

2/3 Port Mechanical Valve

Series VM100



- Compact size
- Piping options:
Side ported, Bottom ported
- Possible to choose mounting method with side ported:
Side mounting, bottom mounting using screws, or mounting with special bracket
- A variety of actuator types



Specifications

Piping	Side ported	Bottom ported			
Fluid	Air/Inert gas				
Operating pressure range	-100 kPa to 1 MPa				
Ambient and fluid temperature	-5 to 60°C (No freezing)				
Flow-rate characteristics	1 (P) ⇒ 2 (A)	2 (A) ⇒ 3 (R)	1 (P) ⇒ 2 (A)	2 (A) ⇒ 3 (R)	
	C [dm ³ /(s·bar)]	0.6	0.5	0.5	0.45
	b	0.2	0.15	0.2	0.15
	Cv	0.11	0.1	0.11	0.1
Lubrication ^{Note 1)}	Not required				
Port size	1/8 (Rc, NPT, G)		M5		
Weight (Basic)	60 g		67 g		
Bracket part number ^{Note 2)}	VM1-B		—		

Note 1) Use turbine oil Class 1 ISO VG32, if lubricated.

Note 2) The bracket can only be used for side mounting of side ported type.

Model

	Piping direction		Side ported				Bottom ported		Actuator	
	Body option		Standard		With bottom mounting thread		—		Actuator part number	Additional weight for actuator
	Number of ports		2 port	3 port	2 port	3 port	2 port	3 port		
Mechanical operation	Basic		VM120-01-00A	VM130-01-00A	VM120U-01-00A	VM130U-01-00A	VM122-M5-00A	VM132-M5-00A	—	—
	Roller lever	Polyacetal roller	VM121-01-01A	VM131-01-01A	VM121U-01-01A	VM131U-01-01A	VM123-M5-01A	VM133-M5-01A	—	11 g
		Hard steel roller	VM121-01-01SA	VM131-01-01SA	VM121U-01-01SA	VM131U-01-01SA	VM123-M5-01SA	VM133-M5-01SA	—	16 g
	One way roller lever	Polyacetal roller	VM121-01-02A	VM131-01-02A	VM121U-01-02A	VM131U-01-02A	VM123-M5-02A	VM133-M5-02A	—	15 g
		Hard steel roller	VM121-01-02SA	VM131-01-02SA	VM121U-01-02SA	VM131U-01-02SA	VM123-M5-02SA	VM133-M5-02SA	—	20 g
	Straight plunger		VM120-01-05A	VM130-01-05A	VM120U-01-05A	VM130U-01-05A	VM122-M5-05A	VM132-M5-05A	VM-05B	43 g
	Roller plunger	Polyacetal roller	VM120-01-06A	VM130-01-06A	VM120U-01-06A	VM130U-01-06A	VM122-M5-06A	VM132-M5-06A	VM-06B	43 g
		Hard steel roller	VM120-01-06SA	VM130-01-06SA	VM120U-01-06SA	VM130U-01-06SA	VM122-M5-06SA	VM132-M5-06SA	VM-06BS	45 g
	Cross roller plunger	Polyacetal roller	VM120-01-07A	VM130-01-07A	VM120U-01-07A	VM130U-01-07A	VM122-M5-07A	VM132-M5-07A	VM-07B	43 g
		Hard steel roller	VM120-01-07SA	VM130-01-07SA	VM120U-01-07SA	VM130U-01-07SA	VM122-M5-07SA	VM132-M5-07SA	VM-07BS	45 g
Toggle lever		VM120-01-08A	VM130-01-08A	VM120U-01-08A	VM130U-01-08A	VM122-M5-08A	VM132-M5-08A	VM-08B	41 g	
Push button (Mushroom)	Red	VM120-01-30RA	VM130-01-30RA	VM120U-01-30RA	VM130U-01-30RA	VM122-M5-30RA	VM132-M5-30RA	VM-30AR	58 g	
	Black	VM120-01-30BA	VM130-01-30BA	VM120U-01-30BA	VM130U-01-30BA	VM122-M5-30BA	VM132-M5-30BA	VM-30AB		
	Green	VM120-01-30GA	VM130-01-30GA	VM120U-01-30GA	VM130U-01-30GA	VM122-M5-30GA	VM132-M5-30GA	VM-30AG		
	Yellow	VM120-01-30YA	VM130-01-30YA	VM120U-01-30YA	VM130U-01-30YA	VM122-M5-30YA	VM132-M5-30YA	VM-30AY		
Push button (Extended)	Red	VM120-01-32RA	VM130-01-32RA	VM120U-01-32RA	VM130U-01-32RA	VM122-M5-32RA	VM132-M5-32RA	VM-32AR	52 g	
	Black	VM120-01-32BA	VM130-01-32BA	VM120U-01-32BA	VM130U-01-32BA	VM122-M5-32BA	VM132-M5-32BA	VM-32AB		
	Green	VM120-01-32GA	VM130-01-32GA	VM120U-01-32GA	VM130U-01-32GA	VM122-M5-32GA	VM132-M5-32GA	VM-32AG		
	Yellow	VM120-01-32YA	VM130-01-32YA	VM120U-01-32YA	VM130U-01-32YA	VM122-M5-32YA	VM132-M5-32YA	VM-32AY		
Push button (Flush)		With a set of red, black, green, yellow	VM120-01-33A	VM130-01-33A	VM120U-01-33A	VM130U-01-33A	VM122-M5-33A	VM132-M5-33A	VM-33A	50 g
Twist selector (2 position)	Red	VM120-01-34RA	VM130-01-34RA	VM120U-01-34RA	VM130U-01-34RA	VM122-M5-34RA	VM132-M5-34RA	VM-34AR	56 g	
	Black	VM120-01-34BA	VM130-01-34BA	VM120U-01-34BA	VM130U-01-34BA	VM122-M5-34BA	VM132-M5-34BA	VM-34AB		
	Green	VM120-01-34GA	VM130-01-34GA	VM120U-01-34GA	VM130U-01-34GA	VM122-M5-34GA	VM132-M5-34GA	VM-34AG		
	Yellow	VM120-01-34YA	VM130-01-34YA	VM120U-01-34YA	VM130U-01-34YA	VM122-M5-34YA	VM132-M5-34YA	VM-34AY		
Key selector (2 position)		VM120-01-36A	VM130-01-36A	VM120U-01-36A	VM130U-01-36A	VM122-M5-36A	VM132-M5-36A	VM-36A	78 g	
Twist selector (3 position)	3 port		5 port		3 port		5 port		—	111 g (Add to 2 basic units.)
	Red	VM131-01-35RA	VM151-01-35RA	VM131U-01-35RA	VM151U-01-35RA	VM133-M5-35RA	VM153-M5-35RA			
	Black	VM131-01-35BA	VM151-01-35BA	VM131U-01-35BA	VM151U-01-35BA	VM133-M5-35BA	VM153-M5-35BA			
	Green	VM131-01-35GA	VM151-01-35GA	VM131U-01-35GA	VM151U-01-35GA	VM133-M5-35GA	VM153-M5-35GA			
	Yellow	VM131-01-35YA	VM151-01-35YA	VM131U-01-35YA	VM151U-01-35YA	VM133-M5-35YA	VM153-M5-35YA			

Note 1) It is possible to change the actuator assembly and mount to basic type when an actuator part number is specified in the column.

Note 2) For push button (mushroom), push button (flush), push button (extended) and individual fastening ring, refer to page 25.

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

Note 4) Color of plunger: Gray (2 port), White (3 port)

How to Order

VM1 **3** **1** - **01** - **01** **A** - -

Number of ports

2	2 port
3	3 port
5	5 port (Twist selector 3 position only)

Piping direction and the height of plunger

0	Side ported	Long
1		Short
2	Bottom ported	Long
3		Short

Body option

Nil	Side mounting
U	With bottom mounting thread

Note) U: Applicable only to side ported type

Port size

01	R1/8	
N01	NPT1/8	Side ported only
F01	G1/8	
M5	M5 x 0.8	Bottom ported only

Actuator type*

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

Combination possible: ○ Combination impossible: ×

Made to Order (Pages 21, 22)

X207	Alternate type, Mushroom push button
X219	Push-lock turn-reset type, Mushroom push button

Note) Applicable only to push button (mushroom)

Bracket option

Nil	None
B	With bracket

Note) Applicable only to side ported, side mounting type.
However, not applicable to twist selector (3 position).
Bracket is shipped together, but not assembled.

Suffix for indicator

Nil	None
Z	With miniature indicator

Note) Applicable only to bottom ported type

Suffix for actuator*

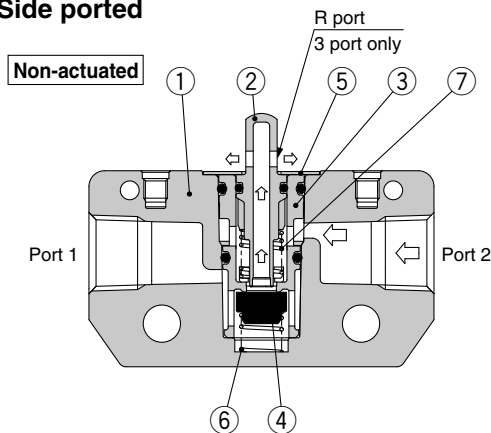
S	Hard steel roller
R	Red
B	Black
G	Green
Y	Yellow

Color of push button, selector

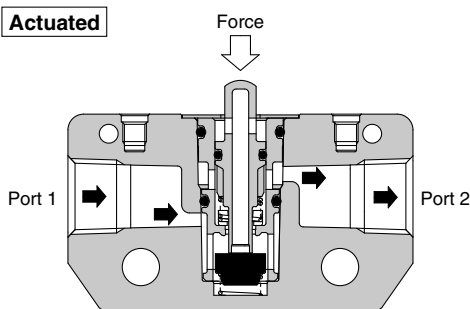
* Refer to the table on page 1 for combinations of actuator type and suffix.

Construction

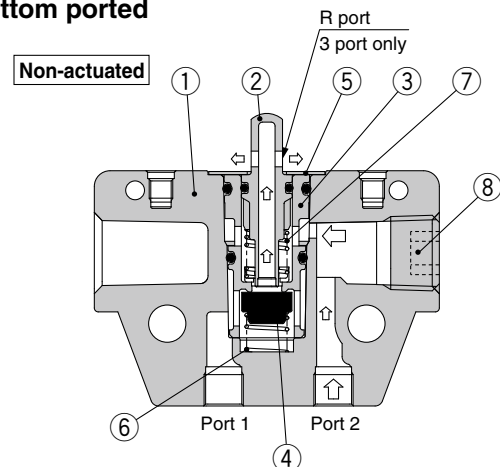
Side ported



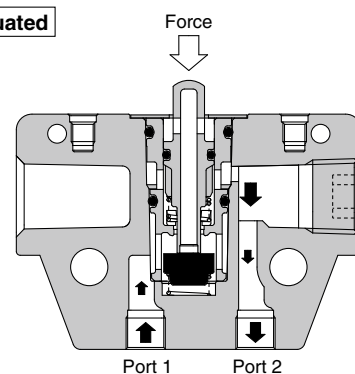
Actuated



Bottom ported



Actuated



Component Parts

No.	Description	Material	Note
1	Valve	ZDC	White coated
2	Plunger	Polyacetal	2 port Gray
			3 port White
3	Valve sheet	PBT	
4	Valve	NBR	

No.	Description	Material	Note
5	Plunger retainer	Stainless steel	
6	Spring	Stainless steel	
7	Spring	Spring steel	
8	Hexagon socket head taper plug	Rolled steel	

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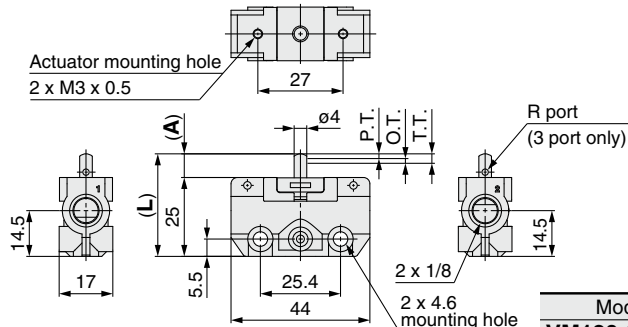
Basic

VM120-01-00A

VM130-01-00A

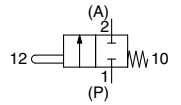
VM121-01-00A

VM131-01-00A

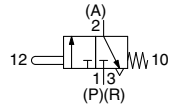


Symbol

2 port



3 port



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

* 0.5 MPa supply	
F.O.F.*	26 N
P.T.	1.5 mm
O.T.	1.5 mm
T.T.	3 mm

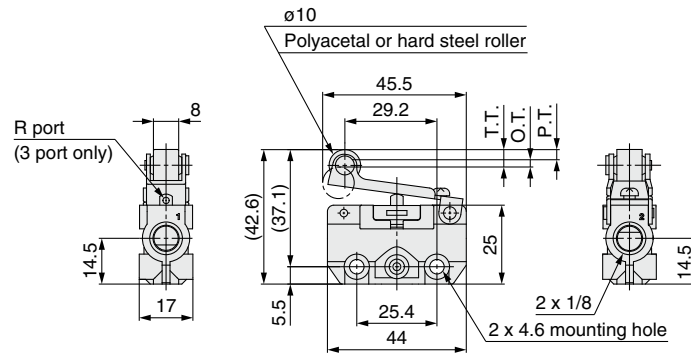
Roller lever

VM121-01-01A

VM131-01-01A

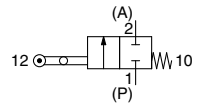
VM121-01-01SA

VM131-01-01SA

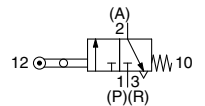


Symbol

2 port



3 port



* 0.5 MPa supply	
F.O.F.*	13 N
P.T.	3.2 mm
O.T.	2.3 mm
T.T.	5.5 mm

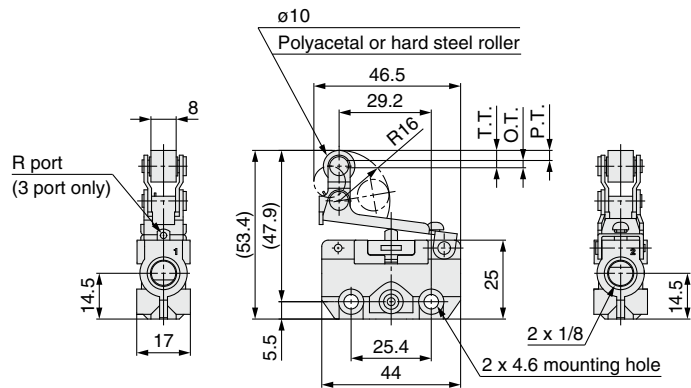
One way roller lever

VM121-01-02A

VM131-01-02A

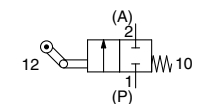
VM121-01-02SA

VM131-01-02SA

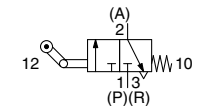


Symbol

2 port



3 port

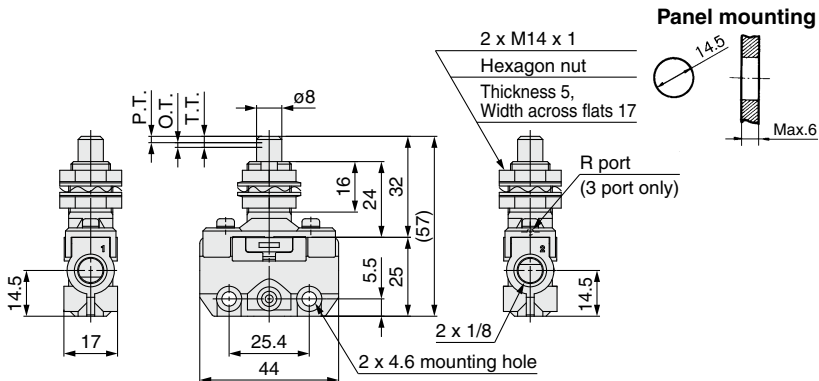


* 0.5 MPa supply	
F.O.F.*	13 N
P.T.	3.2 mm
O.T.	2.3 mm
T.T.	5.5 mm

Straight plunger

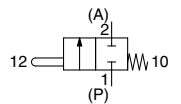
VM120-01-05A

VM130-01-05A

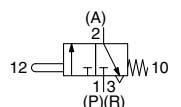


Symbol

2 port



3 port

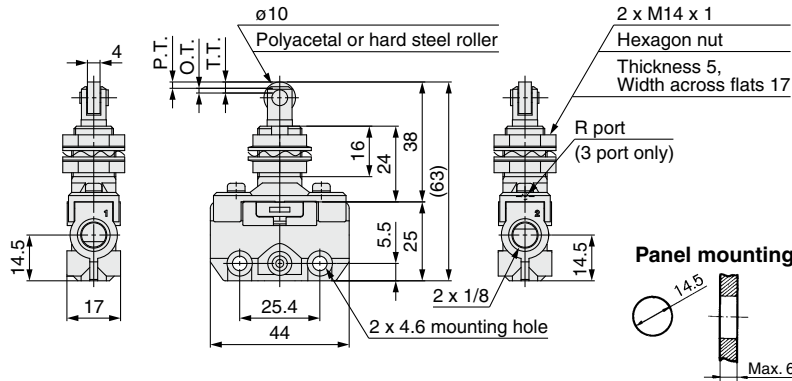


* 0.5 MPa supply	
F.O.F.*	29 N
P.T.	2 mm
O.T.	1.5 mm
T.T.	3.5 mm

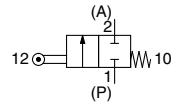
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Roller plunger

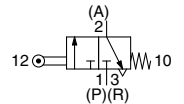
VM120-01-06A
VM130-01-06A
VM120-01-06SA
VM130-01-06SA



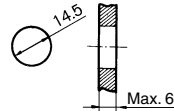
Symbol
2 port



3 port



Panel mounting hole

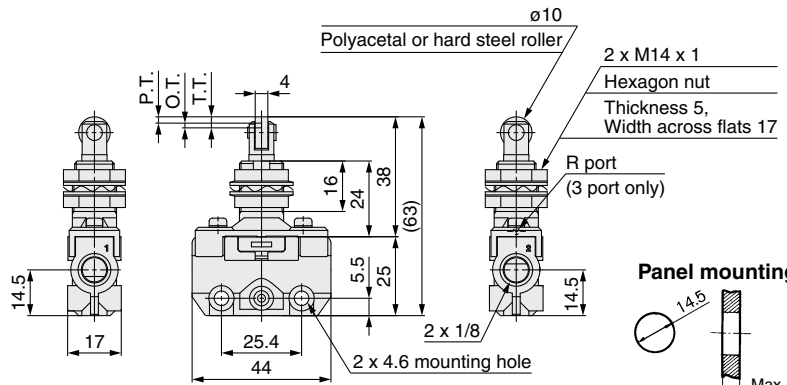


* 0.5 MPa supply

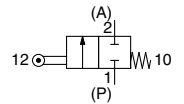
F.O.F.*	29 N
P.T.	2 mm
O.T.	1.5 mm
T.T.	3.5 mm

Cross roller plunger

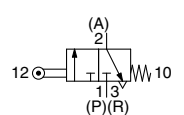
VM120-01-07A
VM130-01-07A
VM120-01-07SA
VM130-01-07SA



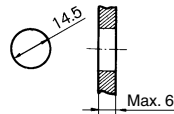
Symbol
2 port



3 port



Panel mounting hole

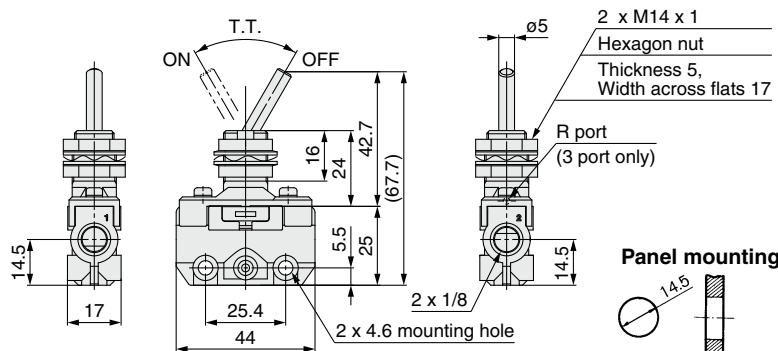


* 0.5 MPa supply

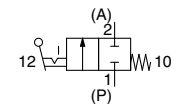
F.O.F.*	29 N
P.T.	2 mm
O.T.	1.5 mm
T.T.	3.5 mm

Toggle lever

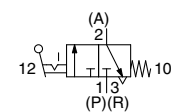
VM120-01-08A
VM130-01-08A



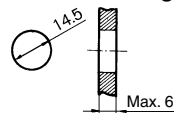
Symbol
2 port



3 port



Panel mounting hole

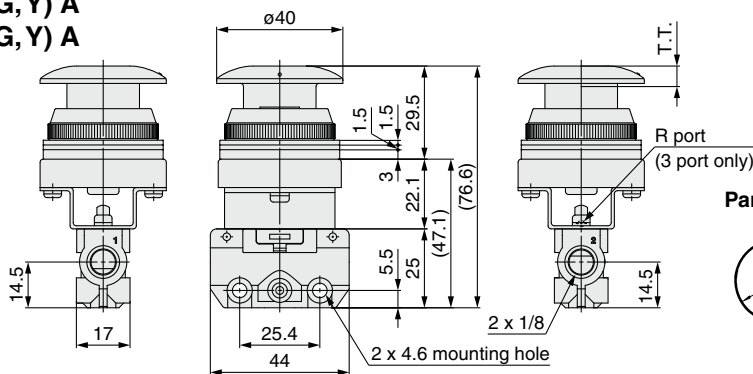


* 0.5 MPa supply

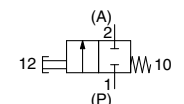
F.O.F.*	13 N
T.T.	60°

Push button (Mushroom)

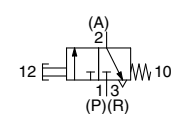
VM120-01-30 (R, B, G, Y) A
VM130-01-30 (R, B, G, Y) A



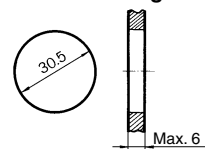
Symbol
2 port



3 port



Panel mounting hole



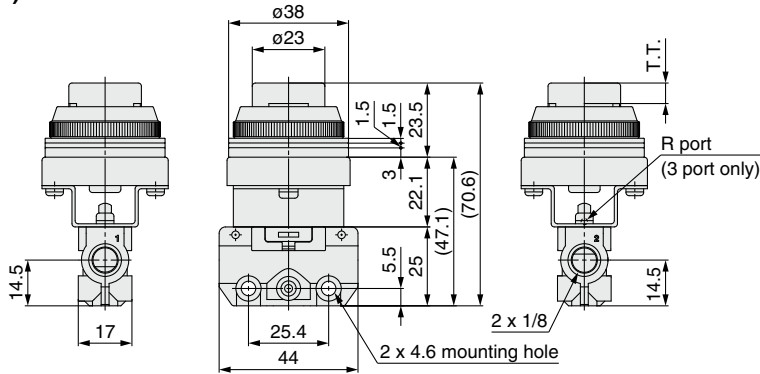
* 0.5 MPa supply

F.O.F.*	27 N
T.T.	6.5 mm

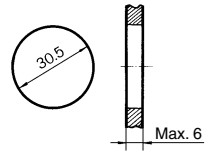
Series VM100

Series VM100/Side Ported

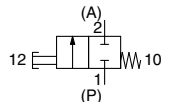
Push button (Extended)
 VM120-01-32 (R, B, G, Y) A
 VM130-01-32 (R, B, G, Y) A



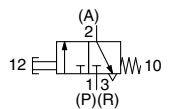
Panel mounting hole



Symbol
 2 port



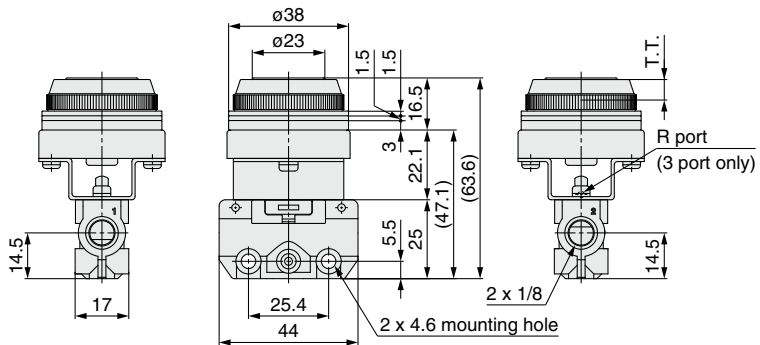
3 port



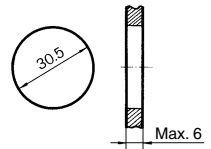
* 0.5 MPa supply

F.O.F.*	27 N
T.T.	6.5 mm

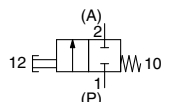
Push button (Flush)
 VM120-01-33A
 VM130-01-33A



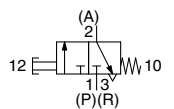
Panel mounting hole



Symbol
 2 port



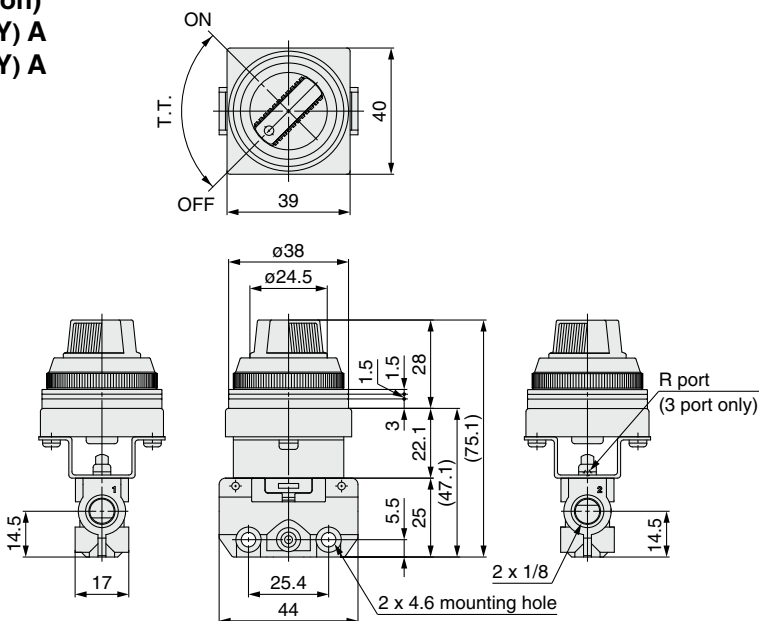
3 port



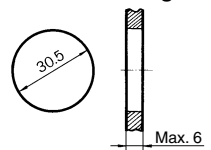
* 0.5 MPa supply

F.O.F.*	27 N
T.T.	6.5 mm

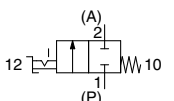
Twist selector (2 position)
 VM120-01-34 (R, B, G, Y) A
 VM130-01-34 (R, B, G, Y) A



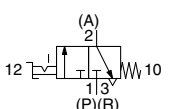
Panel mounting hole



Symbol
 2 port



3 port



* 0.5 MPa supply

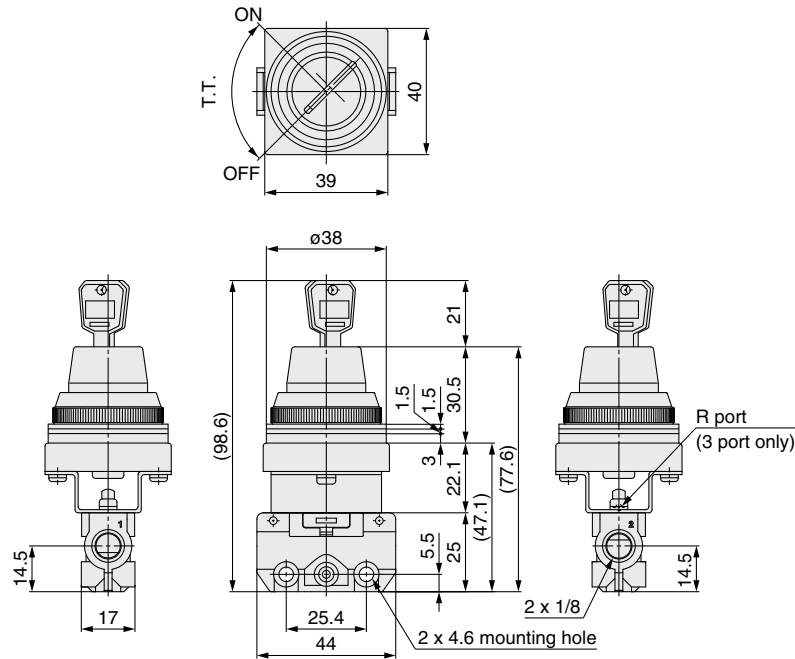
F.O.F.*	15 N
T.T.	90°

Series VM100/Side Ported

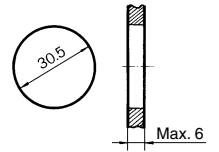
Key selector (2 position)

VM120-01-36A

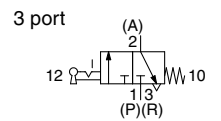
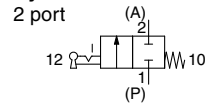
VM130-01-36A



Panel mounting hole



Symbol



Key can be removed at the "on" and "off" positions.
One spare key is included.

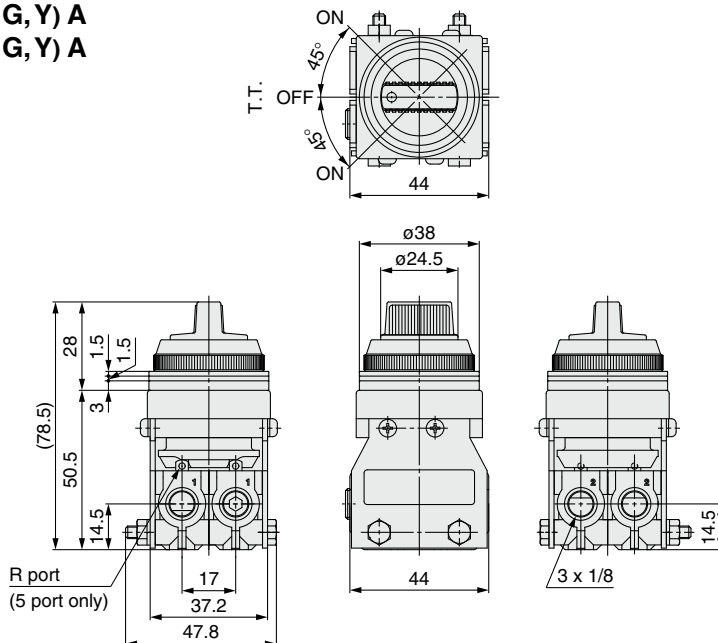
* 0.5 MPa supply

F.O.F.*	15 N
T.T.	90°

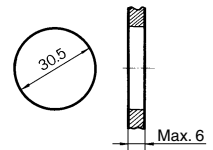
Twist selector (3 position)

VM131-01-35 (R, B, G, Y) A

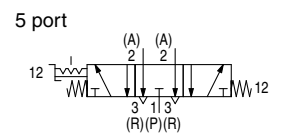
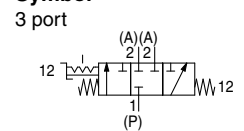
VM151-01-35 (R, B, G, Y) A



Panel mounting hole



Symbol



* 0.5 MPa supply

F.O.F.*	20 N
T.T.	45°

Series VM100

Series VM100/Side Ported

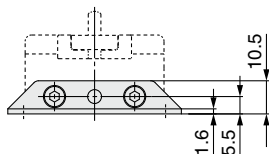
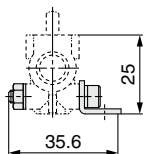
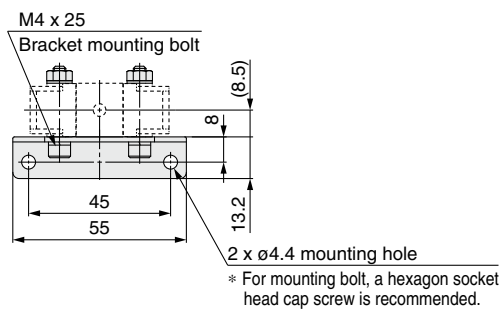
With bracket

VM120-01-□A-B

VM130-01-□A-B

VM121-01-□A-B

VM131-01-□A-B



VM1-B

Component parts	Q'ty
Bracket	1
Hexagon socket head cap screw M4 x 25	2
Hexagon nut M4	2

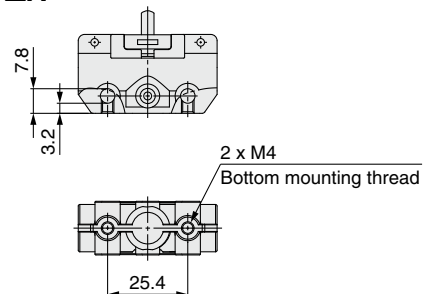
With bottom mounting thread

VM120U-01-□A

VM130U-01-□A

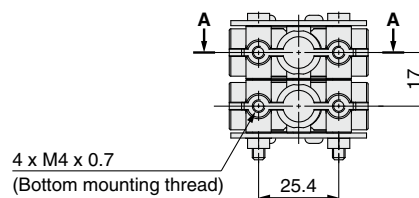
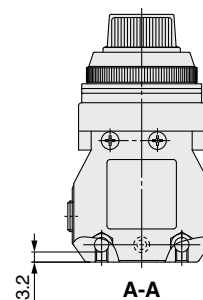
VM121U-01-□A

VM131U-01-□A



VM131U-01-35□A

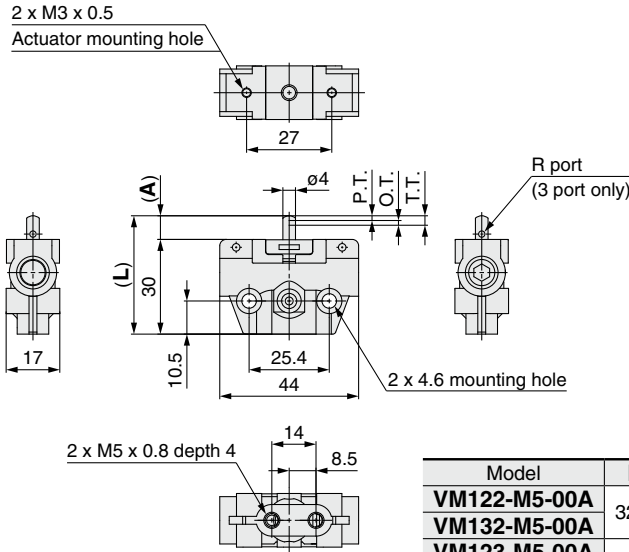
VM151U-01-35□A



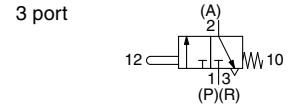
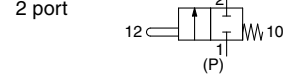
Series VM100/Bottom Ported

Basic

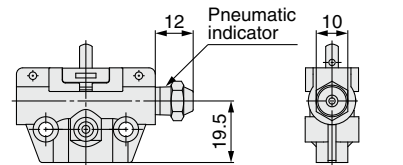
VM122-M5-00A
VM132-M5-00A
VM123-M5-00A
VM133-M5-00A



Symbol



With miniature indicator

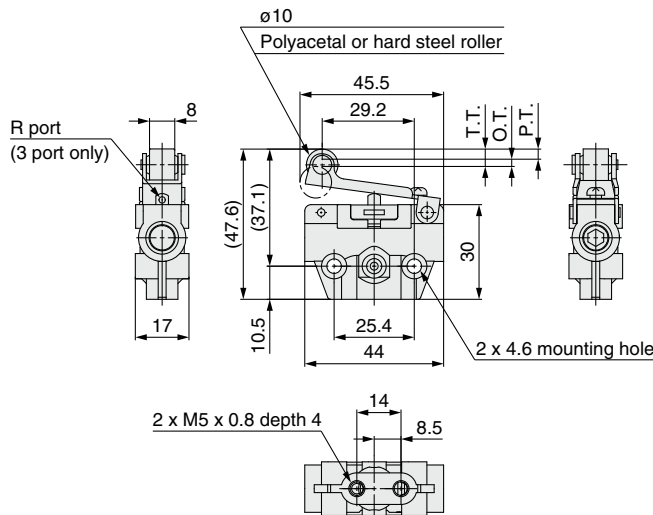


Model	L	A
VM122-M5-00A	32.5	7.5
VM132-M5-00A	32.5	7.5
VM123-M5-00A	28.5	3.5
VM133-M5-00A	28.5	3.5

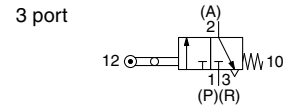
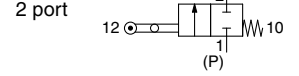
* 0.5 MPa supply	
F.O.F.*	26 N
P.T.	1.5 mm
O.T.	1.5 mm
T.T.	3 mm

Roller lever

VM123-M5-01A
VM133-M5-01A
VM123-M5-01SA
VM133-M5-01SA



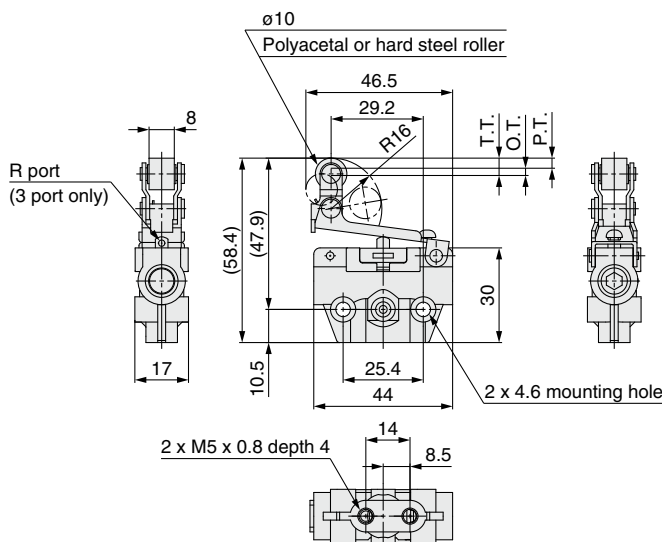
Symbol



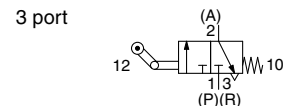
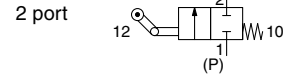
* 0.5 MPa supply	
F.O.F.*	13 N
P.T.	3.2 mm
O.T.	2.3 mm
T.T.	5.5 mm

One way roller lever

VM123-M5-02A
VM133-M5-02A
VM123-M5-02SA
VM133-M5-02SA



Symbol

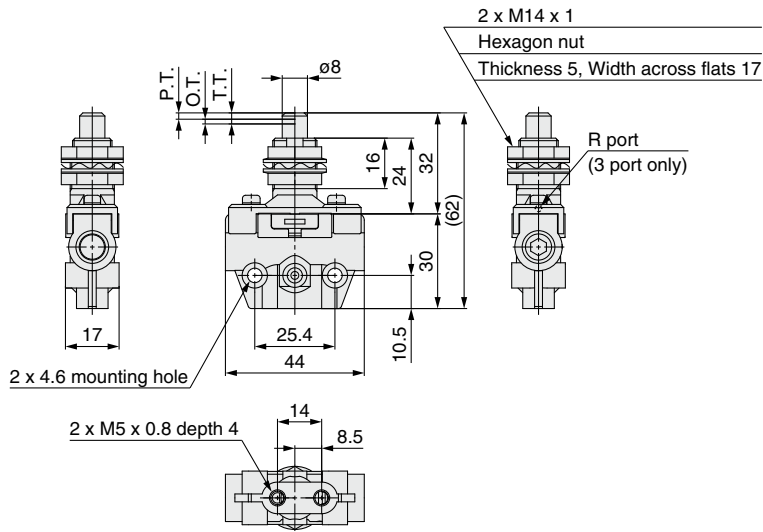


* 0.5 MPa supply	
F.O.F.*	13 N
P.T.	3.2 mm
O.T.	2.3 mm
T.T.	5.5 mm

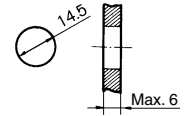
Series VM100

Series VM100/Bottom Ported

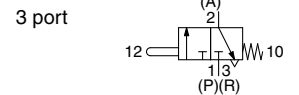
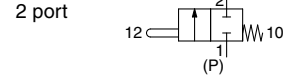
Straight plunger
VM122-M5-05A
VM132-M5-05A



Panel mounting hole



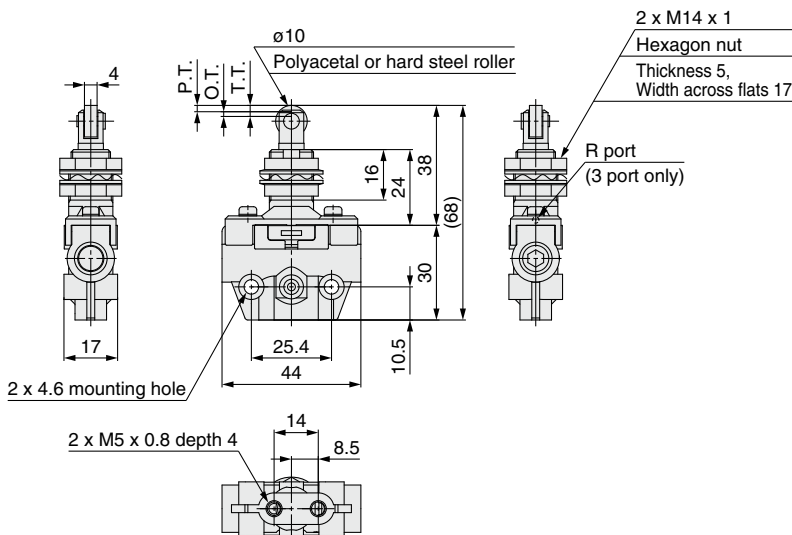
Symbol



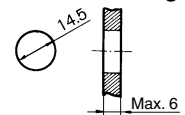
* 0.5 MPa supply

F.O.F.*	29 N
P.T.	2 mm
O.T.	1.5 mm
T.T.	3.5 mm

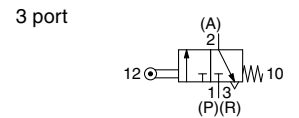
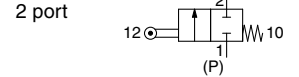
Roller plunger
VM122-M5-06A
VM132-M5-06A
VM122-M5-06SA
VM132-M5-06SA



Panel mounting hole



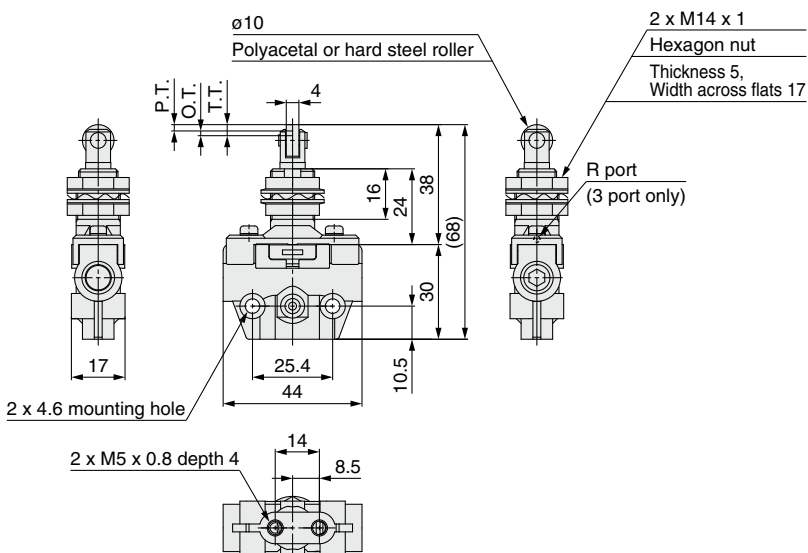
Symbol



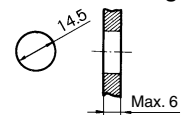
* 0.5 MPa supply

F.O.F.*	29 N
P.T.	2 mm
O.T.	1.5 mm
T.T.	3.5 mm

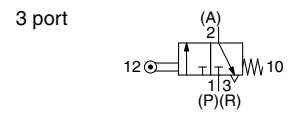
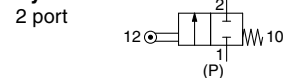
Cross roller plunger
VM122-M5-07A
VM132-M5-07A
VM122-M5-07SA
VM132-M5-07SA



Panel mounting hole



Symbol

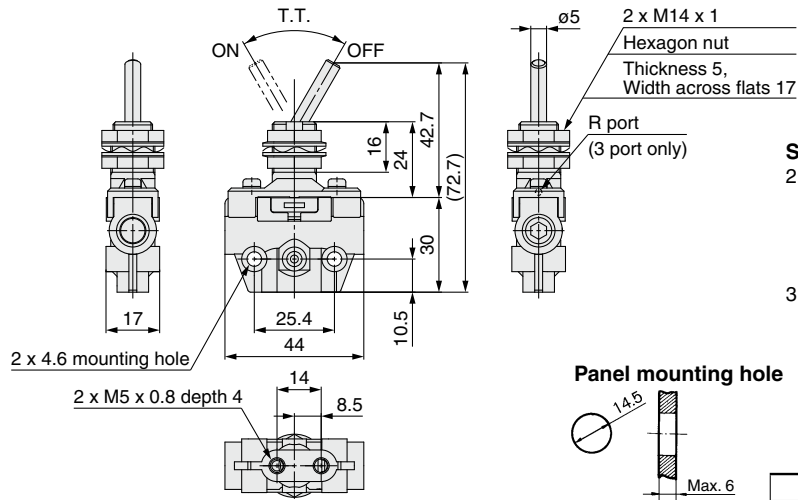


* 0.5 MPa supply

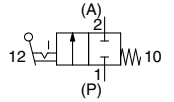
F.O.F.*	29 N
P.T.	2 mm
O.T.	1.5 mm
T.T.	3.5 mm

Series VM100/Bottom Ported

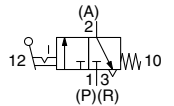
Toggle lever
VM122-M5-08A
VM132-M5-08A



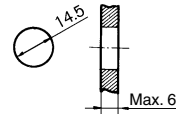
Symbol



3 port



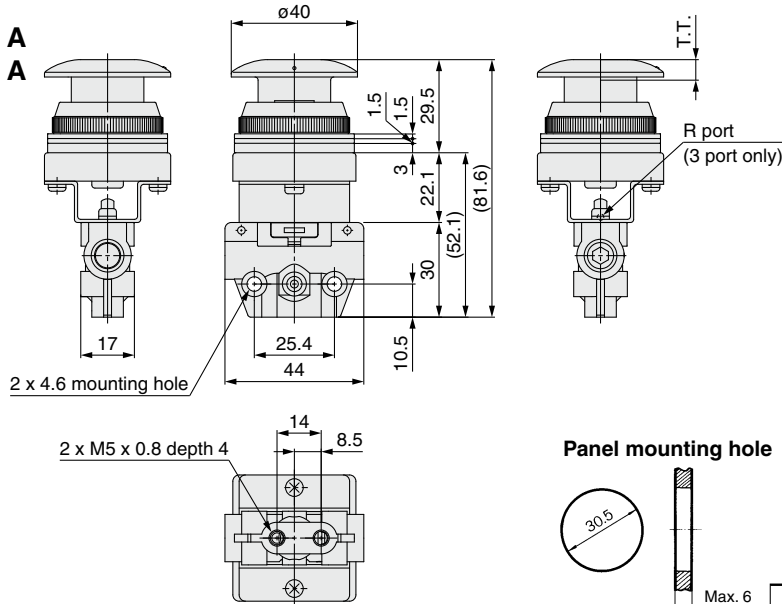
Panel mounting hole



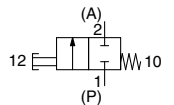
* 0.5 MPa supply

F.O.F.*	13 N
T.T.	60°

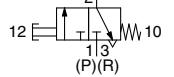
Push button (Mushroom)
VM122-M5-30 (R, B, G, Y) A
VM132-M5-30 (R, B, G, Y) A



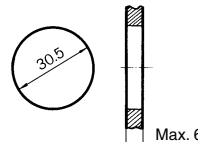
Symbol



3 port



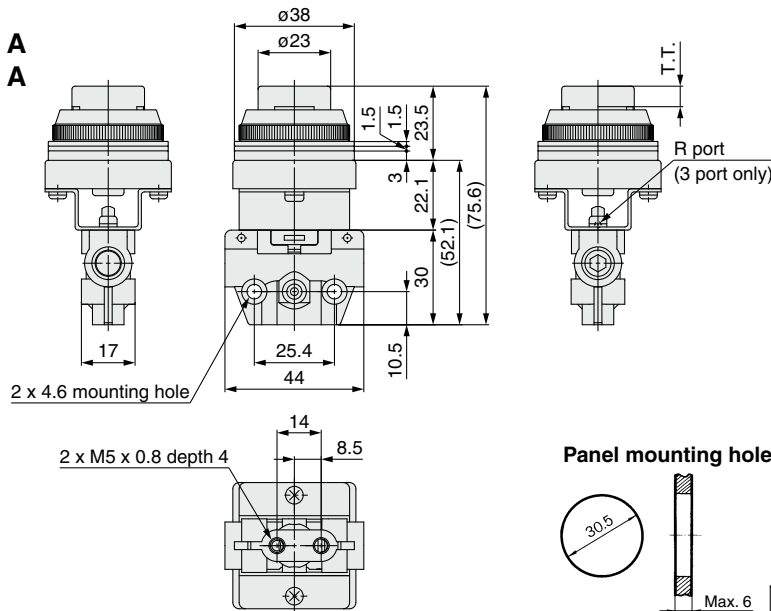
Panel mounting hole



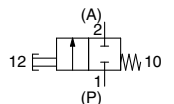
* 0.5 MPa supply

F.O.F.*	27 N
T.T.	6.5 mm

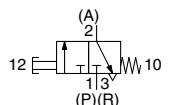
Push button (Extended)
VM122-M5-32 (R, B, G, Y) A
VM132-M5-32 (R, B, G, Y) A



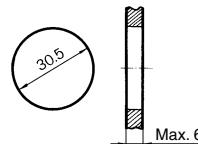
Symbol



3 port



Panel mounting hole



* 0.5 MPa supply

F.O.F.*	27 N
T.T.	6.5 mm

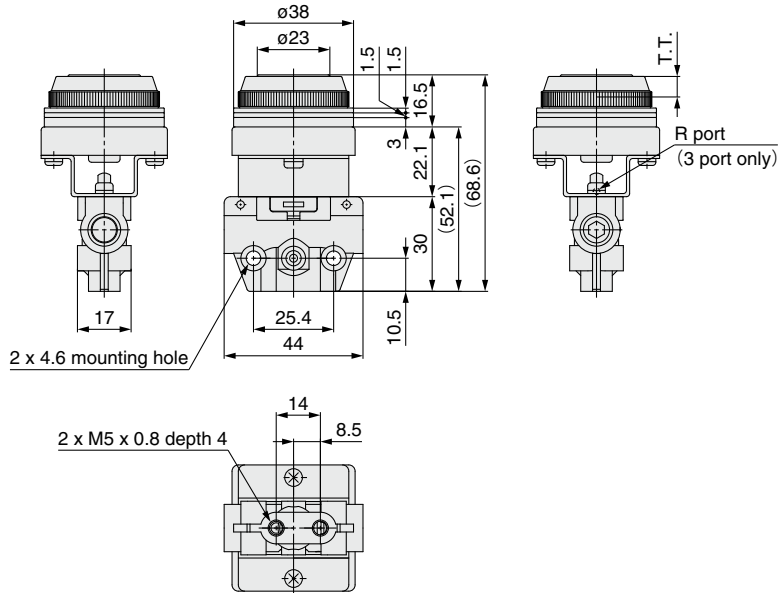
Series VM100

Series VM100/Bottom Ported

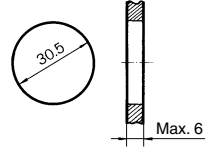
Push button (Flush)

VM122-M5-33A

VM132-M5-33A

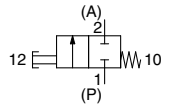


Panel mounting hole

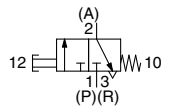


Symbol

2 port



3 port



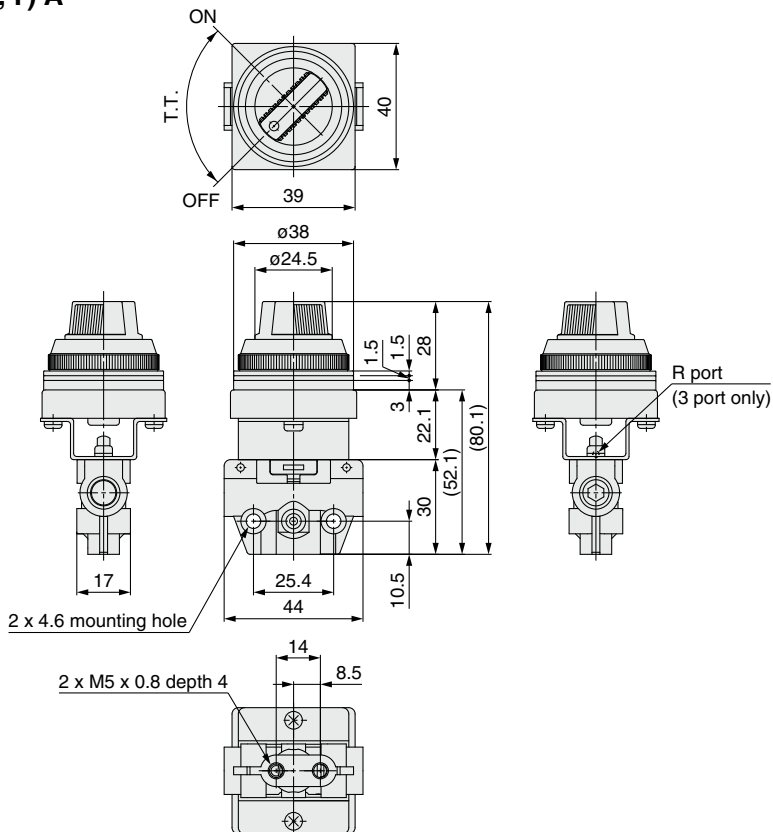
* 0.5 MPa supply

F.O.F.*	27 N
T.T.	6.5 mm

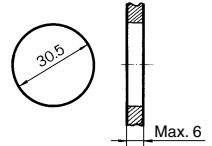
Twist selector (2 position)

VM122-M5-34 (R, B, G, Y) A

VM132-M5-34 (R, B, G, Y) A

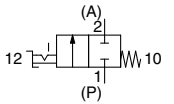


Panel mounting hole

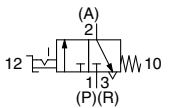


Symbol

2 port



3 port



* 0.5 MPa supply

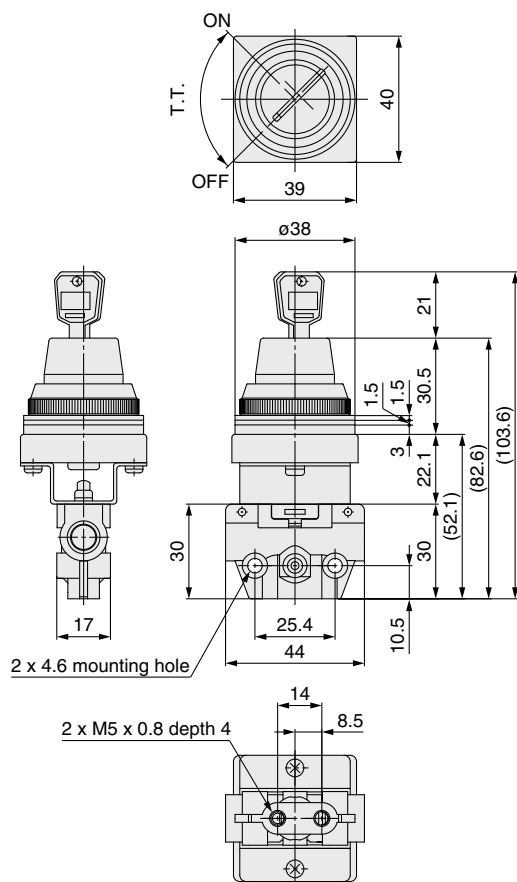
F.O.F.*	15 N
T.T.	90°

Series VM100/Bottom Ported

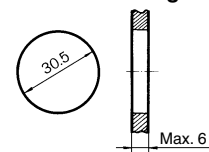
Key selector (2 position)

VM122-M5-36A

VM132-M5-36A

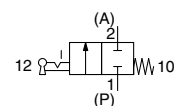


Panel mounting hole

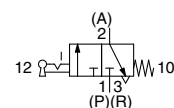


R port
(3 port only)

Symbol



3 port



Key can be removed at the "on" and "off" positions.
One spare key is included.

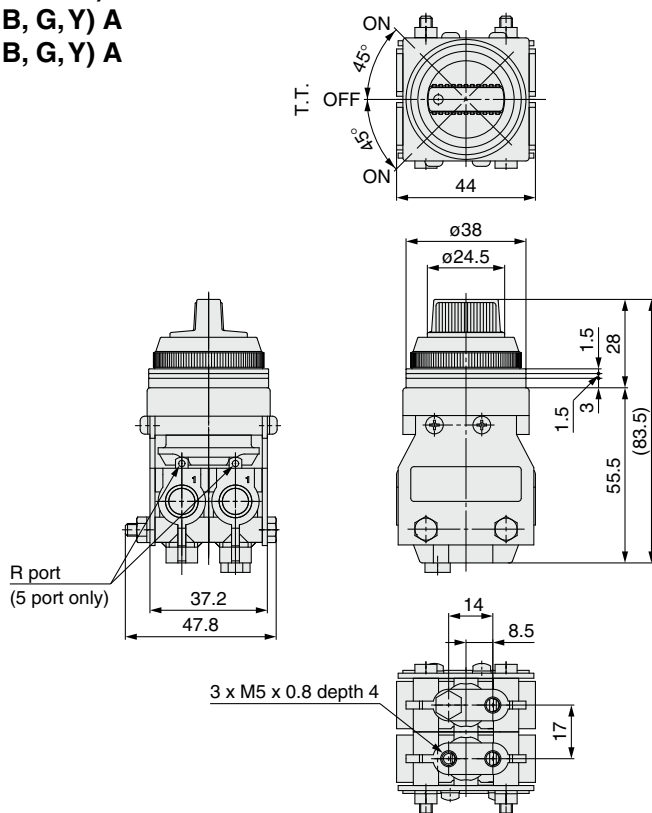
* 0.5 MPa supply

F.O.F.*	15 N
T.T.	90°

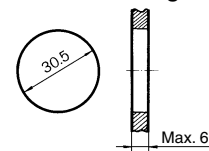
Twist selector (3 position)

VM133-M5-35 (R, B, G, Y) A

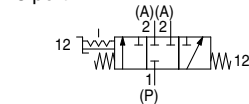
VM153-M5-35 (R, B, G, Y) A



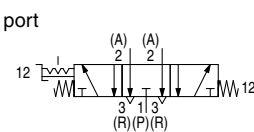
Panel mounting hole



Symbol



5 port



* 0.5 MPa supply

F.O.F.*	20 N
T.T.	45°