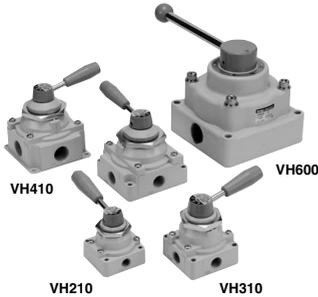


# Hand Valve Series VH



## Specifications

<b>Fluid</b>		Air
<b>Proof pressure</b>		1.5 MPa
<b>Max. operating pressure</b>	VH200/300/400	1.0 MPa
	VH600	0.7 MPa
<b>Ambient temperature and operating fluid temperature</b>		-5 to 60°C (No freezing)
<b>Operating angle</b>		90°
<b>Lubrication</b>		Not required (Use turbine oil Class 1 ISO VG32, if lubricated.)

## Semi-standard

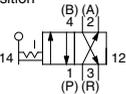
<b>Bottom ported</b>	VH300/400
<b>Panel mount</b>	VH200/300/400
<b>Handle position 180° change</b>	All models applicable *

\* Note that 1(P) port of VH600 is located on handle side as standard.

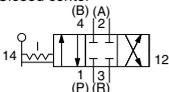
## Model

### Symbol

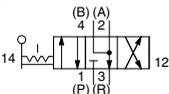
2 position



Closed center

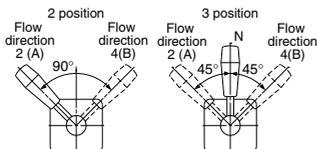


Exhaust center



### Handle Operation Angle and Air Flow Direction

(Refer to the figures of piping direction to the right.)



Series	Port size Rc	Number of positions	Piping direction	Model		Flow characteristics						Weight (kg)
				Body mount	Panel mount	1(P)→2(A)/4(B)			2(A)/4(B)→3(R)			
						C <sub>d</sub> (m <sup>3</sup> /s-bar)	b	Port(Cv)	C <sub>d</sub> (m <sup>3</sup> /s-bar)	b	Port(Cv)	
VH2	1/4	3 (Closed center)		VH200-02	VH210-02	2.4	0.25	0.55	2.4	0.25	0.55	0.42
		3 (Exhaust center)		VH201-02	VH211-02							
		2 (Position)		VH202-02	VH212-02							
VH3	1/4, 3/8	3 (Closed center)		VH300-02/03	VH310-02/03	5.4(1/4)	0.25	1.25(1/4)	5.4(1/4)	0.25	1.25(1/4)	0.71
		3 (Exhaust center)		VH301-02/03	VH311-02/03							
		2 (Position)		VH302-02/03	VH312-02/03							
		3 (Closed center)		VH320-02/03	VH330-02/03	4.5(1/4)	0.2	1.1(1/4)	4.5(1/4)	0.2	1.1(1/4)	
		3 (Exhaust center)		VH321-02/03	VH331-02/03							
		2 (Position)		VH322-02/03	VH332-02/03							
VH4	1/4 to 3/4	3 (Closed center)		VH400-02 to 06	VH410-02 to 06	14.3(1/4)	0.25	3.4(1/4)	14.3(1/4)	0.25	3.4(1/4)	1.28
		3 (Exhaust center)		VH401-02 to 06	VH411-02 to 06							
		2 (Position)		VH402-02 to 06	VH412-02 to 06							
		3 (Closed center)		VH420-02 to 06	VH430-02 to 06	11.9(1/4)	0.2	2.9(1/4)	11.9(1/4)	0.2	2.9(1/4)	
		3 (Exhaust center)		VH421-02 to 06	VH431-02 to 06							
		2 (Position)		VH422-02 to 06	VH432-02a to 06							
VH6	3/4, 1	3 (Closed center)		VH600-06/10	—	58.8(3/4)	0.25	14(3/4)	58.8(3/4)	0.25	14(3/4)	9.7
		3 (Exhaust center)		VH601-06/10								
		2 (Position)		VH602-06/10								

## How to Order

**VH 2 0 1 - [ ] 02 - [ ] - [ ]**

**Hand valve** →

**Body size (Base size)**

2	1/4 base
3	3/8 base
4	1/2 base
6	1 base

**Piping/Mounting**

Symbol	Piping (Note)	Mounting method
0	Side	Body
1	Side	Panel mount
2	Bottom	Body
3	Bottom	Panel mount

Note) Only side piping is available for VH200 and VH600 and 3(R) port is located on the bottom.

**Function**

0	3 position closed center
1	3 position exhaust center
2	2 position

**Made to Order**

Nil	Standard
X116	Handle (Red)

**Suffix symbol**

Nil	Standard
L	Long handle (Applicable to VH300/400)
R	Handle position 180° change

\* When specifying more than one option, indicate symbols alphabetically.

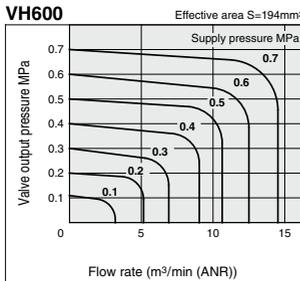
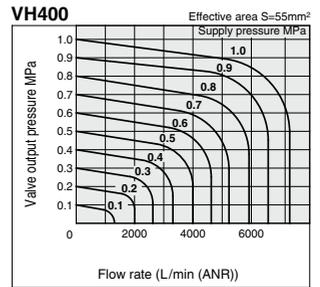
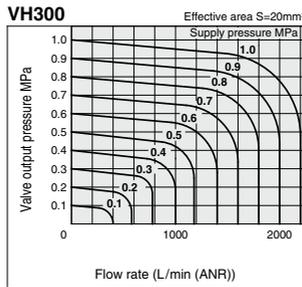
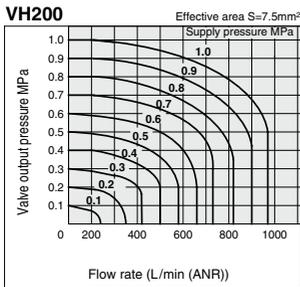
**Port size (Nominal size)**

Symbol	Port size (Nominal size)	Applicable body size
02	1/4	2, 3, 4
03	3/8	3, 4
04	1/2	4
06	3/4	4, 6
10	1	6

**Thread type**

Nil	Rc
F	G
N	NPT

## Flow Characteristics

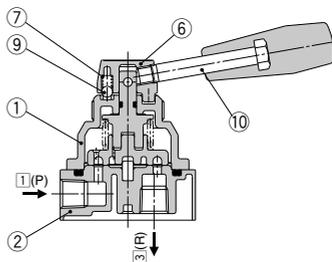
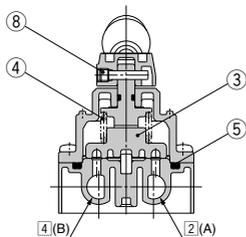


VM  
VMG  
VR  
VR51  
VHK  
VH  
VHS □  
VHS

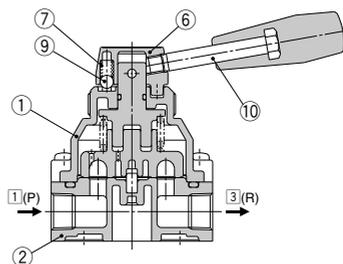
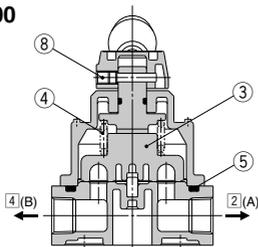
# Series VH

## Construction

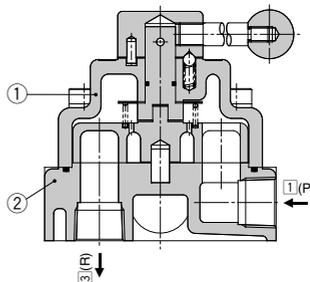
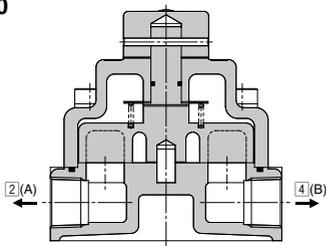
### VH200



### VH300/400



### VH600



## Component Parts

No.	Description	Material	
		VH200/300/400	VH600
1	Cover	Zinc die-casted	Cast iron
2	Body	Aluminium die-casted	Cast iron

## Replacement Parts

Description	No.	Component parts	Material	Part no.		
				VH200	VH300	VH400
Maintenance and repair kit*	3	Slide ring	Resin	KT-VH2□□-N	KT-VH3□□-N	KT-VH4□□-N
	4	Slide ring spring	Piano wire			
	5	O-ring	NBR			
	6	Handle head	Zinc alloy			
	7	Spring	Piano wire			
Handle head assembly*	8	Pin	Structural steel	24403A	24413A	24413A
	9	Steel ball	SUJ			
	6	Handle head	Zinc alloy			
	7	Spring	Piano wire			
Handle head assembly*	8	Pin	Structural steel	244036A	244125A	244125A
	9	Steel ball	SUJ			
	10	Handle	—			
	Standard	—				
Handle	10	Long type	—	244032	244032	244032
		Red	—	—	244127	244223
			—	244035	244035	244035

Note) Replacement parts for the VH600 series are not available.

\* Including grease.

2390

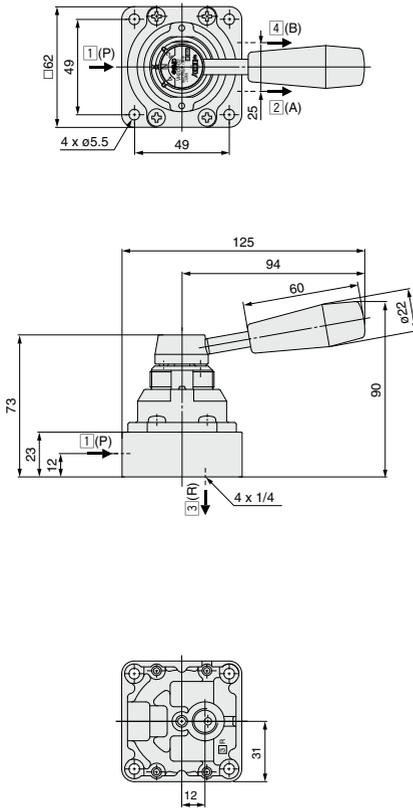
## Part No. of Lock Nut for Panel Mount

Series	Part no.
VH200	244010
VH300	24418
VH400	240258

Note) Not applicable to the VH600 series.

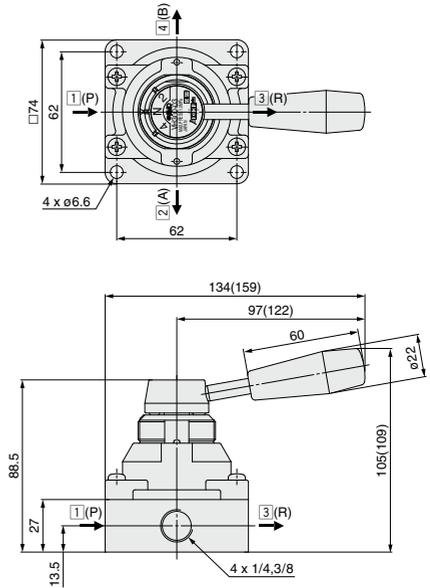
**Dimensions: Body Mount**

**VH20□-02**

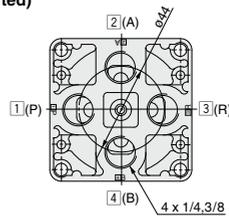


**VH30□-02/03**

( ): Long handle type



**VH32□-02/03**  
(Bottom ported)



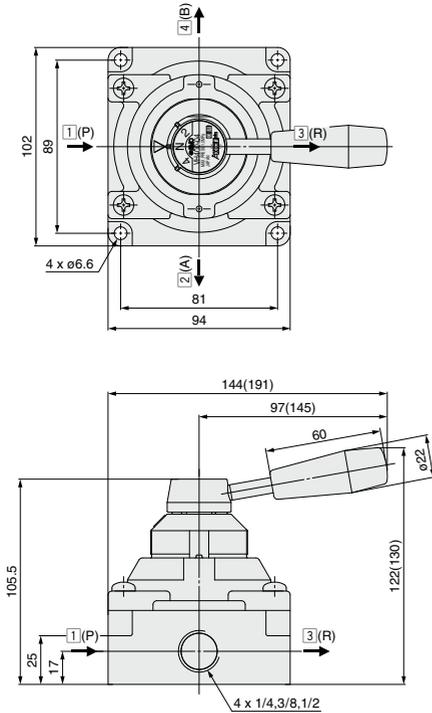
- VM
- VMG
- VR
- VR51
- VHK
- VH**
- VHS□
- VHS

# Series VH

## Dimensions: Body Mount

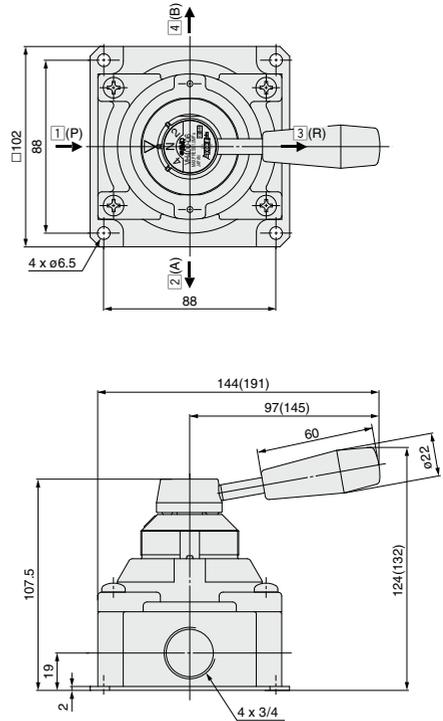
### VH40□-02 to 04

( ): Long handle type

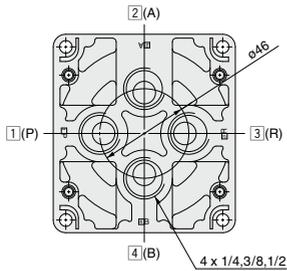


### VH40□-06

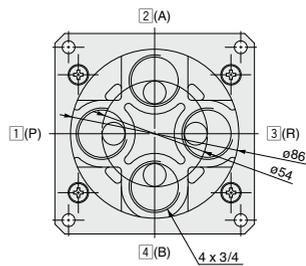
( ): Long handle type



### VH42□-02 to 04 (Bottom ported)

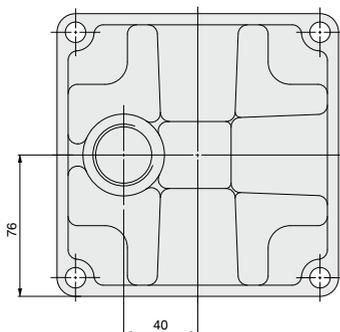
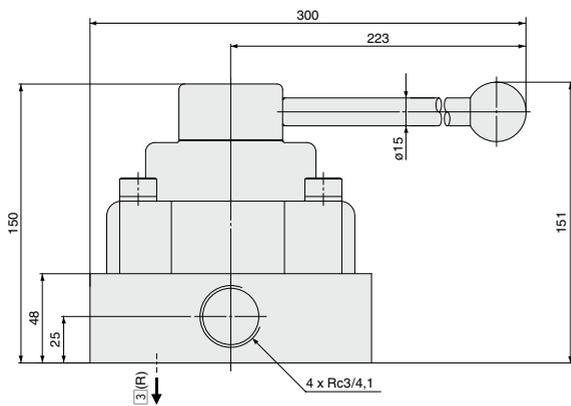
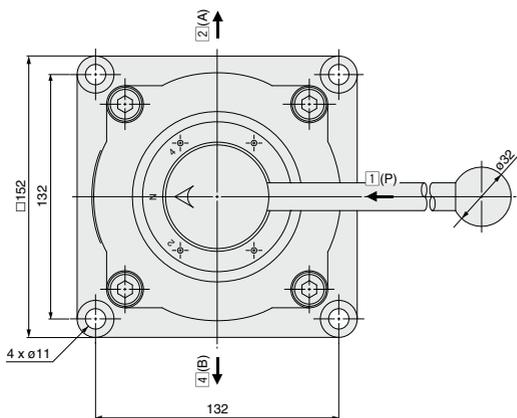


### VH42□-06 (Bottom ported)



**Dimensions: Body Mount**

VH600-06/10

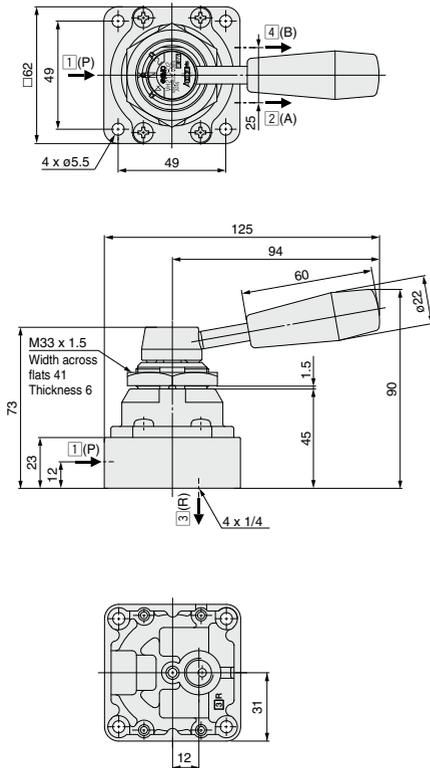


VM
VMG
VR
VR51
VHK
<b>VH</b>
VHS□
VHS

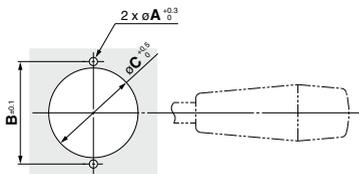
# Series VH

## Dimensions: Panel Mount

### VH21□-02



### Panel cut dimension

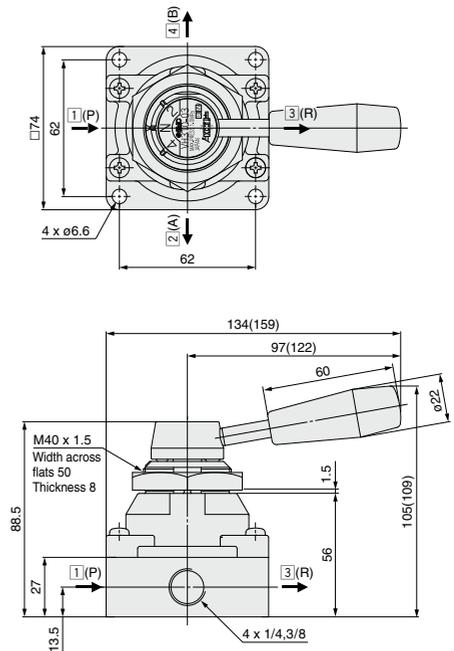


Max. panel thickness D

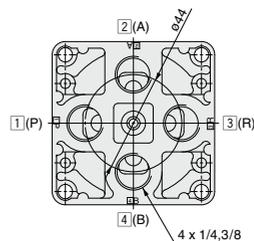
	(mm)			
	A	B	C	D
VH200	3.2	40	35	3.5
VH300	3.2	51	41	6
VH400	3.2	64	51	8

### VH31□-02/03

( ): Long handle type



### VH33□-02/03 (Bottom ported)







## Series VH

# Specific Product Precautions

Be sure to read before handling.

Refer to front matter 53 for Safety Instructions and pages 3 to 8 for 3/4/5 Port Solenoid Valve Precautions.

### Design

#### Warning

- 1. Not suitable for use as a selector valve or a divider valve.**  
The valve can malfunction due to air leakage.
- 2. Not suitable for negative pressure.**  
The valve can malfunction due to air leakage.
- 3. Do not supply air pressure from other ports than 1(P) port.**  
Air leakage may occur when the pressure is supplied from other ports.

### Selection

#### Warning

- 1. Intermediate stop**  
When stopping the cylinder piston in the middle using the 3 position closed center valve, it is not possible to stop it correctly and precisely as the hydraulic equipment due to the air compressibility. Do not use this valve because it has slight air leakage and can not hold a stopping position. When it is necessary to hold a stopping position, select an equipment to prevent displacement and design the circuit.

#### Caution

- 1. Use in low temperature environments**  
The valve can be used at a temperature down to  $-5^{\circ}\text{C}$ . Take appropriate measures to avoid freezing of drainage, moisture, etc.
- 2. Operation method**  
The valve must be switched to each position instantly and securely. Stopping the handle halfway between the extreme positions may cause malfunction.
- 3. Switch the valve by hand**  
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.

### Piping

#### Caution

- 1. Ensure connection so that air is supplied to the port "1(P)" port.**  
Air leakage may occur when the pressure is supplied from other ports.

### Environment

#### Warning

- 1. When the valve is exposed to a large amount of dust, install a silencer into the port "3(R)". When dust enters the valve from the port "3(R)", it may cause air leakage.**

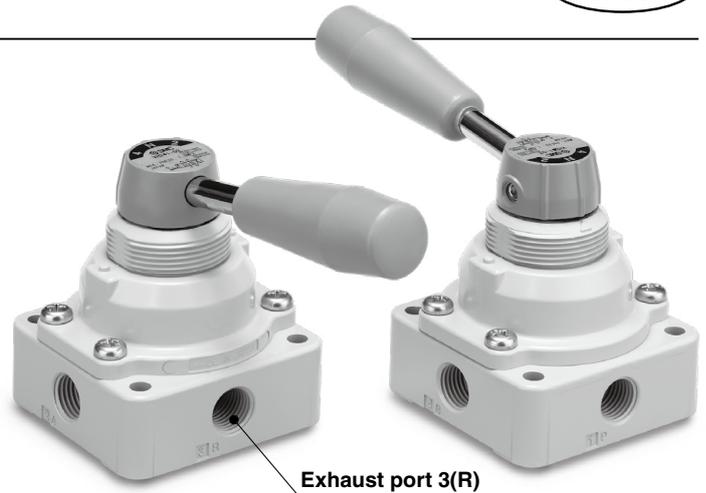
# Hand Valve



## Side exhaust added

### Standard Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1.0 MPa
Ambient and fluid temperature	-5 to 60°C (No freezing)
Operating angle	90°
Lubrication	Not required (Use turbine oil Class 1 ISO VG32, if lubricating.)



### Model

Series	Port size	Number of positions	Piping direction	Model		Flow rate characteristics						Weight [kg]
				Body mount	Panel mount	1(P) → 2(A)/4(B)			2(A)/4(B) → 3(R)			
						C [dm <sup>3</sup> /(s·bar)]	b	Port [Cv]	C [dm <sup>3</sup> /(s·bar)]	b	Port [Cv]	
VH2	1/4	3 (Closed center)		VH240-02	VH250-02	2.4	0.25	0.55	2.4	0.25	0.55	0.42
		3 (Exhaust center)		VH241-02	VH251-02							
		2 (Position)		VH242-02	VH252-02							

Specifications and models other than those shown above are the same as the standard product. For details, refer to the [Web Catalog](#).

### How to Order

**VH 2 4 1 - 02 -**

**Body size**  
2 1/4 base

**Piping/Mounting**

Symbol	Piping	Mounting method	3(R) port direction
4	Side	Body	Side
5	Side	Panel mount	Side

**Function**

Symbol	Description
0	3-position closed center
1	3-position exhaust center
2	2-position

**Thread type**

Symbol	Thread
Nil	Rc
N	NPT
F	G

**Made to order**

Symbol	Description
Nil	Standard
X116	Handle (Red)

**Suffix symbol**

Symbol	Description
Nil	Standard
R	Handle position 180°

**Port size**

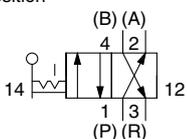
Symbol	Port size
02	1/4

### Handle Operation Angle and Air Flow Direction

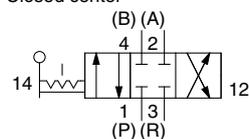
(Refer to the figure of piping direction in the table above.)

#### Symbol

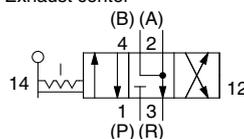
2-position



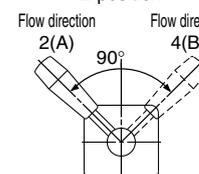
Closed center



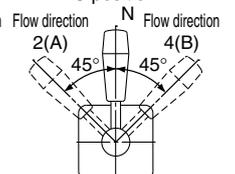
Exhaust center



2-position



3-position



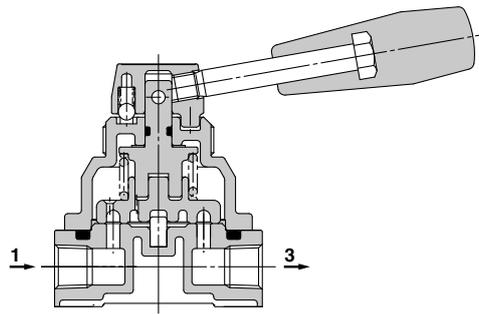
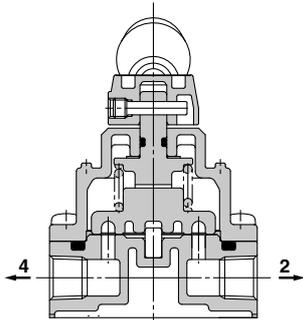
## VH24/25 Series



# VH24/25 Series

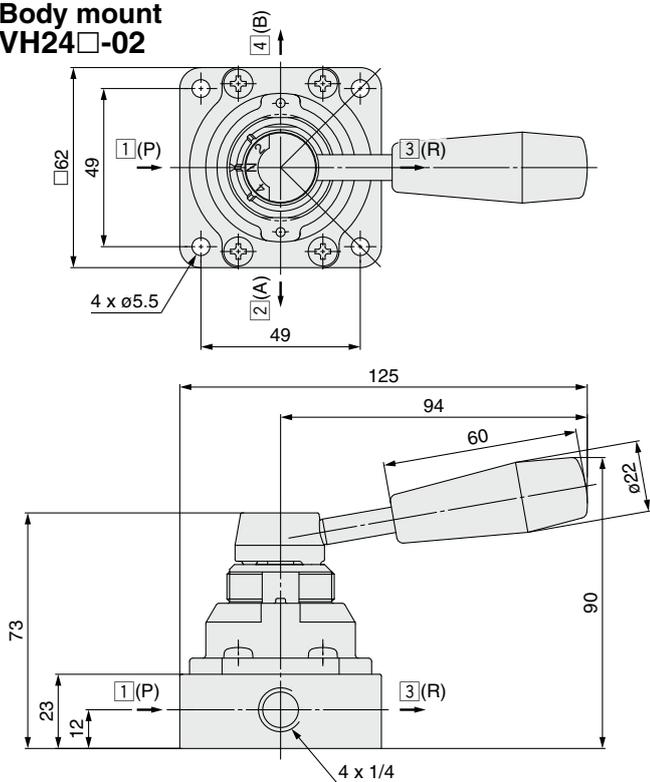
## Construction

VH24/25

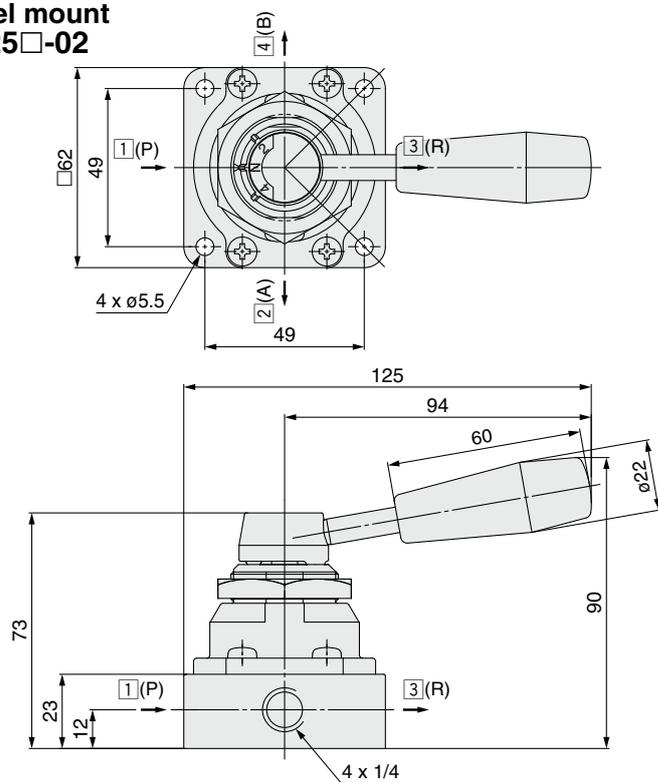


## Dimensions

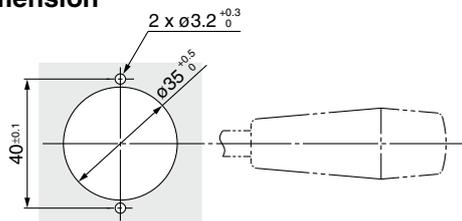
Body mount  
VH24□-02



Panel mount  
VH25□-02



Panel cut dimension



Max. panel thickness 3.5

**⚠ Safety Instructions** Be sure to read the "Handling Precautions for SMC Products" (M-E03-3) and "Operation Manual" before use.