

Residual Pressure Relief 3 Port Hand Valve Series VHS

The VHS Series is a safety manual switching valve for preventing accidents that could be caused by the residual pressure while performing maintenance service on a pneumatic system.

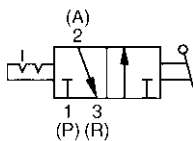
Easy to operate

The direction of air flow can be verified at a glance by the orientation of the handle.

The valve is compact yet provides a large capacity.



JIS Symbol



Model

Piping	Left IN1(P)*	VHS400-02	VHS400-03	VHS400-04	VHS500-06
	Right IN1(P)*	VHS401-02	VHS401-03	VHS401-04	VHS501-06
Port size		1/4	3/8	1/2	3/4
Effective area (mm ²)(CV)	1(P)→2(A)	21(1.18)	35(1.97)	57(3.20)	93(5.22)
	2(A)→3(R)	35(1.97)	54(3.03)	76(4.27)	105(5.90)
Weight (kg)		0.29	0.27	0.25	0.34

* Left or right to the front face of the handle.

Specifications

Fluid	Air
Operating pressure range	0.1 to 1.0MPa
Ambient and fluid temperature	-5 to 60°C (No freezing)
Handle switching angle	90°
Required switching force	7.5kgf (At 1.0MPa)
Coating color (1)	Handle: Black, Body: Platinum silver

Note 1) Handle: Silver, Body: Red (Made to order "-X1")

How to Order

VHS 4 0 0 02

Residual pressure relief 3 port valve

Body size

4	1/2
5	3/4

Piping

0	Left(P)
1	Right(P)

Port thread

—	Rc(PT)
N	NPT
F*	G(PF)

Coating color

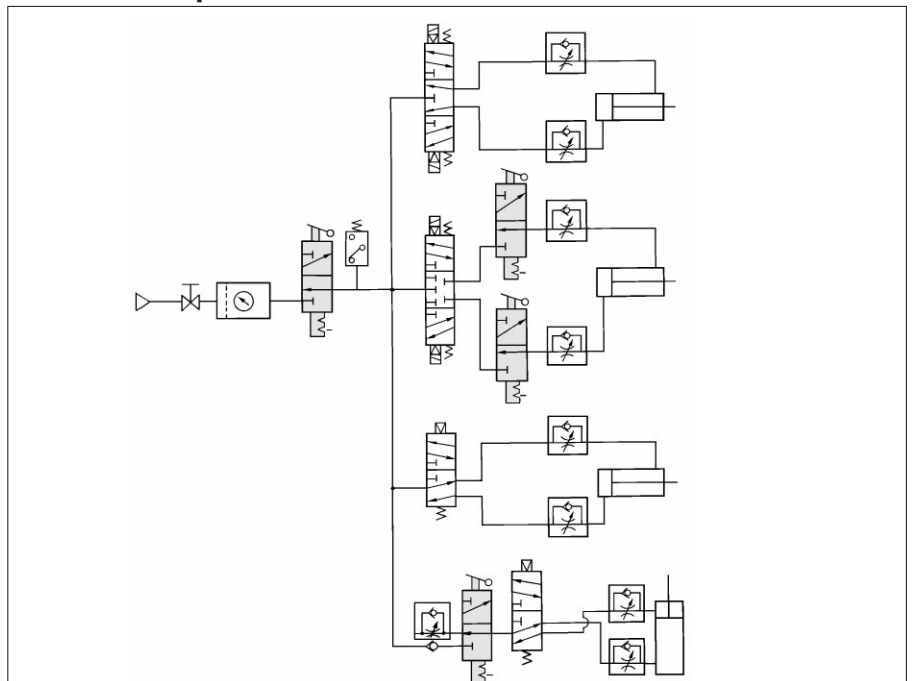
—	Standard color
X1	Handle: Silver, Body: Red

Port size

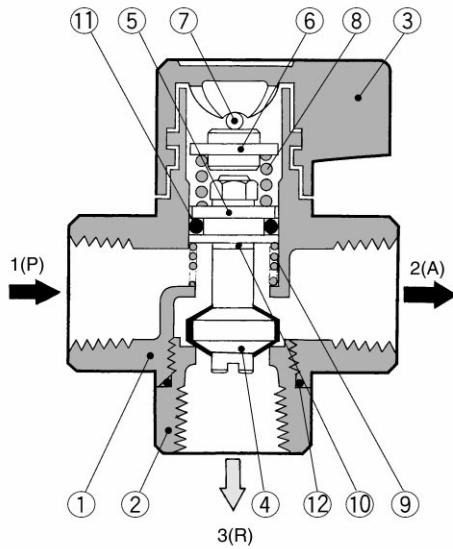
02	1/4	VSH40□
03	3/8	
04	1/2	VSH50□
06	3/4	

* Applicable port size: 1/4, 3/8

Circuit Example



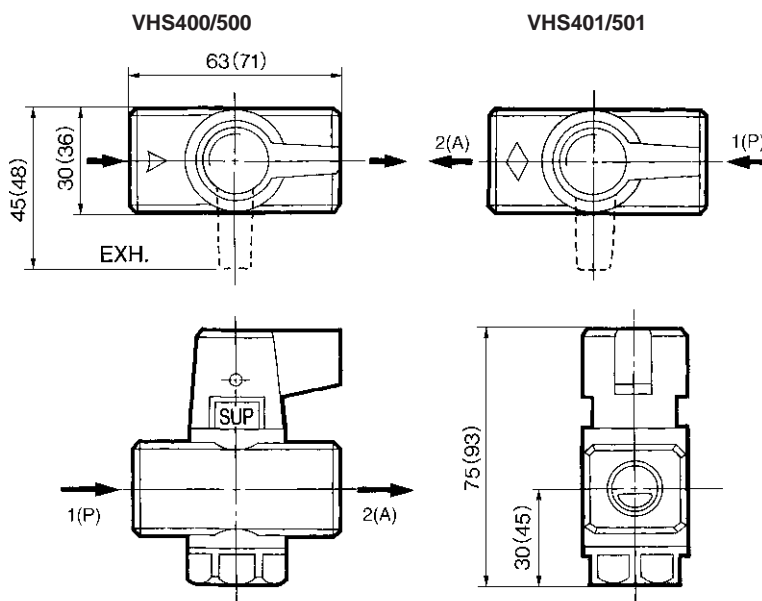
Construction



Components Parts

No.	Description	Material	Note
①	Body	ADC12	Chromated
②	Valve guide	ZDC2	Chromated
③	Handle	Zinc alloy	Chromated
④	Valve	C3604B rubber-lining	Chromated
⑤	Piston	C3604B	
⑥	Spring holder	C3604B	
⑦	Parallel pin	SWP	Zinc chromate
⑧	Spring	SWPB	Zinc chromate
⑨	Valve spring	SUS304W	
⑩	Packing	PVC	
⑪	O ring	NBR	JIS B2401 p12.5
⑫	O ring	NBR	Special

Dimensions



(): VHS500

⚠ Precautions

Be sure to read before handling. Refer to p. 0-33 to 0-36 for Safety Instructions and common precautions.

Design

⚠ Warning

- ① When exhaust piping is connected to 3(R) port, effective area should be larger than the specified value mentioned in the table below.

If it is smaller, air leakage will occur due to back pressure.

Model	Effective area (mm ²)
VHS400, 401	5
VHS500, 501	8

- ① Supply pressure only from 1(P) port for prevention of operating errors.
- ② Negative pressure is not applicable. It will cause malfunctions.

Selection

⚠ Caution

- ① Because an improper operation or an air leak could result if the handle is stopped in an intermediate position, make sure to operate the valve quickly, making sure that the switching has been properly effected.
- ② Do not remove the retaining screw of the handle. If the screw falls off, it could lead to a malfunction.

Piping

⚠ Warning

- ① The port marked with "▷" which means the entrance of compressed air is 1(P) port side (supply side) and the port on its opposite side is 2(A) port side (secondary side). The port on the right angled position is EXH side. Please pay attention to prevent any malfunction when connecting.
- ② In dusty ambient, silencer should be installed to 3(R) port.

Air Supply

⚠ Caution

- ① Mount an air filter to supply side close to the valve. Filtration rating has to be 5µm or smaller.

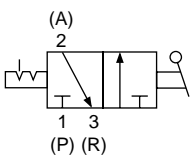
Conforming to OSHA Standard Pressure Relief 3 Port Valve with a Locking Hole VHS2500/3500/4500/5500

When in the exhaust position, the valve may be padlock secured. Prevents accidental start-ups while personnel are cleaning or servicing equipment.

Combination with a modular style FRL is possible.



JIS Symbol



OSHA standard (Occupational Safety and Health Administration Department of Labor)

For safety control, OSHA rule requires energy sources for certain equipment be turned off or disconnected and that the device either be locked or labelled with a warning tag.

Model

Model	VHS2500		VHS3500		VHS4500			VHS5500		
Piping port	1(P)/2(A)	1/8	1/4	1/4	3/8	1/4	3/8	1/2	3/4	1
	3(R)	1/8		1/4		3/8			1/2	
Effective area (mm ²) (Cv)	1(P) → 2(A)	10 (0.56)	14 (0.78)	16 (0.89)	31 (1.72)	22 (1.22)	38 (2.11)	57 (3.17)	110 (6.11)	130 (7.22)
	2(A) → 3(R)	11 (0.61)	16 (0.89)	14 (0.78)	29 (1.61)	15 (0.83)	29 (1.61)	51 (2.83)	33 (1.83)	40 (2.22)
Weight (kg)	0.19		0.25		0.36			0.83		

Specifications

Fluid	Air
Operating pressure range	0.1 to 1.0MPa
Proof pressure	1.5MPa
Ambient and fluid temperature	-5 to 60°C (No freezing)
Handle switching angle	90°
Paint color (Standard)	Handle: Black, Body: Platinum silver

How to Order

VHS 2 5 00 — [] 01 — [] — []

Pressure relief 3 port valve

- Port thread

—	Rc (PT)
F	G (PF)
N	NPT
- With locking hole
- Body size

2	1/8
3	3/8
4	1/2
5	1
- Optional color

—	Standard color
X1	Handle & Body: Red
X116	Handle: Red
- Piping direction

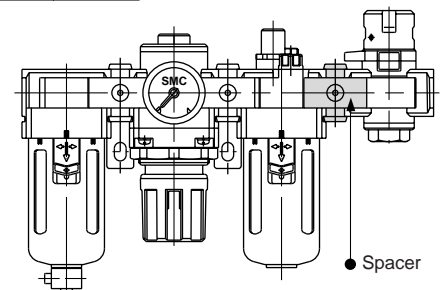
NIL	Left side 1(P) (Standard)
R	Right side 1(P) (Option)
- Port size

01	1/8
02	1/4
03	3/8
04	1/2
06	3/4
10	1

Interface part is required if attached to a modular FRL.
(Refer to the table below for the interface part number.)

Pressure relief 3 port valve	Interface P/N	Applicable F.R.L
VHS2500	Y20	AC 2000
VHS3500	Y30	AC 3000
VHS4500	Y40	AC 4000*
VHS5500	Y60	AC5000/5500/6000

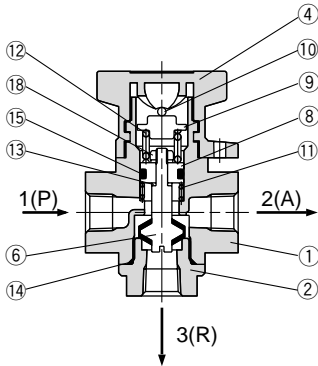
*Combination with "AC4000-06" not available.



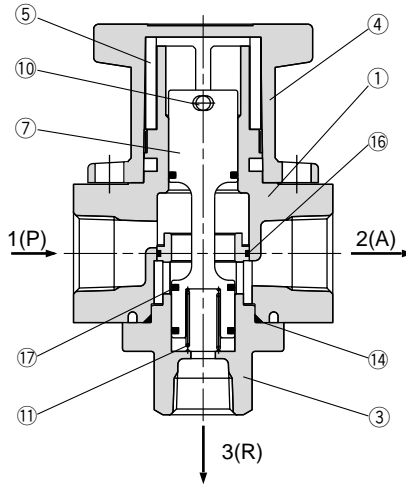
Pressure Relief 3 Port Valve with a Locking Hole *Series VH*

Construction

VHS2500/3500/4500



VHS5500



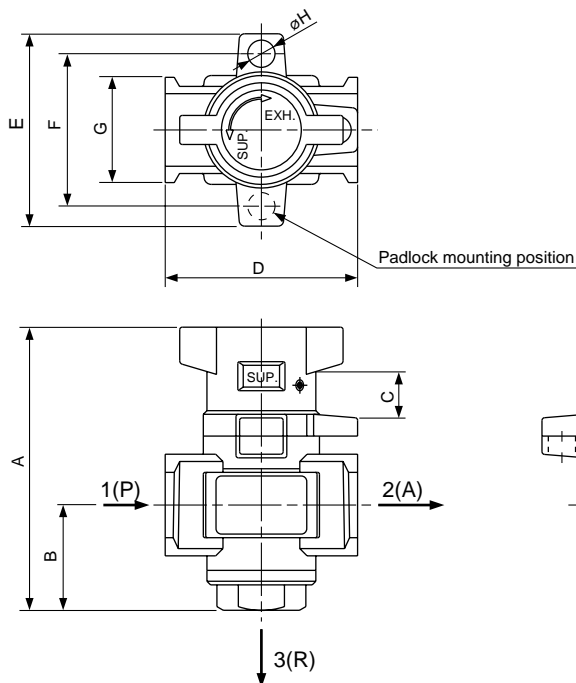
Component Parts

No.	Description	Material	Note
①	Body	ADC12	Chromated
②	Valve guide	ZDC2	Chromated
③	Spool guide	ADC12	Chromated
④	Handle	Zinc alloy	Chromated
⑤	Cam ring	Zinc alloy	Chromated
⑥	Valve	C3604B	—
⑦	Spool	A2017B	Chromated
⑧	Piston	C3604B	—
⑨	Spring holder	C3604B (VHS4500: SWCH)	(VHS4500: Teflon coated)

No.	Description	Material	Note
⑩	Parallel pin	SWP	Zinc chromated
⑪	Valve spring	SUS304-WPB	—
⑫	Spring	SWP-B	Zinc chromated
⑬	Packing	PVC	—
⑭	O ring	NBR	—
⑮	O ring	NBR	Teflon coated
⑯	O ring	NBR	—
⑰	O ring	NBR	—
⑱	Hexagon lock nut	SWCH	—

Dimensions

VHS2500/3500/4500/5500



Model	A	B	C	D	E	F	G	H
VHS2500	60	20	12.8	40	44	33	28	7.5
VHS3500	78	29	12.8	53	53	42	29	7.5
VHS4500	85	32	12.6	70	64	49	36	10
VHS5500	136	56	32	90	80	65	54	10

⚠ Precautions

Be sure to read before handling. Refer to p. 0-33 to 0-36 for Safety Instructions and common precautions.

Installation

⚠ Warning

- When exhaust piping is connected to 3(R) port, effective area should be larger than the specified value mentioned in the table below.
If it is smaller, air leakage will occur due to back pressure.

Model	Effective area (mm ²)
VHS 2500, 3500	5
VHS 4500	8

- Supply pressure only from 1(P) port for prevention of any operating errors.
- Negative pressure is not applicable. It will cause malfunctions.

Selection

⚠ Caution

- Because an improper operation or an air leak could result if the handle is stopped in an intermediate position, make sure to operate the valve quickly, making sure that the switching has been properly effected.
- Do not remove the retaining screw of the handle. If the screw falls off, it could lead to a malfunction.

Piping

⚠ Warning

- The port marked with “▷” which means the entrance of compressed air is 1(P) port side (supply side) and the port on its opposite side is 2(A) port side (secondary side). The port on the right angled position is EXH side. Please pay attention to prevent any malfunction when connecting.
- In dusty atmospheres, silencer should be installed to 3(R) port.

Air Supply

⚠ Warning

- Mount air filter to supply side close to valve.
Filtration rating has to be 5µm or smaller.