	VM-30CR	Red
		VZM550-01-30B	VM-30CB	Black
		VZM550-01-30G	VM-30CG	Green
		VZM550-01-30Y	VM-30CY	Yellow
	Push button (Extended)	VZM550-01-32R	VM-32CR	Red
		VZM550-01-32B	VM-32CB	Black
		VZM550-01-32G	VM-32CG	Green
		VZM550-01-32Y	VM-32CY	Yellow
	Push button (Flush)	VZM550-01-33	VM-33C	With a set of red, black, green, yellow
	Twist selector (2 position)	VZM550-01-34R	VM-34CR	Red
		VZM550-01-34B	VM-34CB	Black
		VZM550-01-34G	VM-34CG	Green
		VZM550-01-34Y	VM-34CY	Yellow
	Key selector (2 position)	VZM550-01-36	VM-36C	—
	Push-pull	VZM550-01-37	—	Black



Note) Actuator replacement is available for all styles. (Except for push-pull)

VZM500

How to Order

E

VZM55

0

01

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

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

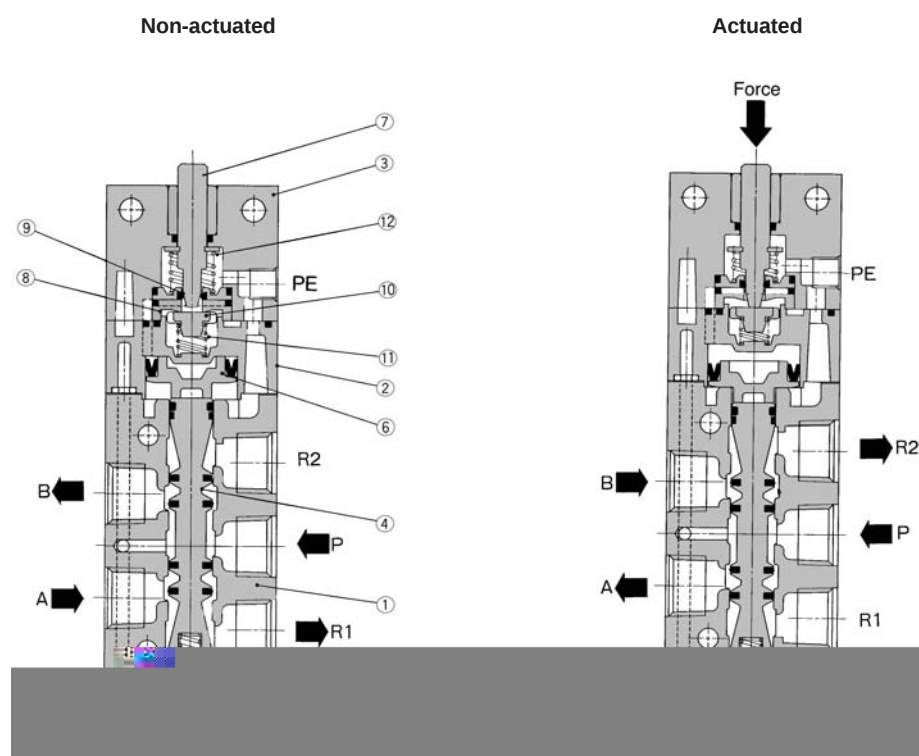
F	Foot bracket
---	--------------

Body option

0	Standard
1*	External pilot style

* Except for VZM550-01-37

Construction



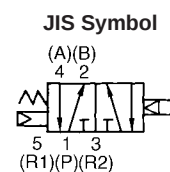
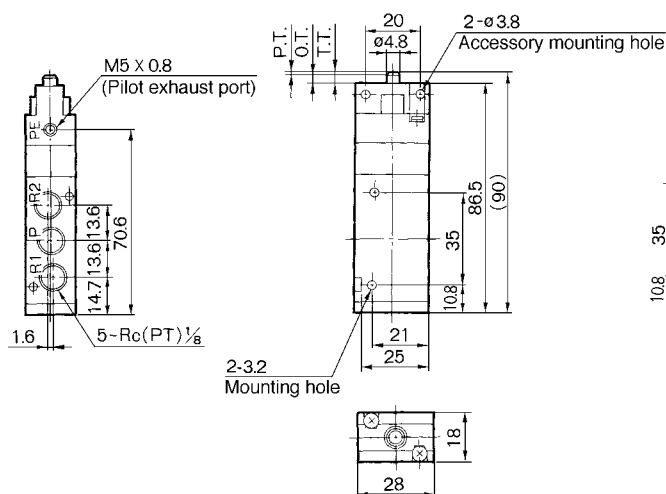
Component Parts

No.	Description	Material	Notes
①	Body	Aluminum alloy	Metallic plated
②	Pilot body	Zinc alloy	Metallic plated
③	Head cover	Zinc alloy	Black zinc chromate
④	Spool assembly		
⑤	End cover	Zinc alloy	Metallic plated
⑥	Piston	Polyacetal	
⑦	Plunger	Stainless steel	

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

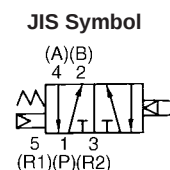
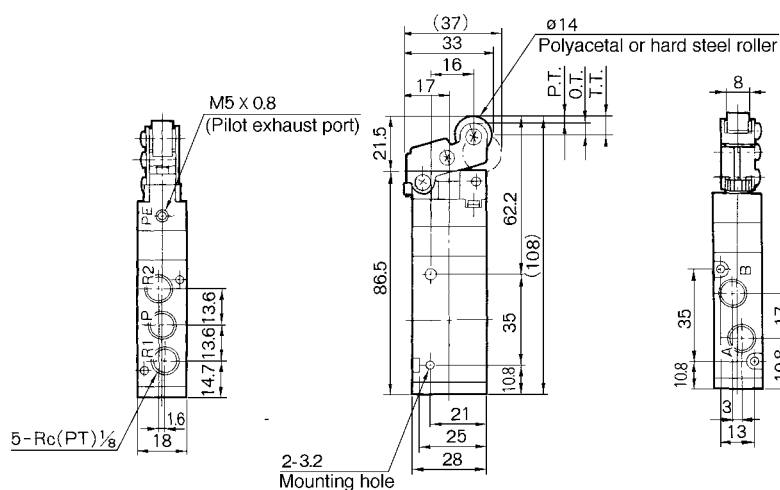
Series VZM500

Basic/vZM550-01-00



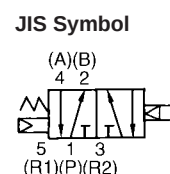
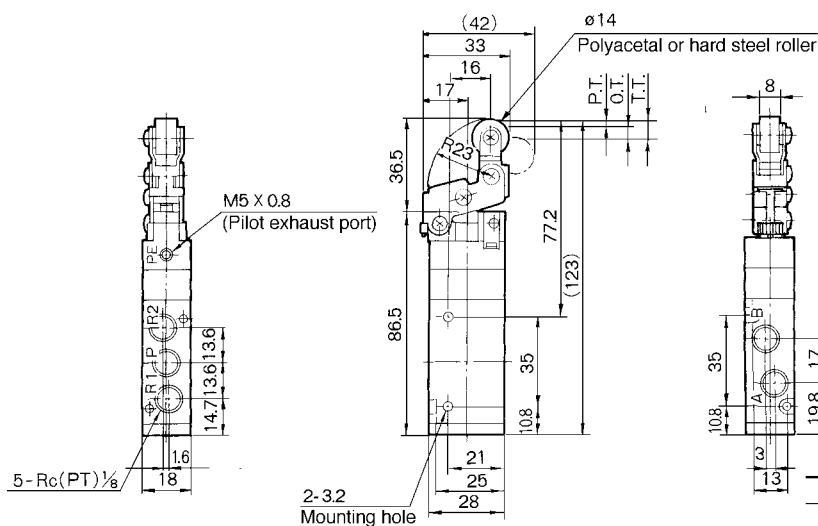
* 0.5MPa supply	
F.O.F.*	16N
P.T.	1mm
O.T.	2mm
T.T.	3mm

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



* 0.5MPa supply	
F.O.F.*	8N
P.T.	2.2mm
O.T.	4mm
T.T.	6.2mm

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



* 0.5MPa supply	
F.O.F.*	7N
P.T.	2.4mm
O.T.	4.6mm
T.T.	7mm

S□A

V□A

S□A

V□A

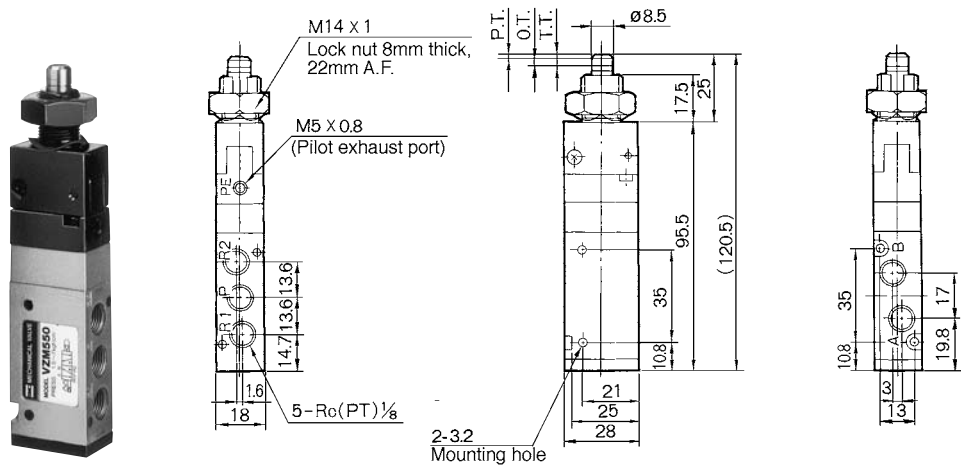
VM/VR

VH

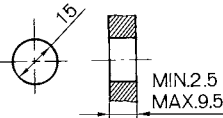
VZM500

Series VZM500

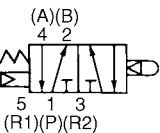
Straight Plunger/VZM550-01-05



Panel mounted hole



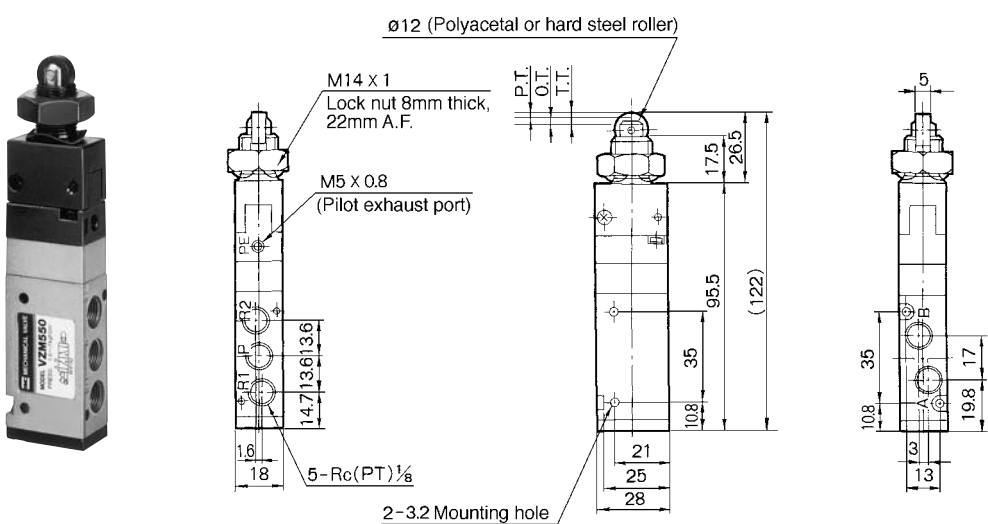
JIS Symbol



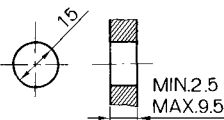
* 0.5MPa supply

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

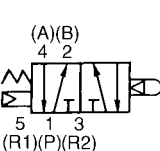
Roller Plunger/VZM550-01-06, VZM550-01-06S



Panel mounted hole



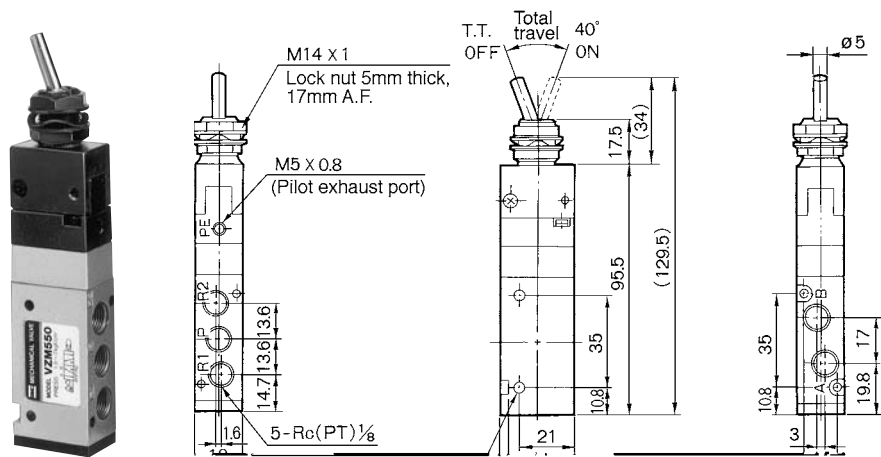
JIS Symbol



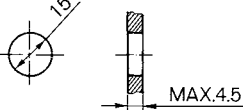
* 0.5MPa supply

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

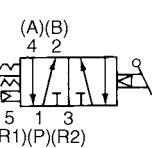
Toggle Lever/VZM550-01-08



Panel mounted hole



JIS Symbol

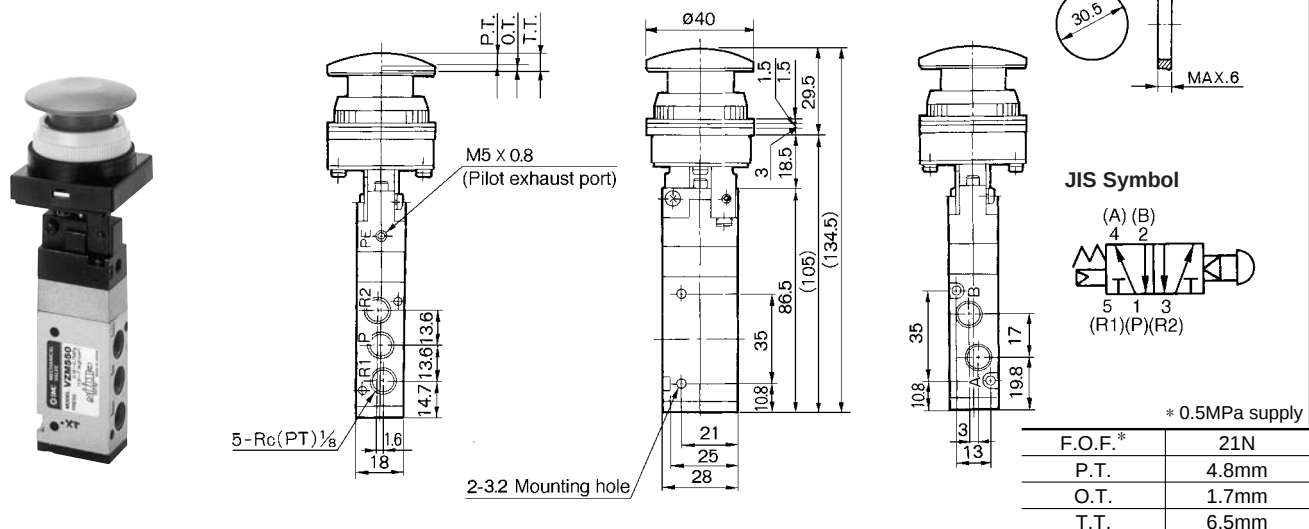


* 0.5MPa supply

F.O.F.*	15N
T.T.	40°

Series VZM500

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



S□A

V□A

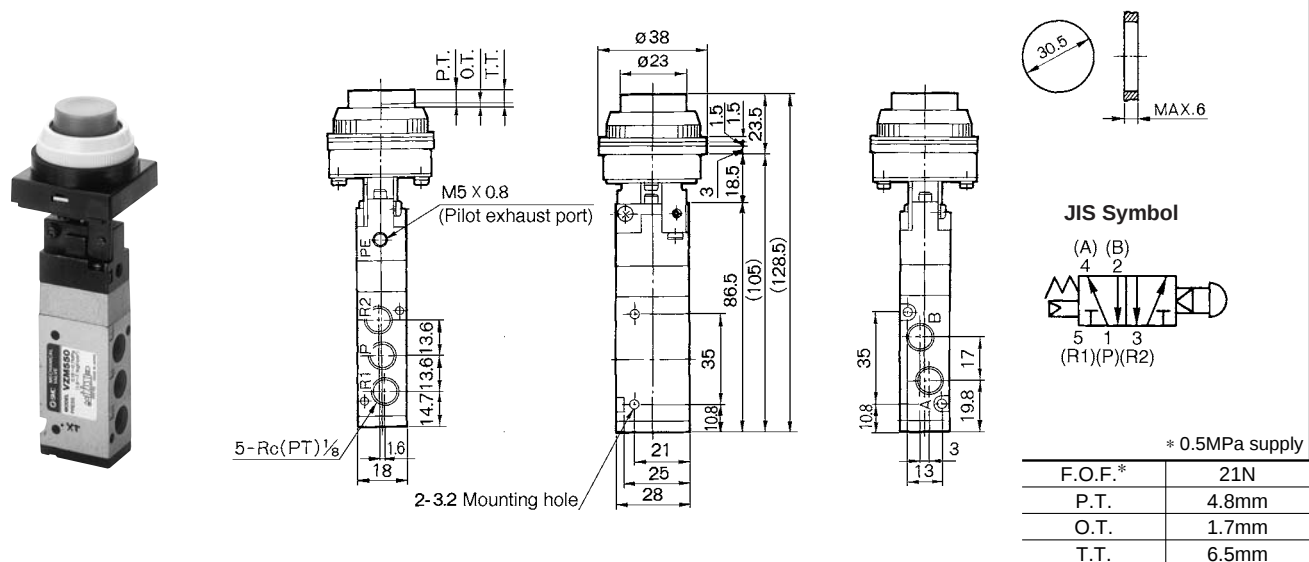
S□A

V□A

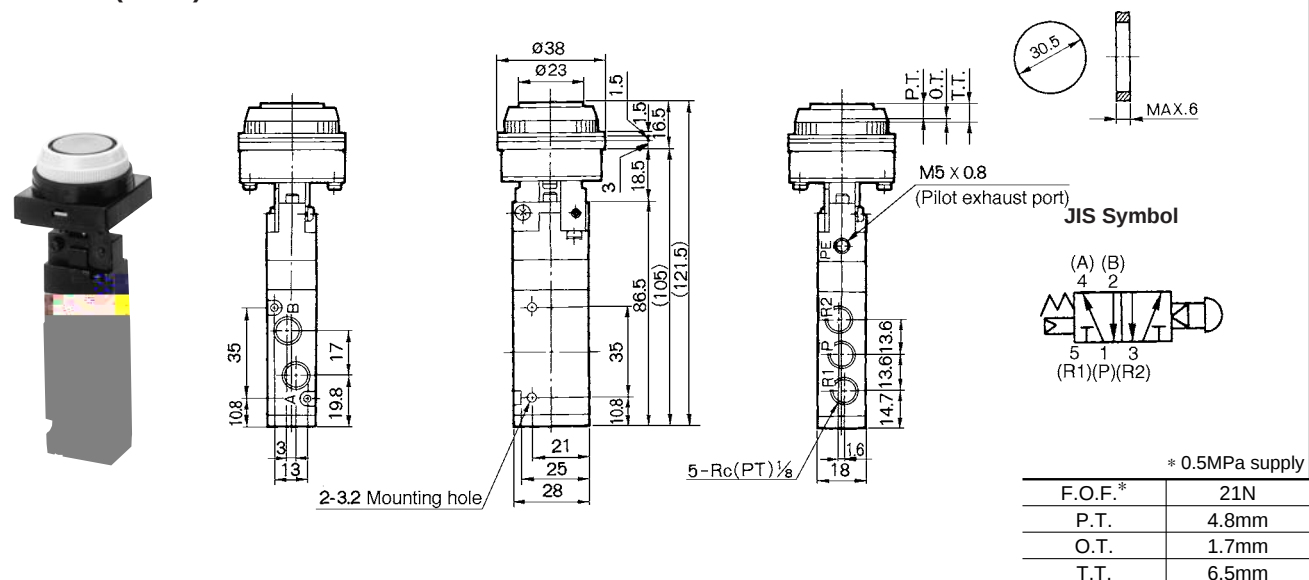
VM/VR

VH

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



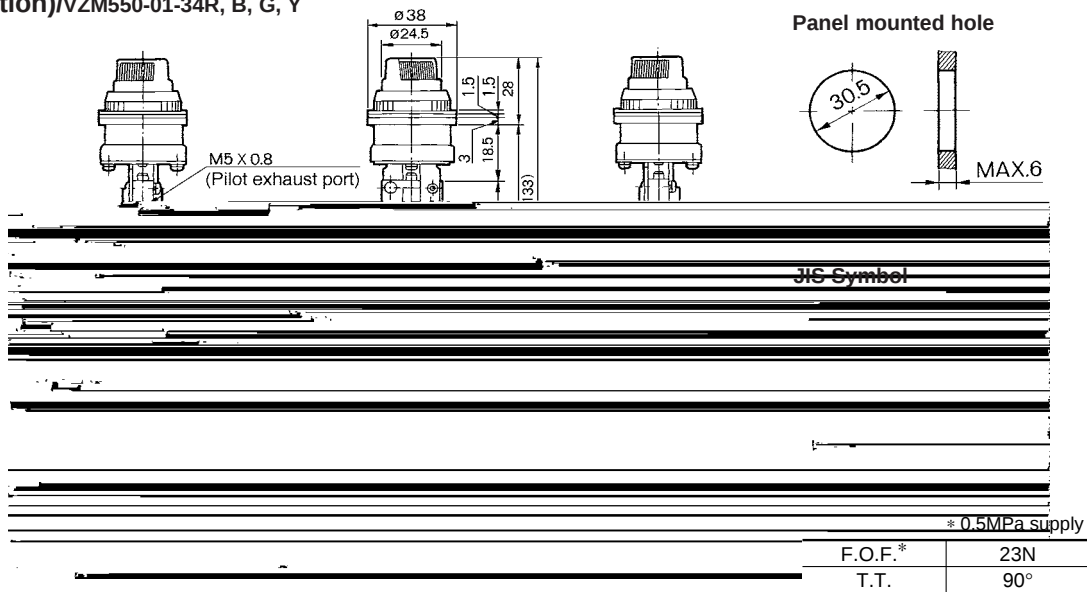
Push Button (Flush)/VZM550-01-33



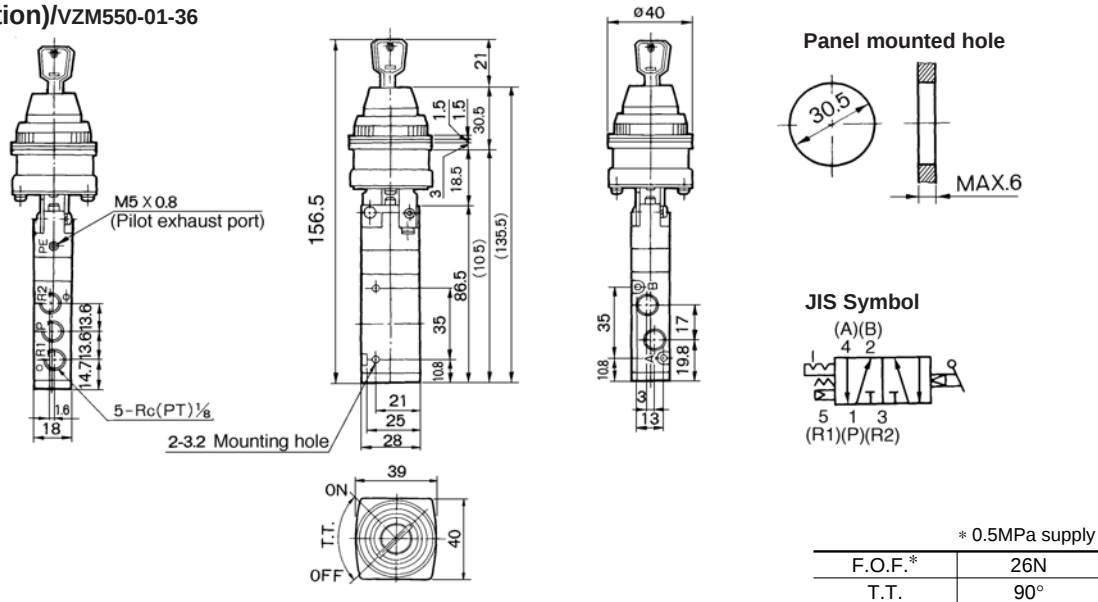
VZM500

Series VZM500

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

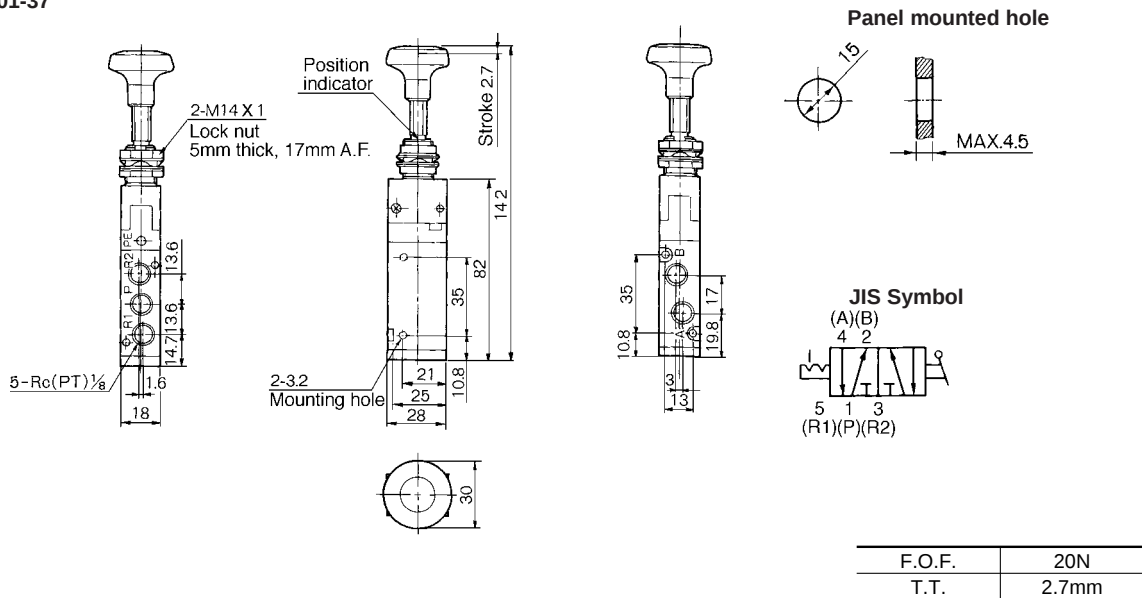


Key Selector (2 position)/VZM550-01-36

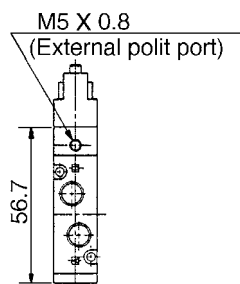


Key can be removed in "on" and "off" positions.

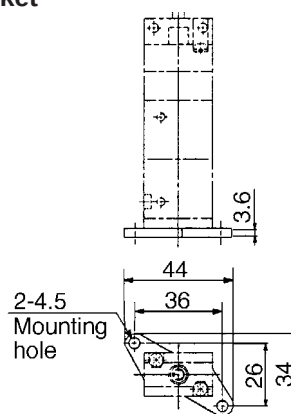
Push-pull/VZM550-01-37



External Pilot Style VZM551 Type



With Foot Bracket VZM55□-01-□□-F



S□A

V□A

S□A

V□A

VM/VR

VH

5 Port Mechanical Valve/Rubber Seal

Series VFM300

**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 fouling or the noise of the exhaust could cause problems to the surroundings.

External pilot model available. (Option)

Foot bracket and manifold



Specifications

Fluid	Air, Inert gas
Operating pressure	0.15 to 0.9MPa ⁽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 SUP, CYL port 1/4, EXH port 1/8 Pilot valve (EXH)/M5 X 0.8
Option	Foot bracket ⁽²⁾
Weight (Basic)	260g



* Contact SMC for manifold mounting style.

Note 1) External pilot style Main valve: 0 to 0.9MPa

Pilot valve: 0.15 to 0.9MPa

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

Model

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



Note) Actuator replacement is available for all styles.

How to Order

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

• **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 (Flash)
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)
----------	------------------------------------

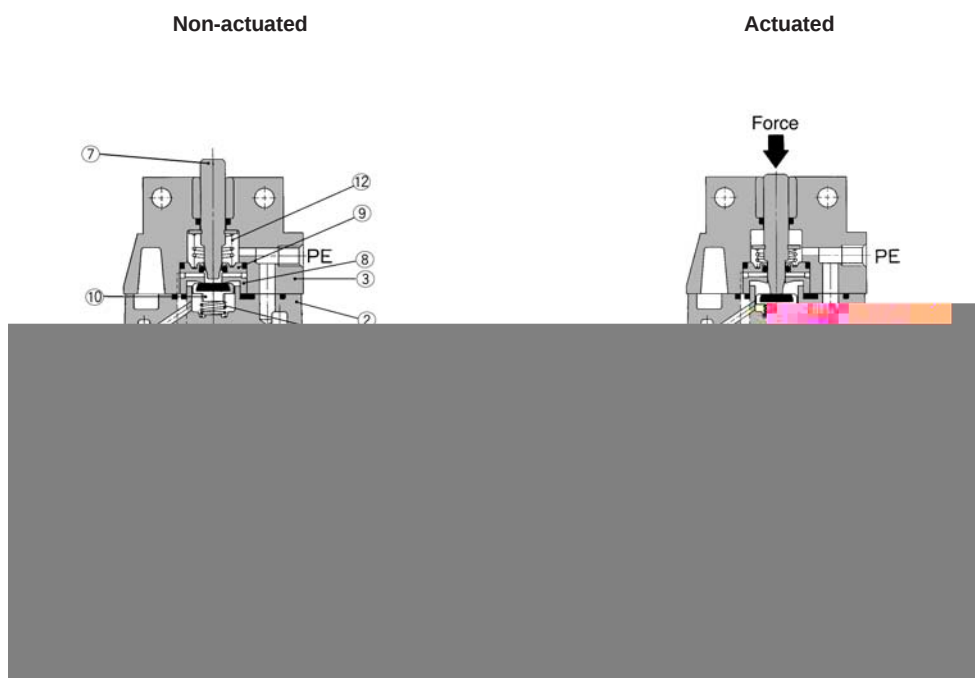
S□A

V□A

S□A

V□A

Construction



VM/VR

VH

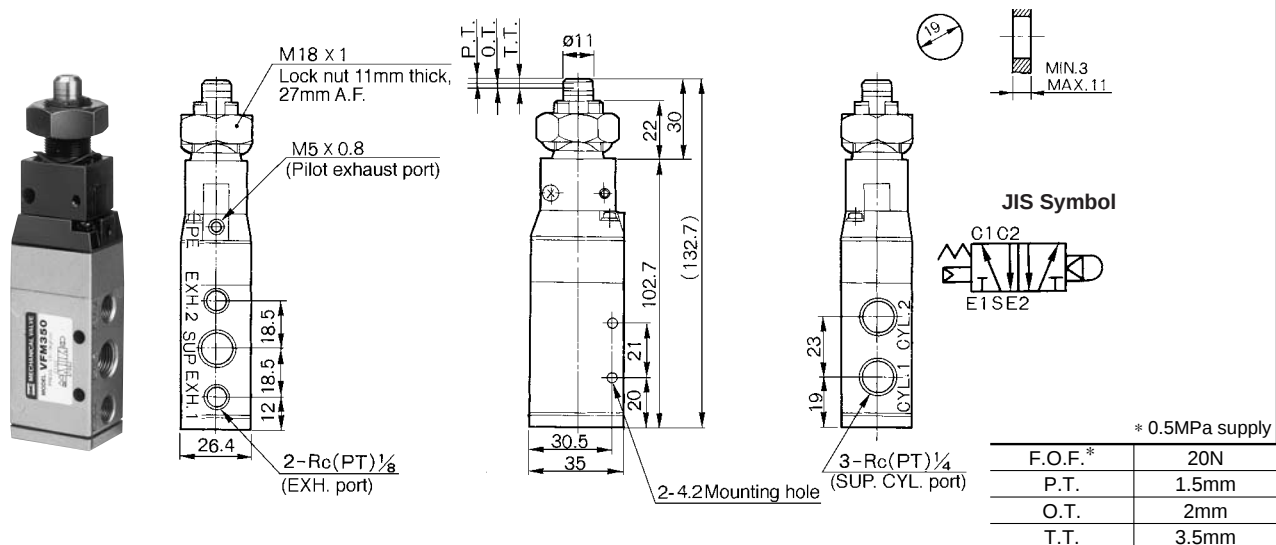
Component Parts

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 valve assembly		
⑤	End cover	Aluminum alloy	Metallic plated
⑥	Piston	Polyacetal	
⑦	Plunger	Stainless steel	

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

Series VFM300

Straight Plunger/VFM350-02-05



S□A

V□A

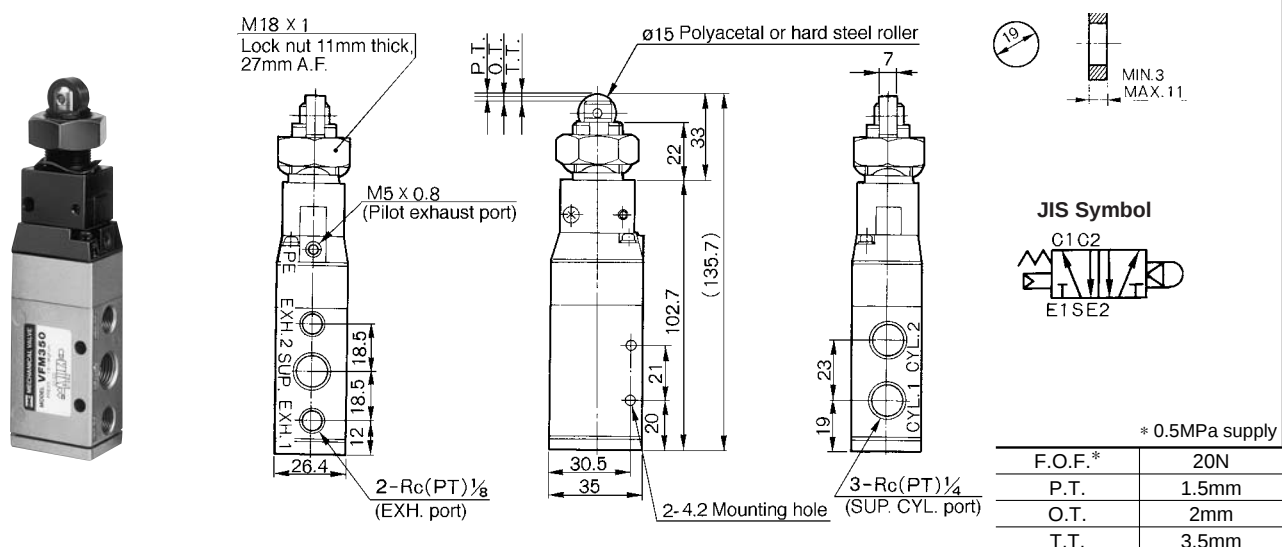
S□A

V□A

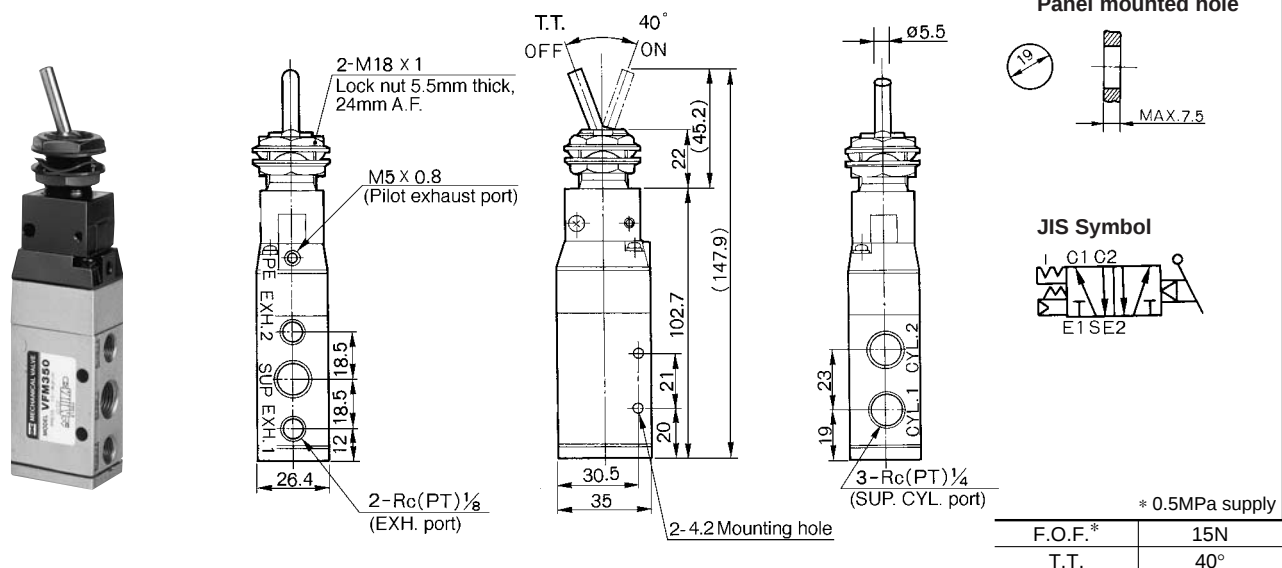
VM/VR

VH

Roller Plunger/VFM350-02-06, VFM350-02-06S



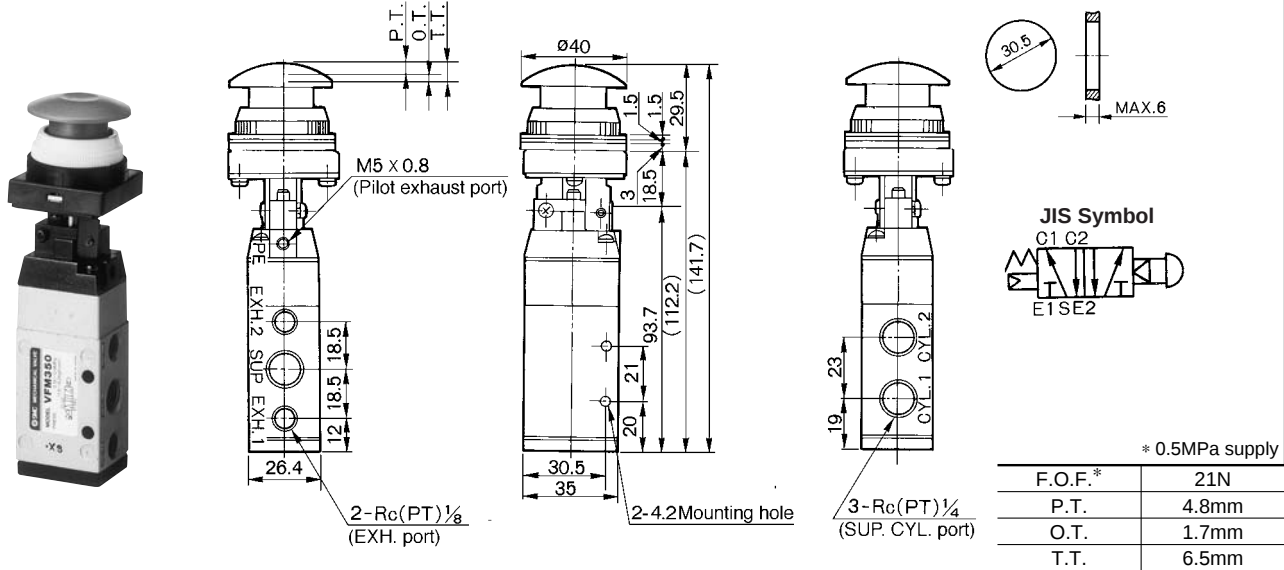
Toggle Lever/VFM350-02-08



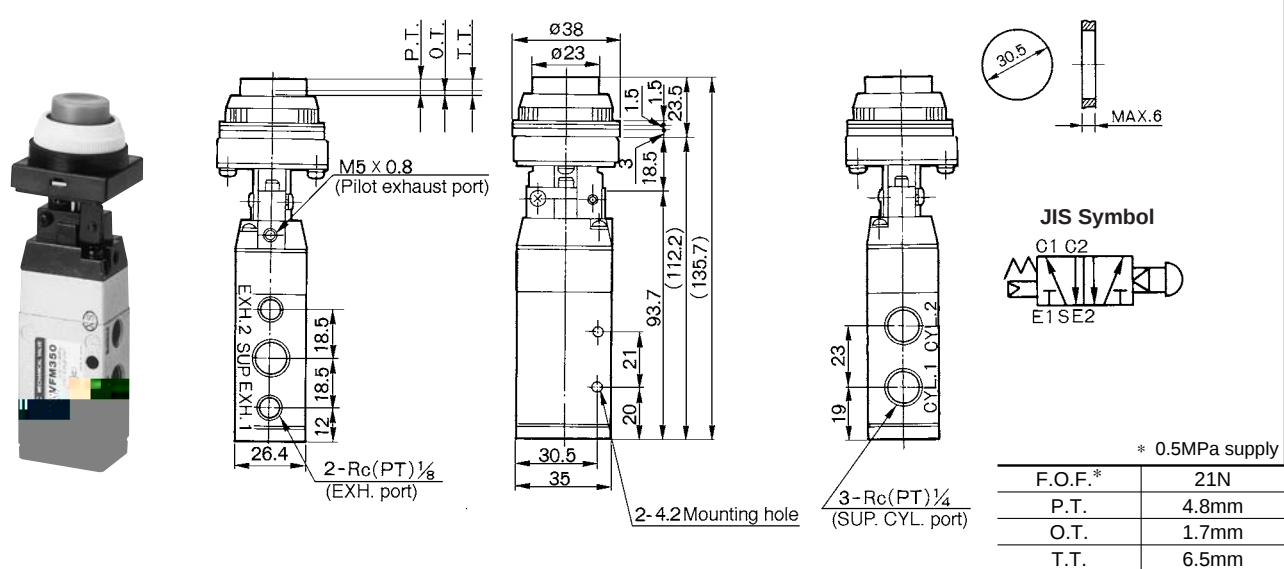
VFM300

Series VFM300

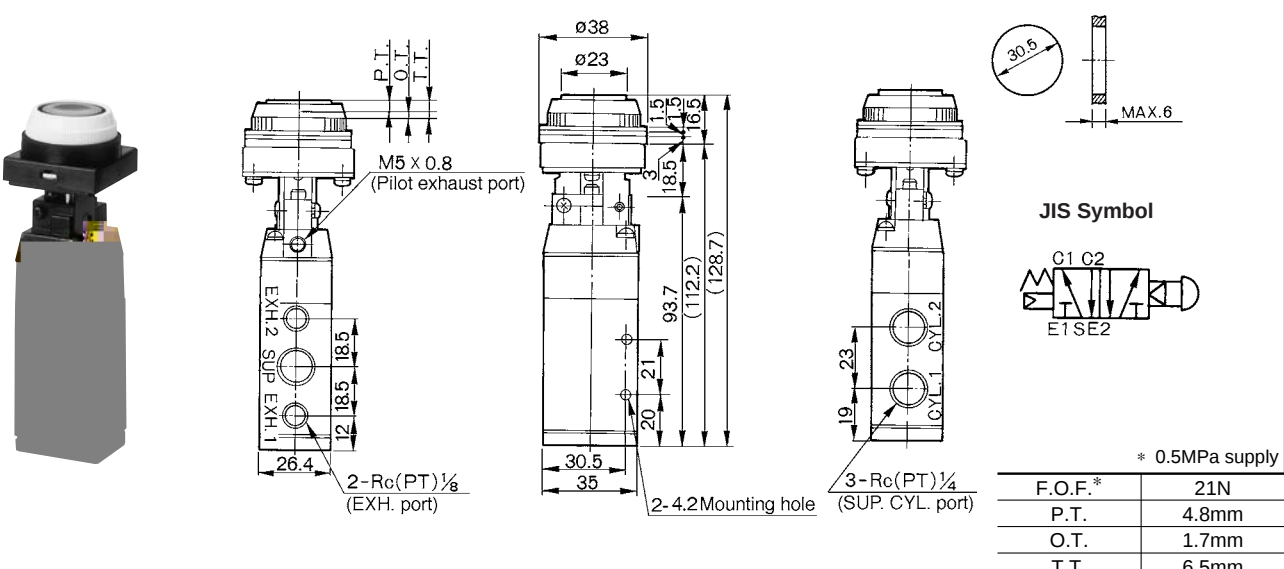
Push Button (Mushroom)/VFM350-02-30R, B, G, Y



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

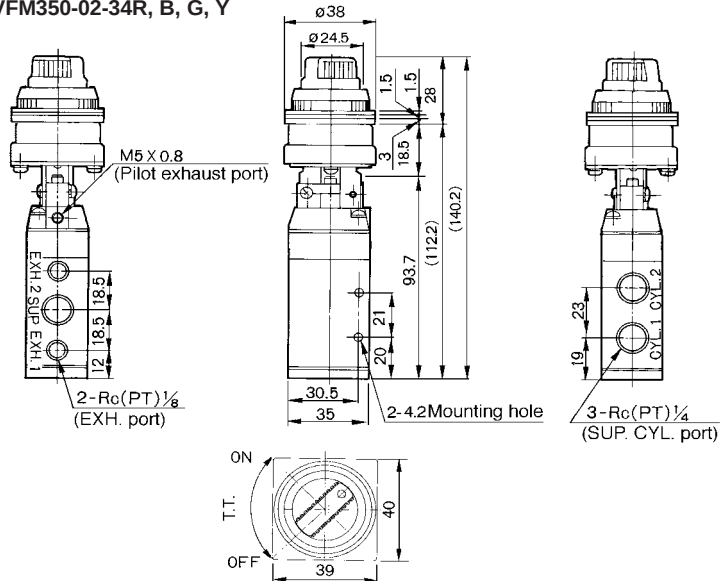


Push Button (Flush)/VFM350-02-33



Series VFM300

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



* 0.5MPa supply

F.O.F.*	23N
T.T.	90°

S□A

V□A

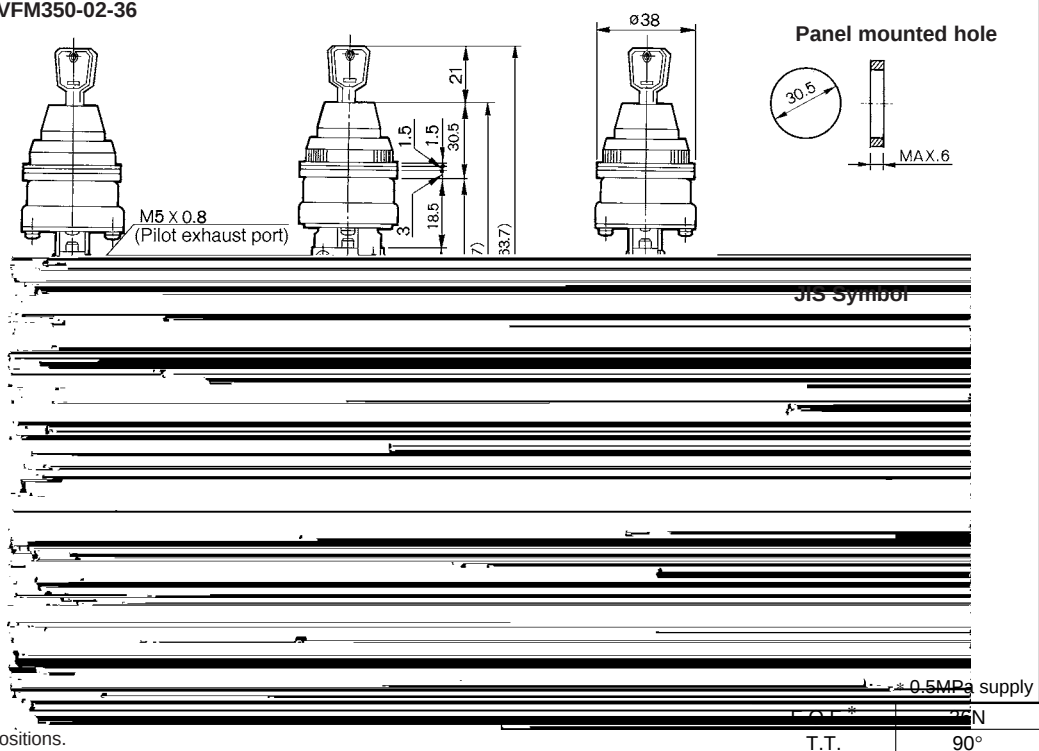
S□A

V□A

VM/VR

VH

Key Selector (2 position)/VFM350-02-36

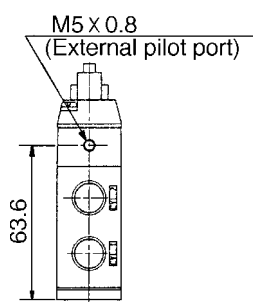


* 0.5MPa supply

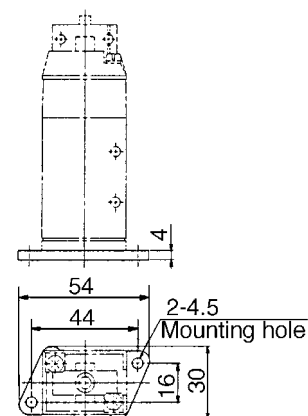
F.O.F.*	23N
T.T.	90°

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

External Pilot Style 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



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 X 0.8
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

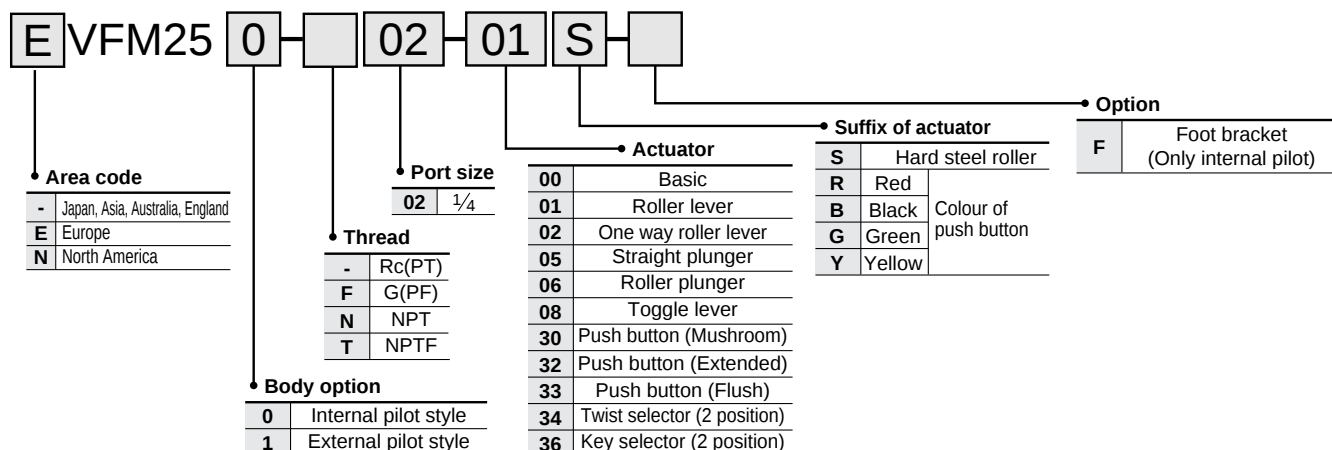
Note 2) The standard body can not be retrofitted with a foot bracket.

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
	Straight plunger	VFM250-02-02S	VM-02CS	Hard steel roller
		VFM250-02-05	VM-05D	—
Manual operation	Roller plunger	VFM250-02-06	VM-06D	Polyacetal roller
		VFM250-02-06S	VM-06DS	Hard steel roller
	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.

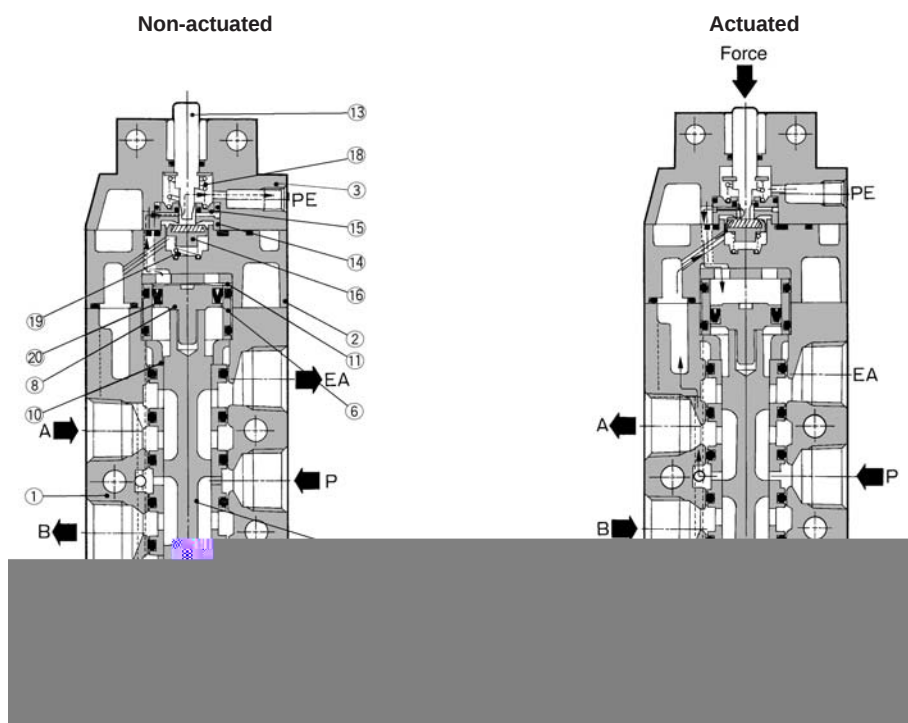
How to Order



V□A

V□A

Construction



Component Parts

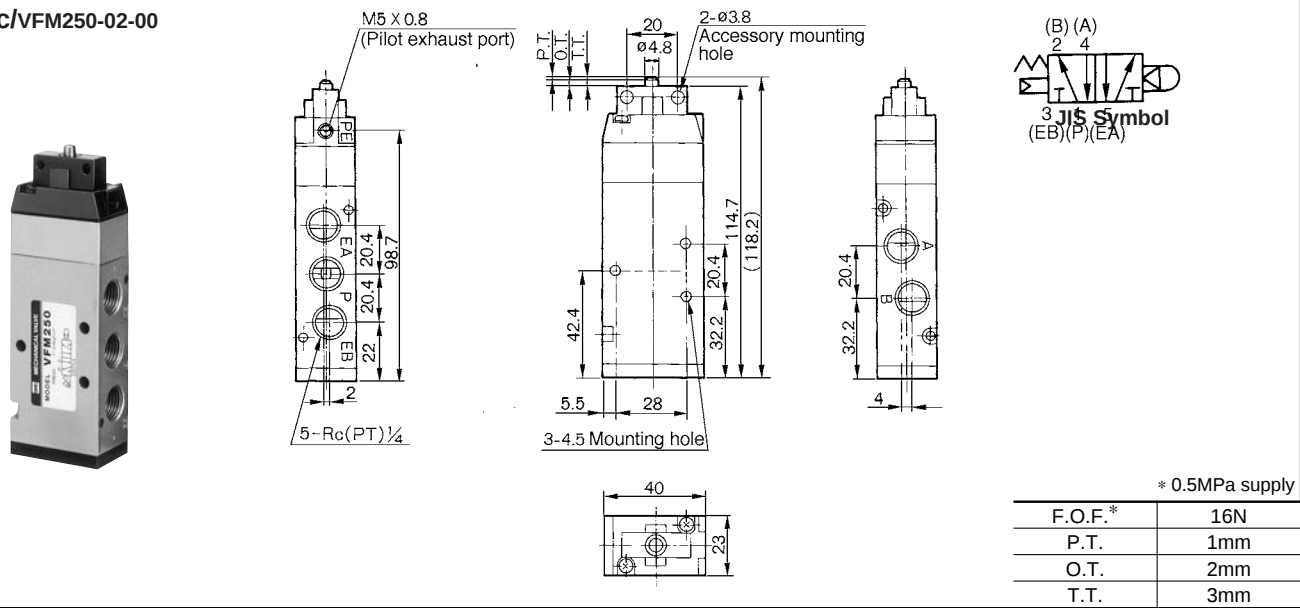
No.	Description	Material	Notes
①	Body	Aluminum alloy	Metallic plated
②	Pilot body	Zinc alloy	Metallic plated
③	Head cover	Zinc alloy	Black zinc chromate
④	Spool/sleeve	Stainless steel	
⑤	End cover	Polyacetal	
⑥	Piston guide	Brass	
⑦	Piston guide for end cover	Brass	
⑧	Piston	Polyacetal	
⑨	Piston for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

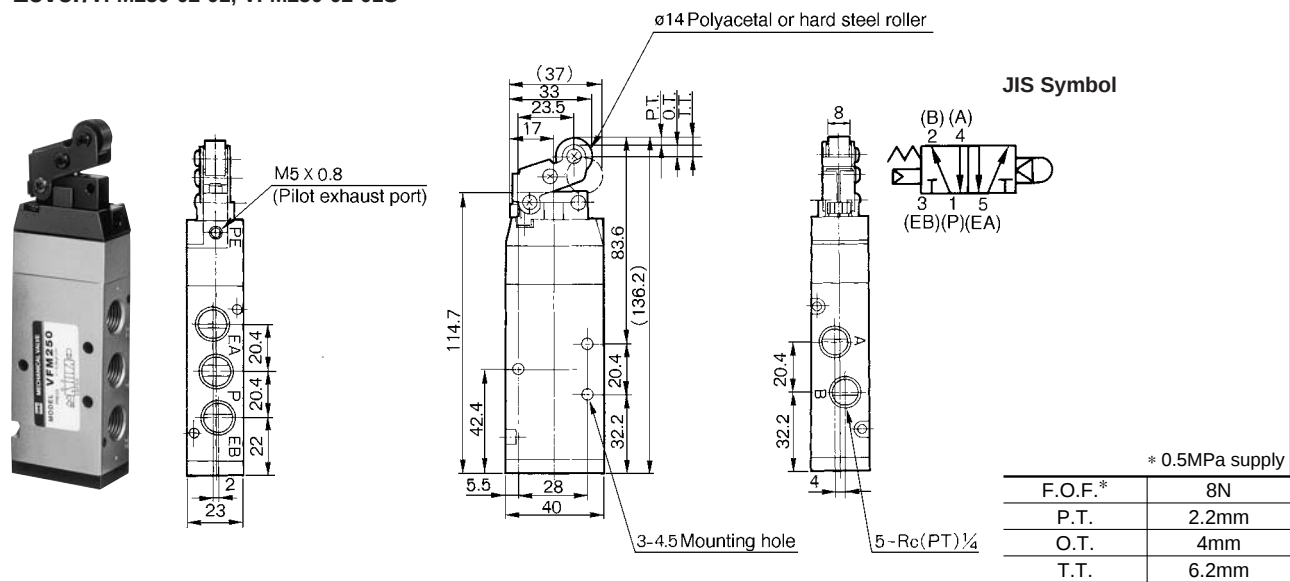
VFM200

Series VFM200

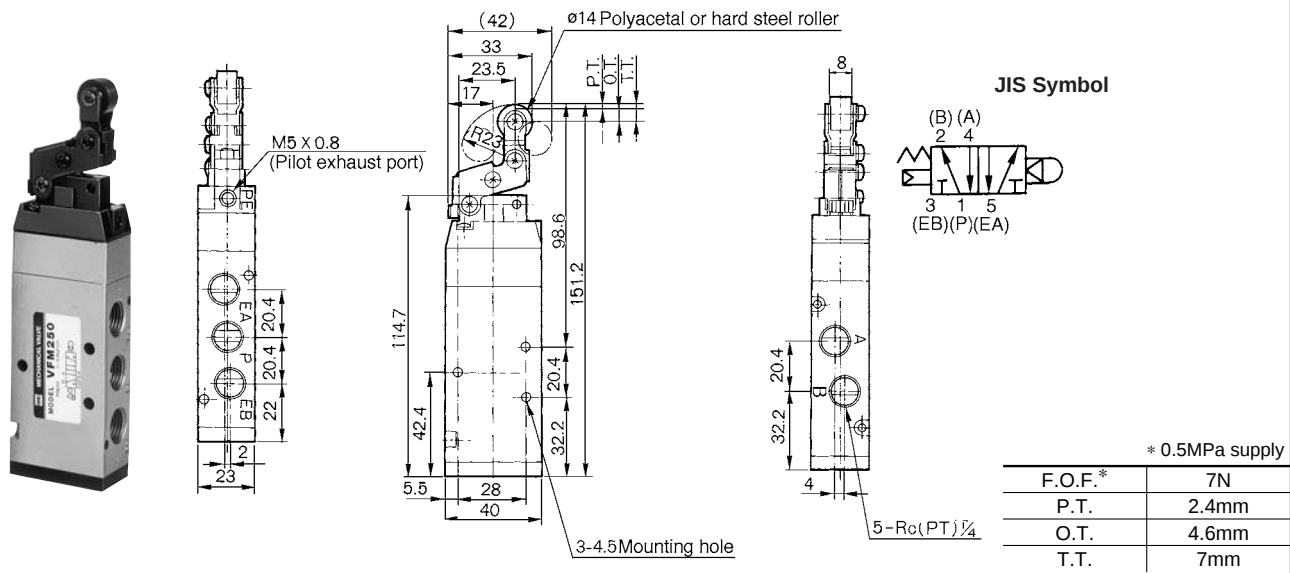
Basic/VFM250-02-00



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

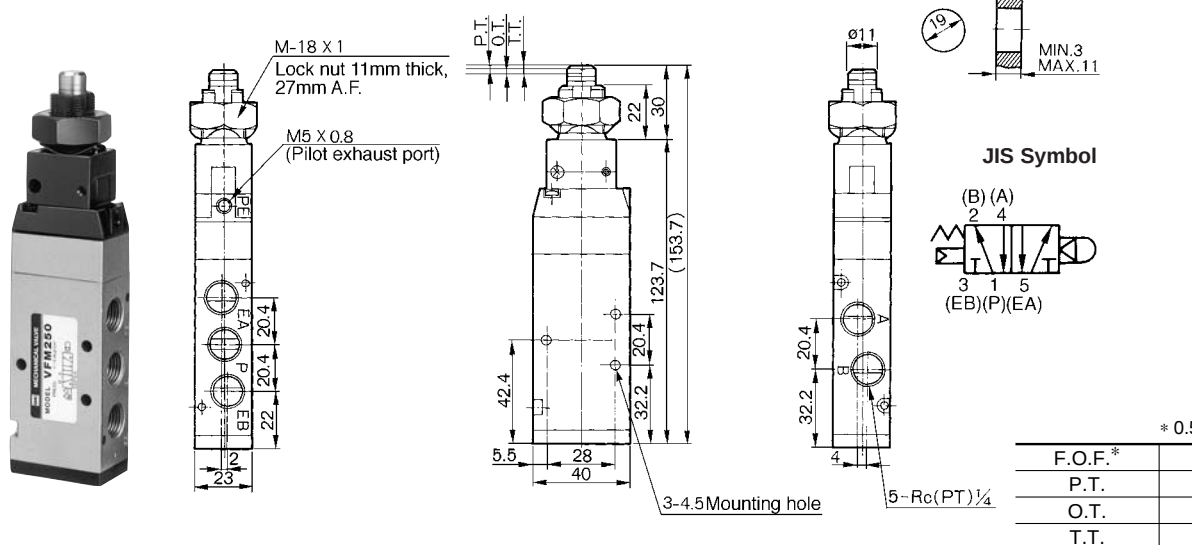


One Way Roller Lever/VFM250-02-02, VFM250-02-02S



Series VFM200

Straight Plunger/VFM250-02-05



S□A

V□A

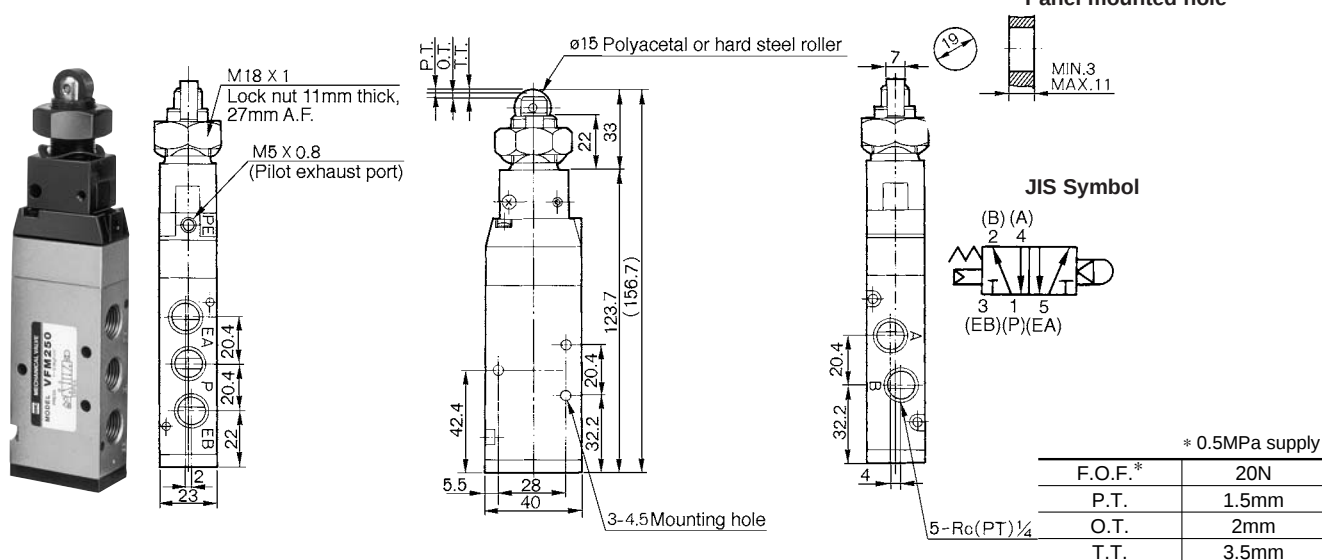
S□A

V□A

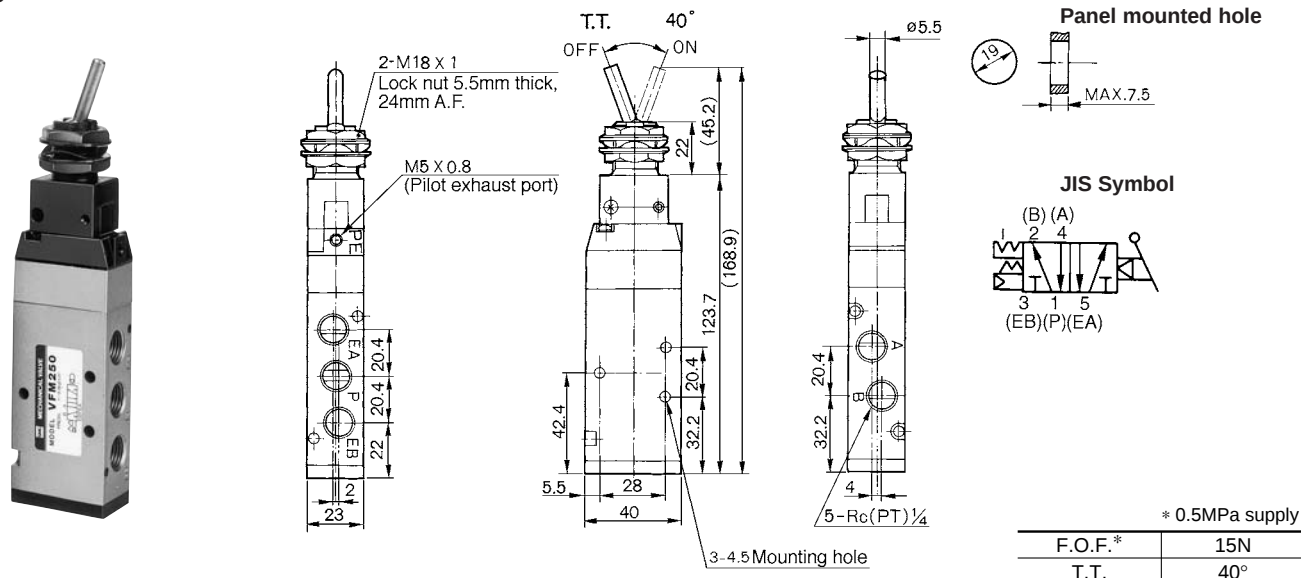
VM/VR

VH

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



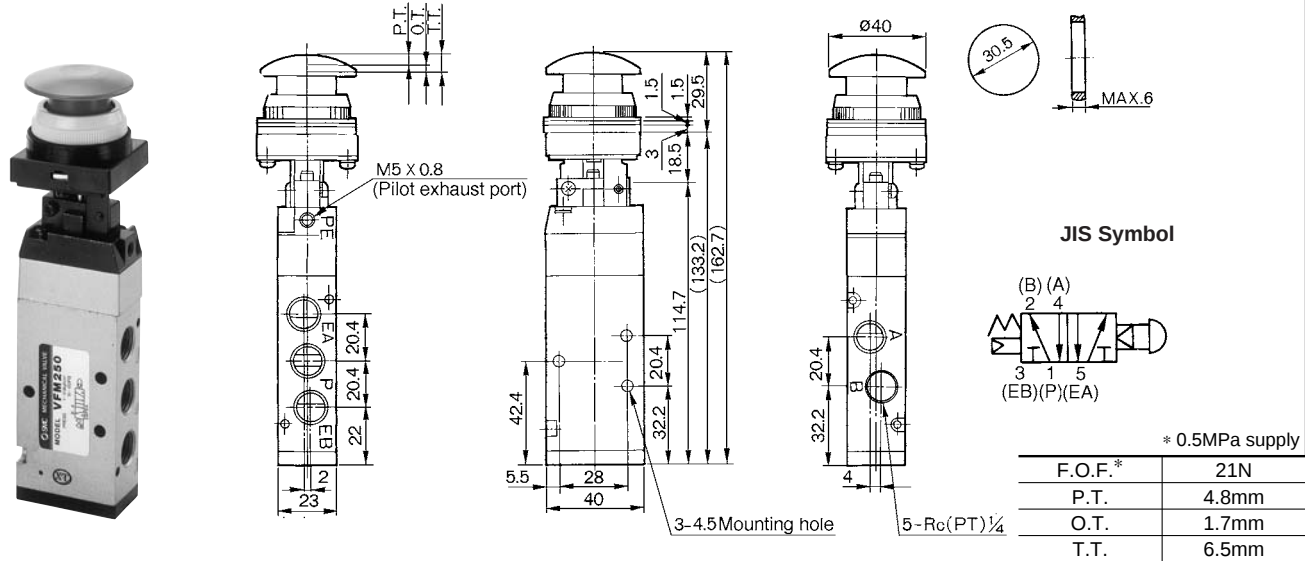
Toggle Lever/VFM250-02-08



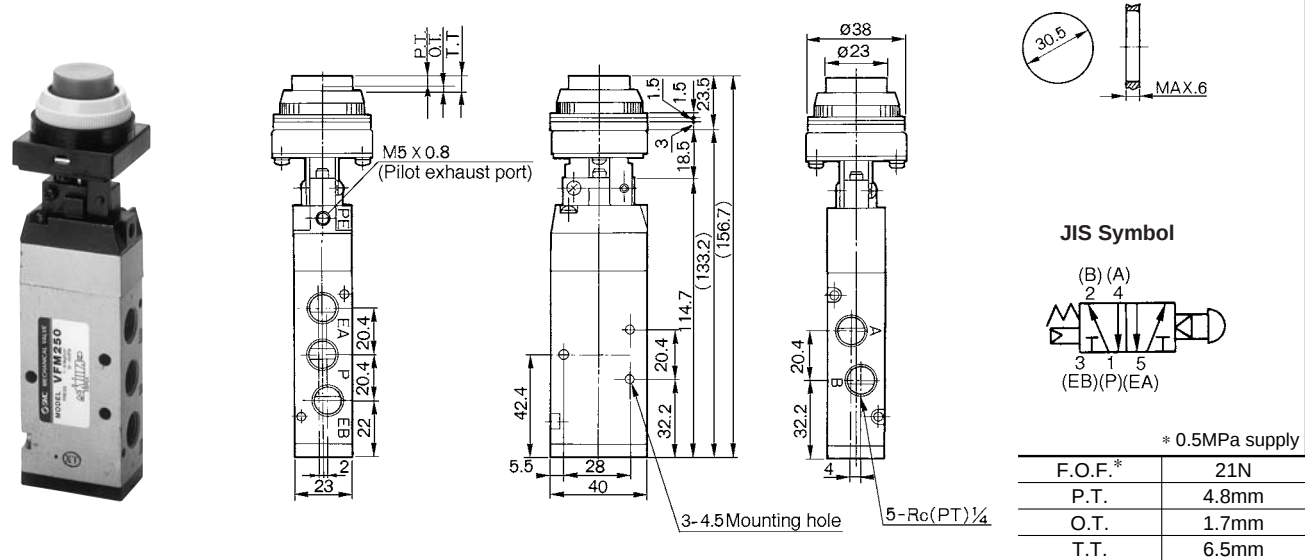
VFM200

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

