

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 characteristics								Weight (kg)																				
				Body mount	Panel mount	1(P)→2(A)/4(B)				2(A)/4(B)→3(R)																								
						C[dm³/(s·bar)]	b	Cv	Q [l/min(ANR)] ^{*)}	C[dm³/(s·bar)]	b	Cv	Q [l/min(ANR)] ^{*)}																					
VH2	1/4	3 (Closed centre)		VH200-02	VH210-02	1.5	0.25	0.38	370	1.5	0.25	0.38	370	0.42																				
		3 (Exhaust centre)		VH201-02	VH211-02																													
		2 (Position)		VH202-02	VH212-02																													
		3 (Closed centre)		VH240-02	VH250-02																													
		3 (Exhaust centre)		VH241-02	VH251-02																													
		2 (Position)		VH242-02	VH252-02																													
		3 (Closed centre)		VH220-02	VH230-02										1.1	0.2	0.28	263	1.1	0.2	0.28	263	0.71											
		3 (Exhaust centre)		VH221-02	VH231-02																													
		2 (Position)		VH222-02	VH232-02																													
VH3	1/4, 3/8	3 (Closed centre)		VH300-02/03	VH310-02/03	5.4 (1/4)	0.25	1.25 (1/4)	1332	5.4 (1/4)	0.25	1.25 (1/4)	1332	0.71																				
		3 (Exhaust centre)		VH301-02/03	VH311-02/03																													
		2 (Position)		VH302-02/03	VH312-02/03																													
		3 (Closed centre)		VH320-02/03	VH330-02/03																			4.5 (1/4)	0.2	1.1 (1/4)	1078	4.5 (1/4)	0.2	1.1 (1/4)	1078	1.28		
		3 (Exhaust centre)		VH321-02/03	VH331-02/03																													
		2 (Position)		VH322-02/03	VH332-02/03																													
		VH4	1/4 to 3/4	3 (Closed centre)											VH400-02 to 06	VH410-02 to 06	14.3 (1/4)	0.25	3.4 (1/4)	3526	14.3 (1/4)	0.25	3.4 (1/4)										3526	1.28
				3 (Exhaust centre)											VH401-02 to 06	VH411-02 to 06																		
				2 (Position)											VH402-02 to 06	VH412-02 to 06																		
3 (Closed centre)				VH420-02 to 06	VH430-02 to 06	11.9 (1/4)	0.2	2.9 (1/4)	2850	11.9 (1/4)	0.2	2.9 (1/4)	2850	1.28																				
3 (Exhaust centre)				VH421-02 to 06	VH431-02 to 06																													
2 (Position)				VH422-02 to 06	VH432-02 to 06																													
VH6	3/4, 1			3 (Closed centre)											VH600-06/10	—								37 (3/4)	0.25	10.2 (3/4)	9123	37 (3/4)	0.25	10.2 (3/4)	9123	9.7		
				3 (Exhaust centre)											VH601-06/10																			
				2 (Position)											VH602-06/10																			

* These values have been calculated according to ISO 6358 and indicate the flow rate under standard conditions with an inlet pressure of 0.6 MPa (relative pressure) and a pressure drop of 0.1 MPa.

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

—	Standard
X116	Handle (Red)

Suffix symbol

Symbol	Description	Body size			
		VH2	VH3	VH4	VH6
—	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.

Piping/Mounting

Symbol	Mounting method	Note) 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.

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

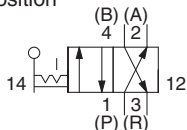
—	Rc
N	NPT
F	G

Function

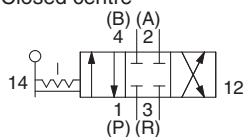
0	3 position closed centre
1	3 position exhaust centre
2	2 position

Symbol

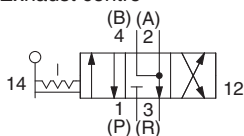
2 position



Closed centre

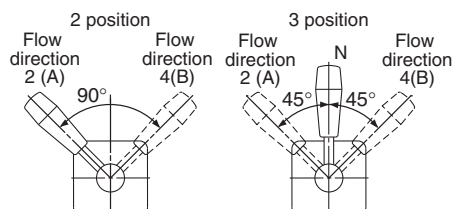


Exhaust centre



Handle Operation Angle and Air Flow Direction

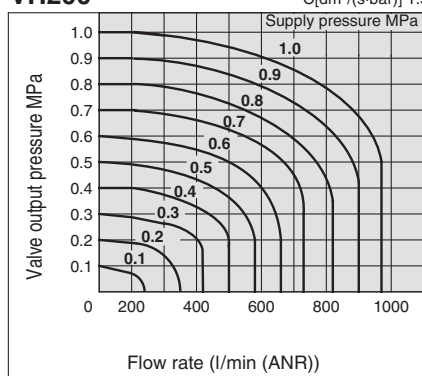
(Refer to the figures of piping direction to the page 1.)



Flow Rate Characteristics

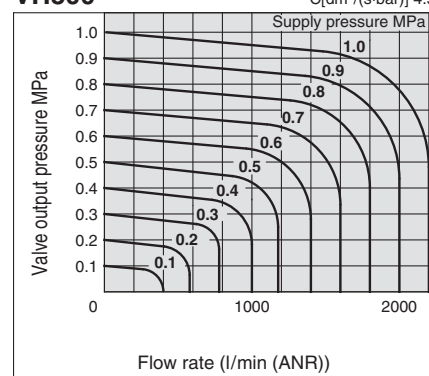
VH200

C[dm³/(s·bar)] 1.5



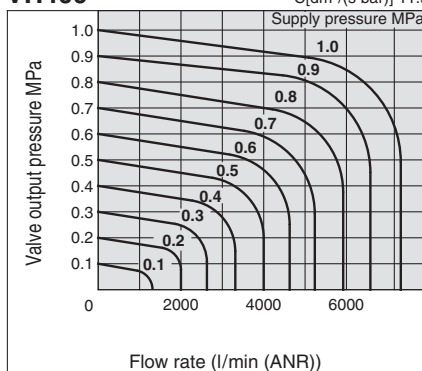
VH300

C[dm³/(s·bar)] 4.5



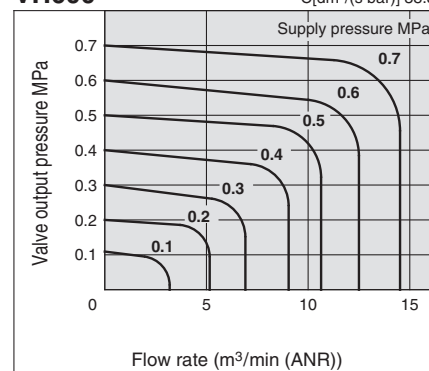
VH400

C[dm³/(s·bar)] 11.9



VH600

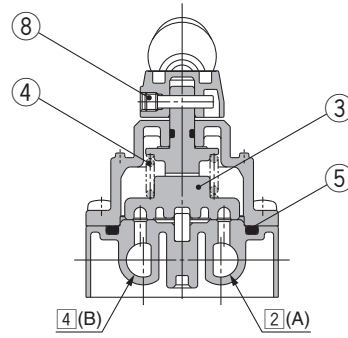
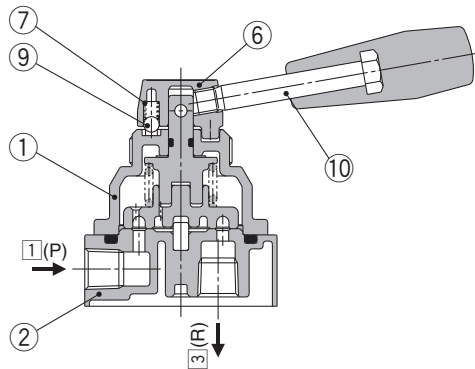
C[dm³/(s·bar)] 38.8



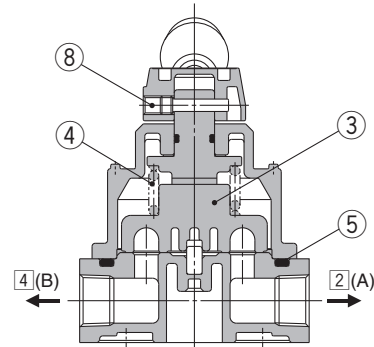
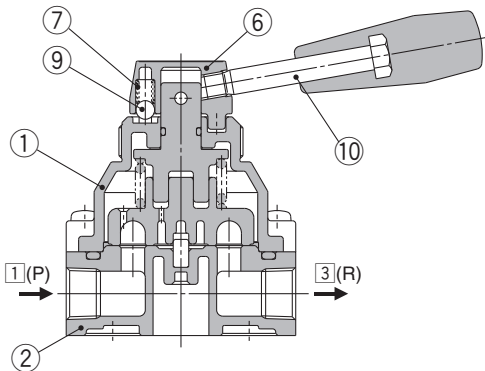
VH Series

Construction

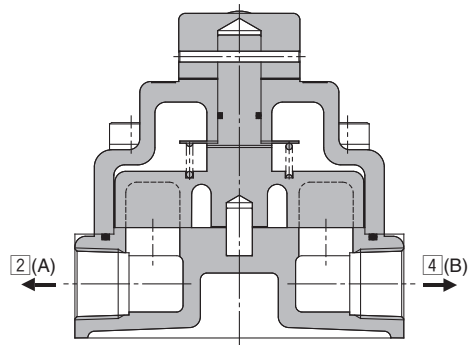
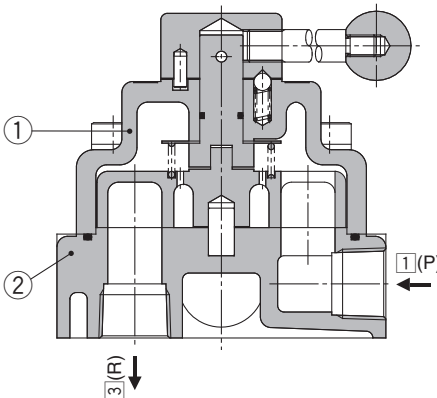
VH200



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			
	4	Slide ring spring	Piano wire	KT-VH2□□-N	KT-VH3□□-N	KT-VH4□□-N
	5	O-ring	NBR			
Handle head assembly*	6	Handle head	Zinc alloy			
	7	Spring	Piano wire	24403A	24413A	24413A
	8	Pin	Structural steel			
	9	Steel ball	SUJ			
Handle head assembly*	6	Handle head	Zinc alloy			
	7	Spring	Piano wire	244036A	244125A	244125A
	8	Pin	Structural steel			
	9	Steel ball	SUJ			
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.

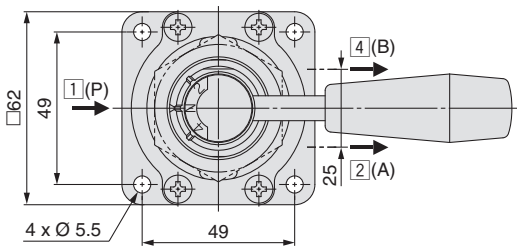
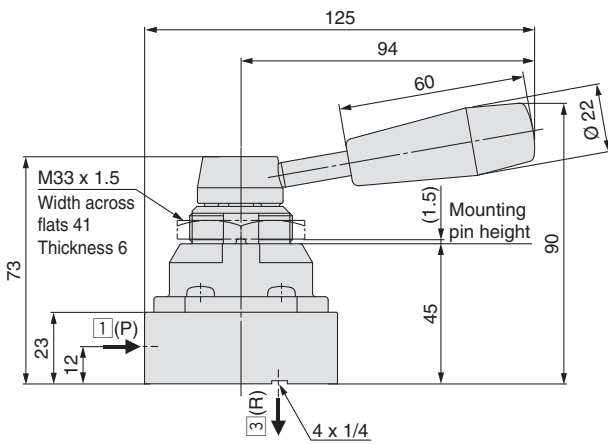
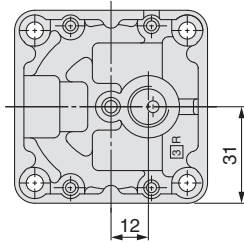
Part No. of Lock Nut for Panel Mount

Series	Part no.
VH200	244010
VH300	24418
VH400	240258

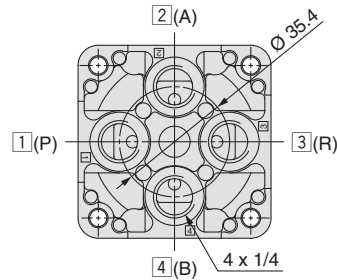
Note) Not applicable to the VH600 series.

Dimensions

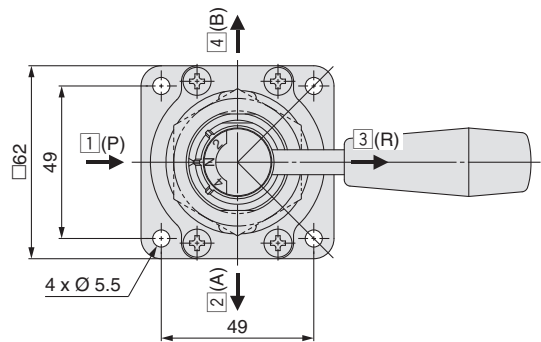
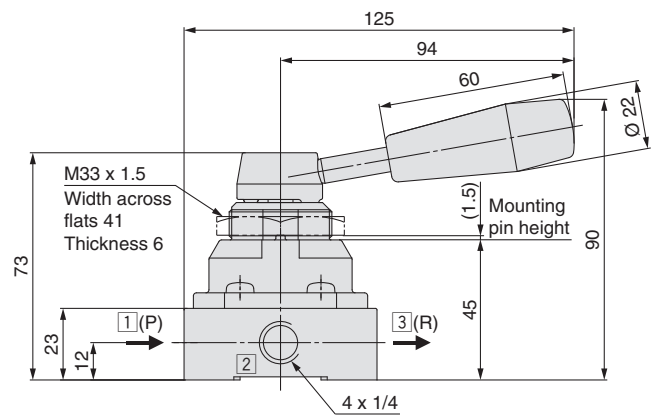
VH20□/21□-02



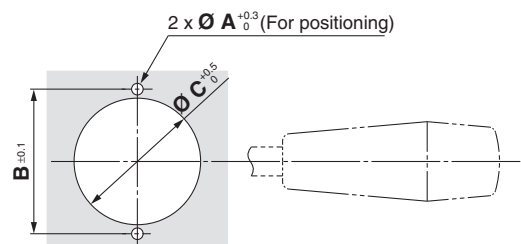
VH22□/23□-02 (Bottom ported)



VH24□/25□-02



Panel cut dimension



Max. panel thickness D

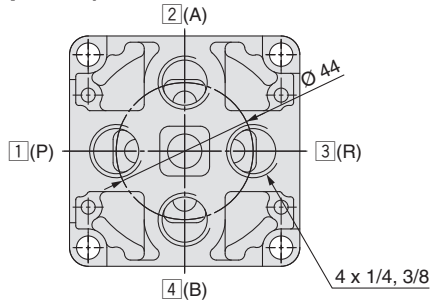
	[mm]			
	A	B	C	D
VH200	3.2	40	35	3.5
VH300	3.2	51	41	6
VH400	3.2	64	51	8

VH Series

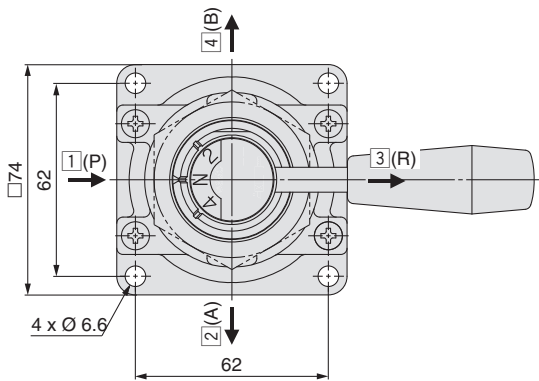
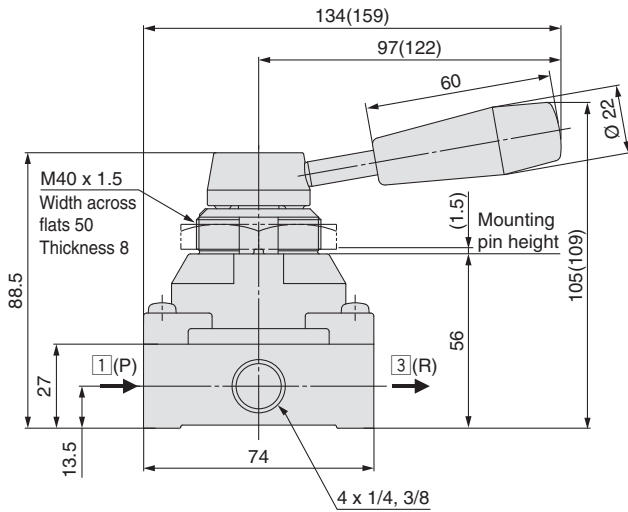
Dimensions

(): Long handle type

VH32□/33□-02 to 03 (Bottom ported)



VH30□/31□-02 to 03

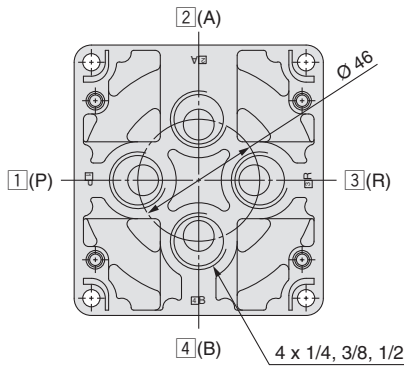


Refer to page 4 for the panel cut dimension.

Dimensions

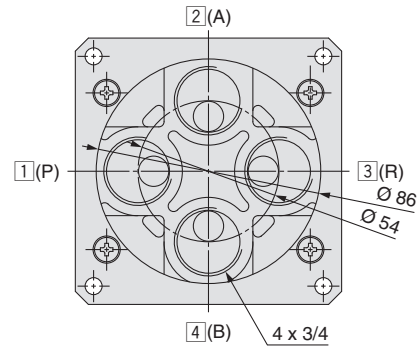
VH42□/43□-02 to 04 (Bottom ported)

(): Long handle type

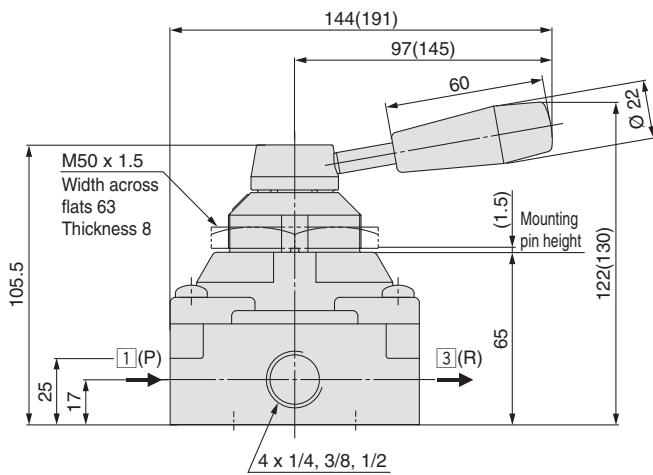


VH42□/43□-06 (Bottom ported)

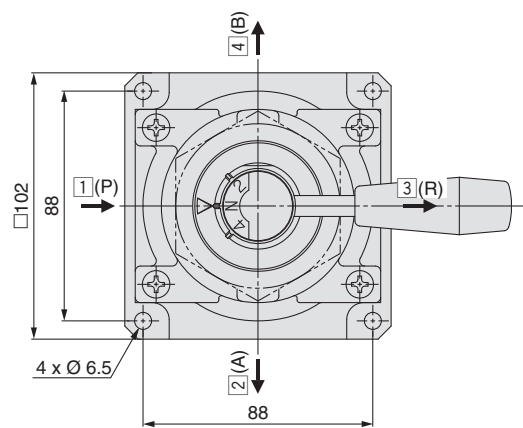
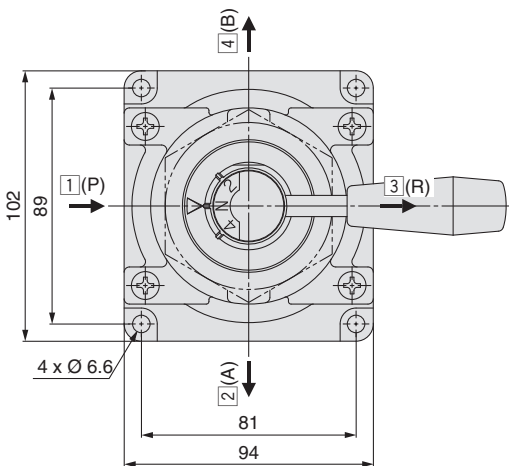
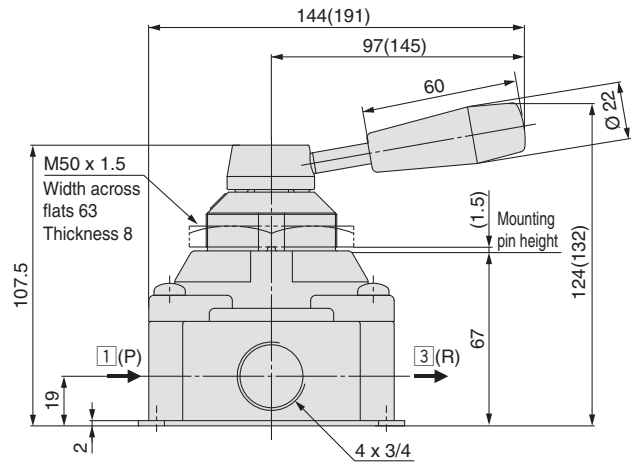
(): Long handle type



VH40□/41□-02 to 04



VH40□/41□-06

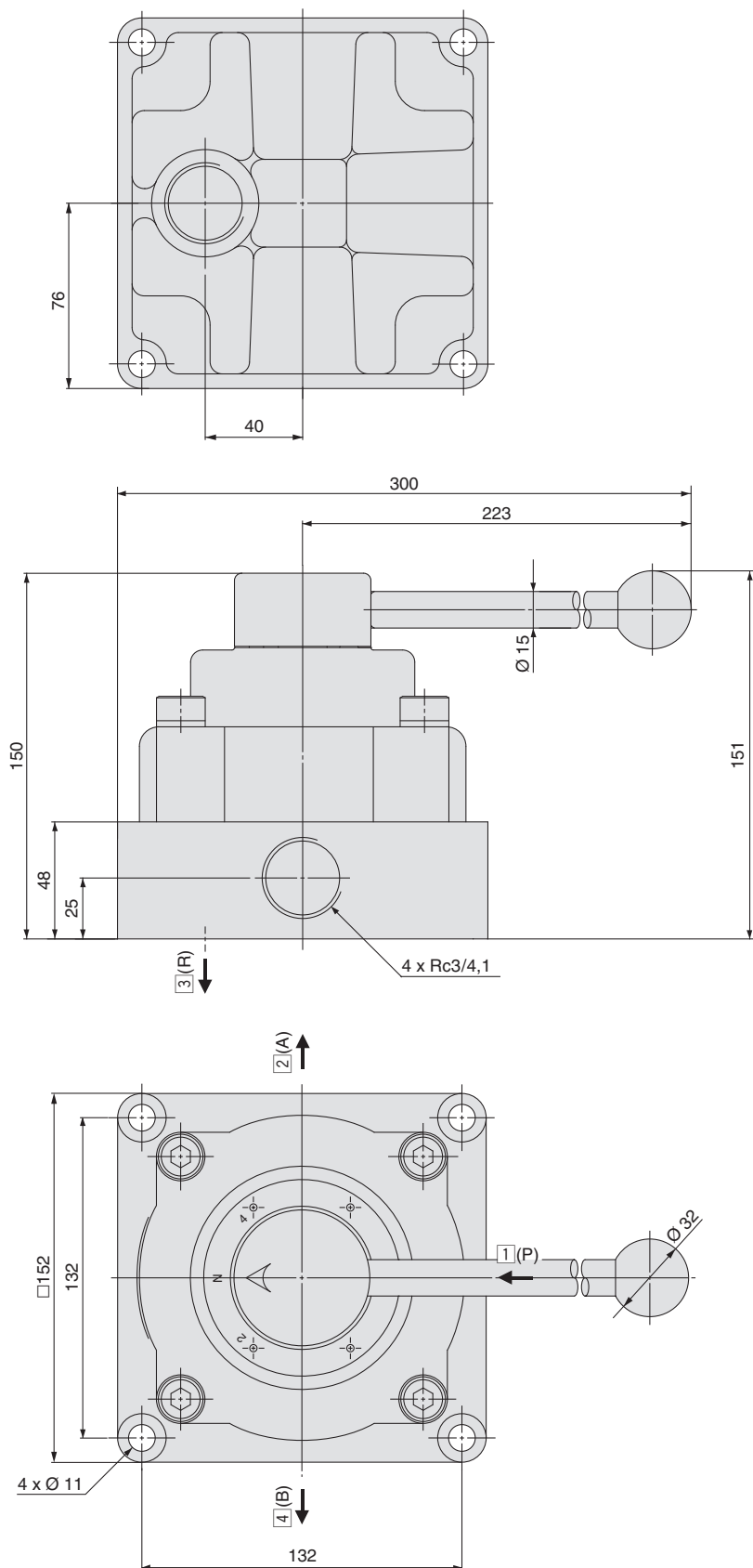


Refer to page 4 for the panel cut dimension.

VH Series

Dimensions: Body Mount

VH600-06/10





VH Series Specific Product Precautions

Be sure to read this before handling the products.

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 centre 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.**