

# Hand Valve VH Series



## Specifications

Fluid		Air
Proof pressure		1.5 MPa
Max. operating pressure	VH200/300/400	1.0 MPa
	VH600	0.7 MPa
Ambient temperature and operating fluid temperature		-5 to 60°C (No freezing)
Operating angle		90°
Lubrication		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[dm³/(s·bar)]	b	Cv	C[dm³/(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	1.1	0.2	0.28	1.1	0.2	0.28				
		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	6.4(3/8)	1.5(3/8)	6.4(3/8)	1.5(3/8)							
		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	5.3(3/8)	1.3(3/8)	5.3(3/8)	1.3(3/8)							
		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	15.6(3/8)	3.8(3/8)	15.6(3/8)	3.8(3/8)							
	VH402-02 to 06			VH412-02 to 06	17.5(1/2)	4.3(1/2)	17.5(1/2)	4.3(1/2)							
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			VH432-02 to 06	13.0(3/8)	3.1(3/8)	13.0(3/8)	3.1(3/8)							
	VH422-02 to 06			VH432-02 to 06	14.6(1/2)	3.5(1/2)	14.6(1/2)	3.5(1/2)							
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												
		2 (Position)	VH602-06/10												

# How to Order

**VH 2 4 1 - 02 - - -**

Hand valve

Body size (Base size)

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

Made to Order

Nil	Standard
X116	Handle (Red)

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

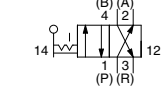
0	3 position closed center
1	3 position exhaust center
2	2 position

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

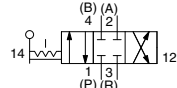
Note) For VH600, 3(R) port is located only on the bottom.

Symbol

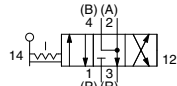
2 position



Closed center

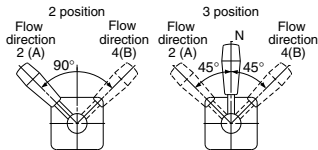


Exhaust center

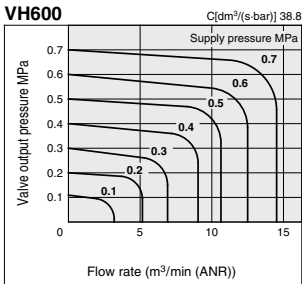
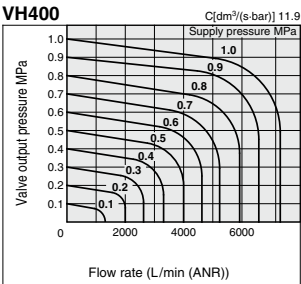
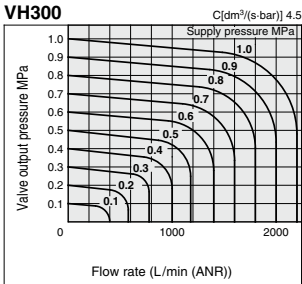
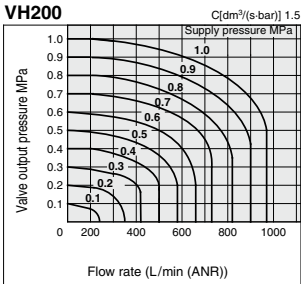


Handle Operation Angle and Air Flow Direction

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



## Flow Rate Characteristics



VM

VMG

VR

VR51

VHK

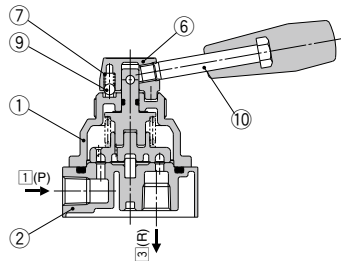
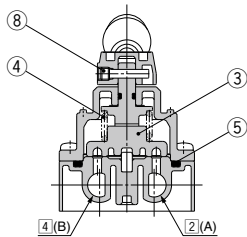
VH

VHS □

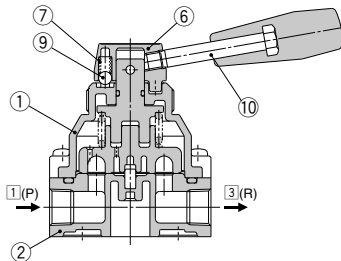
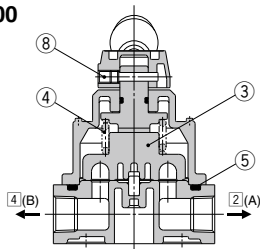
VHS

Construction

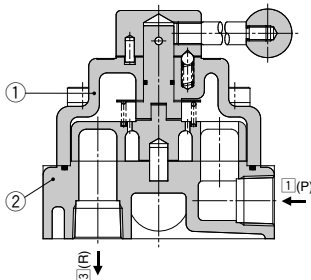
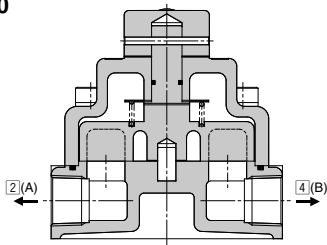
VH200



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

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

\* Including grease.

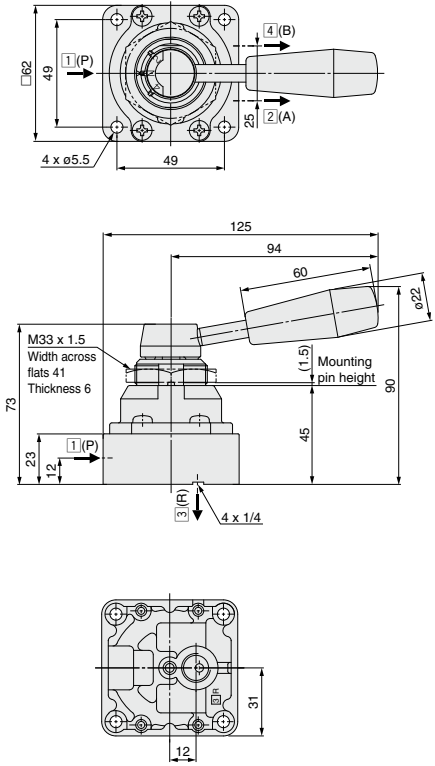
Part No. of Lock Nut for Panel Mount

Series	Part no.
VH200	244010
VH300	24418
VH400	240258

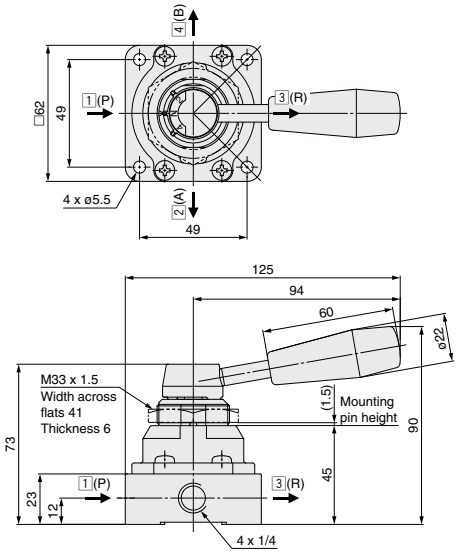
Note) Not applicable to the VH600 series.

**Dimensions**

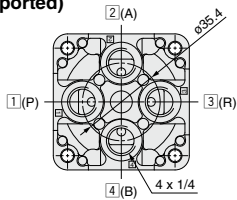
**VH20□/21□-02**



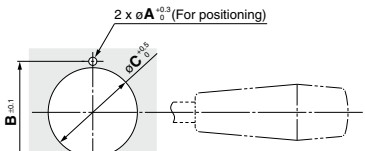
**VH24□/25□-02**



**VH22□/23□-02  
(Bottom ported)**



**Panel cut dimension**



Max. panel thickness D

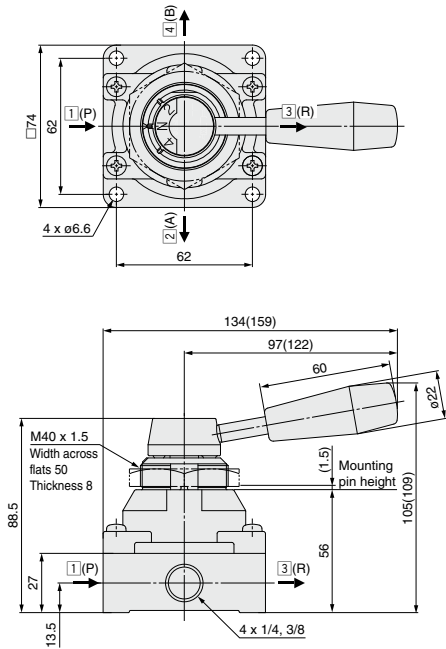
	(mm)			
	A	B	C	D
VH200	3.2	40	35	3.5
VH300	3.2	51	41	6
VH400	3.2	64	51	8

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

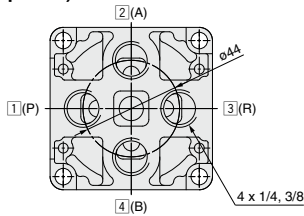
**Dimensions**

**VH30□/31□-02 to 03**

( ): Long handle type



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



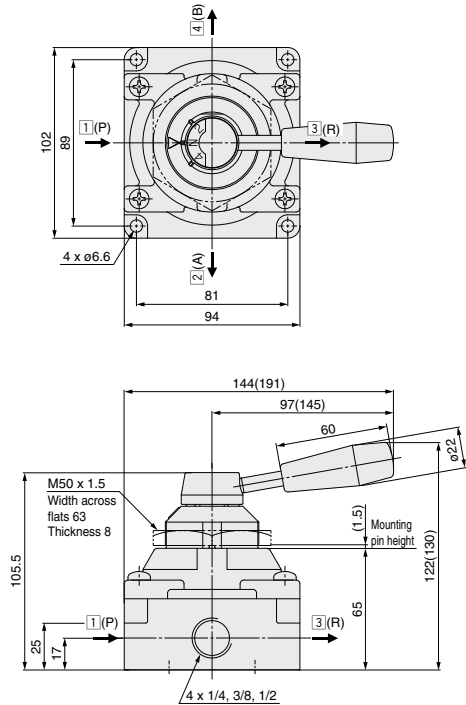
Refer to page 1699 for the panel cut dimension.

VM
VMG
VR
VR51
VHK
<b>VH</b>
VHS□
VHS

Dimensions

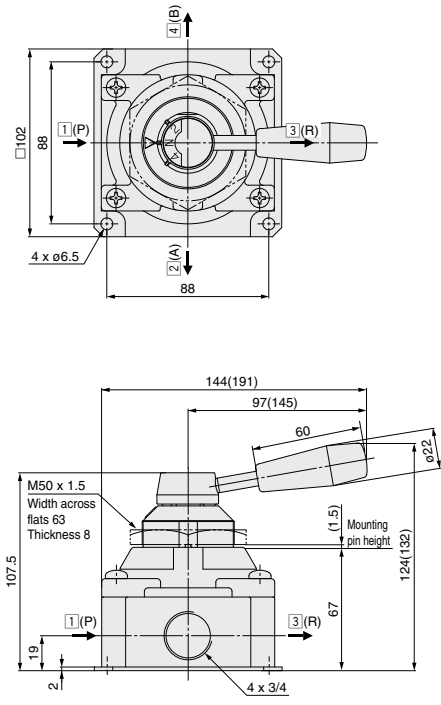
VH40□/41□-02 to 04

( ): Long handle type

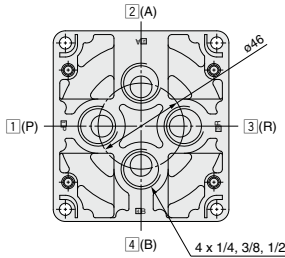


VH40□/41□-06

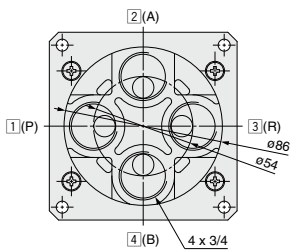
( ): Long handle type



VH42□/43□-02 to 04  
(Bottom ported)



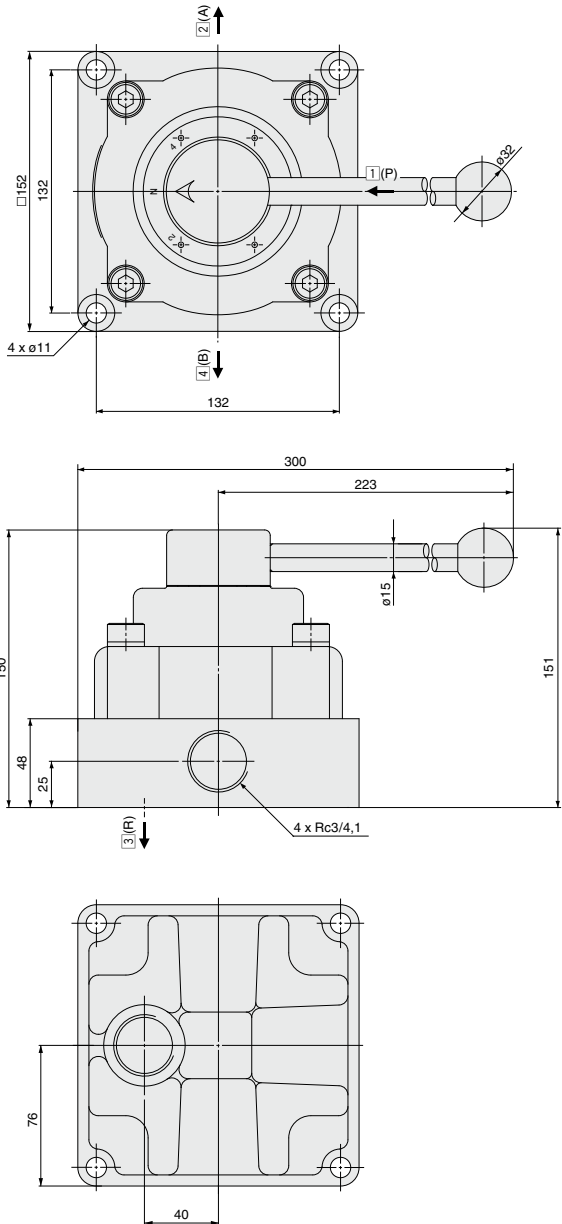
VH42□/43□-06  
(Bottom ported)



Refer to page 1699 for the panel cut dimension.

**Dimensions: Body Mount**

**VH600-06/10**



VM
VMG
VR
VR51
VHK
<b>VH</b>
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.**



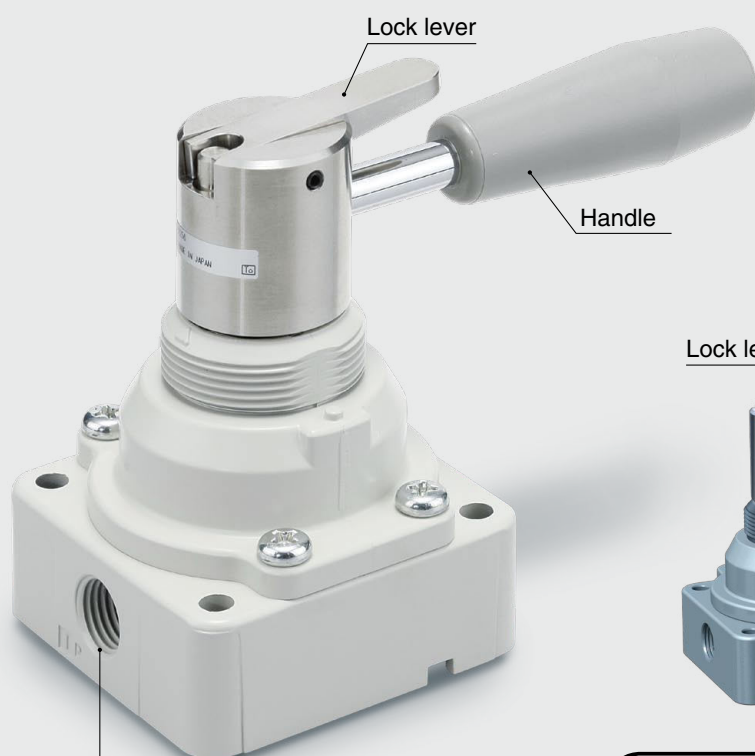
# Hand Valve with Lock Mechanism

**VH2□□/3□□/4□□-□-X256**

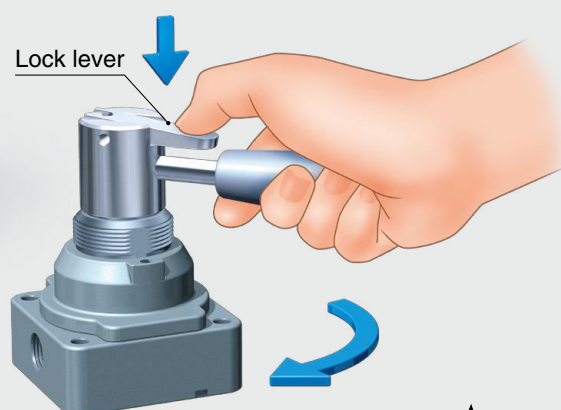
## Features

### Provided with handle lock mechanism.

Hand valve has a structure in which the handle does not move without pushing the lock lever. This prevents change-over due to accidental operation.



Port size 4 x 1/4, 3/8, 1/2



Push the lock lever and...

**Unlocked**

Handle operation becomes possible!

\* Operate the handle with the lock lever pushed.

## Specifications

The flow rate characteristics are the same as the standard product. Refer to the **Web Catalog**.

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1.0 MPa
Ambient temperature and operating fluid temperature	-5 to 60°C (No freezing)
Operating angle	90°



### Caution

To ensure the safest possible operation of this product, please be sure to thoroughly read the "Safety Instructions" in our "Best Pneumatics" catalog before use.

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SP163X-005E  
P: UX

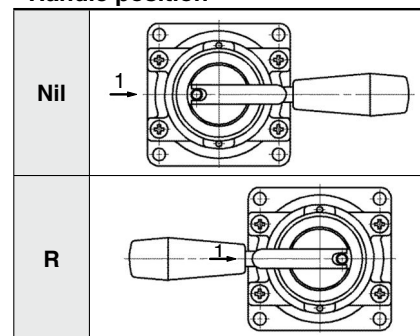
## How to Order

VH **2** **0** **1** - **02** - **Nil** - X256

### Body size

<b>2</b>	1/4 base
<b>3</b>	3/8 base
<b>4</b>	1/2 base

### Handle position



### Piping/Mounting

Symbol	Mounting method	Piping		
		VH2	VH3	VH4
<b>0</b>	Body			
<b>1</b>	Panel mount			

\* For VH2□□, 3(R) port is located on the bottom.

### Port size

Symbol	Port size	Body size		
		VH2	VH3	VH4
<b>02</b>	1/4	●	●	●
<b>03</b>	3/8	—	●	●
<b>04</b>	1/2	—	—	●

### Switching method

<b>0</b>	<b>3-position closed center</b> 
<b>1</b>	<b>3-position exhaust center</b> 
<b>2</b>	<b>2-position</b> 

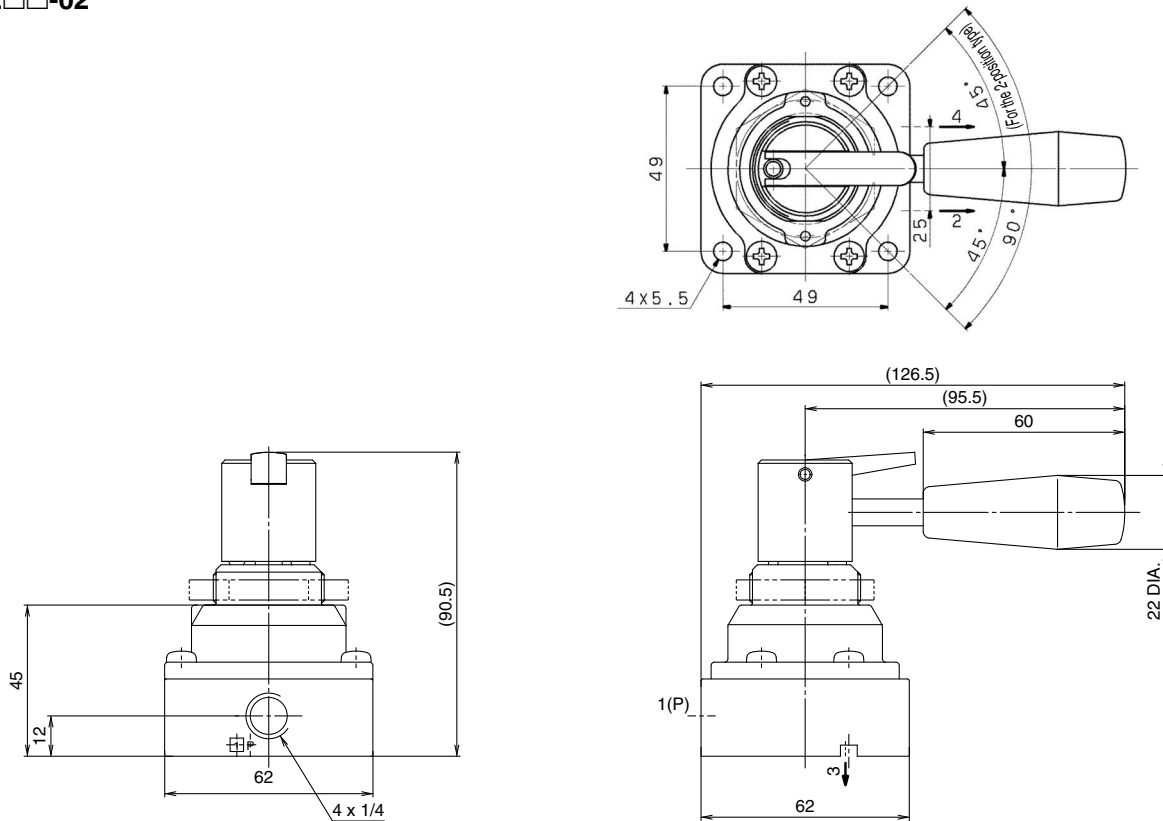
### Thread type

<b>Nil</b>	Rc
<b>N</b>	NPT
<b>F</b>	G

## Dimensions

[mm]

### VH2□□-02



### VH3□□-02 to 03

