



ORIGINAL INSTRUCTIONS

Instruction Manual



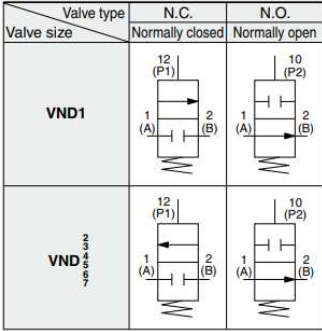
Refer to Declaration of
Conformity for relevant
Directives

56-VND Series

Air operated 2-port valve for steam



Symbol



ATEX classification
II 3 G Ex h IIB T3 Gc -5°C ≤ Ta ≤ +60°C

Certificate reference: SMC 19.0004 X
For special conditions of use see section 1.2.

The intended use of this product is to control (ON or OFF) the flow of steam in industrial steam lines.

1 Safety Instructions

1.1 General 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) ⁽¹⁾, and other safety regulations.

⁽¹⁾ 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: Manipulating industrial robots -Safety. etc.

- 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.

1.2 Special conditions of use

Warning

- Protect from impacts using an ATEX compliant enclosure.
- To avoid the build-up of electrostatic charge, do not mount in areas subject to electrostatic charging mechanisms and clean only with a damp cloth and allow to dry naturally.
- Exhaust ports, P2 (N.C.), P1 (N.O.) to be piped outside of Ex zone.

2 Specifications

2.1 Valve specifications

Fluid			Steam	
Fluid temperature			-5 to 180°C ^{Note 1)}	
Ambient temperature			-5 to 60°C ^{Note 1)}	
Proof pressure			1.5 MPa	
Operating pressure range			0 to 0.97 MPa	
External pilot air	Pressure	N.C.	0.3 to 0.7 MPa	
		N.O.	0.1 + 0.25 x (operating pressure) to 0.25 + 0.25 x (operating pressure) MPa.	
	Lubrication		Not required	
	Temperature		-5 to 60°C ^{Note 1)}	
	Filtration		5 µm or less	
Flow characteristics			See catalogue for standard VND series.	
Dimensions				

Note 1) No freezing.

2.2 Production batch codes

Construction Year / Month	Production batch codes											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2019	Xo	XP	XQ	XR	XS	XT	XU	XV	XW	XX	Xy	XZ
2020	yo	yP	yQ	yR	yS	yT	yU	yV	yW	yX	yy	yZ
...
2024	Co	CP	CQ	CR	CS	CT	CU	CV	CW	CX	Cy	CZ

Note: The batch code is included on the product label.

3 Installation

Warning

- Do not install the product unless the safety instructions have been read and understood.
- Do not install in areas subject to electrostatic charging mechanisms.

3.1 Environment

Warning

- Do not use in an environment where corrosive gases, chemicals, salt water or steam are present.
- 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.

3.2 Piping

Warning

- Exhaust ports, P2 (N.C.), P1 (N.O.) to be piped outside of Ex zone.

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 thread exposed on the end of the pipe/fitting.
- For details regarding pipe sizes, please refer to the catalogue for the standard VND Series.
- 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
1 1/4	40 to 42
1 1/2	48 to 50
2	48 to 50

3 Installation (continued)

3.3 Lubrication

Caution

- SMC products have been lubricated for life at manufacture, and do not require lubrication in service.

4 Settings

4.1 Mechanical indicator

- The valves with mechanical indicator give visual indication of when the valve is open. See fig.1 for location of indicator.

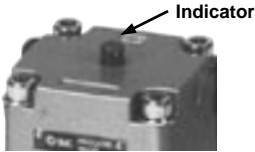


Fig.1

5 How to order

Please refer to the 56-VND how to order in the on-line ATEX catalogue.

6 Outline Dimensions

As the dimensions of the 56-VND series are identical to the standard VND series, please refer to the catalogue for the standard VND series.

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.
- 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.

Warning

- Refer to the ATEX classification for the product.
- Refer to the 'Special conditions of use', section 1.2.

9 Contacts

Refer to Declaration of Conformity and www.smcworld.com for contacts.

SMC Corporation

URL : [http:// www.smcworld.com](http://www.smcworld.com) (Global) <http:// www.smceu.com> (Europe)
'SMC Corporation, Akihabara UDX15F, 4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101 0021
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