

# 5 Port Mechanical Valve/Rubber Seal

# Series **VFM300**

**Compact design,  
Large flow capacity  
N/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 <sup>(1)</sup>
Ambient and fluid temperature	-5 to 60°C (No freezing)
Effective area (N/min)	18mm <sup>2</sup> (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
Option	Pilot valve (EXH)/M5
Weight (Basic)	Foot bracket <sup>(2)</sup> 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	<b>VFM350-02-00</b>	—	—
	Roller lever	<b>VFM350-02-01</b>	VM-01C	Polyacetal roller
		<b>VFM350-02-01S</b>	VM-01CS	Hard steel roller
	One way roller lever	<b>VFM350-02-02</b>	VM-02C	Polyacetal roller
		<b>VFM350-02-02S</b>	VM-02CS	Hard steel roller
	Straight plunger	<b>VFM350-02-05</b>	VM-05D	—
Roller plunger	<b>VFM350-02-06</b>	VM-06D	Polyacetal roller	
	<b>VFM350-02-06S</b>	VM-06DS	Hard steel roller	
Manual operation	Toggle lever	<b>VFM350-02-08</b>	VM-08D	—
	Push button (Mushroom)	<b>VFM350-02-30R</b>	VM-30CR	Red
		<b>VFM350-02-30B</b>	VM-30CB	Black
		<b>VFM350-02-30G</b>	VM-30CG	Green
		<b>VFM350-02-30Y</b>	VM-30CY	Yellow
	Push button (Extended)	<b>VFM350-02-32R</b>	VM-32CR	Red
		<b>VFM350-02-32B</b>	VM-32CB	Black
		<b>VFM350-02-32G</b>	VM-32CG	Green
		<b>VFM350-02-32Y</b>	VM-32CY	Yellow
	Push button (Flush)	<b>VFM350-02-33</b>	VM-33C	With a set of red, black, green, yellow
	Twist selector (2 position)	<b>VFM350-02-34R</b>	VM-34CR	Red
		<b>VFM350-02-34B</b>	VM-34CB	Black
		<b>VFM350-02-34G</b>	VM-34CG	Green
		<b>VFM350-02-34Y</b>	VM-34CY	Yellow
	Key selector (2 position)	<b>VFM350-02-36</b>	VM-36C	—



Note) Actuator replacement is available for all styles.

## How to Order

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

• **Area code**

-	Japan, Asia, Australia, England
<b>E</b>	Europe
<b>N</b>	North America

• **Port size**

<b>02</b>	1/4
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• **Thread**

-	Rc(PT)
<b>F</b>	G(PF)
<b>N</b>	NPT
<b>T</b>	NPTF

• **Body option**

<b>0</b>	Internal pilot style
<b>1</b>	External pilot style

• **Actuator**

<b>00</b>	Basic
<b>01</b>	Roller lever
<b>02</b>	One way roller lever
<b>05</b>	Straight plunger
<b>06</b>	Roller plunger
<b>08</b>	Toggle lever
<b>30</b>	Push button (Mushroom)
<b>32</b>	Push button (Extended)
<b>33</b>	Push button (Flash)
<b>34</b>	Twist selector (2 position)
<b>36</b>	Key selector (2 position)

• **Suffix of actuator**

<b>S</b>	Hard steel roller
<b>R</b>	Red
<b>B</b>	Black
<b>G</b>	Green
<b>Y</b>	Yellow

Colour of push button

• **Option**

<b>F</b>	Foot bracket (Only internal pilot)
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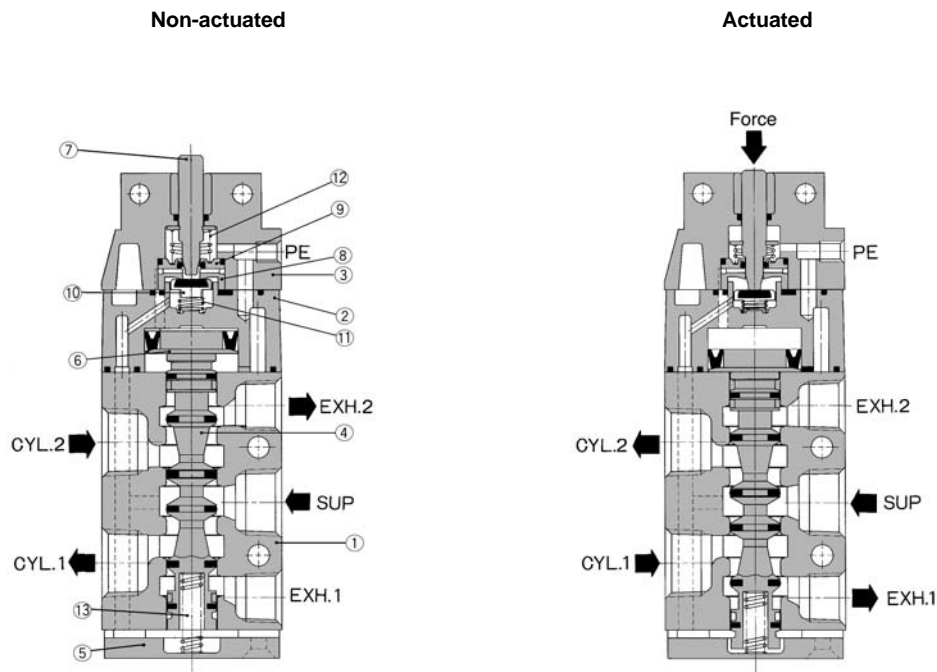
S□A

V□A

S□A

V□A

## Construction



VM/R

VH

### Component Parts

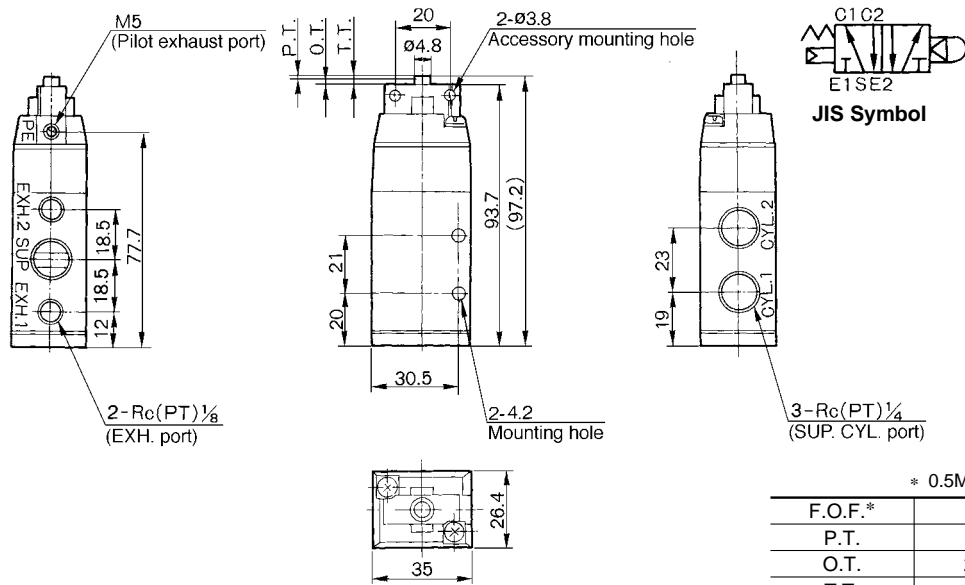
No.	Description	Material	Notes
①	Body	Aluminum alloy	Metallic plated
②	Pilot body	Zinc alloy	Metallic plated
③	Head cover	Zinc alloy	Black zinc chromate
④	Spool valve assembly		
⑤	End cover	Aluminum alloy	Metallic plated
⑥	Piston	Polyacetal	
⑦	Plunger	Stainless steel	

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	

# VFM300

## Series VFM300

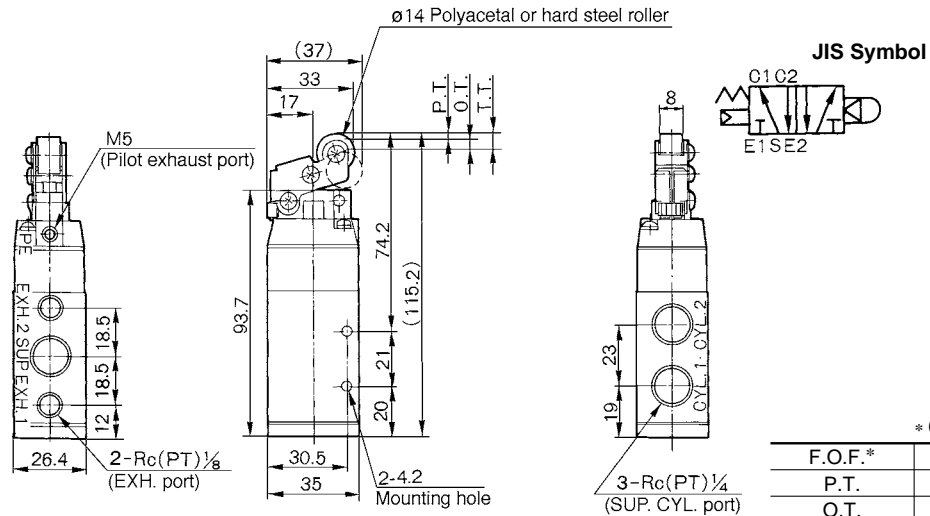
### Basic/VFM350-02-00



\* 0.5MPa supply

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

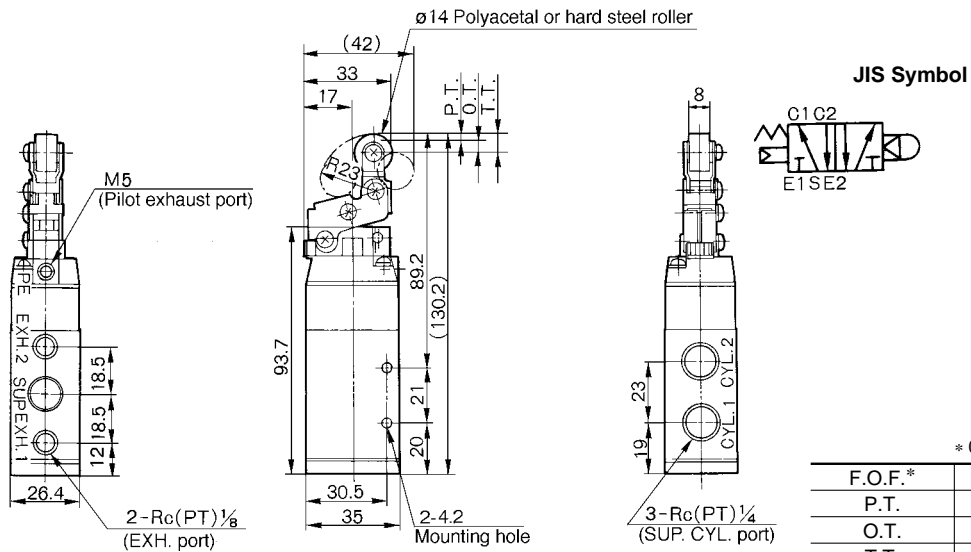
### Roller Lever/VFM350-02-01, VFM350-02-01S



\* 0.5MPa supply

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

### One Way Roller Lever/VFM350-02-02, VFM350-02-02S



\* 0.5MPa supply

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

## Series VFM300

### Straight Plunger/VFM350-02-05

**Panel mounted hole**

M18 x 1  
Lock nut 11mm thick,  
27mm A.F.

M5  
(Pilot exhaust port)

PE  
EXH.2 SUP  
EXH.1

26.4

12 18.5 18.5 11

2-Rc(PT) 1/8  
(EXH. port)

P.T.  
O.T.  
T.T.

Ø11

22 30

102.7 (132.7)

30.5 35

2-4.2 Mounting hole

19

MIN.3  
MAX.11

**JIS Symbol**

C1 C2  
E1 SE2

3-Rc(PT) 1/4  
(SUP. CYL. port)

19 23

CYL.1 CYL.2

* 0.5MPa supply	
F.O.F.*	20N
P.T.	1.5mm
O.T.	2mm
T.T.	3.5mm

S□A

V□A

S□A

V□A

VM/VR

VH

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

**Panel mounted hole**

M18 x 1  
Lock nut 11mm thick,  
27mm A.F.

M5  
(Pilot exhaust port)

PE  
EXH.2 SUP  
EXH.1

26.4

12 18.5 18.5 11

2-Rc(PT) 1/8  
(EXH. port)

P.T.  
O.T.  
T.T.

Ø15 Polyacetal or hard steel roller

7

22 33

102.7 (135.7)

30.5 35

2-4.2 Mounting hole

19

MIN.3  
MAX.11

**JIS Symbol**

C1 C2  
E1 SE2

3-Rc(PT) 1/4  
(SUP. CYL. port)

19 23

CYL.1 CYL.2

* 0.5MPa supply	
F.O.F.*	20N
P.T.	1.5mm
O.T.	2mm
T.T.	3.5mm

### Toggle Lever/VFM350-02-08

**Panel mounted hole**

2-M18 x 1  
Lock nut 5.5mm thick,  
24mm A.F.

M5  
(Pilot exhaust port)

PE  
EXH.2 SUP  
EXH.1

26.4

12 18.5 18.5 11

2-Rc(PT) 1/8  
(EXH. port)

T.T.

40°  
OFF ON

22 (45.2)

102.7 (147.9)

30.5 35

2-4.2 Mounting hole

19

MAX.7.5

**JIS Symbol**

C1 C2  
E1 SE2

3-Rc(PT) 1/4  
(SUP. CYL. port)

19 23

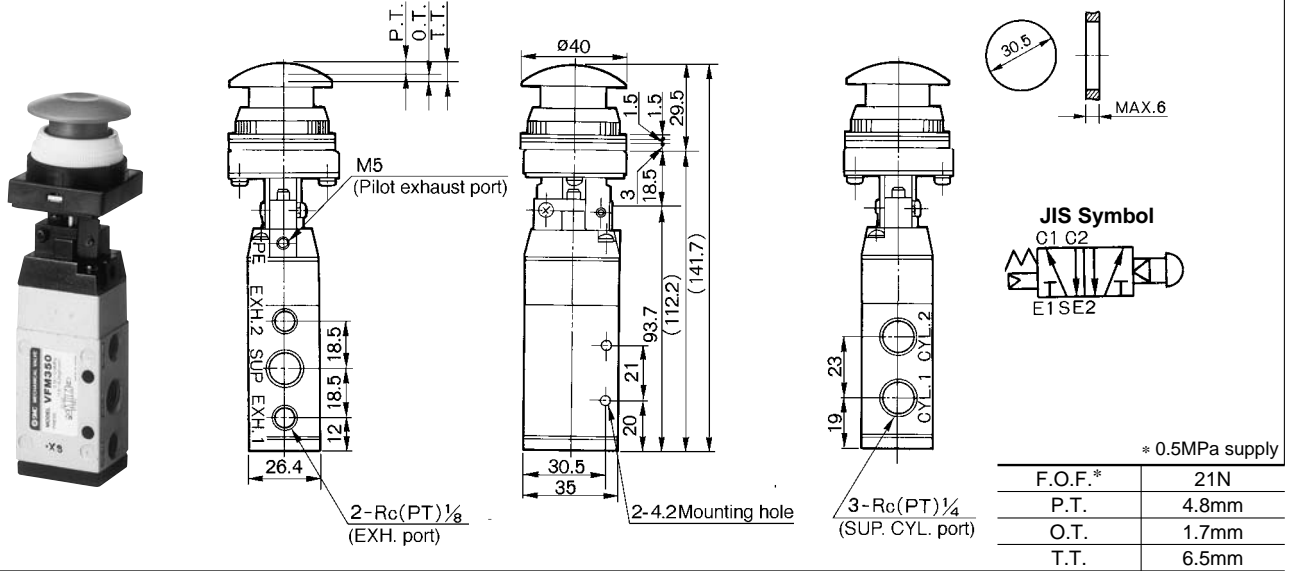
CYL.1 CYL.2

* 0.5MPa supply	
F.O.F.*	15N
T.T.	40°

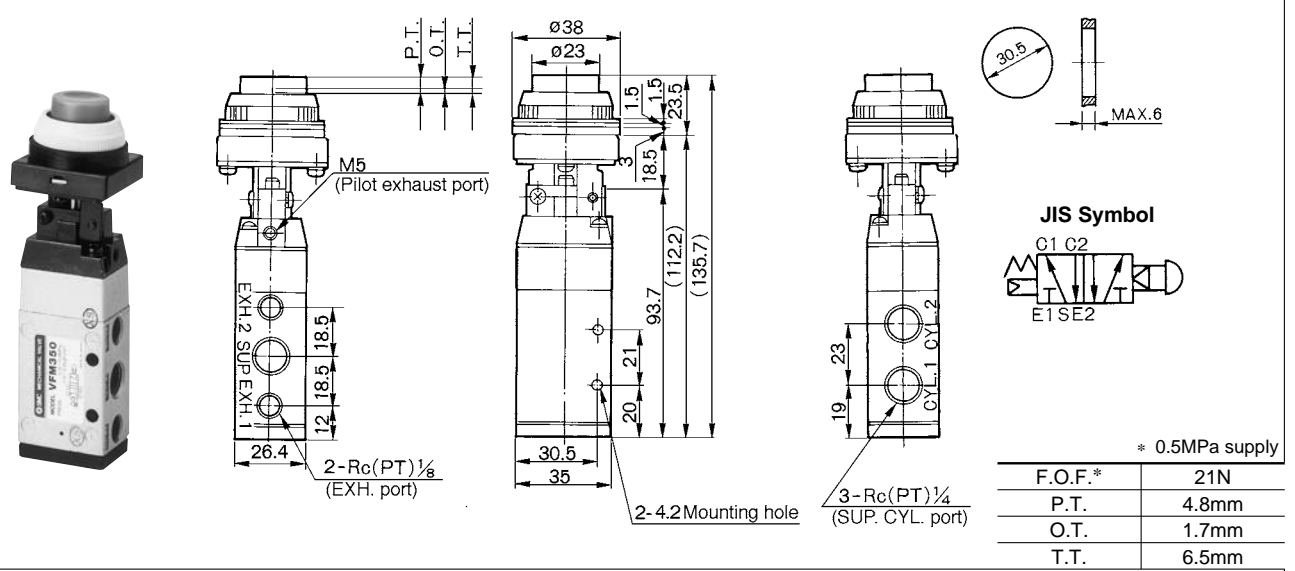
# VFM300

## Series VFM300

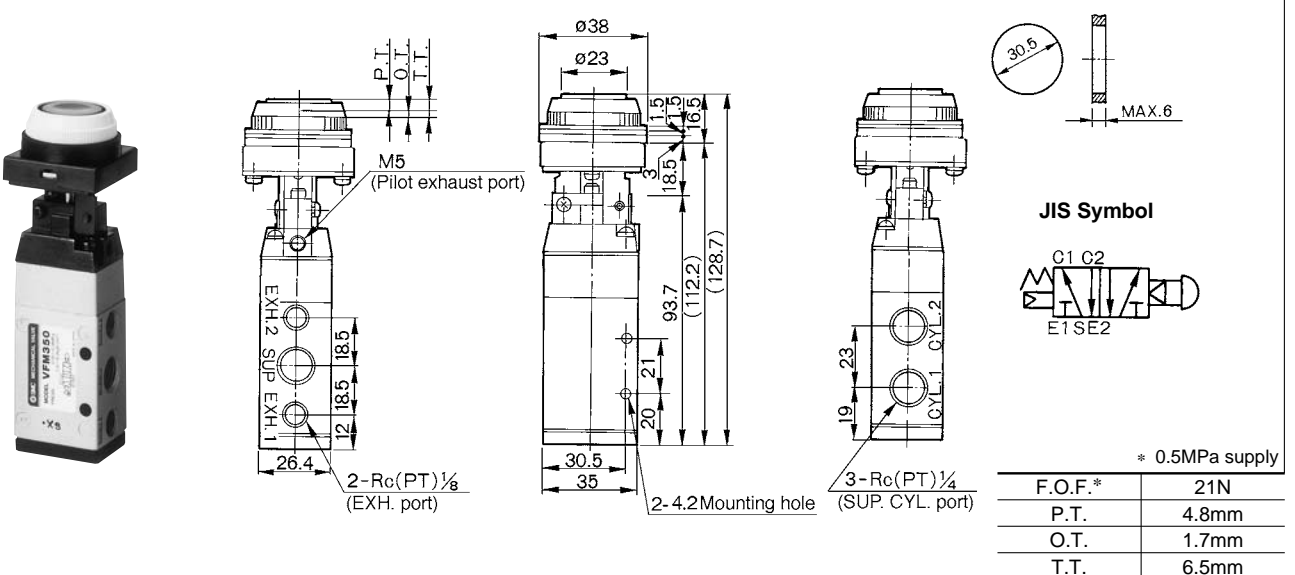
### Push Button (Mushroom)/VFM350-02-30R, B, G, Y



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

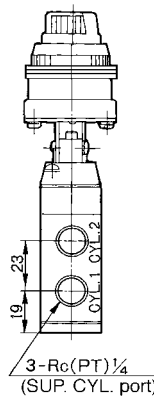
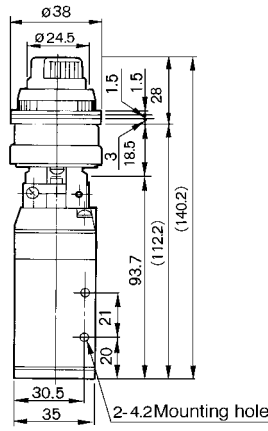
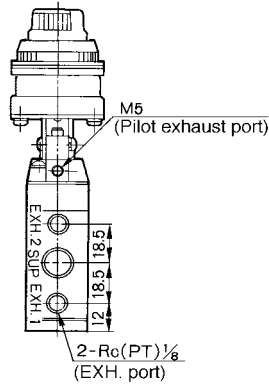


### Push Button (Flush)/VFM350-02-33

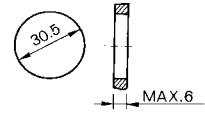


## Series VFM300

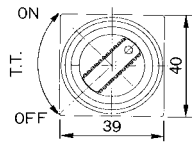
### Twist Selector (2 position)/VFM350-02-34R, B, G, Y



Panel mounted hole



JIS Symbol



\* 0.5MPa supply

F.O.F.*	23N
T.T.	90°

S□A

V□A

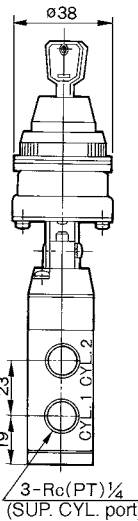
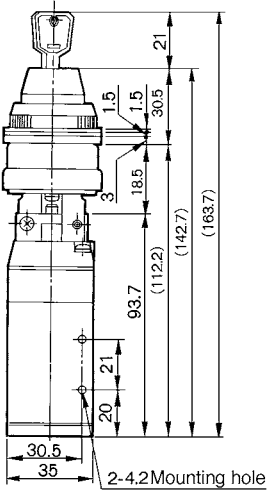
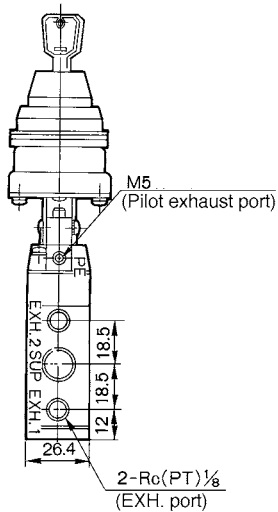
S□A

V□A

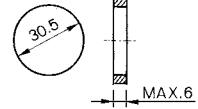
VMVR

VH

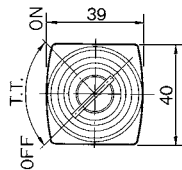
### Key Selector (2 position)/VFM350-02-36



Panel mounted hole



JIS Symbol

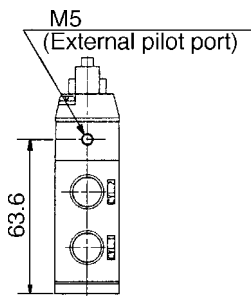


\* 0.5MPa supply

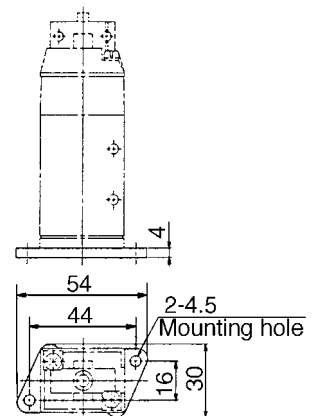
F.O.F.*	26N
T.T.	90°

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

### 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/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 <sup>(1)</sup>
Ambient and fluid temperature	-5 to 60°C (No freezing)
Effective area (N/min)	18mm <sup>2</sup> (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 <sup>(2)</sup>
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	<b>VFM250-02-00</b>	—	—
	Roller lever	<b>VFM250-02-01</b>	VM-01C	Polyacetal roller
		<b>VFM250-02-01S</b>	VM-01CS	Hard steel roller
	One way roller lever	<b>VFM250-02-02</b>	VM-02C	Polyacetal roller
		<b>VFM250-02-02S</b>	VM-02CS	Hard steel roller
	Straight plunger	<b>VFM250-02-05</b>	VM-05D	—
Roller plunger	<b>VFM250-02-06</b>	VM-06D	Polyacetal roller	
	<b>VFM250-02-06S</b>	VM-06DS	Hard steel roller	
Manual operation	Toggle lever	<b>VFM250-02-08</b>	VM-08D	—
	Push button (Mushroom)	<b>VFM250-02-30R</b>	VM-30CR	Red
		<b>VFM250-02-30B</b>	VM-30CB	Black
		<b>VFM250-02-30G</b>	VM-30CG	Green
		<b>VFM250-02-30Y</b>	VM-30CY	Yellow
	Push button (Extended)	<b>VFM250-02-32R</b>	VM-32CR	Red
		<b>VFM250-02-32B</b>	VM-32CB	Black
		<b>VFM250-02-32G</b>	VM-32CG	Green
		<b>VFM250-02-32Y</b>	VM-32CY	Yellow
	Push button (Flush)	<b>VFM250-02-33</b>	VM-33C	With a set of red, black, green, yellow
	Twist selector (2 position)	<b>VFM250-02-34R</b>	VM-34CR	Red
		<b>VFM250-02-34B</b>	VM-34CB	Black
		<b>VFM250-02-34G</b>	VM-34CG	Green
		<b>VFM250-02-34Y</b>	VM-34CY	Yellow
	Key selector (2 position)	<b>VFM250-02-36</b>	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
<b>E</b>	Europe
<b>N</b>	North America

• **Port size**

<b>02</b>	1/4
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• **Thread**

-	Rc(PT)
<b>F</b>	G(PF)
<b>N</b>	NPT
<b>T</b>	NPTF

• **Body option**

<b>0</b>	Internal pilot style
<b>1</b>	External pilot style

• **Actuator**

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

• **Suffix of actuator**

<b>S</b>	Hard steel roller
<b>R</b>	Red
<b>B</b>	Black
<b>G</b>	Green
<b>Y</b>	Yellow

Colour of push button

• **Option**

<b>F</b>	Foot bracket (Only internal pilot)
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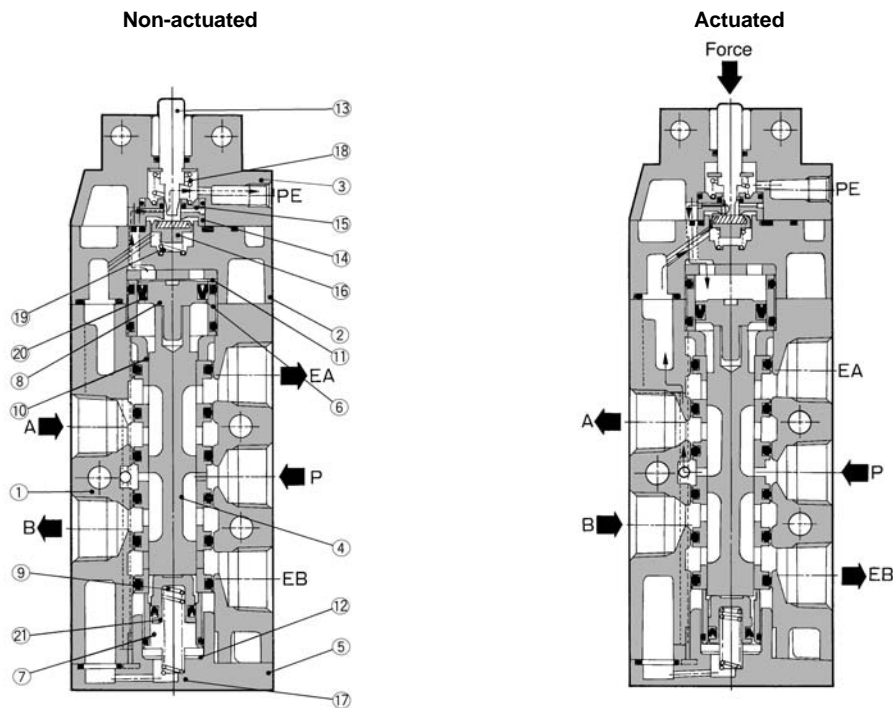
S□A

V□A

S□A

V□A

## Construction



VM/R

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/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	

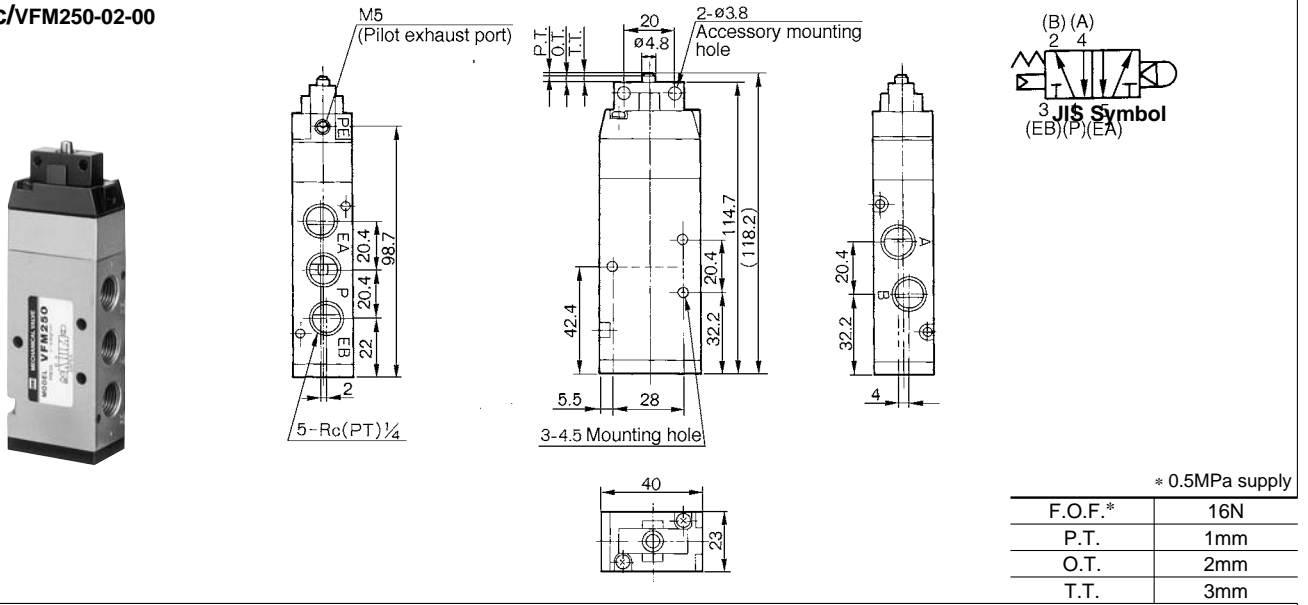
No.	Description	Material	Notes
⑫	Cushion for end cover	Urethane rubber	
⑬	Plunger	Stainless steel	
⑭	Valve seat (A)	Brass	
⑮	Valve seat (B)	Brass	
⑯	Valve	NBR, Brass	
⑰	Return spring	Stainless steel	
⑱	Return spring	Stainless steel	
⑲	Valve spring	Stainless steel	
⑳	Mini Y packing	NBR	
㉑	Mini Y packing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



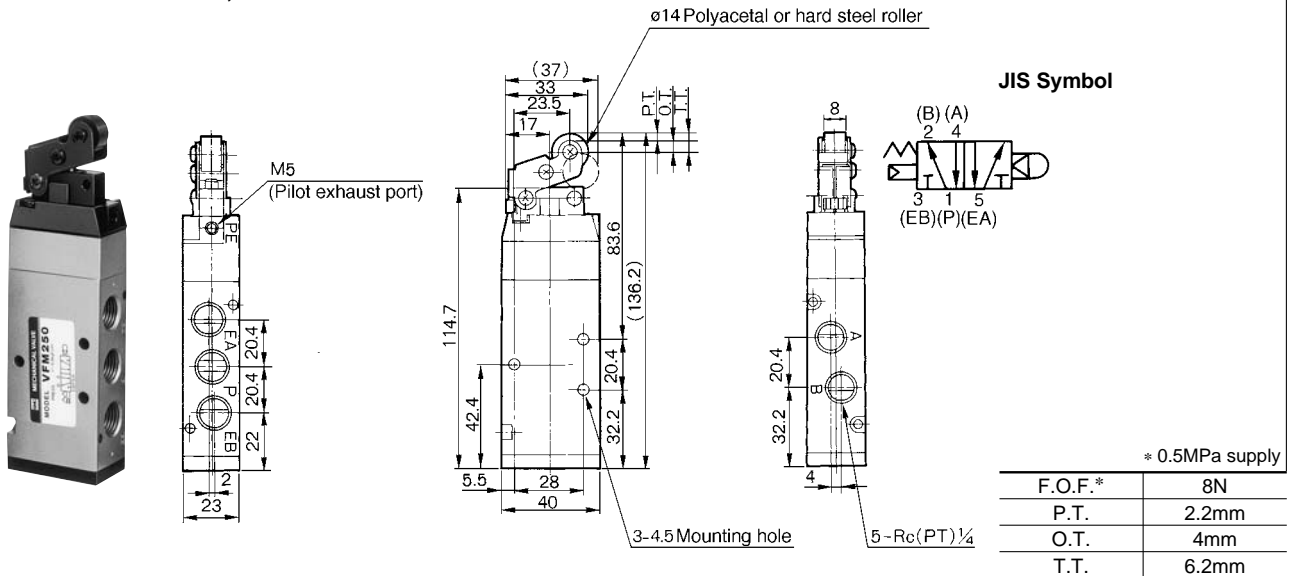
# VFM200

## Series VFM200

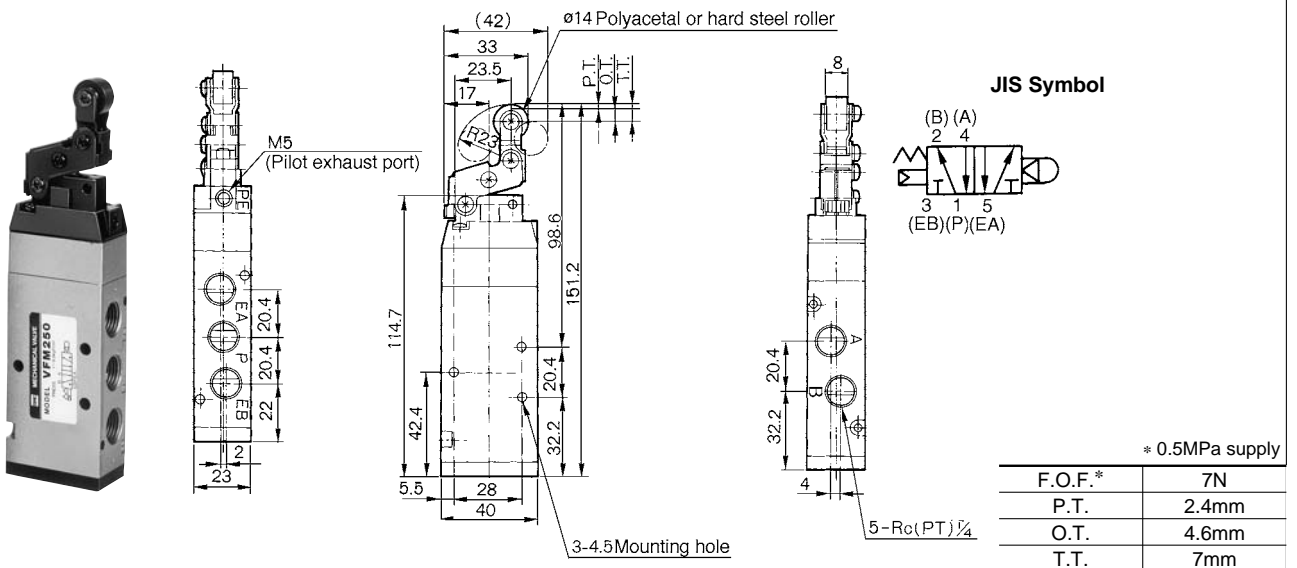
### Basic/VFM250-02-00



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

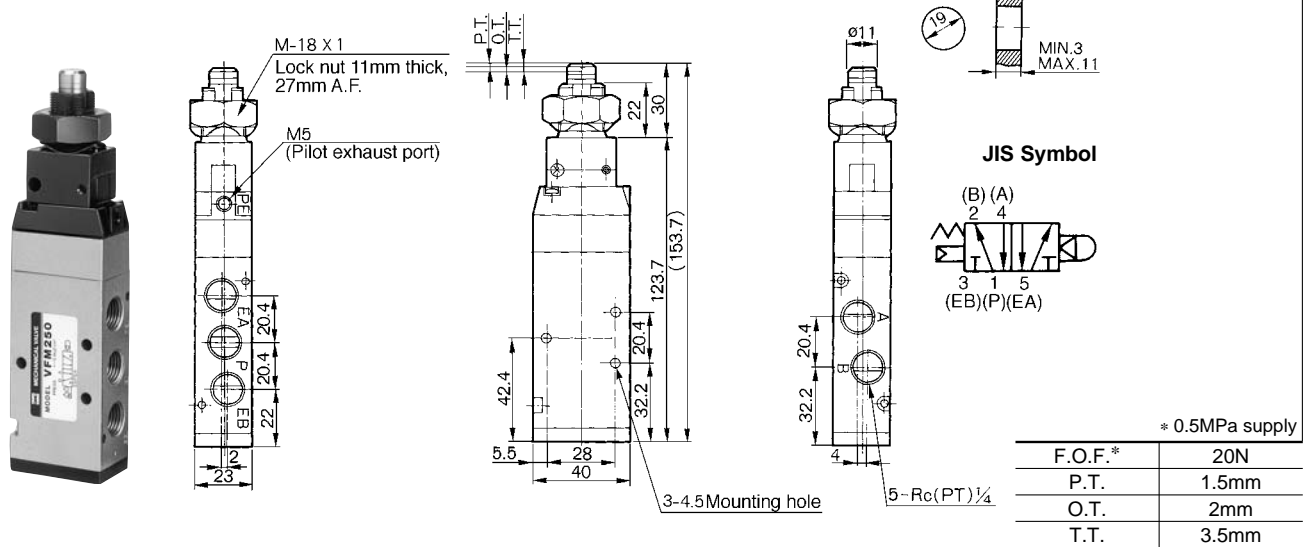


### One Way Roller Lever/VFM250-02-02, VFM250-02-02S



## Series VFM200

### Straight Plunger/VFM250-02-05



S□A

V□A

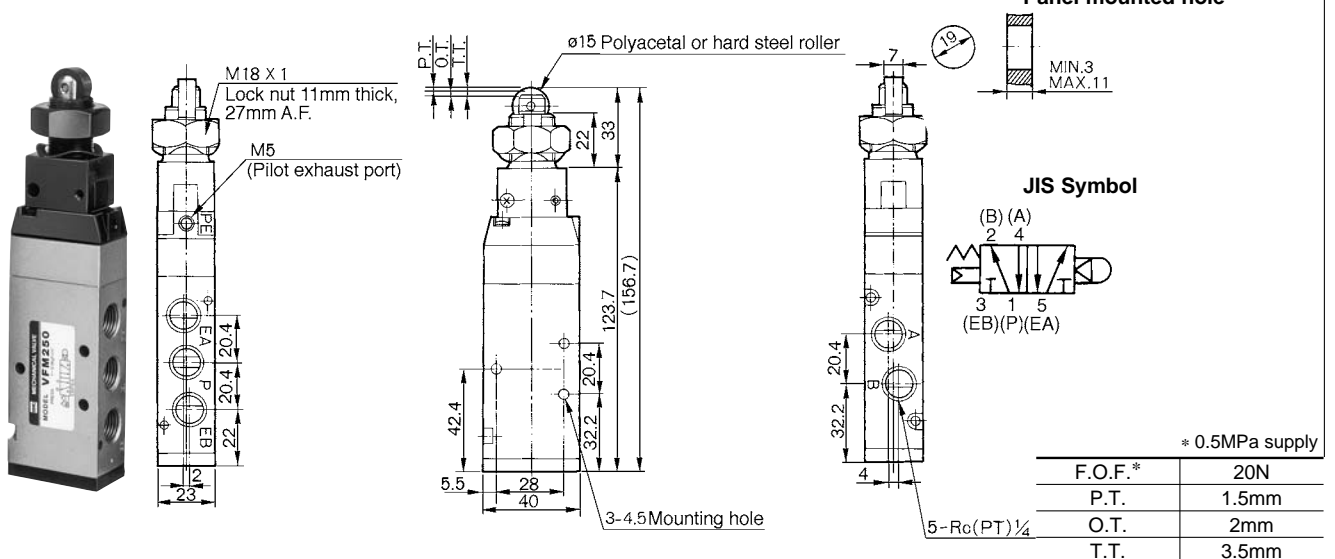
S□A

V□A

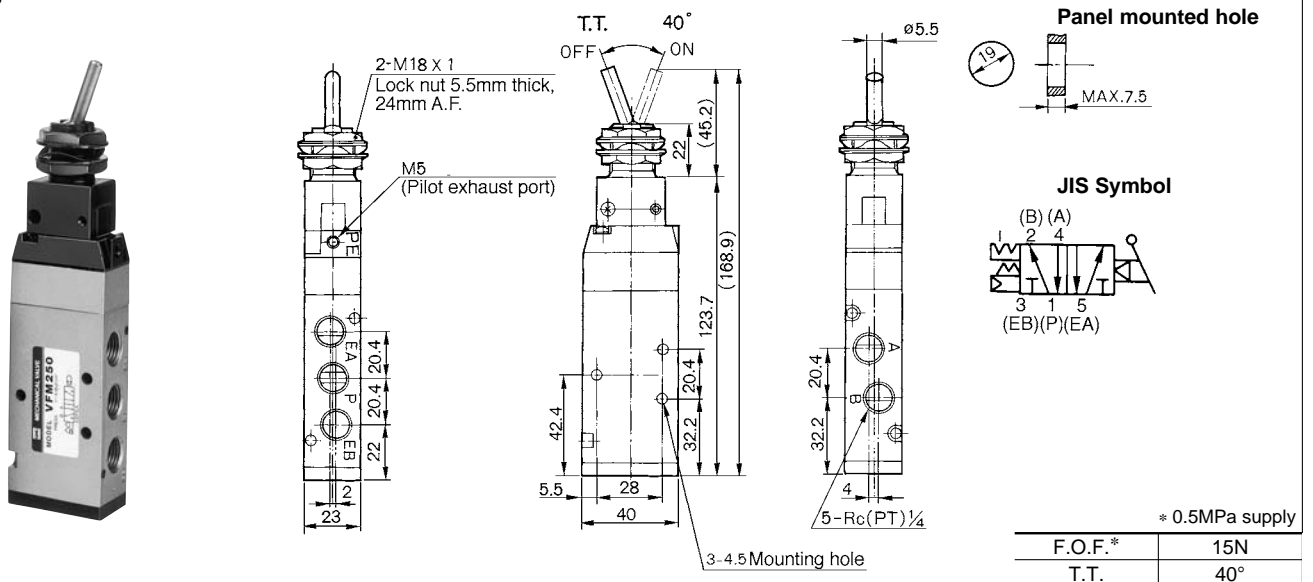
VM/VR

VH

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



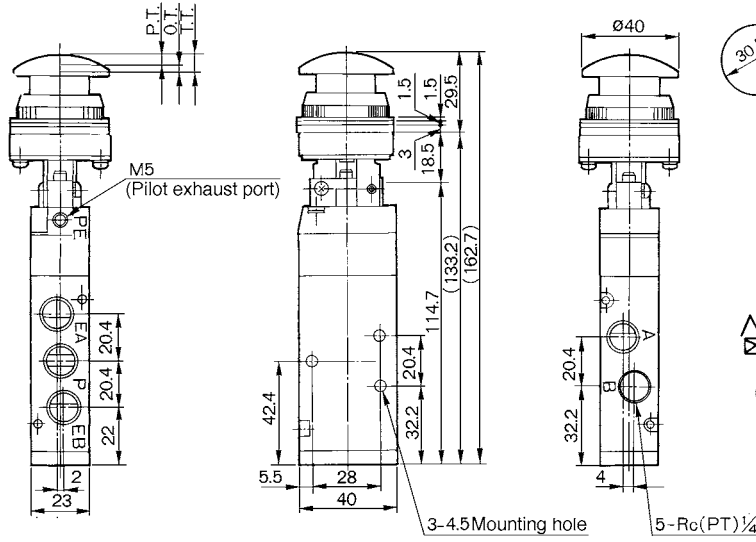
### Toggle Lever/VFM250-02-08



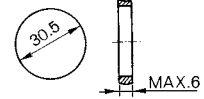
# VFM200

## Series VFM200

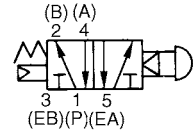
### Push Button (Mushroom)/VFM250-02-30R, B, G, Y



Panel mounted hole



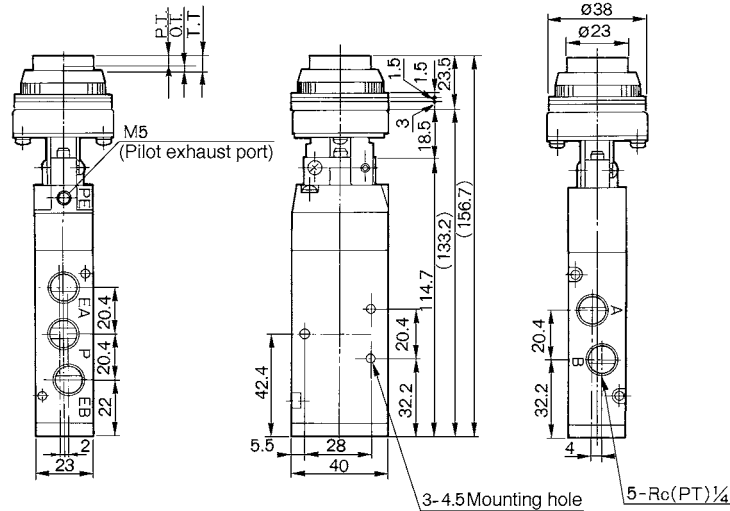
JIS Symbol



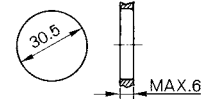
\* 0.5MPa supply

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

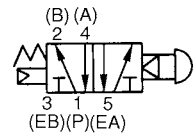
### Push Button (Extended)/VFM250-02-32R, B, G, Y



Panel mounted hole



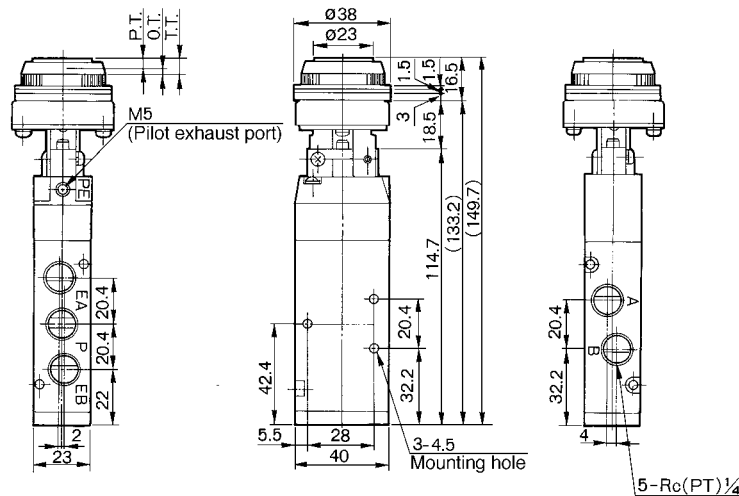
JIS Symbol



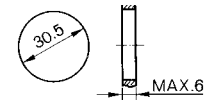
\* 0.5MPa supply

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

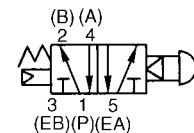
### Push Button (Flush)/VFM250-02-33



Panel mounted hole



JIS Symbol

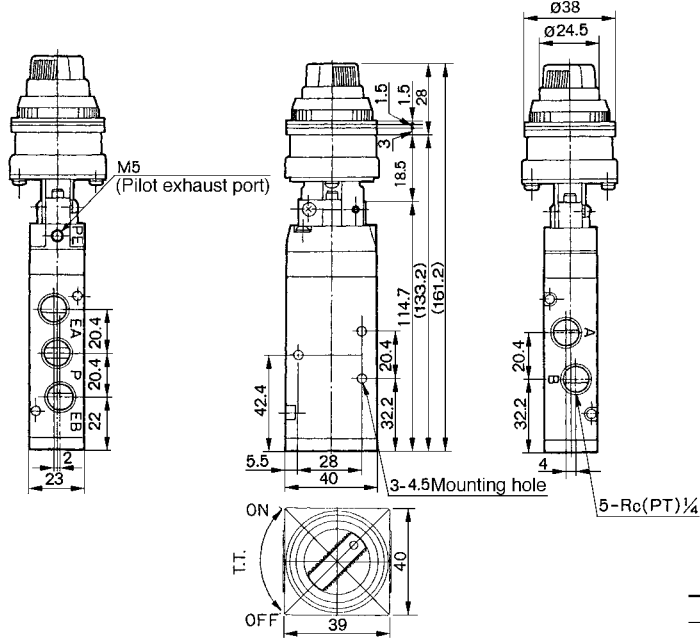


\* 0.5MPa supply

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

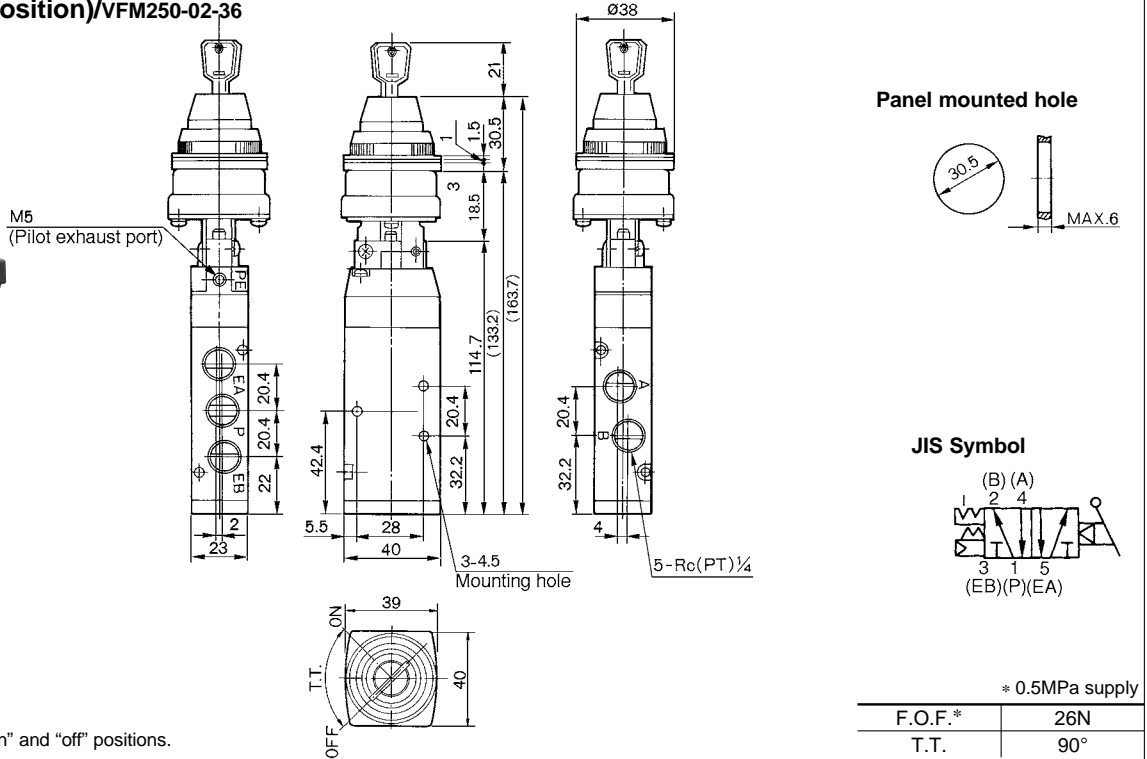
## Series VFM200

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



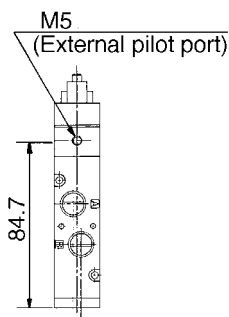
- A
- A
- A
- A
- VM/VR**
- VH**

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



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

### External Pilot Style VFM251 Type



### With Foot Bracket VFM250-02-□□-F

