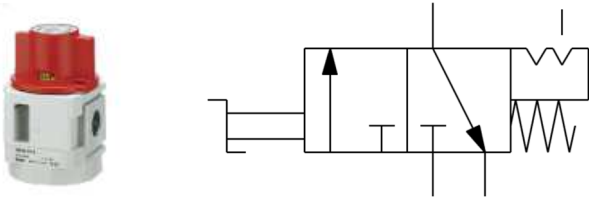




ORIGINAL INSTRUCTIONS

Instruction Manual
Pressure Relief 3 Port Valve with Locking
Holes
Series VHS-D



The intended use of this valve is to release residual pressure by switching hand valve.

1 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.

^{*)} ISO 4414: Pneumatic fluid power - General rules relating to systems.
ISO 4413: Hydraulic fluid power - General rules relating to systems.
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.

- Refer to product catalogue, Operation Manual and Handling Precautions for SMC Products for additional information.
- Keep this manual in a safe place for future reference.

Caution	Caution indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
Warning	Warning indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
Danger	Danger indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

Warning

- **Always ensure compliance with relevant safety laws and standards.**
- All work must be carried out in a safe manner by a qualified person in compliance with applicable national regulations.

2 Specifications

2.1 Specifications

Fluid	Air
Ambient and Fluid Temperature	-5 to 60°C
Proof Pressure	1.5 MPa
Maximum Operating Pressure	1.0 MPa
Handle Switching Angle	90°

Table 1.

	Model			
Port Size	VHS20-D	VHS30-D	VHS40-D	VHS50-D
1/8	•			
1/4	•	•	•	
3/8		•	•	
1/2			•	
3/4			•	•
1				•

Table 2.

Warning

Special products (-X) might have specifications different from those shown in this section. Contact SMC for specific drawings.

3 Installation

3.1 Installation

Warning

- Do not install the product unless the safety instructions have been read and understood.
- Use an air filter on the inlet side.
- Confirm the symbols “1”, “2” before the product is connected. The symbols have the following meanings.

Port Symbol	Piping Type
1	Inlet
2	Outlet

Table 3.

3.2 Environment

Warning

- Do not use in an environment where corrosive gases, chemicals, salt water or steam are present.
- Do not use in an explosive atmosphere.
- Do not expose to direct sunlight. Use a suitable protective cover.
- Do not install in a location subject to vibration or impact in excess of the product’s specifications.
- Do not mount in a location exposed to radiant heat that would result in temperatures in excess of the product’s specifications.
- Install a silencer into exhaust port to prevent the ingress of dust if there is a lot of dust in the atmosphere. If dust enters the valve via exhaust port, it may cause air leakage or if fluid other than air is used

3.3 Piping

Caution

- Before connecting piping make sure to clean up chips, cutting oil, dust etc.
- When installing piping or fittings, ensure sealant material does not enter inside the port. When using seal tape, leave 1.5 thread exposed on the end of the pipe/fitting.
- Tighten fittings to the specified tightening torque.

Thread	Tightening Torque (Nm)
1/8	7 to 9
1/4	12 to 14
3/8	22 to 24
1/2	28 to 30
3/4	28 to 30
1	36 to 38

Table 4.

- For piping into the exhaust port, recommended installing a silencer. When installing resin built-in silencers (VHS series / Optional Parts), after tightening by hand, use a suitable wrench on octagonal flats to tighten until it contacts to the end surface. When installing resin silencers (AN series), after tightening by hand, use a suitable wrench on the hexagonal flats to tighten an additional 1/4 turn. When installing one-touch fittings (KQ2 series) or the piping, add 1/2 turn after tightening by hand. Excess tightening torque may cause damage to threads.

3.4 Lubrication

Caution

- SMC products have been lubricated for life at manufacture, and do not require lubrication in service.
- If a lubricant is used in the system, refer to catalogue for details.

4 Settings

- Turning the knob clockwise will supply air to the outlet port.
- Turning the knob anticlockwise will shut off the supply to the outlet port and exhaust the downstream air through exhaust port.
- A padlock can be fitted to prevent users switching position. Lock shackle must be less than Ø10mm. Recommend Ø5mm or more.

5 How to Order

Refer to drawings or catalogue for ‘How to Order’.

6 Outline Dimensions

Refer to drawings or catalogue for outline dimensions.

7 Maintenance

7.1 General maintenance

Caution

- Not following proper maintenance procedures could cause the product to malfunction and lead to equipment damage.
- If handled improperly, compressed air can be dangerous.
- Maintenance of pneumatic systems should be performed only by qualified personnel.
- Before performing maintenance, turn off the power supply and be sure to cut off the supply pressure. Confirm that the air is released to atmosphere.
- After installation and maintenance, apply operating pressure and power to the equipment and perform appropriate functional and leakage tests to make sure the equipment is installed correctly.
- If any electrical connections are disturbed during maintenance, ensure they are reconnected correctly and safety checks are carried out as required to ensure continued compliance with applicable national regulations.
- Do not make any modification to the product.
- Do not disassemble the product, unless required by installation or maintenance instructions.

8 Limitations of Use

8.1 Limited warranty and disclaimer/compliance requirements

Refer to Handling Precautions for SMC Products.

9 Product Disposal

This product shall not be disposed of as municipal waste. Check your local regulations and guidelines to dispose this product correctly, in order to reduce the impact on human health and the environment.

10 Contacts

Refer to www.smcworld.com or www.smc.eu for your local distributor/importer.

SMC Corporation

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