

# Hand Valve

# VH Series



## Specifications

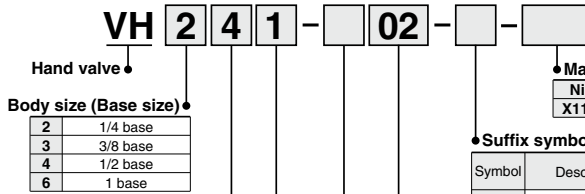
<b>Fluid</b>		Air
<b>Proof pressure</b>		1.5 MPa
<b>Max. operating pressure</b>	VH200/300/400	1.0 MPa
	VH600	0.7 MPa
<b>Ambient temperature and operating fluid temperature</b>		-5 to 60°C (No freezing)
<b>Operating angle</b>		90°
<b>Lubrication</b>		Not required (Use turbine oil Class 1 ISO VG32, if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

## Model

The value in brackets refers to the port size.

Series	Port size	Number of positions	Piping direction	Model		Flow rate characteristic						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	Cv	C[dm <sup>3</sup> /(s·bar)]	b	Cv		
VH2	1/4	3 (Closed center)		VH200-02	VH210-02	1.5	0.25	0.38	1.5	0.25	0.38	0.42	
		3 (Exhaust center)		VH201-02	VH211-02								
		2 (Position)	VH202-02	VH212-02									
		3 (Closed center)		VH240-02	VH250-02								
		3 (Exhaust center)		VH241-02	VH251-02								
		2 (Position)	VH242-02	VH252-02									
		3 (Closed center)	VH220-02	VH230-02									
		3 (Exhaust center)		VH221-02	VH231-02								
2 (Position)	VH222-02	VH232-02											
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								
		3 (Exhaust center)		VH321-02/03	VH331-02/03								
		2 (Position)	VH322-02/03	VH332-02/03									
		3 (Closed center)		VH400-02 to 06	VH410-02 to 06								
		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										
3 (Exhaust center)		VH421-02 to 06	VH431-02 to 06										
2 (Position)	VH422-02 to 06	VH432-02 to 06											
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								
		3 (Exhaust center)		VH421-02 to 06	VH431-02 to 06								
		2 (Position)	VH422-02 to 06	VH432-02 to 06									
VH6	3/4, 1	3 (Closed center)		VH600-06/10	—	37(3/4)	0.25	10.2(3/4)	37(3/4)	0.25	10.2(3/4)	9.7	
		3 (Exhaust center)		VH601-06/10		38.8(1)		10.5(1)			38.8(1)		10.5(1)
		2 (Position)		VH602-06/10									

## How to Order



● **Suffix symbol**

Symbol	Description	Body size			
		VH2	VH3	VH4	VH6
Nil	Standard	●	●	●	●
L	Long handle	—	●	●	—
R	Handle position 180° change	●	●	●	●

\* When specifying more than one option, indicate symbols alphabetically.  
 \* Note that 1(P) port of VH600 is located on handle side as standard.

● **Port size (Nominal size)**

Symbol	Port size (Nominal size)	Body size			
		VH2	VH3	VH4	VH6
02	1/4	●	●	●	—
03	3/8	—	●	●	—
04	1/2	—	—	●	—
06	3/4	—	—	●	●
10	1	—	—	—	●

● **Thread type**

Nil	Rc
N	NPT
F	G

● **Function**

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

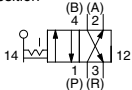
**Piping/Mounting**

Symbol	Mounting method	Piping			
		VH2	VH3	VH4	VH6
0	Body				
1	Panel mount				—
2	Body				—
3	Panel mount				—
4	Body		—	—	—
5	Panel mount		—	—	—

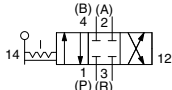
(Note) For VH600, 3(R) port is located only on the bottom.

● **Symbol**

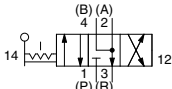
2 position



Closed center

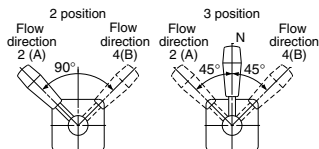


Exhaust center

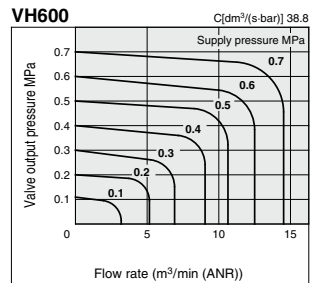
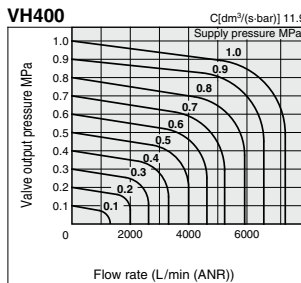
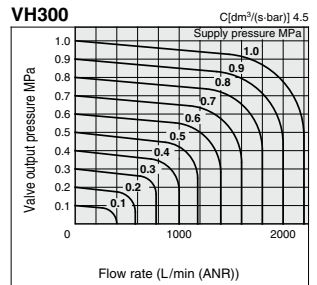
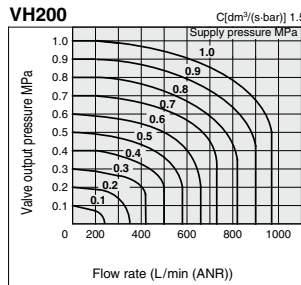


● **Handle Operation Angle and Air Flow Direction**

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



## Flow Rate Characteristics



VV

VVG

VR

VR51

VHK

VH

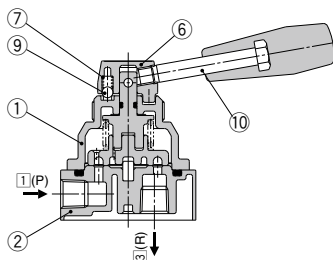
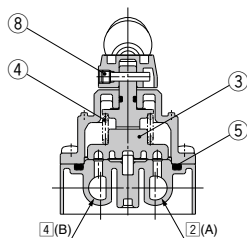
VHS □

VHS

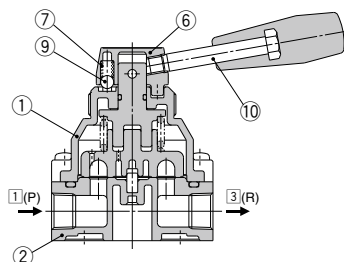
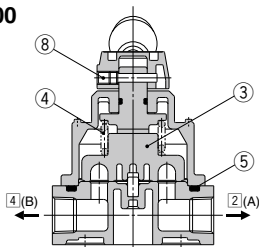
# VH Series

## Construction

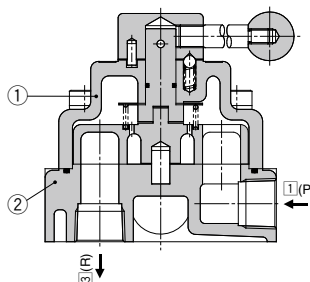
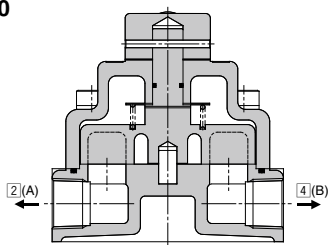
### VH200



### 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			
Handle head assembly*	6	Handle head	Zinc alloy	24403A	24413A	24413A
	7	Spring	Piano wire			
	8	Pin	Structural steel			
	9	Steel ball	SUJ			
	10	Handle	—			
Handle head assembly*	6	Handle head	Zinc alloy	244036A	244125A	244125A
	7	Spring	Piano wire			
	8	Pin	Structural steel			
	9	Steel ball	SUJ			
	10	Handle	—			
Handle	10	Standard	—	244032	244032	244032
		Long type	—	—	244127	244223
		Red	—	244035	244035	244035

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

\* Including grease.

1698

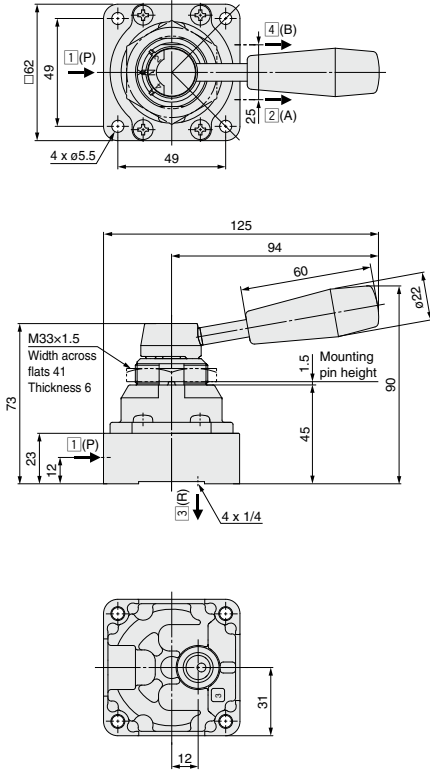
## Part No. of Lock Nut for Panel Mount

Series	Part no.
VH200	244010
VH300	24418
VH400	240258

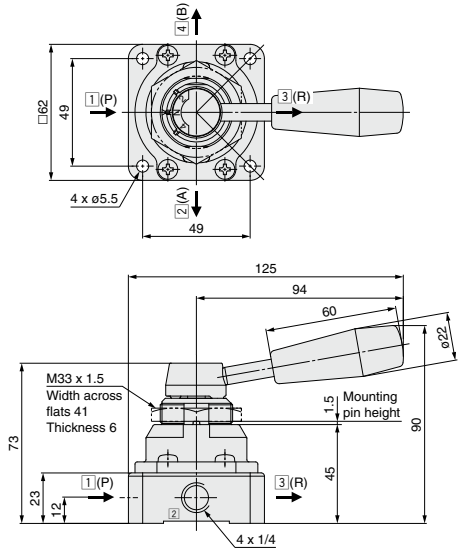
Note) Not applicable to the VH600 series.

**Dimensions**

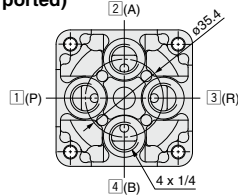
**VH20□/21□-02**



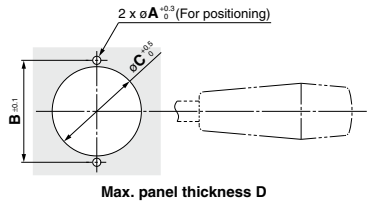
**VH24□/25□-02**



**VH22□/23□-02  
(Bottom ported)**



**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

VM

VMG

VR

VR51

VHK

**VH**

VHS□

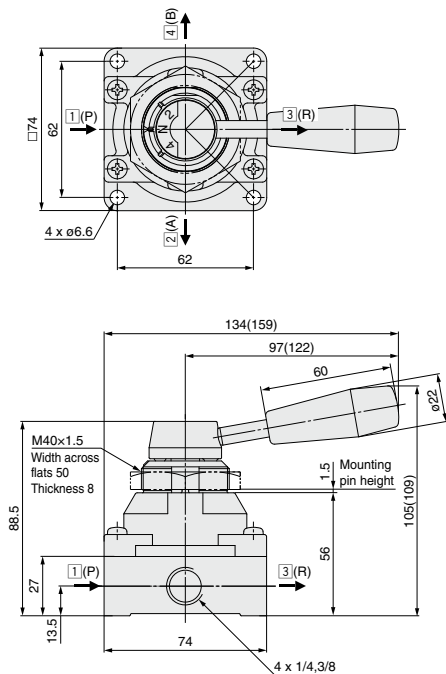
VHS



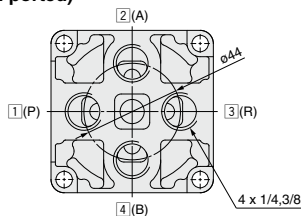
**Dimensions**

( ): Long handle type

**VH30□/31□-02 to 03**



**VH32□/33□-02 to 03  
(Bottom ported)**



Refer to page 1699 for the panel cut dimension.

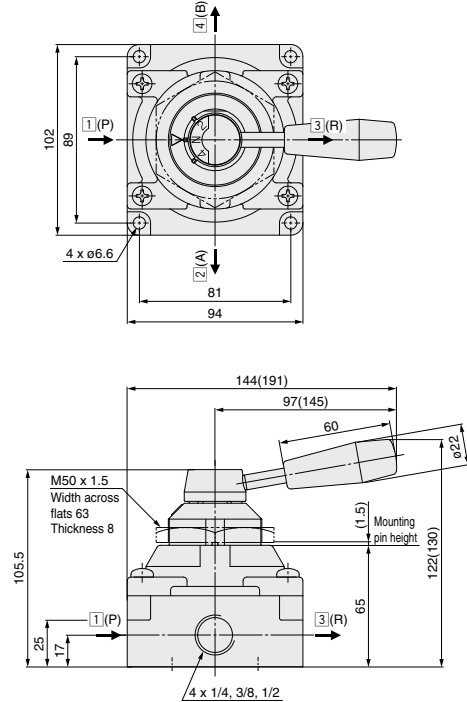
- VM
- VMG
- VR
- VR51
- VHK
- VH**
- VHS□
- VHS

# VH Series

## Dimensions

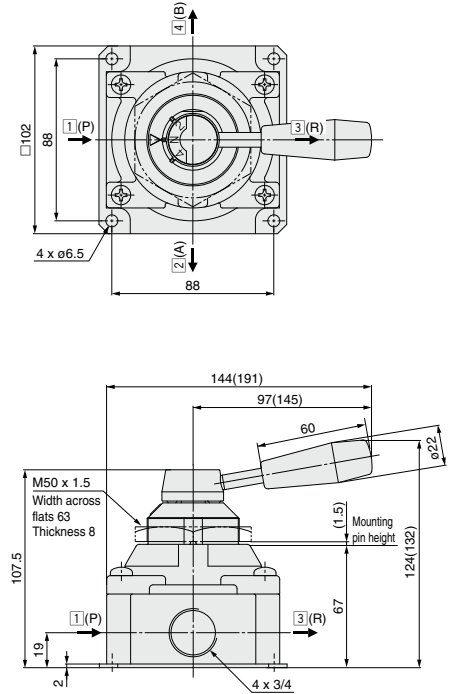
### VH40□/41□-02 to 04

( ): Long handle type

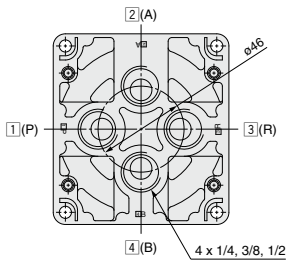


### VH40□/41□-06

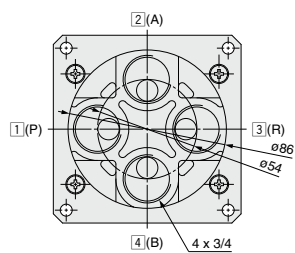
( ): Long handle type



### VH42□/43□-02 to 04 (Bottom ported)



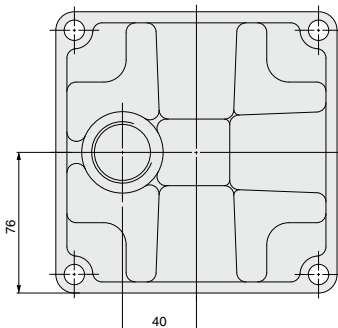
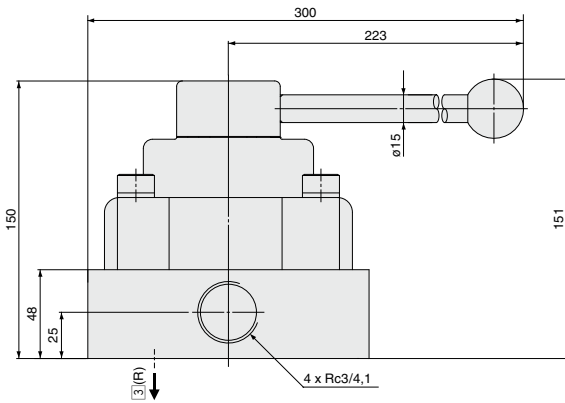
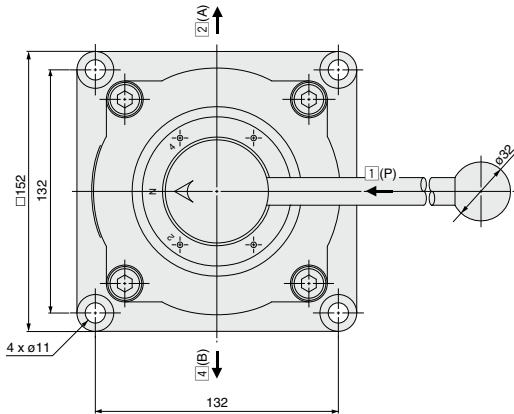
### VH42□/43□-06 (Bottom ported)



Refer to page 1699 for the panel cut dimension.

**Dimensions: Body Mount**

VH600-06/10



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





## VH Series

# Specific Product Precautions

Be sure to read this before handling the products.

Refer to back page 50 for Safety Instructions and pages 3 to 9 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°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.**