



Operation Manual

PRODUCT NAME

Pressure Relief 3 Port Valve With Locking Holes

MODEL / Series / Product Number

VHS20-(F,N)01~02A,B(-B,S)(-K,R,Z)

VHS30-(F,N)02~03A,B(-B,S)(-K,R,Z)

VHS40-(F,N)02~04A,B(-B,S)(-K,R,Z)

VHS40-(F,N)06A,B(-B,S)(-K,R,Z)

VHS50-(F,N)06~10A,B(-B,S)(-K,R,Z)

VHS2510-(F,N)01~02A,B(-B,S)(-K,R,Z)

VHS3510-(F,N)02~03A,B(-B,S)(-K,R,Z)

VHS4510-(F,N)02~04A,B(-B,S)(-K,R,Z)

VHS4510-(F,N)06A,B(-B,S)(-K,R,Z)

VHS5510-(F,N)06~10A,B(-B,S)(-R,Z)

SMC Corporation

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Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of “**Caution**,” “**Warning**” or “**Danger**.” They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)^{*)}, and other safety regulations.

*1) ISO 4414: Pneumatic fluid power - General rules and safety requirements for systems and their components
ISO 4413: Hydraulic fluid power - General rules and safety requirements for systems and their components
IEC 60204-1: Safety of machinery - Electrical equipment of machines - Part 1: General requirements
ISO 10218-1: Robots and robotic devices - Safety requirements for industrial robots - Part 1: Robots
etc.



Danger

Danger indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.



Warning

Warning indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.



Caution

Caution indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.



Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.

1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. Our products cannot be used beyond their specifications. Our products are not developed, designed, and manufactured to be used under the following conditions or environments. Use under such conditions or environments is not covered.

1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Use for nuclear power, railways, aviation, space equipment, ships, vehicles, military application, equipment affecting human life, body, and property, fuel equipment, entertainment equipment, emergency shut-off circuits, press clutches, brake circuits, safety equipment, etc., and use for applications that do not conform to standard specifications such as catalogs and operation manuals.
3. Use for interlock circuits, except for use with double interlock such as installing a mechanical protection function in case of failure. Please periodically inspect the product to confirm that the product is operating properly.



Safety Instructions

Caution

We develop, design, and manufacture our products to be used for automatic control equipment, and provide them for peaceful use in manufacturing industries. Use in non-manufacturing industries is not covered.

Products we manufacture and sell cannot be used for the purpose of transactions or certification specified in the Measurement Act.

The new Measurement Act prohibits use of any unit other than SI units in Japan.

Limited warranty and Disclaimer/Compliance Requirements

The product used is subject to the following “Limited warranty and Disclaimer” and “Compliance Requirements”. Read and accept them before using the product.

Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first.*2)
Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.
This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog for the particular products.

***2) Vacuum pads are excluded from this 1 year warranty.**

A vacuum pad is a consumable part, so it is warranted for a year after it is delivered.

Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty

Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

Precautions on Design



Warning

1. If no leakage is allowed due to the environment, it cannot be used. Or operating fluid is not air, it cannot be used.
2. Do not apply negative pressure. It may result in malfunction.
3. Do not supply air pressure from ports other than the 1(P) port. The valve will malfunction when air pressure is supplied from other ports.

Selection



Warning

1. Grease used on the internal sliding parts and seals may flow to the outlet side.

Installation and Adjustment



Warning

1. Confirm the symbols “1” and “2” before the valve is connected. The port marked “1” is the air inlet and the port marked “2” is the outlet.

Pressurization is only possible via the inlet port “1”. Reverse connection may cause malfunction. The port symbols and corresponding piping types are shown in the table below.

| Port symbol | Piping type |
|-------------|-------------|
| 1 | Inlet |
| 2 | Outlet |
| 3 | Exhaust |



Caution

1. The valve must be switched to each position instantly and securely. Stopping the knob between the extreme positions may cause malfunction.
2. Do not remove the mounting screws from the bonnet. This may cause malfunction.
3. Double action type requires two actions (push the handle + turn). Confirm that the handle is pushed properly before turning it. If the handle is not pushed properly to the end, the internal parts will be broken by turning the handle.

Piping

Warning

1. Before piping is connected, the pipes should be thoroughly blown through with air (flushing) or washed to remove chips, cutting oil and other debris from inside. Should they remain, they could cause malfunction.
2. When connecting pipes and fittings, etc., be sure that neither chips from the pipe threads nor sealing material get inside the valve. When a sealant tape is used, leave 1 thread ridge exposed at the end of the threads.
3. When screwing a piping component into the valve, secure the female threaded side and apply the recommended tightening torque. Under tightening may result in loosening or sealing failure while over tightening may cause damage to threads and other problems.

Recommended tightening torque

Unit: N-m

| Connection thread | 1/8 | 1/4 | 3/8 | 1/2 | 3/4 | 1 |
|-------------------|--------|----------|----------|----------|----------|----------|
| Torque | 7 to 9 | 12 to 14 | 22 to 24 | 28 to 30 | 28 to 30 | 36 to 38 |

Air Supply

Warning

1. Use clean air. Do not use compressed air which contains chemicals, synthetic oils containing organic solvents, salts or corrosive gases, etc., as this can cause damage or malfunction.
2. Install an air dryer or after cooler on the upstream side of the pressure release 3 port valve because air containing excessive drainage may cause malfunction.

Caution

1. Install an air filter of 5 μm filtration on inlet side.
2. Install a mist separator on the inlet side to remove carbon powder from the compressor or other equipment. An excessive amount of carbon dust ingress via the inlet may cause the valve to malfunction.

Refer to SMC's "Air Cleaning Equipment" catalog for further details on compressed air quality.

Operating Environment

Warning

1. Do not use valves where there is direct contact with, or in atmospheres of, corrosive gases, chemicals, salts water or steam.
2. Do not use in an explosive atmosphere.
3. Do not use in locations subject to vibration or impact. Confirm the specifications for each series.

4. A protective cover should be used to shield valves from direct sunlight.
5. Shield valves from radiated heat generated by nearby heat sources.
6. Employ suitable protective measures in locations where there is contact with water droplets, oil, or welding spatter.
7. Install a silencer into port (3) to prevent the ingress of dust if there is a lot of dust in the atmosphere. If dust enters the valve via port (3), it may cause air leakage.

If above conditions are applicable, use metal handle / bonnet type for your safety.

Maintenance



Warning

1. Perform maintenance procedures as shown in the instruction manual. If handled improperly, malfunction or damage of machinery or equipment may occur.
2. Do not disassemble the product. Improper handling will cause malfunction or breakage of the machinery or equipment.
3. When equipment is to be removed, first confirm that measures are in place to prevent dropping of driven objects and run-away of equipment, etc. Then cut the supply air pressure and electric power, and exhaust all compressed air from the system using its residual pressure release function.

When the equipment is to be started again after remounting or replacement, first confirm that measures are in place to prevent lurching of actuators and then confirm that equipment operates normally.



Caution

1. Once lubricant is introduced, be sure to continue lubrication. If it is discontinued, malfunction may result due to loss of the initial lubricant. Apply class 1 turbine oil (ISO VG32) as a lubricant. Use of other lubricants may cause malfunction.

Built-in Silencer (Option) Bronze Sintered Metal Element



Caution

1. Products made of bronze may contain uneven color due to the oxidization process of the atmosphere. However, this oxidization process occurs in the limited range of less than 1 μm of thickness and is so thin as to not affect the product characteristics. The uneven color occurs depending on the storage duration before utilization (stock as a product, stock in customers).

* If this is a problem, nickel plating is available as a request for special.

2. Applications

This product is a residual pressure release valve which is switched by hand.

3. Standard specifications

(1) Single action type

| Model | | VHS20 | VHS30 | VHS40 | VHS40-06 | VHS50 |
|---------------------------------|-----------------------------------|----------------------------|----------------|----------------|----------------|----------------|
| Fluid | | Air | | | | |
| Ambient and fluid temperature | | -5 to 60°C (No freezing) | | | | |
| Proof pressure | | 1.5MPa | | | | |
| Operating pressure range | | 0.1 to 1.0MPa | | | | |
| Color (Standard) | | Handle: Red Body: White | | | | |
| Handle operation | Pushing stroke | - | | - | | |
| | Switching angle | 90° | | | | |
| Handle operating force | Push force ^{Note1)} | - | | | | |
| | Rotating torque ^{Note1)} | 0.7N-m or less | 1.0N-m or less | 3.0N-m or less | 3.0N-m or less | 3.5N-m or less |
| Mass (Handle / Bonnet material) | A (Flame resistant PBT) | 76g | 127g | 247g | 293g | 532g |
| | B (Aluminum) | 92g | 156g | 301g | 349g | 630g |

(2) Double action type

| Model | | VHS2510 | VHS3510 | VHS4510 | VHS4510-06 | VHS5510 |
|---------------------------------|-----------------------------------|----------------------------|----------------|----------------|----------------|----------------|
| Fluid | | Air | | | | |
| Ambient and fluid temperature | | -5 to 60°C (No freezing) | | | | |
| Proof pressure | | 1.5MPa | | | | |
| Operating pressure range | | 0.1 to 1.0MPa | | | | |
| Color (Standard) | | Handle: Red Body: White | | | | |
| Handle operation | Pushing stroke | 3.2mm | | 4.2mm | | |
| | Switching angle | 90° | | | | |
| Handle operating force | Push force ^{Note1)} | 10N or less | | | | |
| | Rotating torque ^{Note1)} | 0.7N-m or less | 1.0N-m or less | 3.0N-m or less | 3.0N-m or less | 3.5N-m or less |
| Mass (Handle / Bonnet material) | A (Flame resistant PBT) | 77g | 129g | 250g | 296g | 536g |
| | B (Aluminum) | 93g | 158g | 304g | 352g | 635g |

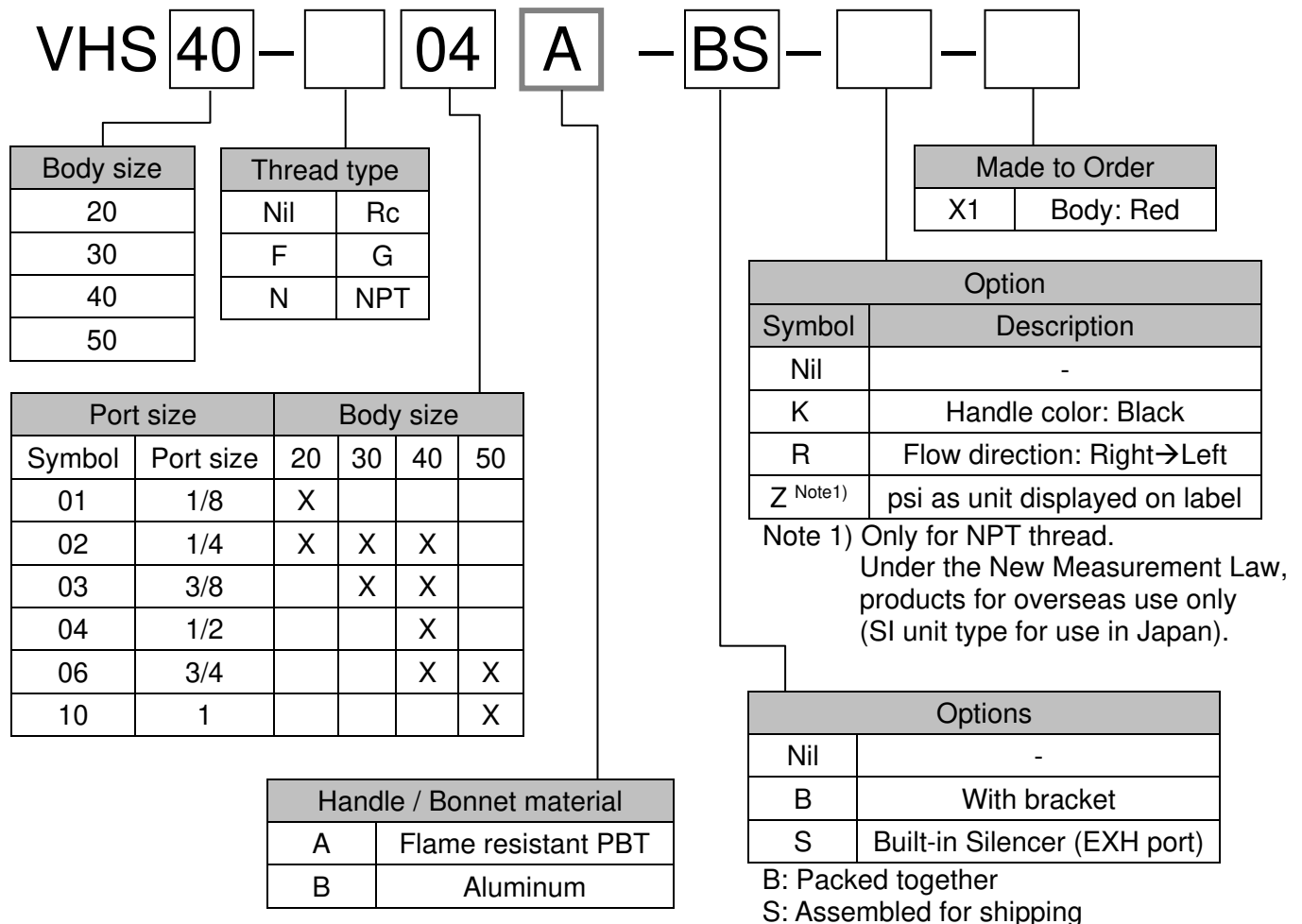
Note 1) Supply pressure: 1.0 MPa

Flow characteristics

| Model | Port size | | Supply (IN→OUT) | | | Exhaust (OUT→EXH) | | |
|------------------------|-----------|-----|-----------------|------|------|-------------------|------|------|
| | IN, OUT | EXH | C(dm³/S-bar) | b | Cv | C(dm³/S-bar) | b | Cv |
| VHS20 VHS2510 | 1/8 | 1/8 | 2.4 | 0.43 | 0.65 | 2.5 | 0.39 | 0.69 |
| | 1/4 | | 3.3 | 0.40 | 0.88 | 3.1 | 0.51 | 0.84 |
| VHS30 VHS3510 | 1/4 | 1/4 | 6.4 | 0.45 | 1.7 | 6.2 | 0.38 | 1.7 |
| | 3/8 | | 8.3 | 0.41 | 2.3 | 7.0 | 0.41 | 1.9 |
| VHS40 VHS4510 | 1/4 | 3/8 | 7.3 | 0.49 | 2.0 | 8.5 | 0.35 | 2.3 |
| | 3/8 | | 10.9 | 0.45 | 3.0 | 11.6 | 0.40 | 3.1 |
| | 1/2 | | 14.2 | 0.39 | 3.8 | 13.3 | 0.43 | 3.6 |
| VHS40-06 VHS4510-06 | 3/4 | 1/2 | 18.3 | 0.31 | 5.0 | 17.7 | 0.37 | 4.8 |
| VHS50 VHS5510 | 3/4 | 1/2 | 23.8 | 0.41 | 6.4 | 21.8 | 0.41 | 5.9 |
| | 1 | | 31.9 | 0.33 | 8.6 | 23.5 | 0.44 | 6.4 |

4. How to Order

(1) Single action type



(2) Double action type

VHS **4** **510** - **04** **A** - **BS** - **X1** **Red body**

Double Action

| Body size | |
|-----------|--|
| 2 | |
| 3 | |
| 4 | |
| 5 | |

| Thread type | |
|-------------|-----|
| Nil | Rc |
| F | G |
| N | NPT |

| Port size | | Body size | | | |
|-----------|-----------|-----------|---|---|---|
| Symbol | Port size | 2 | 3 | 4 | 5 |
| 01 | 1/8 | X | | | |
| 02 | 1/4 | X | X | X | |
| 03 | 3/8 | | X | X | |
| 04 | 1/2 | | | X | |
| 06 | 3/4 | | | X | X |
| 10 | 1 | | | | X |

| Handle / Bonnet material | |
|--------------------------|---------------------|
| A | Flame resistant PBT |
| B | Aluminum |

| Option | |
|--------------------|--------------------------------|
| Symbol | Description |
| Nil | - |
| K | Handle color: Black |
| R | Flow direction: Right→Left |
| Z ^{Note1} | psi as unit displayed on label |

Note 1) Only for NPT thread.
Under the New Measurement Law, products for overseas use only (SI unit type for use in Japan).

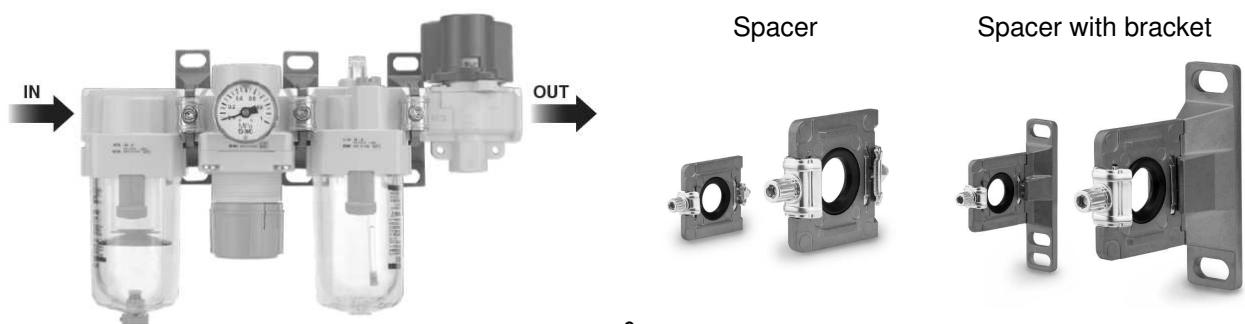
| Options | |
|---------|------------------------------|
| Nil | - |
| B | With bracket |
| S | Built-in Silencer (EXH port) |

B: Packed together
S: Assembled for shipping

For connection of the modular type FRL combination, the spacer or the spacer with bracket shown below is necessary. Please order separately.

| 3-port valve for residual pressure release | Spacer p/n | With bracket Spacer p/n | Applicable air combination |
|--|------------|-------------------------|----------------------------|
| VHS20, VHS2510 | Y200-A | Y200T-A | AC20-A |
| VHS30, VHS3510 | Y300-A | Y300T-A | AC25-A, AC30-A |
| VHS40, VHS4510 | Y400-A | Y400T-A | AC40-A |
| VHS40-06, VHS4510-06 | Y500-A | Y500T-A | AC40-06-A |
| VHS50, VHS5510 | Y600 | Y600T | AC50, AC55, AC60 |

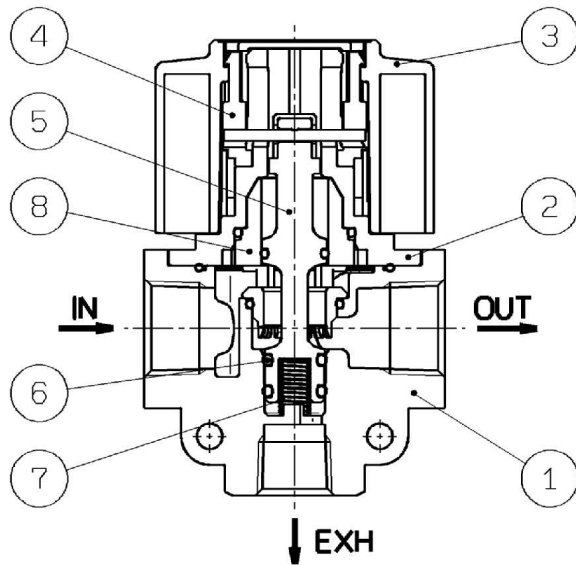
* New VHS series compatible with Old spacer Y200(T) to Y600(T) and Old AC20 to AC60.



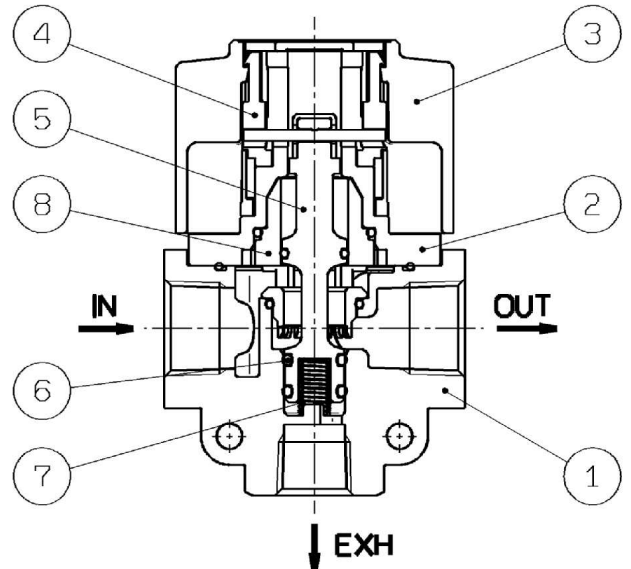
5. Construction/Parts list

(1) Standard

VHS20~50-A
VHS2510~5510-A



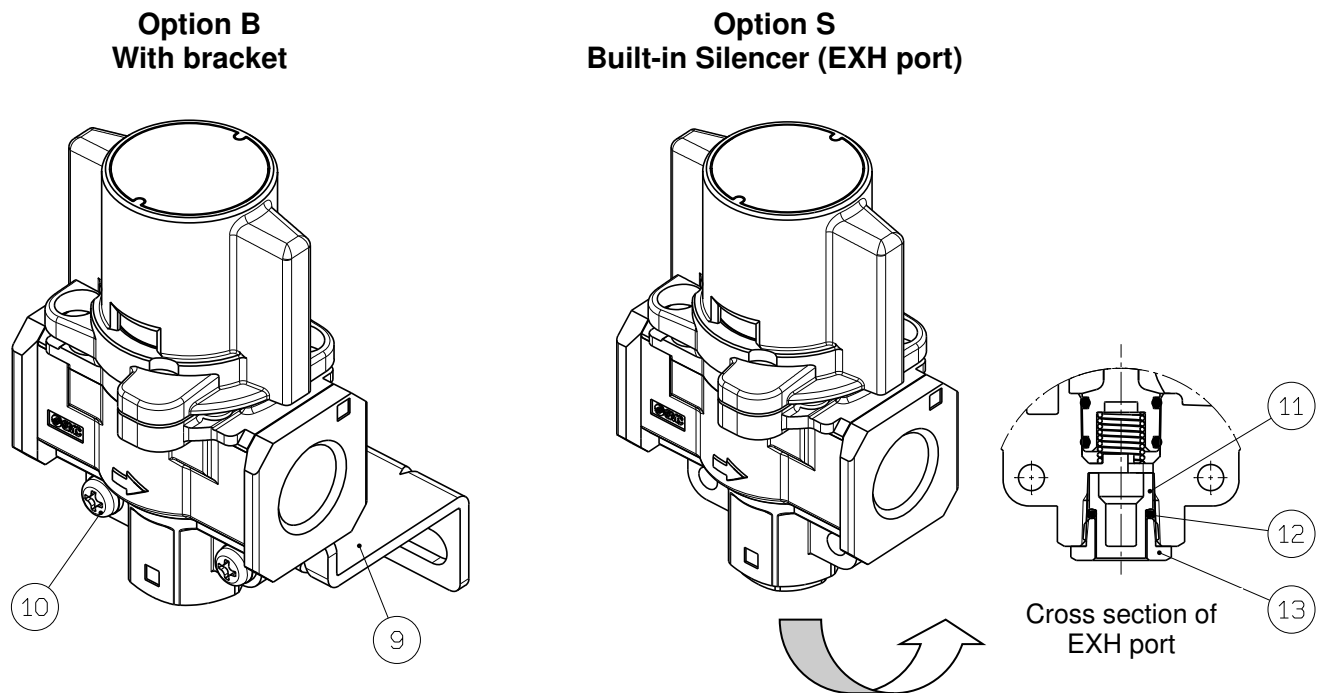
VHS20~50-B
VHS2510~5510-B



| No. | Description | Material | | Note |
|-----|--------------|--|------------------------------|-------|
| | | VHS20~50-A VHS2510~5510-A | VHS20~50-B VHS2510~5510-B | |
| 1 | Body | ADC12 | | White |
| 2 | Bonnet | Flame resistant PBT (Equivalent to UL-94 Standard V-0) | ADC12 | White |
| 3 | Handle | Flame resistant PBT (Equivalent to UL-94 Standard V-0) | ADC12 | Red |
| 4 | Cam ring | POM | | - |
| 5 | Spool | PBT | | - |
| 6 | Spool O-ring | H-NBR | | - |
| 7 | Spool spring | Stainless steel | | - |
| 8 | Sleeve | POM | | - |

* VHS series cannot be disassembled. No repair parts available.

(2) Optional specifications



Optional parts

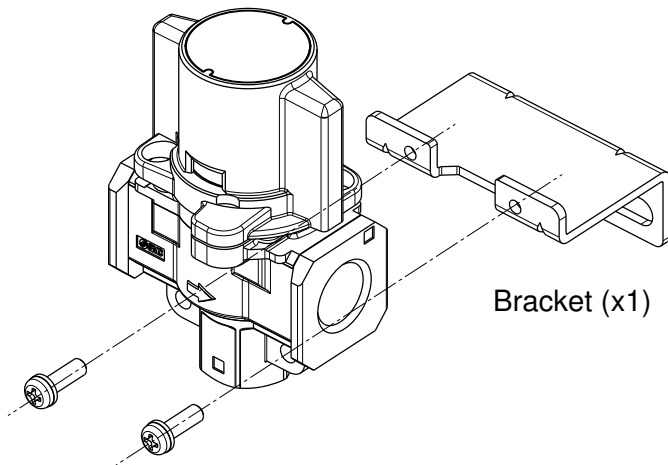
| 3-port valve for residual pressure release | Bracket assembly p/n | Silencer assembly p/n |
|--|----------------------|-----------------------|
| VHS20, VHS2510 | VHS20PW-180AS | VHS20PW-190AS |
| VHS30, VHS3510 | VHS30PW-180AS | VHS30PW-190AS |
| VHS40, VHS4510 | VHS40PW-180AS | VHS40PW-190AS |
| VHS40-06, VHS4510-06 | VHS40PW-180-06AS | VHS40PW-190-06AS |
| VHS50, VHS5510 | VHS50PW-180AS | VHS50PW-190AS |

Construction of Optional parts

| No. | Description | Material | Bracket assembly | Silencer assembly | Note |
|-----|----------------|------------|------------------|-------------------|---------------|
| 9 | Bracket | SPCC | 1 pc | | Zinc chromate |
| 10 | Mounting screw | Steel wire | 2 pc | | Zinc chromate |
| 11 | Element | BC | | 1 pc | - |
| 12 | Element O ring | NBR | | 1 pc | - |
| 13 | Element cover | C3604 | | 1 pc | - |

6. Assembly of Optional parts

(1) Bracket assembly



Cross recessed head screw with captive washer (x2)

Bracket (x1)

1) Installation of bracket

Align two holes of the bracket with the holes at the bottom of the product.
(See drawing on the left)

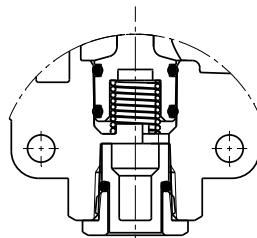
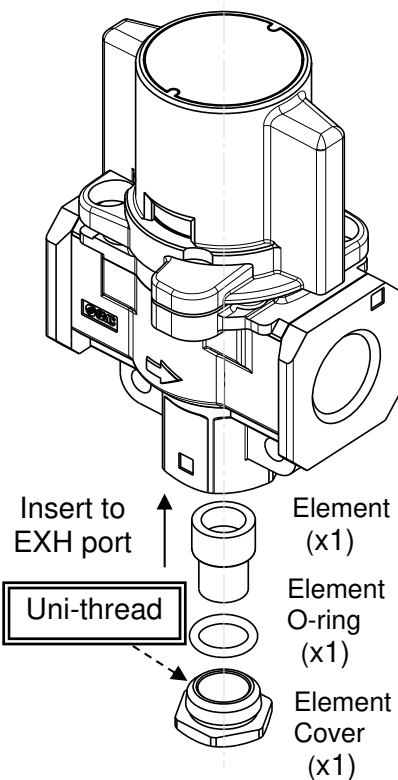
2) Tightening of screw

Insert the mounting screws (cross recessed head screw with captive washer) to the holes of the product at the opposite side of the bracket, and tighten the screws to hold the bracket.

*Use a phillips head screwdriver for tightening the screws.

| Bracket assembly p/n | Cross recessed head screw size |
|----------------------|--------------------------------|
| VHS20PW-180AS | M4x14 |
| VHS30PW-180AS | M4x14 |
| VHS40PW-180AS | M5x16 |
| VHS40PW-180-06 AS | M5x16 |
| VHS50PW-180AS | M6x20 |

(2) Silencer assembly



Cross section of EXH port
Silencer assembly
Mounting condition

1) Mounting of the element

After inserting the element o-ring to the element, insert the element to EXH port.

2) Tightening of the screw of the element cover

Mount the element cover to the female thread of EXH port

*The male thread of the element cover is Uni-thread. It is applicable to all thread types of Rc/G/NPT.

*Refer to the table below for the tightening torque of the element.

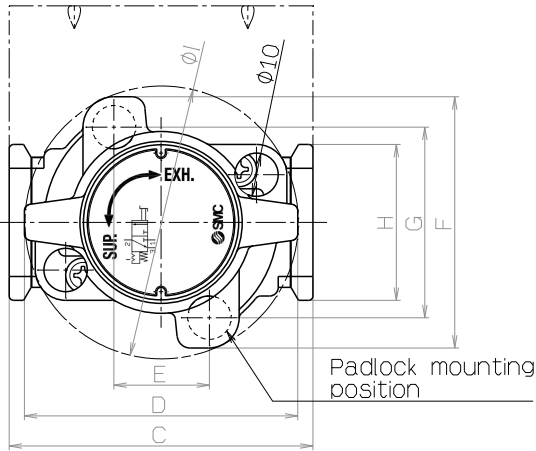
| Silencer assembly p/n | Uni-thread size | Tightening Torque [N-m] | Noise Reduction [dB] ^{Note1)} |
|-----------------------|-----------------|-------------------------|--|
| VHS20PW-190AS | Uni1/8 | 3 to 4 | 17 |
| VHS30PW-190AS | Uni1/4 | 4 to 5 | 21 |
| VHS40PW-190AS | Uni3/8 | 8 to 9 | 25 |
| VHS40PW-190-06AS | Uni1/2 | 14 to 15 | 22 |
| VHS50PW-190AS | Uni1/2 | 14 to 15 | 26 |

Note 1) Reference data.

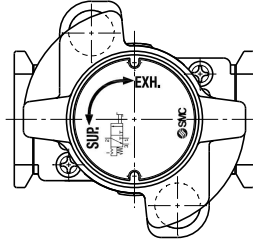
7. Dimensions

(1) Single action type

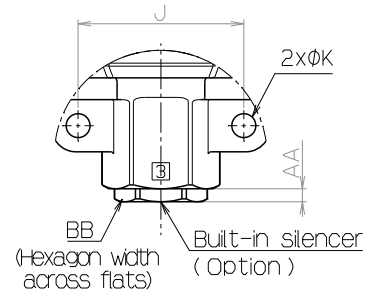
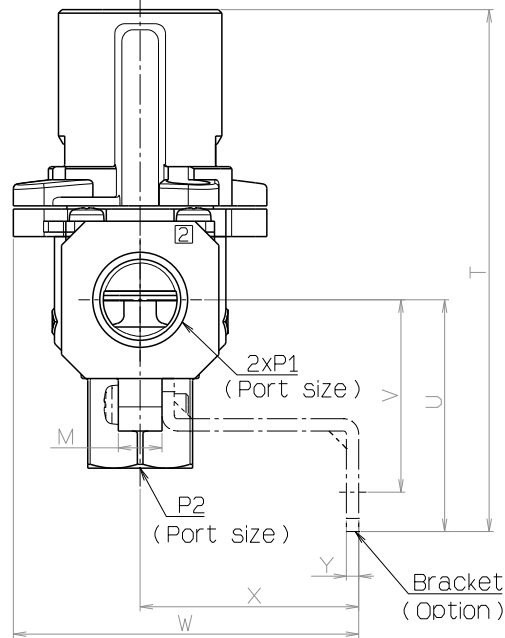
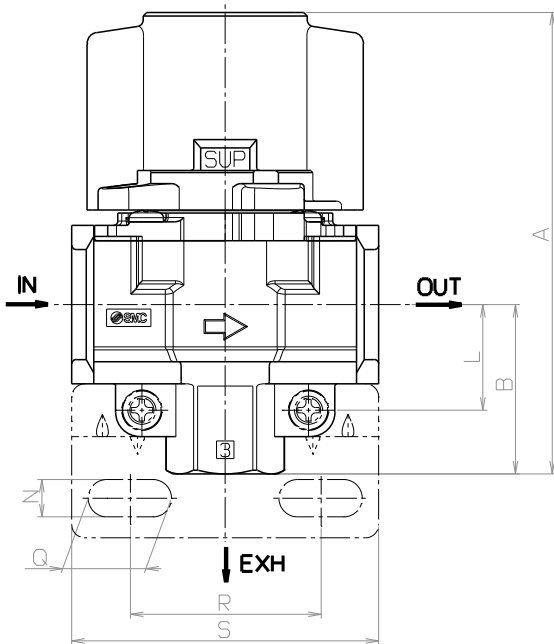
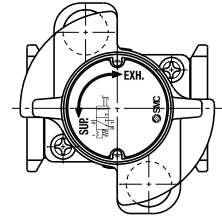
VHS40~50



VHS30



VHS20



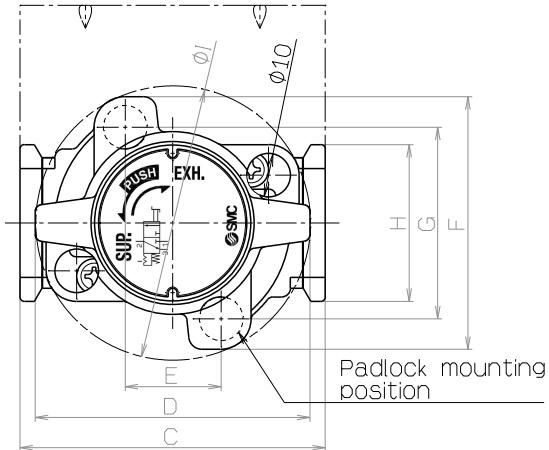
Unit (mm)

| Model | Standard Specifications | | | | | | | | | | | | | | |
|----------|-------------------------|-----|-------|------|----|------|----|------|------|----|----|----|-----|------|----|
| | P1 | P2 | A | B | C | D | E | F | G | H | I | J | K | L | M |
| VHS20 | 1/8, 1/4 | 1/8 | 66.4 | 22.3 | 40 | 37.5 | 14 | 46.6 | 33.6 | 28 | 43 | 24 | 4.5 | 14.8 | 9 |
| VHS30 | 1/4, 3/8 | 1/4 | 80.3 | 29.4 | 53 | 49 | 19 | 52 | 38 | 30 | 49 | 30 | 4.5 | 19 | 9 |
| VHS40 | 1/4, 3/8, 1/2 | 3/8 | 104.9 | 38.5 | 70 | 63 | 22 | 58 | 44 | 36 | 63 | 38 | 5.5 | 24 | 10 |
| VHS40-06 | 3/4 | 1/2 | 110.4 | 42 | 75 | 63 | 22 | 58 | 44 | 44 | 63 | 43 | 5.5 | 26 | 10 |
| VHS50 | 3/4, 1 | 1/2 | 134.3 | 53 | 90 | 76 | 26 | 76 | 61 | 53 | 81 | 50 | 6.5 | 31 | 12 |

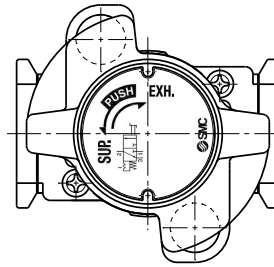
| Model | Optional Specifications | | | | | | | | | | | |
|----------|-------------------------|------|------|----|-------|------|------|------|----|-----|-------------------|----|
| | With bracket | | | | | | | | | | Built-in silencer | |
| | N | Q | R | S | T | U | V | W | X | Y | AA | BB |
| VHS20 | 5.4 | 8.4 | 27 | 40 | 75.4 | 31.3 | 25.3 | 53.3 | 30 | 2.3 | 3 | 12 |
| VHS30 | 6.5 | 10 | 36.5 | 53 | 90.9 | 40 | 33 | 67 | 41 | 2.3 | 3 | 14 |
| VHS40 | 8.5 | 19 | 43.5 | 70 | 119.4 | 53 | 44 | 79 | 50 | 2.8 | 3 | 19 |
| VHS40-06 | 8.5 | 19 | 43.5 | 70 | 123.4 | 55 | 46 | 79 | 50 | 2.8 | 4 | 22 |
| VHS50 | 11 | 27.5 | 49.5 | 90 | 152.3 | 71 | 60 | 108 | 70 | 3.2 | 4 | 22 |

(2) Double action type

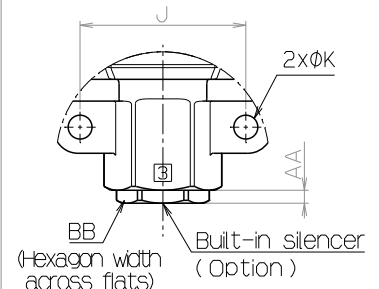
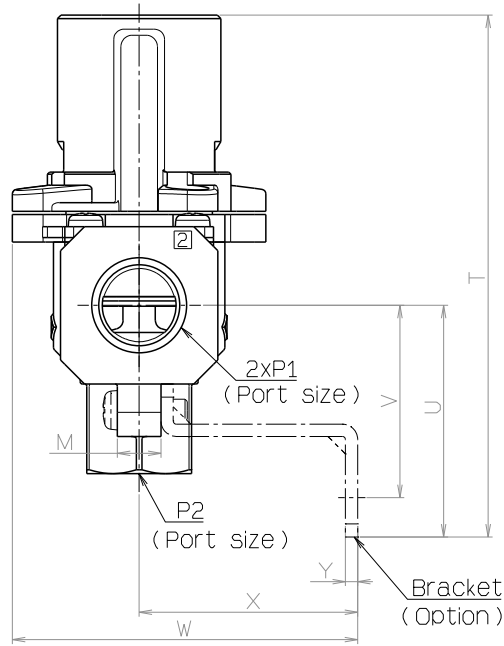
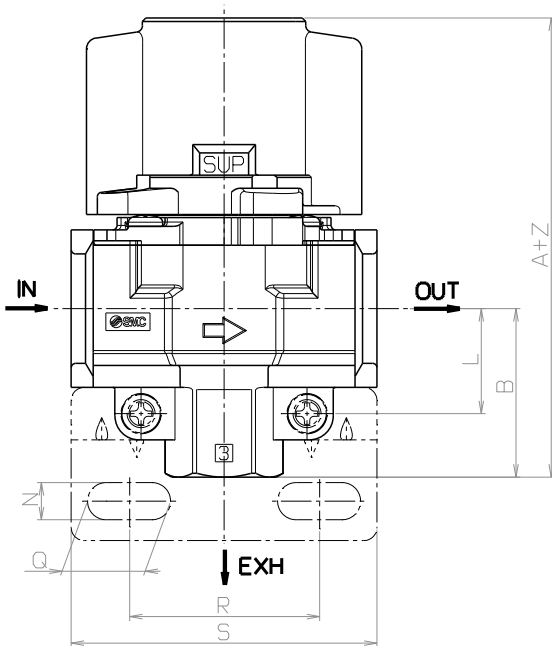
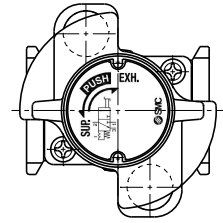
VHS4510~5510



VHS3510



VHS2510



Unit (mm)

| Model | Standard Specifications | | | | | | | | | | | | | | | |
|------------|-------------------------|-----|-------|------|----|------|----|------|------|----|----|----|-----|------|----|-----|
| | P1 | P2 | A | B | C | D | E | F | G | H | I | J | K | L | M | Z |
| VHS2510 | 1/8, 1/4 | 1/8 | 66.4 | 22.3 | 40 | 37.5 | 14 | 46.6 | 33.6 | 28 | 43 | 24 | 4.5 | 14.8 | 9 | 3.2 |
| VHS3510 | 1/4, 3/8 | 1/4 | 80.3 | 29.4 | 53 | 49 | 19 | 52 | 38 | 30 | 49 | 30 | 4.5 | 19 | 9 | 3.2 |
| VHS4510 | 1/4, 3/8, 1/2 | 3/8 | 104.9 | 38.5 | 70 | 63 | 22 | 58 | 44 | 36 | 63 | 38 | 5.5 | 24 | 10 | 4.2 |
| VHS4510-06 | 3/4 | 1/2 | 110.4 | 42 | 75 | 63 | 22 | 58 | 44 | 44 | 63 | 43 | 5.5 | 26 | 10 | 4.2 |
| VHS5510 | 3/4, 1 | 1/2 | 134.3 | 53 | 90 | 76 | 26 | 76 | 61 | 53 | 81 | 50 | 6.5 | 31 | 12 | 4.2 |

| Model | Optional Specifications | | | | | | | | | | | |
|------------|-------------------------|------|------|----|-------|------|------|------|----|-----|-------------------|----|
| | With bracket | | | | | | | | | | Built-in silencer | |
| | N | Q | R | S | T | U | V | W | X | Y | AA | BB |
| VHS2510 | 5.4 | 8.4 | 27 | 40 | 75.4 | 31.3 | 25.3 | 53.3 | 30 | 2.3 | 3 | 12 |
| VHS3510 | 6.5 | 10 | 36.5 | 53 | 90.9 | 40 | 33 | 67 | 41 | 2.3 | 3 | 14 |
| VHS4510 | 8.5 | 19 | 43.5 | 70 | 119.4 | 53 | 44 | 79 | 50 | 2.8 | 3 | 19 |
| VHS4510-06 | 8.5 | 19 | 43.5 | 70 | 123.4 | 55 | 46 | 79 | 50 | 2.8 | 4 | 22 |
| VHS5510 | 11 | 27.5 | 49.5 | 90 | 152.3 | 71 | 60 | 108 | 70 | 3.2 | 4 | 22 |

Revision history

- Rev. A - Semi-standard "K" type added (Black handle)
- Revision of safety precaution (Piping / Installation and Adjustment / Operating Environment)
 - Revision of the product number of spacer, addition of interchangeability of old and new products
 - Addition of noise reduction effect of silencer assembly
- Rev. B - Revision of the figure of dimension for VHS20/VHS2510.
- Revision of the dimension "I" for VHS20/VHS2510 in the dimension table.
- Rev. C – Update the photos of Spacer and Spacer with bracket to the latest version.
- Update the Construction to the latest version.
 - Correct Silencer assembly P/N
- Rev. D – Change : Safety Instructions (P2,3)

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Note: Specifications are subject to change without prior notice and any obligation on the part of the manufacturer.
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