

2 Port Solenoid Valve/Air Operated Valve For Dust Collector

VXF2/VXFA2 Series

RoHS

CE

* [Excluding VXFC]

Applicable for high temperature

Fluid temperature
100°C

Large port size is available.

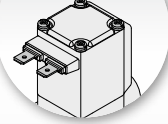
Port size
50A to 100A

Enclosure

IP65*

* Electrical entry flat terminal type terminal is IP40.

Flat terminal type added



- VX2
- VXK
- VXD
- VXZ
- VXS
- VXB
- VXE
- VXP
- VXR
- VXH
- VXF**
- VX3
- VXA

Flange type

Mounting can be changed depending on the piping conditions!



Flange body type

Orifice machining on the outlet is not necessary, so piping man hour is reduced!



Flange body I type
(Flange mounting type)



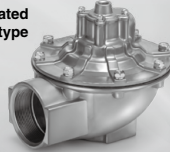
Flange body II type
(Through hole mounting type)

Direct piping type

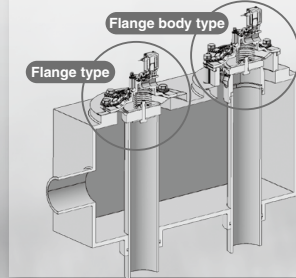
Solenoid valve type



Air operated type

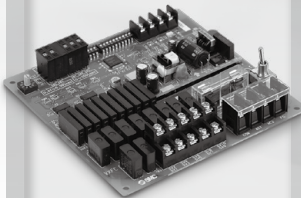


Installation Example



Variations

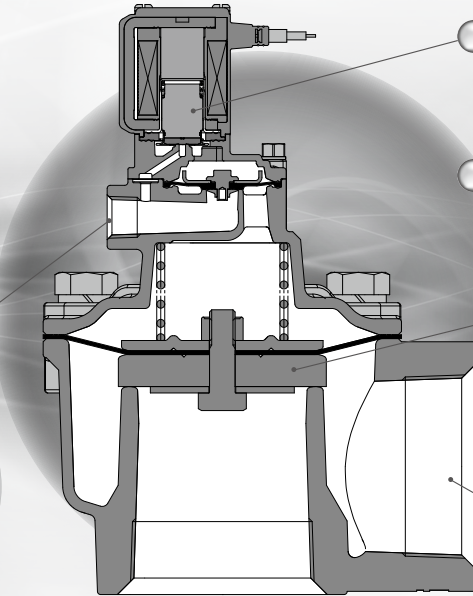
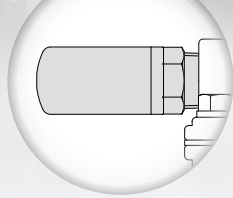
Dedicated controller for operation VXFC series



| Type | Port size | Piping | | | | Electrical entry* |
|---------------------|-----------|--------------------|-------------|--|---|---|
| | | Direct piping type | Flange type | Flange body I type Flange mounting type | Flange body II type Through hole mounting type | |
| Solenoid valve type | 20A | ● | | | | Solenoid valve type only |
| | 25A | ● | | | | |
| | 40A | ● | | | | |
| | 50A | ● | | | | |
| Air operated type | 65A | ● | ● | | | Grommet DIN terminal Conduit terminal Conduit Flat terminal |
| | 80A | ● | ● | ● | ● | |
| | 90A | ● | ● | | | |
| | 100A | ● | ● | | | |
| | | | ● | | | |

Enclosure
IP65

With/without
silencer
(Can be selected.)



Improved armature
durability

Flame resistant
UL94V-0 conformed

Diaphragm
assembly material
(Diaphragm/Main valve)
• NBR/POM:
For normal temperature
• FKM/PTFE:
For high temperature

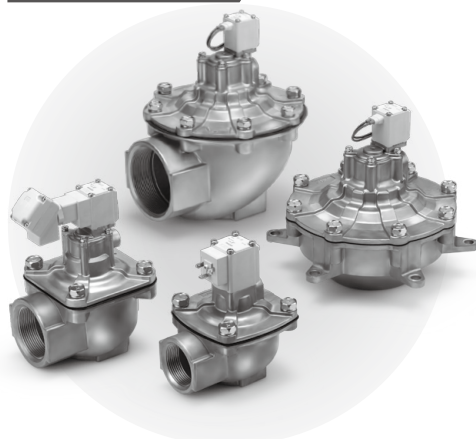
Piping variations
20A, 25A, 40A
50A, 65A, 80A
90A, 100A

Built-in full-wave rectifier type (AC specification)

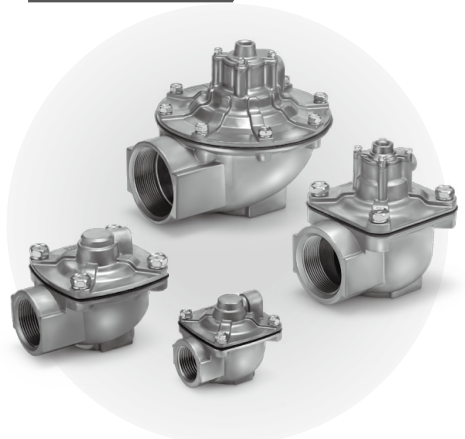
- **Improved durability**
Service life is extended by the special construction.
(compared with current shading coil)
- **Reduced apparent power (for normal temperature)**
11 VA → **7 VA** (Size 21, 22, 24, 25, 26, 27, 28)
18 VA → **10 VA** (Size 23)

- **Noise reduction**
Rectified to DC by the full-wave rectifier, resulting in a
buzz noise reduction.

Solenoid Valve Type VXF2 Series

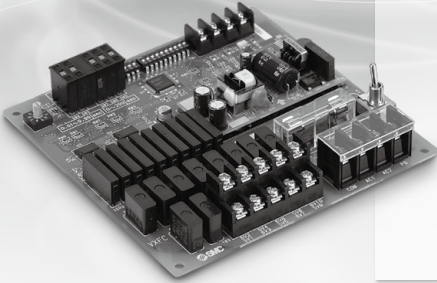


Air Operated Type VXFA2 Series

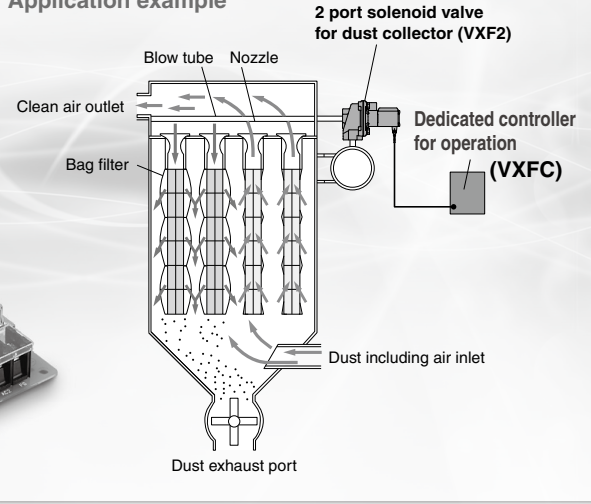


The valve controller turns ON/OFF many valves for the dust controller.

- Power supply voltage** 85 to 240 VAC
12 VDC, 24 to 48 VDC
- Number of output points** 6 output points,
10 output points



Application example

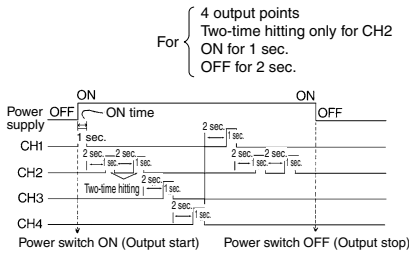


- VX2
- VXK
- VXD
- VXZ
- VXS
- VXB
- VXE
- VXP
- VXR
- VXH
- VXF**
- VX3
- VXA

Two-time Hitting Function

A two-time hitting function is adopted to improve the bag filter dusting efficiency. Turn ON the DIP switch for two-time hitting (OFF for one-time hitting). (Effective up to the number of setting channels)

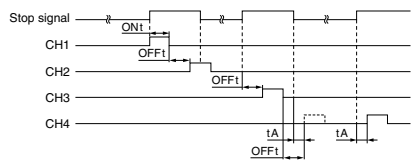
Operation sequence diagram



Interrupt Operation Function

Interrupting an operation from an external switch is possible using input signals.

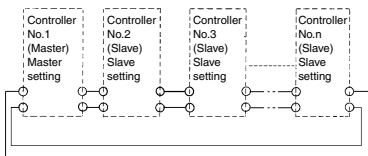
Operation sequence diagram



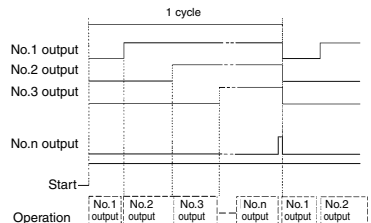
Cascade Connection (Multiple-board connection)

VXFC10: One board allows outputs at merely 10 output points max. But the points can be increased to 20 and 30 output points by connecting cascades.

Connection



Operation sequence diagram



VXF2 Series Solenoid Valve Type

Common Specifications/Selection Steps

Specifications

Solenoid Valve Type

| Model | VXF21A□□ | VXF22A□□ | VXF23A□□ | VXF24A□□ | VXF25A□□ | VXF26 ^A _B □□ | VXF27B□□ | VXF28B□□ |
|--|-----------------------|----------|----------|----------|--|------------------------------------|----------|----------|
| Orifice size | 22 | 28 | 44 | 53 | 70 | 80 | 90 | 100 |
| Fluid | Air | | | | | | | |
| Min. operating pressure | 0.03 | | | 0.1 | | | | |
| Max. operating pressure | | | | | 0.7 | | | |
| Fluid temperature (for normal/high temperature) | | | | | -10 (No freezing) to 60/-10 (No freezing) to 100 | | | |
| Ambient temperature | 5 to 60 | | | | | | | |
| Coil insulation type (for normal/high temperature) | Class B/Class H | | | | | | | |
| Enclosure | IP65 (Note) | | | | | | | |
| Allowable voltage fluctuation | ±10% of rated voltage | | | | | | | |
| Apparent power (for normal/high temperature) | AC (VA) | 7/9 | 10/12 | | | | | 7/9 |
| Power consumption (for normal temperature) | DC (W) | 7 | 8 | | | | | 7 |

Note) For enclosure, refer to "Glossary of Terms" on page 371. When using the product in a place which requires water resistance, please contact SMC.

Solenoid Coil Specifications

Normally Closed (N.C.)

DC Specification (For normal temperature)

| Size | Power consumption (W) (Note 1) | Temperature rise (°C) (Note 2) |
|---------------------------------|--------------------------------|--------------------------------|
| Size 21, 22, 24, 25, 26, 27, 28 | 7 | 60 |
| Size 23 | 8 | 55 |

Note 1) Power consumption, Apparent power: The value at ambient temperature of 20°C and when the rated voltage is applied. (Variation: ±10%)

Note 2) Value at ambient temperature of 20°C and when the rated voltage is applied. The value depends on the ambient environment. This is for reference.

AC Specification (Built-in Full-wave Rectifier Type) (For normal/high temperature)

| Size | Apparent power (VA) (Note 1) (Note 2) | Temperature rise (°C) (Note 3) |
|---------------------------------|---------------------------------------|--------------------------------|
| Size 21, 22, 24, 25, 26, 27, 28 | 7/9 | 60/100 |
| Size 23 | 10/12 | 70/100 |

Note 1) Power consumption, Apparent power: The value at ambient temperature of 20°C and when the rated voltage is applied. (Variation: ±10%)

Note 2) There is no difference in the frequency and the inrush and energized apparent power because a rectifying circuit is used in the AC (Built-in full-wave rectifier type).

Note 3) Value at ambient temperature of 20°C and when the rated voltage is applied. The value depends on the ambient environment. This is for reference.

Valve Leakage Rate

| | Leakage rate (Note) |
|------------------|-----------------------------------|
| Internal leakage | 1000 cm ³ /min or less |
| External leakage | 100 cm ³ /min or less |

Note) Leakage value at an ambient temperature of 20°C with 0.5 MPa of pressure applied. The amount of valve leakage may be greater if operated at a pressure lower than 0.3 MPa.

Selection Steps

Step 1 Select the port size.

| Item | Selection item | Symbol |
|-----------|----------------|--------|
| Port size | 20A (3/4) | 1 |
| | 25A (1) | 2 |
| | 40A (1 1/2) | 3 |
| | 50A (2) | 4 |
| | 65A (2 1/2) | 5 |
| | 80A (3) | 6 |
| | 90A (2 1/2) | 7 |
| | 100A (4) | 8 |

VXF2 ^① 1 A A A

Step 2 Select the piping system.

| Item | Selection item | Symbol |
|--------|---------------------|--------|
| Piping | Direct piping type | A |
| | Flange type | B |
| | Flange body I type | C |
| | Flange body II type | D |

VXF2 1 ^② A A A

Step 3 Diaphragm/Main valve material, Select whether the silencer is mounted.

| Item | Selection item | Symbol |
|-----------------------------------|---------------------------|--------|
| Material With/without silencer | NBR/POM Without silencer | A |
| | NBR/POM With silencer | B |
| | FKM/PTFE Without silencer | C |
| | FKM/PTFE With silencer | D |

VXF2 1 A ^③ A A

Step 4 Select electrical specification.

| Item | Voltage/Electrical entry | Symbol |
|--------------------------|--------------------------|--------|
| Electrical specification | Grommet 24 VDC | A |

VXF2 1 A A ^④ A

Step 5 For other special options, refer to page 342.



How to Order

Solenoid Valve Type **VXF2 1 A A A**

Port size Piping







| Symbol | Port size | Symbol | Piping |
|--------|-----------|--------|---------------------|
| 1 | 20A | A | Direct piping type |
| 2 | 25A | | |
| 3 | 40A | | |
| 4 | 50A | | |
| 5 | 65A | A | Direct piping type |
| | | B | Flange type |
| 6 | 80A | A | Direct piping type |
| | | B | Flange type |
| | | C | Flange body I type |
| | | D | Flange body II type |
| 7 | 90A | B | Flange type |
| 8 | 100A | | |

Material – With/without silencer, Fluid temperature

| Symbol | Diaphragm/ Main valve material | With/without silencer | Fluid temperature |
|--------|--------------------------------|-----------------------|------------------------------------|
| A | NBR/POM | Without | For normal temperature (Max. 60°C) |
| B | NBR/POM | With | |
| C | FKM/PTFE | Without | For high temperature* (Max. 100°C) |
| D | FKM/PTFE | With | |

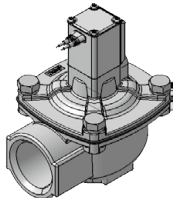
* For high temperature type, DC specification, DIN terminal and flat terminal are not available.

Voltage – Electrical entry

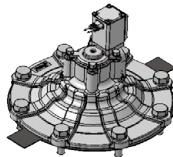
| Symbol | Voltage | Electrical entry |
|--------|---------|---|
| A | 24 VDC | Grommet  |
| B | 100 VAC | Grommet (Note 2) (with surge voltage suppressor)  |
| C | 110 VAC | |
| D | 200 VAC | |
| E | 230 VAC | |
| F | 24 VDC | DIN terminal (with surge voltage suppressor)  |
| G | 24 VDC | |
| H | 100 VAC | |
| J | 110 VAC | |
| K | 200 VAC | Conduit terminal (with surge voltage suppressor)  |
| L | 230 VAC | |
| M | 24 VDC | |
| N | 100 VAC | |
| P | 110 VAC | Conduit (Note 2) (with surge voltage suppressor)  |
| Q | 200 VAC | |
| R | 230 VAC | |
| S | 24 VDC | |
| T | 100 VAC | Flat terminal  |
| U | 110 VAC | |
| V | 200 VAC | |
| W | 230 VAC | |
| Y | 24 VDC | Other voltages |
| Z | | |

Note 1) For high temperature type, DC specification, DIN terminal and flat terminal are not available.

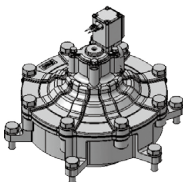
Note 2) For high temperature type, the surge voltage suppressor for grommet or conduit is attached in the middle of lead wire.



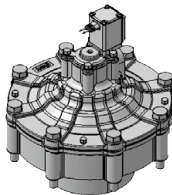
A: Direct piping type



B: Flange type



C: Flange body I type (Flange mounting type)



D: Flange body II type (Through hole mounting type)

For other special options, refer to page 342.

| | |
|---------------------------------|---------|
| Special voltage | 24 VAC |
| | 48 VAC |
| | 220 VAC |
| | 240 VAC |
| | 12 VDC |
| DIN terminal with light | |
| With conduit terminal and light | |
| G thread (Note 3) | |
| NPT thread (Note 3) | |

Note 3) For options with silencer, the exhaust port is Rc.

VX2
VXX
VXD
VXZ
VXS
VXB
VXE
VXP
VXR
VXH
VXF
VX3
VXA

VXFA2 Series **Air Operated Type**

Common Specifications/Selection Steps

Specifications

Air Operated Type

| Model | VXFA21AA□ | VXFA22AA□ | VXFA23AA□ | VXFA24A [△] □ | VXFA25(A,B) [△] □ | VXFA26(A,B,C,D) [△] □ | VXFA27B [△] □ | VXFA28B [△] □ |
|--|--|-----------|-----------|------------------------|----------------------------|--------------------------------|------------------------|------------------------|
| Orifice size mm ϕ | 22 | 28 | 44 | 53 | 70 | 80 | 90 | 100 |
| Fluid | Air | | | | | | | |
| Min. operating pressure MPa | 0.03 | | | 0.1 | | | | |
| Max. operating pressure MPa | 0.7 | | | | | | | |
| Fluid temperature (for normal/high temperature) °C | -10 (No freezing) to 60/-10 (No freezing) to 100 | | | | | | | |
| Ambient temperature °C | 5 to 60 | | | | | | | |

Valve Leakage Rate

| | Leakage rate ^{Note)} |
|------------------|-----------------------------------|
| Internal leakage | 1000 cm ³ /min or less |
| External leakage | 100 cm ³ /min or less |

Note) Leakage value at an ambient temperature of 20°C with 0.5 MPa of pressure applied. The amount of valve leakage may be greater if operated at a pressure lower than 0.3 MPa.

Selection Steps

Step 1 Select the port size.

| Item | Selection item | Symbol |
|-----------|----------------|--------|
| Port size | 20A(3/4) | 1 |
| | 25A(1) | 2 |
| | 40A(1 1/2) | 3 |
| | 50A(2) | 4 |
| | 65A(2 1/2) | 5 |
| | 80A(3) | 6 |
| | 90A(2 1/2) | 7 |
| | 100A(4) | 8 |

VXFA2 ^① 1 A A

Step 2 Select the piping system.

| Item | Selection item | Symbol |
|--------|---------------------|--------|
| Piping | Direct piping type | A |
| | Flange type | B |
| | Flange body I type | C |
| | Flange body II type | D |

VXFA2 1 ^② A A

Step 3 Diaphragm/Main valve material, Select whether the silencer is mounted.

| Item | Selection item | Symbol |
|----------|---------------------------|--------|
| Material | NBR/POM Without silencer | A |
| | NBR/POM With silencer | B |
| | FKM/PTFE Without silencer | C |
| | FKM/PTFE With silencer | D |

VXFA2 1 A ^③ A

Step 4 For other special options, refer to page 342.

How to Order

Air Operated Type **VXFA2** **1** **A** **A**

| Port size | | Piping | |
|-----------|-----------|--------|---------------------|
| Symbol | Port size | Symbol | Piping |
| 1 | 20A | A | Direct piping type |
| 2 | 25A | | |
| 3 | 40A | | |
| 4 | 50A | | |
| 5 | 65A | A | Direct piping type |
| | | B | Flange type |
| 6 | 80A | A | Direct piping type |
| | | B | Flange type |
| | | C | Flange body I type |
| | | D | Flange body II type |
| 7 | 90A | B | Flange type |
| 8 | 100A | | |

Material – With/without silencer, Fluid temperature

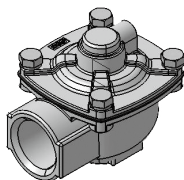
| Symbol | Diaphragm/ Main valve material | With/without silencer* | Fluid temperature |
|--------|-----------------------------------|---------------------------|--|
| A | NBR/POM | Without | For normal temperature (Max. 60°C) |
| B | NBR/POM | With | |
| C | FKM/PTFE | Without | For high temperature (Max. 100°C) |
| D | FKM/PTFE | With | |

* For 40A or less, silencer cannot be selected.

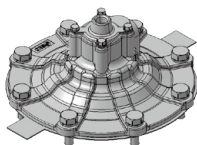
For other special options, refer to page 342.

| |
|-----------------------------------|
| G thread <small>Note 1)</small> |
| NPT thread <small>Note 1)</small> |

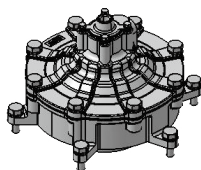
Note 1) For options with silencer, the exhaust port is Rc.



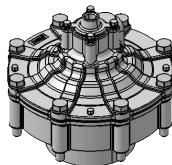
A: Direct piping type



B: Flange type



C: Flange body I type
(Flange mounting type)



D: Flange body II type
(Through hole mounting type)

Caution
Selection of Pilot Valve

When selecting the air operated type VXFA2 series, select the 2 port valve with the stated orifice diameter or more.

VXFA21 to VXFA23: $\phi 5$ mm or more
VXFA24 to VXFA28: $\phi 4$ mm or more

VX2
VXK
VXD
VXZ
VXS
VXB
VXE
VXP
VXR
VXH
VXF
VX3
VXA

VXF2/VXFA2 Series

Other Special Options

Electrical Option (Special voltage, with light)

VXF2 **1 A A Z 1A**

Enter standard product number.

Electrical option

Special voltage – Electrical entry/Electrical option

| Specifications | Symbol | Voltage | Electrical entry |
|-----------------------|---------|---|---|
| Special voltage | 1A | 48 VAC | Grommet (Note 2) (with surge voltage suppressor) |
| | 1B | 220 VAC | |
| | 1C | 240 VAC | |
| | 1U | 24 VAC | Grommet |
| | 1D | 12 VDC | |
| | 1E | 12 VDC | Grommet (with surge voltage suppressor) |
| | 1F | 48 VAC | DIN terminal (with surge voltage suppressor) |
| | 1G | 220 VAC | |
| | 1H | 240 VAC | |
| | 1V | 24 VAC | |
| | 1J | 12 VDC | Conduit terminal (with surge voltage suppressor) |
| | 1K | 48 VAC | |
| | 1L | 220 VAC | |
| | 1M | 240 VAC | |
| | 1W | 24 VAC | |
| | 1N | 12 VDC | |
| | 1P | 48 VAC | Conduit (Note 2) (with surge voltage suppressor) |
| | 1Q | 220 VAC | |
| 1R | 240 VAC | | |
| 1Y | 24 VAC | | |
| 1S | 12 VDC | Flat terminal | |
| 1T | 12 VDC | | |
| With light | 2A | 24 VDC | DIN terminal (with surge voltage suppressor) |
| | 2B | 100 VAC | |
| | 2C | 110 VAC | |
| | 2D | 200 VAC | |
| | 2E | 230 VAC | |
| | 2F | 48 VAC | |
| | 2G | 220 VAC | |
| | 2H | 240 VAC | Conduit terminal (with surge voltage suppressor) |
| | 2V | 24 VAC | |
| | 2J | 12 VDC | |
| | 2K | 24 VDC | |
| | 2L | 100 VAC | |
| | 2M | 110 VAC | |
| | 2N | 200 VAC | |
| 2P | 230 VAC | DIN terminal (with surge voltage suppressor) | |
| 2Q | 48 VAC | | |
| 2R | 220 VAC | | |
| 2S | 240 VAC | | |
| 2W | 24 VAC | | |
| 2T | 12 VDC | | |
| 2U | 24 VDC | | |
| Without DIN connector | 3A | 24 VDC | DIN terminal (with surge voltage suppressor) |
| | 3B | 100 VAC | |
| | 3C | 110 VAC | |
| | 3D | 200 VAC | |
| | 3E | 230 VAC | |
| | 3F | 48 VAC | |
| | 3G | 220 VAC | |
| 3H | 240 VAC | DIN terminal (with surge voltage suppressor) | |
| 3V | 24 VAC | | |
| 3J | 12 VDC | | |

Other Option (Port thread)

Solenoid Valve Type

VXF2 **1 A A A**

Enter standard product number.

Piping option
Port thread

| Symbol | Port thread |
|--------|--------------|
| A | G (Note 1) |
| B | NPT (Note 1) |

Note 1) For options with silencer, the exhaust port is Rc.

Air Operated Type

VXFA2 **1 A A**

Enter standard product number.

Piping option
Port thread

| Symbol | Port thread |
|--------|--------------|
| A | G (Note 2) |
| B | NPT (Note 2) |

Note 2) For options with silencer, the exhaust port is Rc.

Note 1) For high temperature type, DC specification, DIN terminal and flat terminal are not available.
Note 2) For high temperature type, the surge voltage suppressor for grommet or conduit is attached in the middle of lead wire.

* Enter symbols in the order below when ordering an electrical option and other option.

Example) Solenoid valve type

VXF2 **1 A A Z 1A**

Electrical option

Other option

VXF2/VXFA2 Series Valve Characteristics

The valve characteristics data was measured with the outlet piping length. The valve characteristics vary depending on the tank capacity, air supply, set pressure, outlet conditions (nozzle size, quantity, piping length), so please use these values as a guideline.

1. Response Time, Start-up Speed

VXF2 Type

Measuring conditions

Test circuit Refer to the circuit below.

Test sample···VXF21A (Port size 3/4) VXF22A (Port size 1)
VXF23A (Port size 1 1/2) VXF24A (Port size 2)
VXF25A, B (Port size 2 1/2) VXF26A, B, C, D (Port size 3)
VXF27B (Port size 3 1/2) VXF28B (Port size 4)

Air tank capacity···VXF21 to VXF22: 100 L
VXF23 to VXF24: 200 L
VXF25 to VXF28: 1000 L

Energizing time·····150 msec

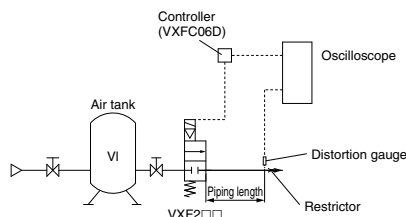
Rated voltage·······24 VDC

Outlet piping length····500 mm

Thread size connected to the outlet piping end···VXF21: Rc3/8 VXF22: Rc1/2
VXF23: Rc3/4 VXF24: Rc1
VXF25: Rc1 1/2 VXF26: Rc2
VXF27: Rc2 1/2 VXF28: Rc3

How to calculate

1. Set the tank pressure to 0.5 MPa.
2. Close the stop valve on the inlet of the tank.
3. Energize the valve and read the pressure wave on the outlet.



VXF2□ Test circuit

VXFA2 Type

Measuring conditions

Test circuit Refer to the circuit below.

Test sample···VXFA21A (Port size 3/4) VXFA22A (Port size 1)
VXFA23A (Port size 1 1/2) VXFA24A (Port size 2)
VXFA25A, B (Port size 2 1/2) VXFA26A, B, C, D (Port size 3)
VXFA27B (Port size 3 1/2) VXFA28B (Port size 4)

Air tank capacity···VXFA21 to VXFA22: 100 L
VXFA23 to VXFA24: 200 L
VXFA25 to VXFA28: 1000 L

Energizing time·····150 msec

Pilot valve

VX232AA (Orifice, ø5, Rated voltage 24 VDC)

Piping length to the pilot valve

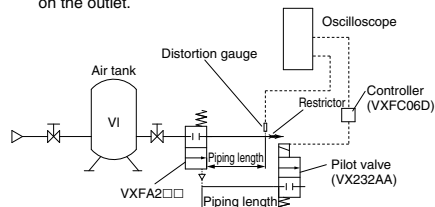
500 mm, 1000 mm, 1500 mm (ø10, t = 1.5)

Outlet piping length····500 mm

Thread size connected to the outlet piping end···VXFA21: Rc3/8 VXFA22: Rc1/2
VXFA23: Rc3/4 VXFA24: Rc1
VXFA25: Rc1 1/2 VXFA26: Rc2
VXFA27: Rc2 1/2 VXFA28: Rc3

How to calculate

1. Set the tank pressure to 0.5 MPa.
2. Close the stop valve on the inlet of the tank.
3. Energize the pilot valve and read the pressure wave on the outlet.



VXFA2□ Test circuit

ON response time

Time required until the valve is switched after it is energized
(Time required until pressure is released to the outlet)

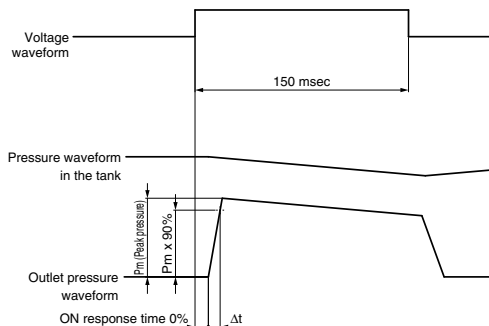
Start-up speed

Speed until the valve is switched after being energized and the pressure released to the outlet reaches 90% of the peak pressure

$$\text{Start-up speed} = (P_m \times 0.9) / \Delta t \quad [\text{MPa/msec}]$$

Note) For air operated type, the longer the piping length to the pilot valve, the longer the ON response time will be. If the piping length is extended more, the valve might not be opened due to piping capacity and resistance in the piping, so keep the piping length to the pilot valve as short as possible.

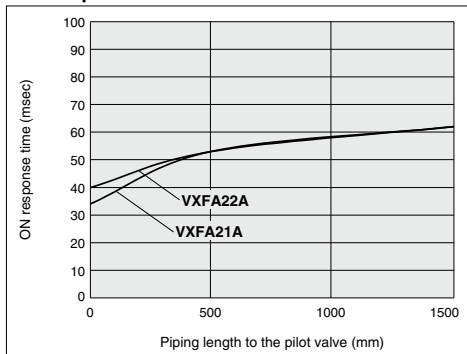
How to Read the Data



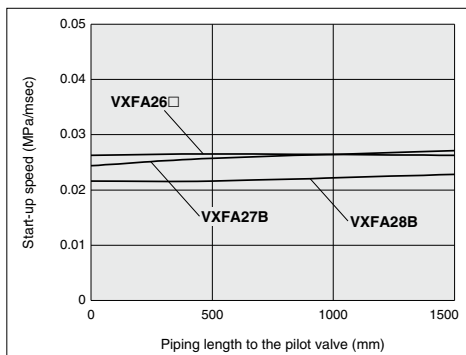
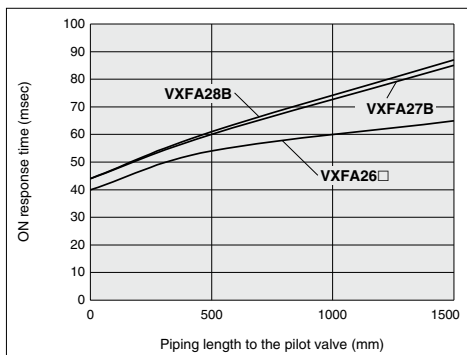
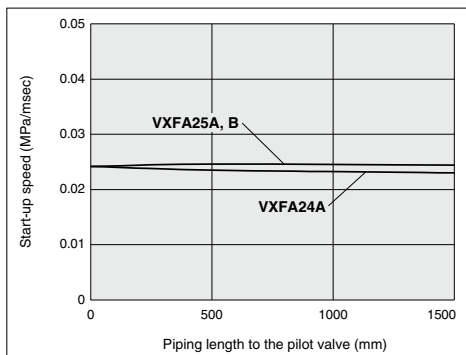
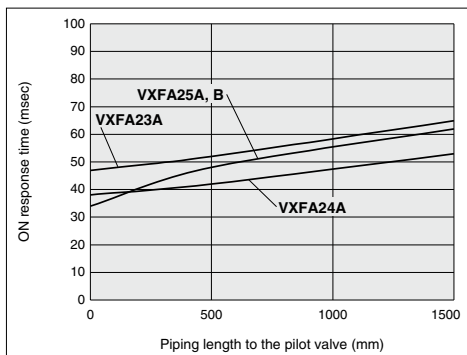
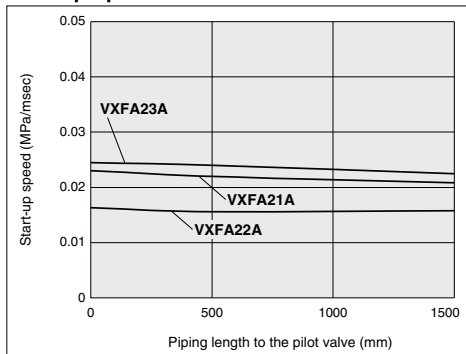
1. Response Time, Start-up Speed

For VXF2/solenoid valve type, the piping length to the pilot valve should be 0 mm.

ON Response Time



Start-up Speed



- VX2
- VXK
- VXD
- VXZ
- VXS
- VXB
- VXE
- VXP
- VXR
- VXH
- VXF**
- VX3
- VXA

VXF2/VXFA2 Series

2. Discharge Volume

For VXF2/solenoid valve type, the piping length to the pilot valve should be 0 mm.

VXF2 Type

Measuring conditions

Test circuit Refer to the circuit below.

Test sample···VXF21A (Port size 3/4) VXF22A (Port size 1)
 VXF23A (Port size 1 1/2) VXF24A (Port size 2)
 VXF25A, B (Port size 2 1/2) VXF26A, B, C, D (Port size 3)
 VXF27B (Port size 3 1/2) VXF28B (Port size 4)

Air tank capacity···VXF21 to VXF22: 100 L
 VXF23 to VXF24: 200 L
 VXF25 to VXF28: 1000 L

Energizing time150 msec

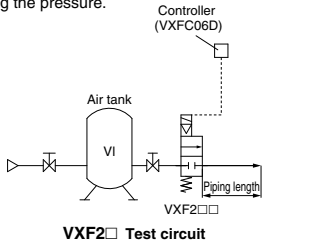
Rated voltage24 VDC

Outlet piping length500 mm

Thread size connected to the outlet piping endOpen

How to calculate

1. Set the tank pressure to 0.5 MPa.
2. Close the stop valve on the inlet of the tank.
3. Energize the valve and read the tank pressure after releasing the pressure.



Discharge volume: Valve discharge volume per energizing time

Conversion of the discharge volume

Calculate the discharge volume by reading the tank pressure after the valve starts the operation.

Conversion equation

$$V_0 = (P_1 \times V_1 - P_2 \times V_1) / P_0$$

V_0 : Discharge volume L

P_1 : Tank initial pressure MPa (Absolute pressure)

V_1 : Tank capacity L

P_2 : Tank pressure after release MPa (Absolute pressure)

P_0 : Atmospheric pressure MPa (Absolute pressure)

VXFA2 Type

Measuring conditions

Test circuit Refer to the circuit below.

Test sample···VXFA21A (Port size 3/4) VXFA22A (Port size 1)
 VXFA23A (Port size 1 1/2) VXFA24A (Port size 2)
 VXFA25A, B (Port size 2 1/2) VXFA26A, B, C, D (Port size 3)
 VXFA27B (Port size 3 1/2) VXFA28B (Port size 4)

Air tank capacity···VXFA21 to VXFA22: 100 L
 VXFA23 to VXFA24: 200 L
 VXFA25 to VXFA28: 1000 L

Energizing time150 msec

Pilot valve

VX232AA (Orifice, $\phi 5$, Rated voltage 24 VDC)

Piping length to the pilot valve

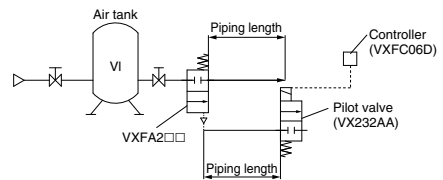
500 mm, 1000 mm, 1500 mm ($\phi 10$, $t = 1.5$)

Outlet piping length500 mm

Thread size connected to the outlet piping endOpen

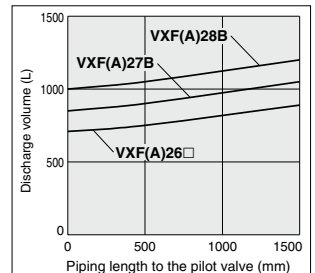
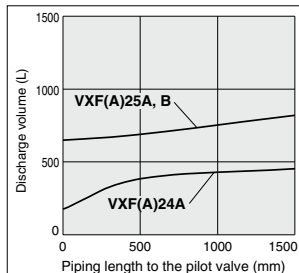
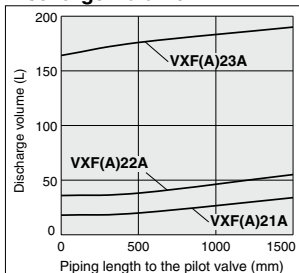
How to calculate

1. Set the tank pressure to 0.5 MPa.
2. Close the stop valve on the inlet of the tank.
3. Energize the pilot valve and read the tank pressure after releasing the pressure.



- Note 1) If the regulator or the restrictor is installed right before the IN side of the valve, the valve may oscillate when it is turned off. Keep the regulator or the restrictor away from the valve for at least 1 m or change restriction.
- Note 2) The dust collector valve is a large flow control valve in which air is discharged with high speed to clean the bag filter with impact wave. Tank capacity should be sufficient to secure impact wave and discharge flow rate. If the air tank capacity is insufficient, response delay of valve, malfunctions or oscillation may occur.

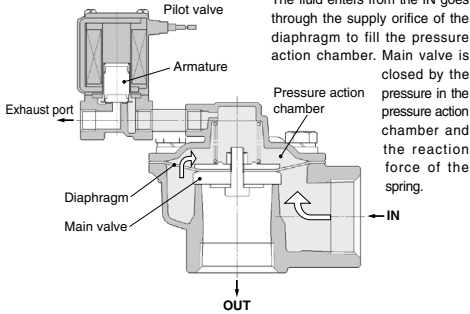
Discharge Volume



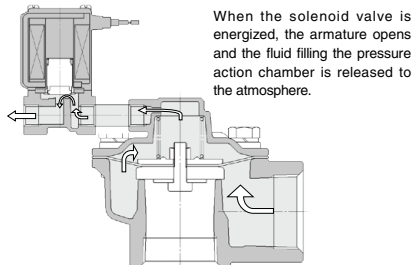
VXFA2 Series Working Principle

VXFA21, 22, 23

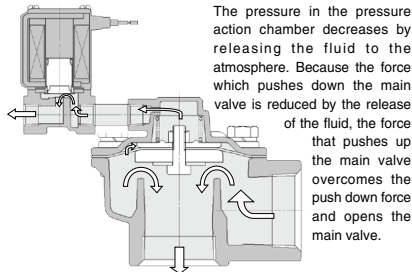
De-energized



Right after energized

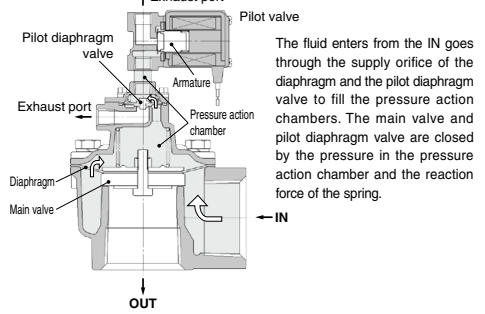


Energized (Main valve open)

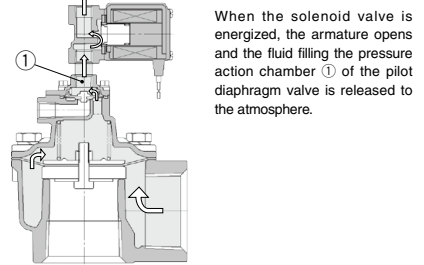


VXFA24 to 28 (Double diaphragm)

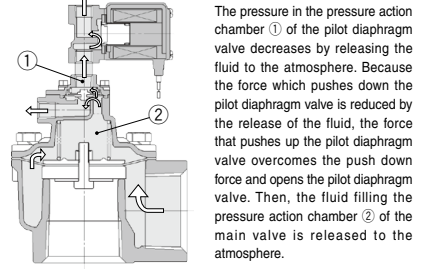
De-energized



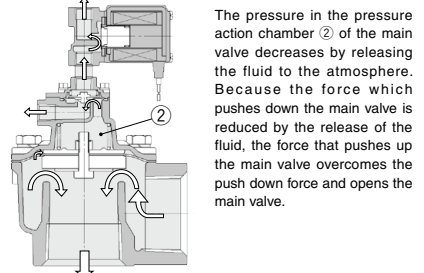
Right after energized



Energized (Pilot diaphragm valve open)



Energized (Main valve open)



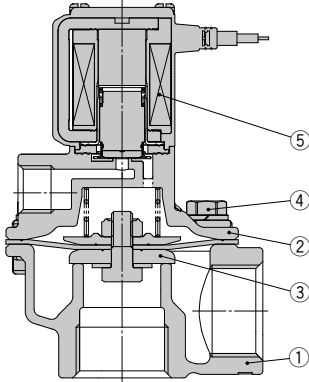
| |
|-----|
| VX2 |
| VXK |
| VXD |
| VXZ |
| VXS |
| VXB |
| VXE |
| VXP |
| VXR |
| VXH |
| VXF |
| VX3 |
| VXA |

VXF2/VXFA2 Series

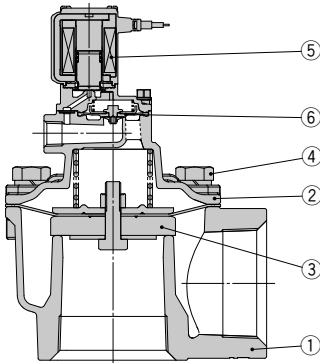
Construction

Solenoid Valve Type

VXF2 $\frac{1}{2}$ A□□/Direct piping type

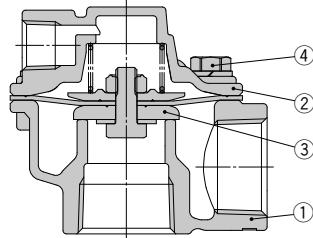


VXF2 $\frac{4}{5}$ A□□/Direct piping type

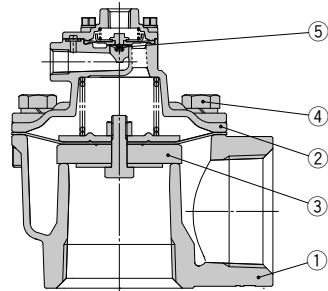


Air Operated Type

VXFA2 $\frac{1}{2}$ A□□/Direct piping type



VXFA2 $\frac{4}{5}$ A□□/Direct piping type



Component Parts

() : For high temperature

| No. | Description | Material |
|-----|------------------------------------|--|
| 1 | Body | ADC |
| 2 | Bonnet | ADC |
| 3 | Diaphragm assembly | NBR (FKM), POM (PTFE), Stainless steel |
| 4 | Upset bolt | FE |
| 5 | Pilot valve assembly | — |
| 6 | Diaphragm assembly for pilot valve | NBR (FKM), Stainless steel |

Component Parts

() : For high temperature

| No. | Description | Material |
|-----|------------------------------------|--|
| 1 | Body | ADC |
| 2 | Bonnet | ADC |
| 3 | Diaphragm assembly | NBR (FKM), POM (PTFE), Stainless steel |
| 4 | Upset bolt | FE |
| 5 | Diaphragm assembly for pilot valve | NBR (FKM) |

Replacement Parts (Direct piping type)

| Model | Diaphragm assembly (Note 1) (For normal temperature/high temperature) | Diaphragm assembly for pilot valve (Note 1) | | Silencer | |
|---------------------------|--|--|--|--|--|
| | | Solenoid valve type (For normal temperature/high temperature) | Air operated type (For normal temperature/high temperature) | Solenoid valve type (For normal temperature/high temperature) | Air operated type (For normal temperature/high temperature) |
| VXF(A)21A(A,B,C,D) | VXF-21AA/VXF-21AC | — | — | AN20-02/EBKX-J2001-100 | — |
| VXF(A)22A(A,B,C,D) | VXF-22AA/VXF-22AC | — | — | AN20-02/EBKX-J2001-100 | — |
| VXF(A)23A(A,B,C,D) | VXF-23AA/VXF-23AC | — | — | AN20-02/EBKX-J2001-100 | — |
| VXF(A)24A(A,B,C,D) | VXF-24AA/VXF-24AC | VXD30-3A-1A/VXD30-3A-F-1A | VXD30-3A-2A/VXD30-3A-F-2A | AN20-02/EBKX-J2001-100 | AN20-02/EBKX-J2001-100 |
| VXF(A)25A(A,B,C,D) | VXF-25AA/VXF-25AC | VXD40S-3A-1A/VXD40S-3A-F-1A | VXD40S-3A-2A/VXD40S-3A-F-2A | AN40-04/EBKX-J2003-120 | AN40-04/EBKX-J2003-120 |
| VXF(A)26A(A,C,D) (Note 2) | VXF-26AA/VXF-26AC | VXD40S-3A-1A/VXD40S-3A-F-1A | VXD40S-3A-2A/VXD40S-3A-F-2A | — | — |
| VXF(A)26A(B,D) (Note 2) | VXF-26AB/VXF-26AD | VXD40S-3A-1A/VXD40S-3A-F-1A | VXD40S-3A-2A/VXD40S-3A-F-2A | AN40-04/EBKX-J2003-120 | AN40-04/EBKX-J2003-120 |

Note 1) Spring is shipped together with the product, but not assembled.

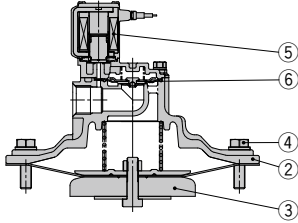
Note 2) When the VXF26 is replaced with a silencer, and a silencer is attached later by the user, the operation may become unstable while ON. When attaching a silencer later, be sure to replace the diaphragm assembly as well. When ordering a product with a silencer and is used without the silencer, the operation may become unstable while OFF. In this case, the diaphragm assembly should be replaced.

2 Port Solenoid Valve/Air Operated Valve For Dust Collector **VXF2/VXFA2 Series**

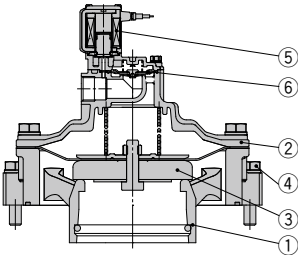
Construction

Solenoid Valve Type

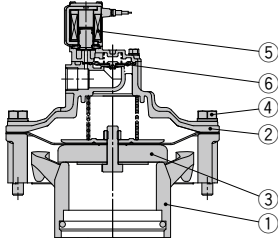
VXF2⁵/₈B□□/Flange type



VXF26C□□/Flange body I type



VXF26D□□/Flange body II type



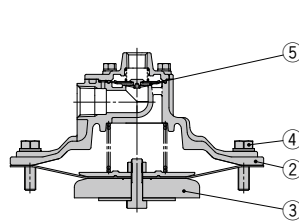
Component Parts

(): For high temperature

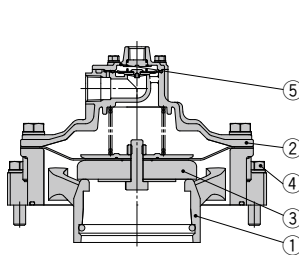
| No. | Description | Material |
|-----|------------------------------------|--|
| 1 | Body | ADC |
| 2 | Bonnet | ADC |
| 3 | Diaphragm assembly | NBR (FKM), POM (PTFE), Stainless steel |
| 4 | Upset bolt | FE |
| 5 | Pilot valve assembly | — |
| 6 | Diaphragm assembly for pilot valve | NBR (FKM), Stainless steel |

Air Operated Type

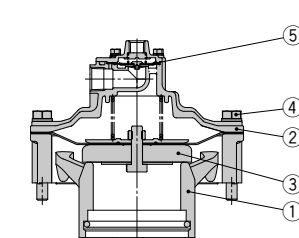
VXFA2⁵/₈B□□/Flange type



VXFA26C□□/Flange body I type



VXFA26D□□/Flange body II type



Component Parts

(): For high temperature

| No. | Description | Material |
|-----|------------------------------------|--|
| 1 | Body | ADC |
| 2 | Bonnet | ADC |
| 3 | Diaphragm assembly | NBR (FKM), POM (PTFE), Stainless steel |
| 4 | Upset bolt | FE |
| 5 | Diaphragm assembly for pilot valve | NBR (FKM), Stainless steel |

Replacement Parts (Flange type, Flange body [I, II] type)

| Model | Diaphragm assembly ^{Note 1)} (For normal temperature/high temperature) | Diaphragm assembly for pilot valve ^{Note 1)} | | Silencer (For normal temperature/high temperature) |
|--------------------|--|--|--|---|
| | | Solenoid valve type (For normal temperature/high temperature) | Air operated type (For normal temperature/high temperature) | |
| VXF(A)25B(A,B,C,D) | VXF-25AA/VXF-25AC | VXD40S-3A-1/VXD40S-3A-F-1A | VXD40S-3A-2A/VXD40S-3A-F-2A | AN40-04/EBKX-J2003-120 |
| VXF(A)26B(A,C) | VXF-26BA/VXF-26BC | VXD40S-3A-1/VXD40S-3A-F-1A | VXD40S-3A-2A/VXD40S-3A-F-2A | — |
| VXF(A)26B(B,D) | VXF-26BB/VXF-26BD | VXD40S-3A-1/VXD40S-3A-F-1A | VXD40S-3A-2A/VXD40S-3A-F-2A | AN40-04/EBKX-J2003-120 |
| VXF(A)26C(A,C) | VXF-26CA/VXF-26CC | VXD40S-3A-1/VXD40S-3A-F-1A | VXD40S-3A-2A/VXD40S-3A-F-2A | — |
| VXF(A)26C(B,D) | VXF-26CB/VXF-26CD | VXD40S-3A-1/VXD40S-3A-F-1A | VXD40S-3A-2A/VXD40S-3A-F-2A | AN40-04/EBKX-J2003-120 |
| VXF(A)26D(A,C) | VXF-26CA/VXF-26CC | VXD40S-3A-1/VXD40S-3A-F-1A | VXD40S-3A-2A/VXD40S-3A-F-2A | — |
| VXF(A)26D(B,D) | VXF-26CB/VXF-26CD | VXD40S-3A-1/VXD40S-3A-F-1A | VXD40S-3A-2A/VXD40S-3A-F-2A | AN40-04/EBKX-J2003-120 |
| VXF(A)27B(A,B,C,D) | VXF-27BA/VXF-27BC | VXD40S-3A-1/VXD40S-3A-F-1A | VXD40S-3A-2A/VXD40S-3A-F-2A | AN40-04/EBKX-J2003-120 |
| VXF(A)28B(A,B,C,D) | VXF-28BA/VXF-28BC | VXD40S-3A-1/VXD40S-3A-F-1A | VXD40S-3A-2A/VXD40S-3A-F-2A | AN40-04/EBKX-J2003-120 |

Note 1) Spring is shipped together with the product, but not assembled.

Note 2) When the VXF26 is ordered without a silencer, and a silencer is attached later by the user, the operation may become unstable while ON. When attaching a silencer later, be sure to replace the diaphragm assembly as well. When ordering a product with a silencer and is used without the silencer, the operation may become unstable while OFF. In this case, the diaphragm assembly should be replaced.

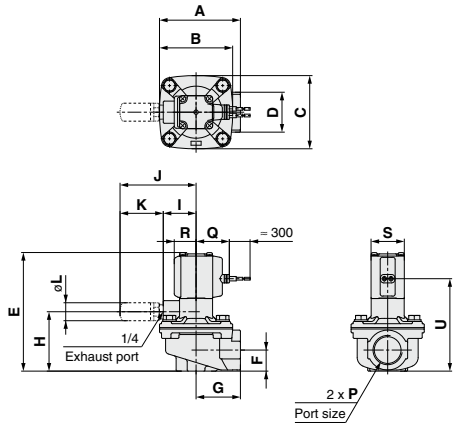
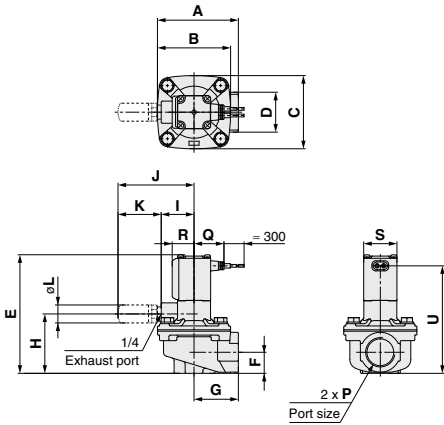
| |
|------------|
| VX2 |
| VXK |
| VXD |
| VXZ |
| VXS |
| VXB |
| VXE |
| VXP |
| VXR |
| VXH |
| VXF |
| VX3 |
| VXA |

VXF2 Series

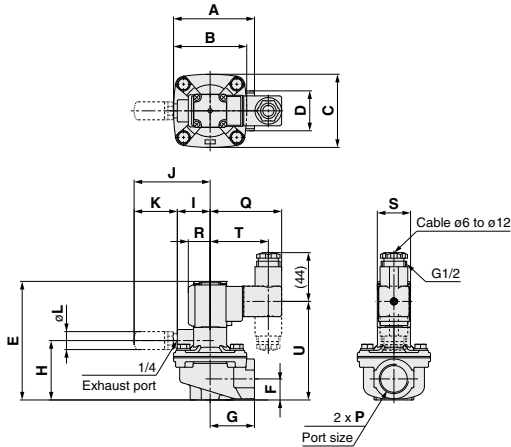
Dimensions: **Direct piping type** VXF21A□□□/22A□□□/23A□□□

Grommet

Grommet (with surge voltage suppressor)



DIN terminal



Dimensions

(mm)

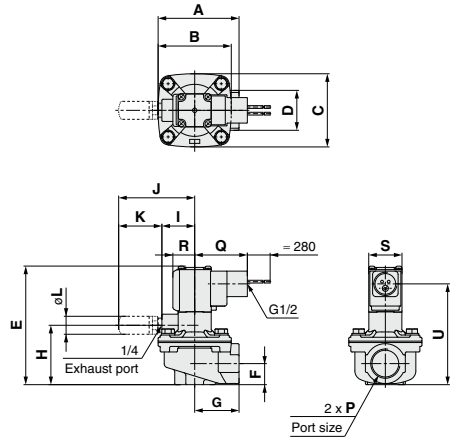
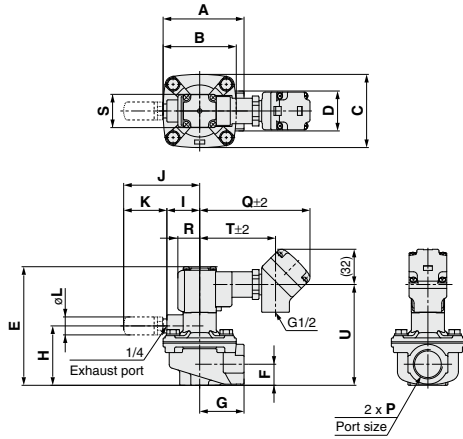
| Model | Port size P | A | B | C | D | E | F | G | H | I | J | K | L | S |
|---------|-------------|-----|-------|---|----|-------|--------------|----|-------|------|-------------|-----------|-----------|----|
| VXF21A□ | 3/4 | 73 | 66 | 66 | 36 | 107 | 19 | 40 | 53.5 | 29.5 | 68.5 (70.8) | 39 (41.3) | 16.5 (17) | 30 |
| VXF22A□ | 1 | 84 | 74 | 74 | 45 | 118 | 23.5 | 47 | 64.5 | 29.5 | 68.5 (70.8) | 39 (41.3) | 16.5 (17) | 30 |
| VXF23A□ | 1 1/2 | 132 | 110 | 110 | 63 | 154.5 | 35 | 77 | 95 | 32 | 71 (73.3) | 39 (41.3) | 16.5 (17) | 35 |
| Model | Grommet | | | Grommet (with surge voltage suppressor) | | | DIN terminal | | | | | | | |
| | Q | R | U | Q | R | U | Q | R | U | T | | | | |
| VXF21A□ | 27 | 20 | 97 | 30 | 20 | 83.5 | 64.5 | 20 | 89 | 52.5 | | | | |
| VXF22A□ | 27 | 20 | 108 | 30 | 20 | 94.5 | 64.5 | 20 | 100 | 52.5 | | | | |
| VXF23A□ | 29.5 | 22 | 143.5 | 32.5 | 22 | 130 | 67 | 22 | 135.5 | 55 | | | | |

* () : When the symbol "D" for high temperature is selected.

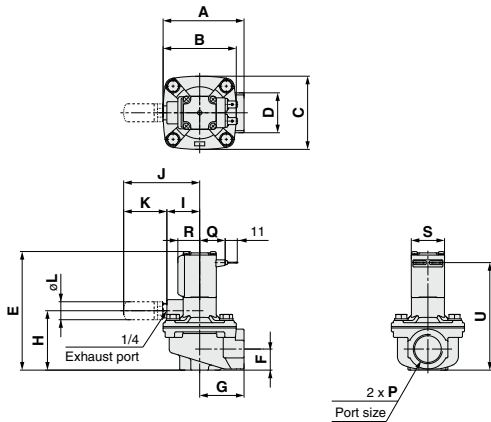
Dimensions: **Direct piping type** VXF21A□□□/22A□□□/23A□□□

Conduit terminal

Conduit



Flat terminal



- VX2
- VXK
- VXD
- VXZ
- VXS
- VXB
- VXE
- VXP
- VXR
- VXH
- VXF**
- VX3
- VXA

Dimensions

(mm)

| Model | Port size P | A | B | C | D | E | F | G | H | I | J | K | L | S |
|---------|-------------|-----|-----|-----|----|-------|------|----|------|------|-------------|-----------|-----------|----|
| VXF21A□ | 3/4 | 73 | 66 | 66 | 36 | 107 | 19 | 40 | 53.5 | 29.5 | 68.5 (70.8) | 39 (41.3) | 16.5 (17) | 30 |
| VXF22A□ | 1 | 84 | 74 | 74 | 45 | 118 | 23.5 | 47 | 64.5 | 29.5 | 68.5 (70.8) | 39 (41.3) | 16.5 (17) | 30 |
| VXF23A□ | 1 1/2 | 132 | 110 | 110 | 63 | 154.5 | 35 | 77 | 95 | 32 | 71 (73.3) | 39 (41.3) | 16.5 (17) | 35 |

| Model | Conduit terminal | | | | Conduit | | | | Flat terminal | | | |
|---------|------------------|----|-------|------|---------|----|-------|------|---------------|-------|---|--|
| | Q | R | U | T | Q | R | U | Q | R | U | U | |
| VXF21A□ | 99.5 | 20 | 91 | 68.5 | 47.5 | 20 | 91 | 23 | 20 | 97 | | |
| VXF22A□ | 99.5 | 20 | 102 | 68.5 | 47.5 | 20 | 102 | 23 | 20 | 108 | | |
| VXF23A□ | 102 | 22 | 137.5 | 71 | 50 | 22 | 137.5 | 25.5 | 22 | 143.5 | | |

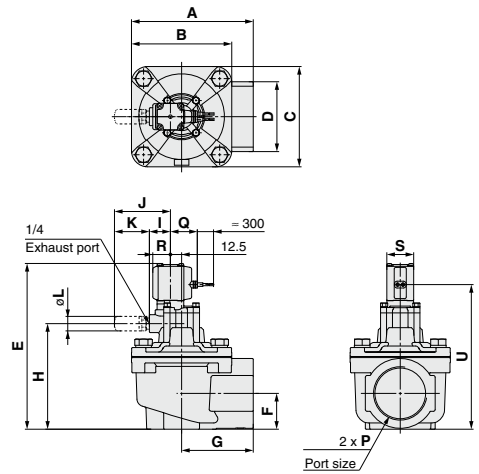
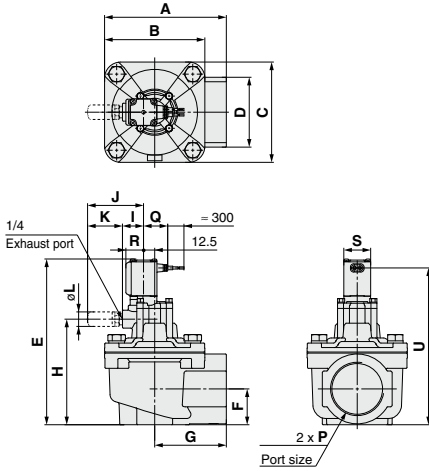
* () : When the symbol "D" for high temperature is selected.

VXF2 Series

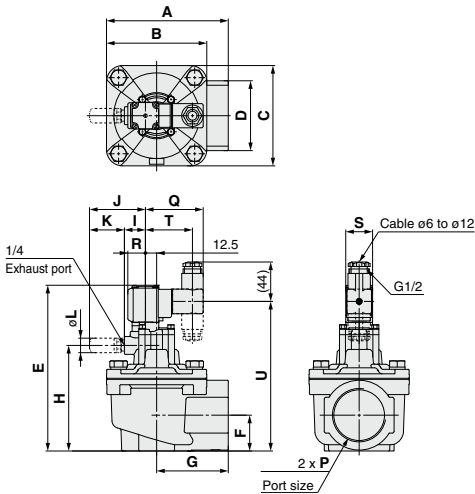
Dimensions: **Direct piping type** VXF24A□□□

Grommet

Grommet (with surge voltage suppressor)



DIN terminal



Dimensions

(mm)

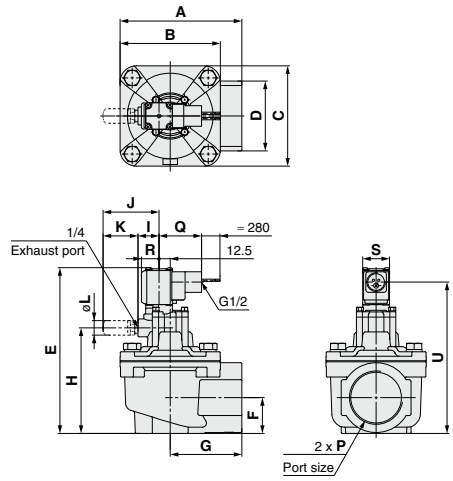
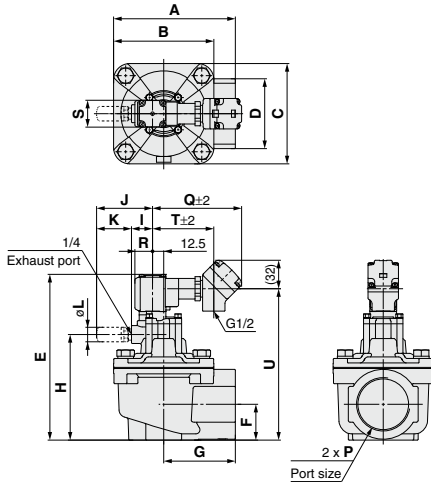
| Model | Port size P | A | B | C | D | E | F | G | H | I | J | K | L | S |
|---------|-------------|-----|-----|---|----|-------|--------------|----|-----|------|-------------|-----------|-----------|----|
| VXF24A□ | 2 | 136 | 112 | 112 | 78 | 185 | 40 | 80 | 118 | 23.5 | 62.5 (64.8) | 39 (41.3) | 16.5 (17) | 30 |
| Model | Grommet | | | Grommet (with surge voltage suppressor) | | | DIN terminal | | | | | | | |
| | Q | R | U | Q | R | U | Q | R | U | T | | | | |
| VXF24A□ | 27 | 20 | 175 | 30 | 20 | 161.5 | 64.5 | 20 | 167 | 52.5 | | | | |

* () : When the symbol "D" for high temperature is selected.

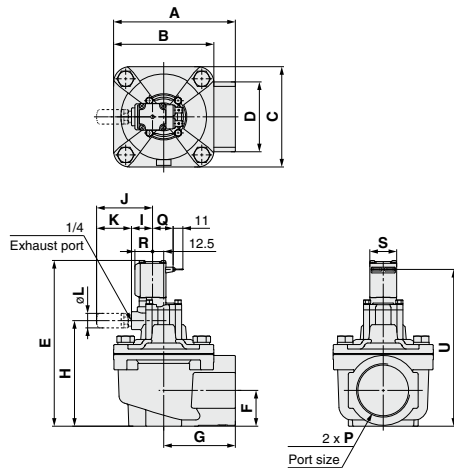
Dimensions: **Direct piping type** VXF24A□□□

Conduit terminal

Conduit



Flat terminal



- VX2
- VXK
- VXD
- VXZ
- VXS
- VXB
- VXE
- VXP
- VXR
- VXH
- VXF**
- VX3
- VXA

Dimensions

(mm)

| Model | Port size P | A | B | C | D | E | F | G | H | I | J | K | L | S |
|---------|------------------|-----|-----|------|---------|-----|-----|---------------|-----|------|-------------|-----------|-----------|----|
| VXF24A□ | 2 | 136 | 112 | 112 | 78 | 185 | 40 | 80 | 118 | 23.5 | 62.5 (64.8) | 39 (41.3) | 16.5 (17) | 30 |
| Model | Conduit terminal | | | | Conduit | | | Flat terminal | | | | | | |
| | Q | R | U | T | Q | R | U | Q | R | U | | | | |
| VXF24A□ | 99.5 | 20 | 169 | 68.5 | 47.5 | 20 | 169 | 23 | 20 | 175 | | | | |

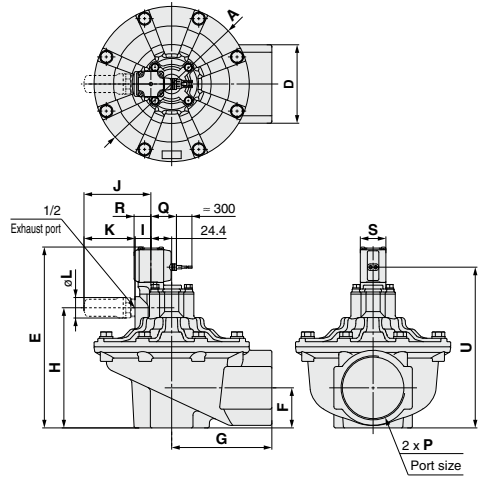
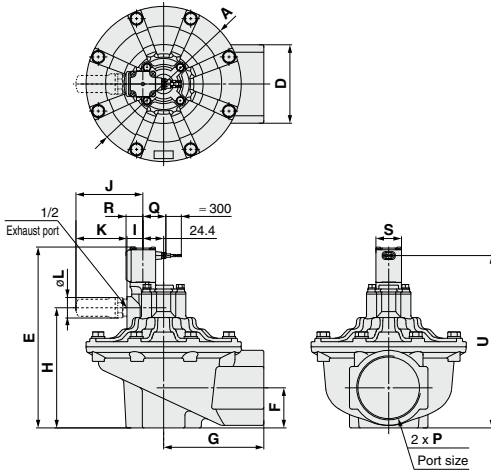
* () : When the symbol "D" for high temperature is selected.

VXF2 Series

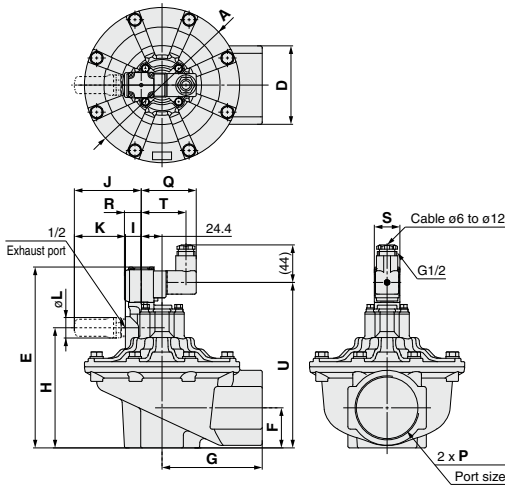
Dimensions: **Direct piping type** VXF25A□□□/26A□□□

Grommet

Grommet (with surge voltage suppressor)



DIN terminal



Dimensions

(mm)

| Model | Port size P | A | D | E | F | G | H | I | J | K | L | S |
|---------|-------------|-----|-----|-----|----|-------|-----|------|-------------|-------------|---------|----|
| VXF25A□ | 2 1/2 | 182 | 92 | 212 | 47 | 117.5 | 141 | 18.6 | 78.4 (70.2) | 59.8 (43.1) | 24 (17) | 30 |
| VXF26A□ | 3 | 206 | 102 | 247 | 63 | 119 | 176 | 18.6 | 78.4 (70.2) | 59.8 (43.1) | 24 (17) | 30 |

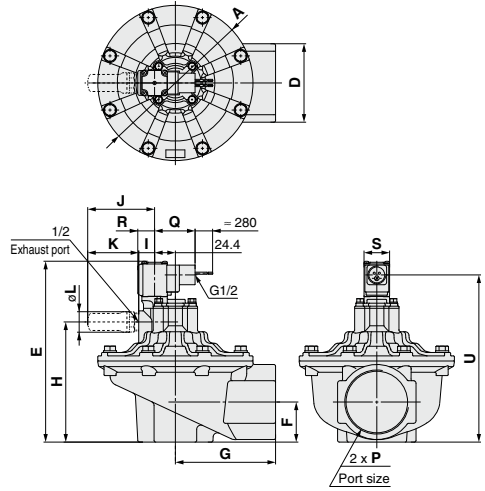
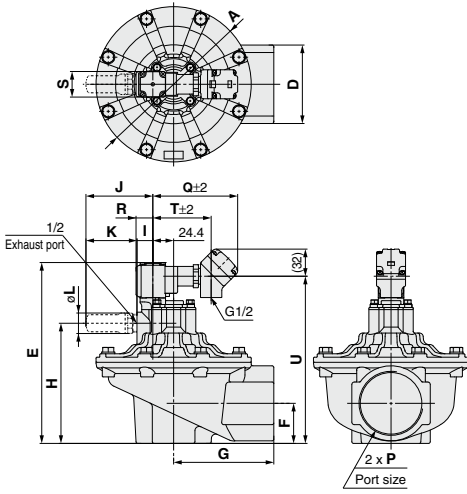
| Model | Grommet | | | Grommet (with surge voltage suppressor) | | | DIN terminal | | | |
|---------|---------|----|-----|---|----|-------|--------------|----|-----|------|
| | Q | R | U | Q | R | U | Q | R | U | T |
| VXF25A□ | 27 | 20 | 202 | 30 | 20 | 188.5 | 64.5 | 20 | 194 | 52.5 |
| VXF26A□ | 27 | 20 | 237 | 30 | 20 | 223.5 | 64.5 | 20 | 229 | 52.5 |

* (): When the symbol "D" for high temperature is selected.

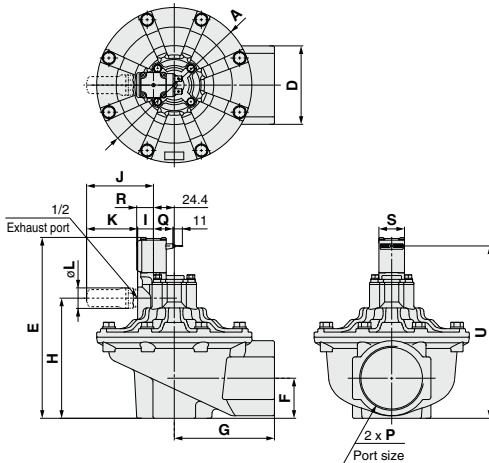
Dimensions: **Direct piping type** VXF25A□□□/26A□□□

Conduit terminal

Conduit



Flat terminal



- VX2
- VXK
- VXD
- VXZ
- VXS
- VXB
- VXE
- VXP
- VXR
- VXH
- VXF**
- VX3
- VXA

Dimensions

| Model | Port size P | A | D | E | F | G | H | I | J | K | L | S |
|---------|-------------|-----|-----|-----|----|-------|-----|------|-------------|-------------|---------|----|
| VXF25A□ | 2 1/2 | 182 | 92 | 212 | 47 | 117.5 | 141 | 18.6 | 78.4 (70.2) | 59.8 (43.1) | 24 (17) | 30 |
| VXF26A□ | 3 | 206 | 102 | 247 | 63 | 119 | 176 | 18.6 | 78.4 (70.2) | 59.8 (43.1) | 24 (17) | 30 |

| Model | Conduit terminal | | | | Conduit | | | Flat terminal | | |
|---------|------------------|----|-----|------|---------|----|-----|---------------|----|-----|
| | Q | R | U | T | Q | R | U | Q | R | U |
| VXF25A□ | 99.5 | 20 | 196 | 68.5 | 47.5 | 20 | 196 | 23 | 20 | 202 |
| VXF26A□ | 99.5 | 20 | 231 | 68.5 | 47.5 | 20 | 231 | 23 | 20 | 237 |

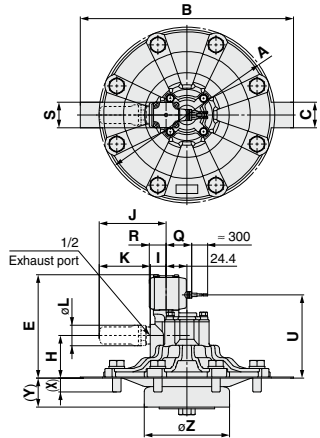
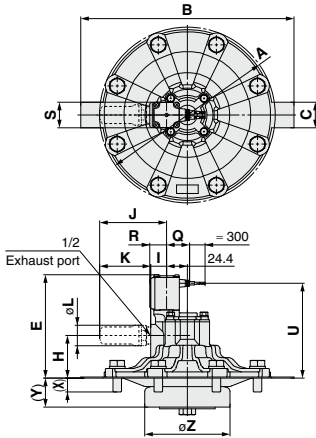
* () : When the symbol "D" for high temperature is selected.

VXF2 Series

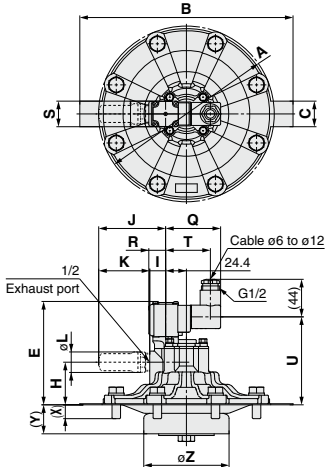
Dimensions: **Flange type** VXF25B□□□/26B□□□/27B□□□/28B□□□

Grommet

Grommet (with surge voltage suppressor)



DIN terminal



Note) Refer to page 358 for the dimensions on the mounting side.

Dimensions

(mm)

| Model | A | B | C | E | H | I | X | Y | Z | J | K | L | S |
|---------|-----|-----|----|-----|----|------|----|------|-----|-------------|-------------|---------|----|
| VXF25B□ | 182 | — | — | 118 | 47 | 18.6 | 17 | 18.3 | 90 | 78.4 (70.2) | 59.8 (43.1) | 24 (17) | 30 |
| VXF26B□ | 206 | 250 | 30 | 121 | 50 | 18.6 | 17 | 34 | 100 | 78.4 (70.2) | 59.8 (43.1) | 24 (17) | 30 |
| VXF27B□ | 206 | 250 | 30 | 121 | 50 | 18.6 | 17 | 34 | 110 | 78.4 (70.2) | 59.8 (43.1) | 24 (17) | 30 |
| VXF28B□ | 206 | 250 | 30 | 121 | 50 | 18.6 | 17 | 34 | 120 | 78.4 (70.2) | 59.8 (43.1) | 24 (17) | 30 |

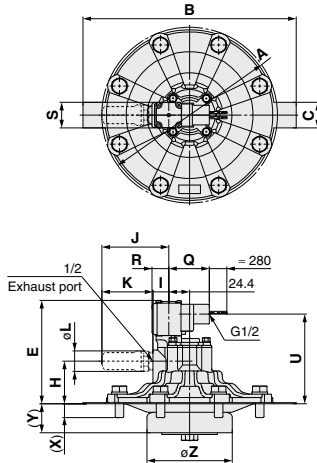
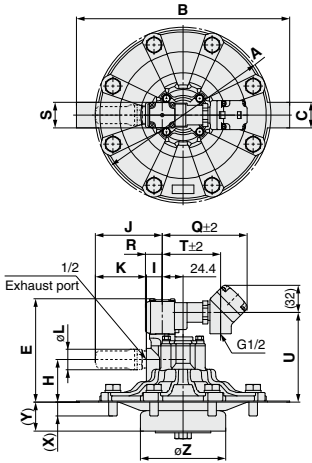
| Model | Grommet | | | Grommet (with surge voltage suppressor) | | | DIN terminal | | | |
|---------|---------|----|-----|---|----|------|--------------|----|-----|------|
| | Q | R | U | Q | R | U | Q | R | U | T |
| VXF25B□ | 27 | 20 | 108 | 30 | 20 | 94.5 | 64.5 | 20 | 100 | 52.5 |
| VXF26B□ | 27 | 20 | 111 | 30 | 20 | 97.5 | 64.5 | 20 | 103 | 52.5 |
| VXF27B□ | 27 | 20 | 111 | 30 | 20 | 97.5 | 64.5 | 20 | 103 | 52.5 |
| VXF28B□ | 27 | 20 | 111 | 30 | 20 | 97.5 | 64.5 | 20 | 103 | 52.5 |

* () : When the symbol "D" for high temperature is selected.

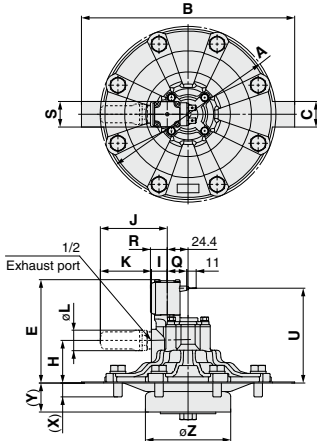
Dimensions: **Flange type** VXF25B□□□/26B□□□/27B□□□/28B□□□

Conduit terminal

Conduit



Flat terminal



- VX2
- VXK
- VXD
- VXZ
- VXS
- VXB
- VXE
- VXP
- VXR
- VXH
- VXF**
- VX3
- VXA

Note) Refer to page 358 for the dimensions on the mounting side.

Dimensions

(mm)

| Model | A | B | C | E | H | I | X | Y | Z | J | K | L | S |
|---------|-----|-----|----|-----|----|------|----|------|-----|-------------|-------------|---------|----|
| VXF25B□ | 182 | — | — | 118 | 47 | 18.6 | 17 | 18.3 | 90 | 78.4 (70.2) | 59.8 (43.1) | 24 (17) | 30 |
| VXF26B□ | 206 | 250 | 30 | 121 | 50 | 18.6 | 17 | 34 | 100 | 78.4 (70.2) | 59.8 (43.1) | 24 (17) | 30 |
| VXF27B□ | 206 | 250 | 30 | 121 | 50 | 18.6 | 17 | 34 | 110 | 78.4 (70.2) | 59.8 (43.1) | 24 (17) | 30 |
| VXF28B□ | 206 | 250 | 30 | 121 | 50 | 18.6 | 17 | 34 | 120 | 78.4 (70.2) | 59.8 (43.1) | 24 (17) | 30 |

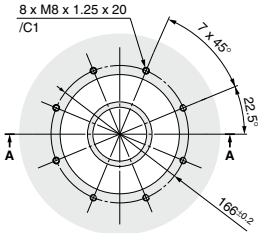
| Model | Conduit terminal | | | | Conduit | | | Flat terminal | | |
|---------|------------------|----|-----|------|---------|----|-----|---------------|----|-----|
| | Q | R | U | T | Q | R | U | Q | R | U |
| VXF25B□ | 99.5 | 20 | 102 | 68.5 | 47.5 | 20 | 102 | 23 | 20 | 108 |
| VXF26B□ | 99.5 | 20 | 105 | 68.5 | 47.5 | 20 | 105 | 23 | 20 | 111 |
| VXF27B□ | 99.5 | 20 | 105 | 68.5 | 47.5 | 20 | 105 | 23 | 20 | 111 |
| VXF28B□ | 99.5 | 20 | 105 | 68.5 | 47.5 | 20 | 105 | 23 | 20 | 111 |

* () : When the symbol "D" for high temperature is selected.

VXF2 Series

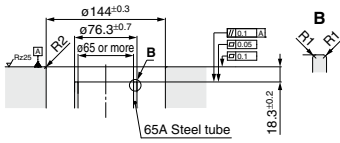
Dimensions on the Mounting Side: Flange type

VXF25B□□□

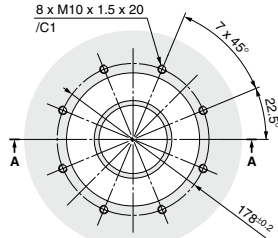


A-A

The surface roughness of the orifice machining should be Rz6.3 or less.

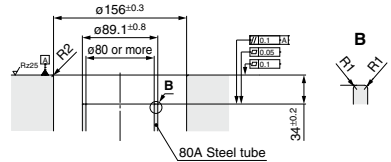


VXF26B□□□

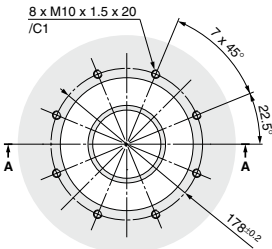


A-A

The surface roughness of the orifice machining should be Rz6.3 or less.

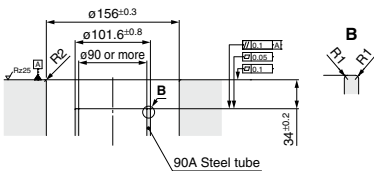


VXF27B□□□

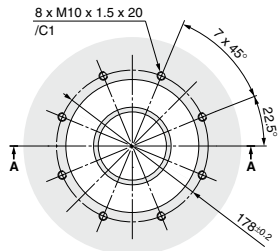


A-A

The surface roughness of the orifice machining should be Rz6.3 or less.

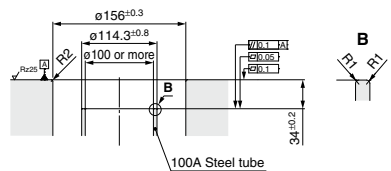


VXF28B□□□



A-A

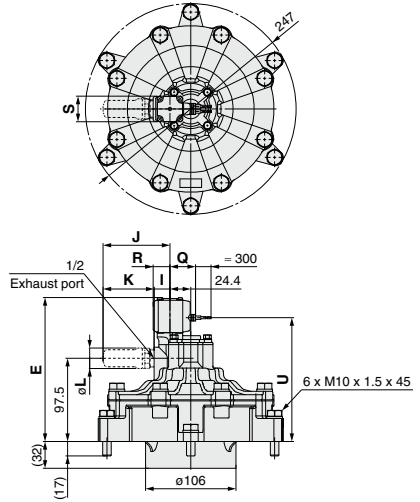
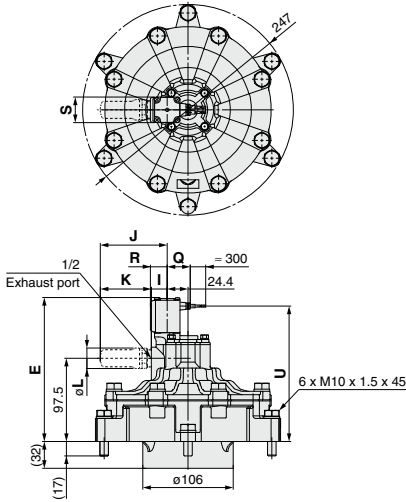
The surface roughness of the orifice machining should be Rz6.3 or less.



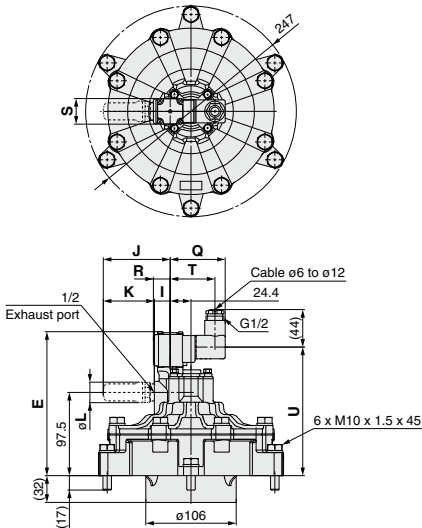
Dimensions: **Flange body I type** VXF26C□□□

Grommet

Grommet (with surge voltage suppressor)



DIN terminal



Note) Refer to page 363 for the dimensions on the mounting side.

Dimensions

(mm)

| Model | E | I | J | K | L | S | Grommet | | | | Grommet (with surge voltage suppressor) | | | | DIN terminal | | | |
|---------|-----|------|-------------|-------------|---------|----|---------|----|-----|----|---|-----|---|------|--------------|-----|------|---|
| | | | | | | | Q | R | U | | Q | R | U | | Q | R | U | T |
| VXF26C□ | 169 | 18.6 | 78.4 (70.2) | 59.8 (43.1) | 24 (17) | 30 | 27 | 20 | 159 | 30 | 20 | 145 | | 64.5 | 20 | 151 | 52.5 | |

* (): When the symbol "D" for high temperature is selected.

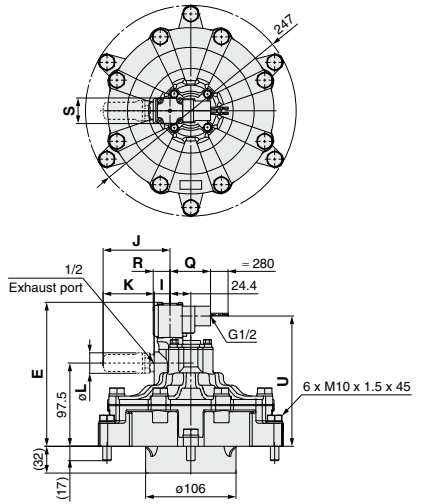
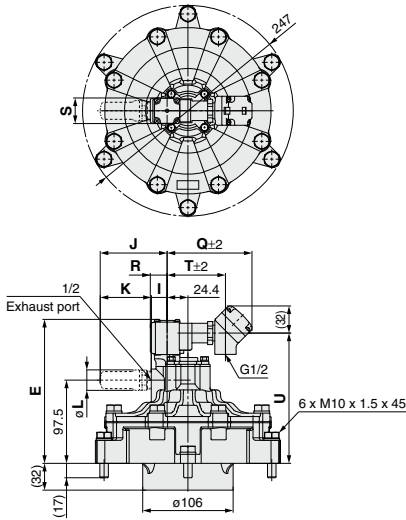
- VX2
- VXK
- VXD
- VXZ
- VXS
- VXB
- VXE
- VXP
- VXR
- VXH
- VXF**
- VX3
- VXA

VXF2 Series

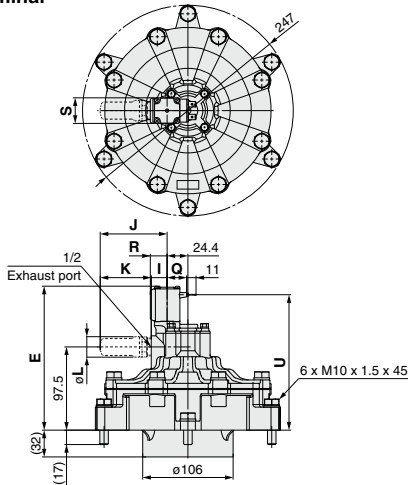
Dimensions: **Flange body I type** VXF26C□□□

Conduit terminal

Conduit



Flat terminal



Note) Refer to page 363 for the dimensions on the mounting side.

Dimensions

(mm)

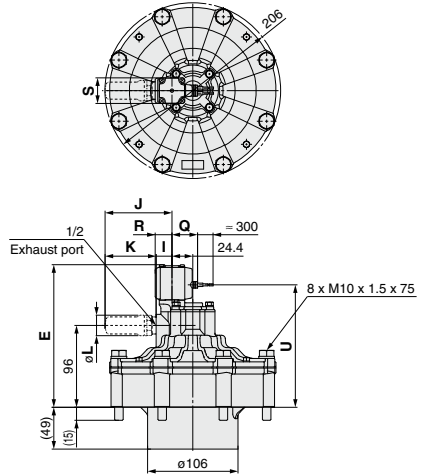
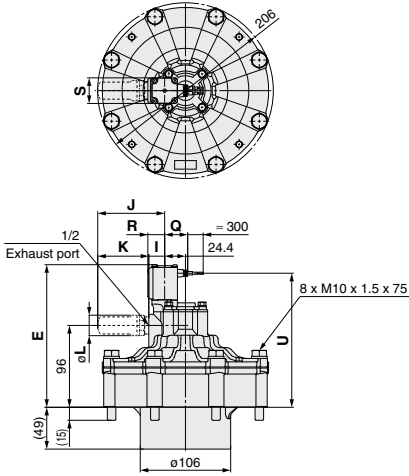
| Model | E | I | J | K | L | S | Conduit terminal | | | | Conduit | | | Flat terminal type | | |
|---------|-----|------|-------------|-------------|---------|----|------------------|----|-----|------|---------|----|-----|--------------------|----|-----|
| | | | | | | | Q | R | U | T | Q | R | U | Q | R | U |
| VXF26C□ | 169 | 18.6 | 78.4 (70.2) | 59.8 (43.1) | 24 (17) | 30 | 99.5 | 20 | 153 | 68.5 | 47.5 | 20 | 153 | 23 | 20 | 159 |

* () : When the symbol "D" for high temperature is selected.

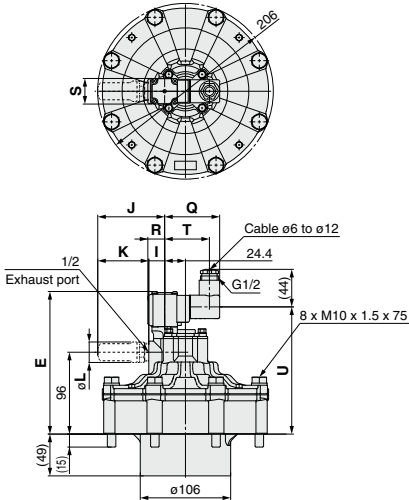
Dimensions: **Flange body II type** VXF26D□□□

Grommet

Grommet (with surge voltage suppressor)



DIN terminal



Note) Refer to page 363 for the dimensions on the mounting side.

Dimensions

(mm)

| Model | E | I | J | K | L | S | Grommet | | | Grommet (with surge voltage suppressor) | | | DIN terminal | | | |
|---------|-----|------|-------------|-------------|---------|----|---------|----|-----|---|----|-------|--------------|----|-----|------|
| | | | | | | | Q | R | U | Q | R | U | Q | R | U | T |
| VXF26D□ | 167 | 18.6 | 78.4 (70.2) | 59.8 (43.1) | 24 (17) | 30 | 27 | 20 | 157 | 30 | 20 | 143.5 | 64.5 | 20 | 149 | 52.5 |

* (): When the symbol "D" for high temperature is selected.

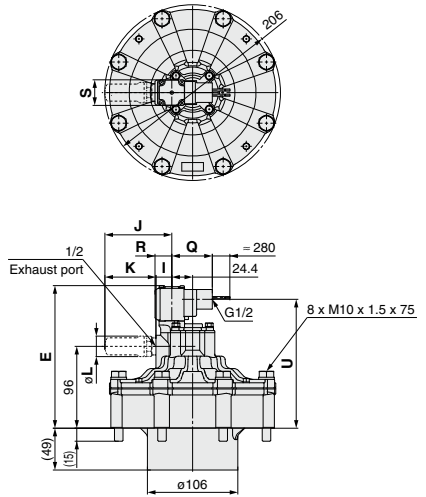
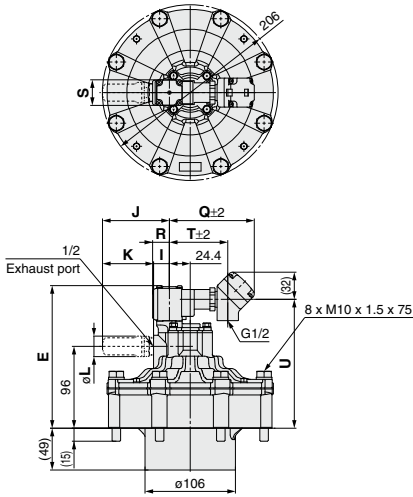
| |
|------------|
| VX2 |
| VXK |
| VXD |
| VXZ |
| VXS |
| VXB |
| VXE |
| VXP |
| VXR |
| VXH |
| VXF |
| VX3 |
| VXA |

VXF2 Series

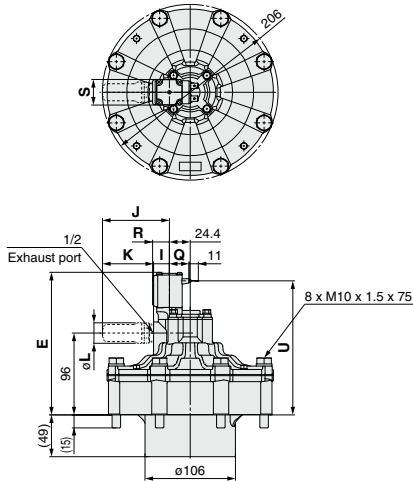
Dimensions: **Flange body II type** VXF26D□□□

Conduit terminal

Conduit



Flat terminal



Note) Refer to page 363 for the dimensions on the mounting side.

Dimensions

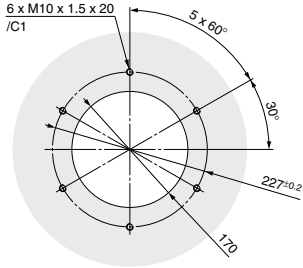
(mm)

| Model | E | I | J | K | L | S | Conduit terminal | | | | Conduit | | | Flat terminal type | | |
|---------|-----|------|-------------|-------------|---------|----|------------------|----|-----|------|---------|----|-----|--------------------|----|-----|
| | | | | | | | Q | R | U | T | Q | R | U | Q | R | U |
| VXF26D□ | 167 | 18.6 | 78.4 (70.2) | 59.8 (43.1) | 24 (17) | 30 | 99.5 | 20 | 151 | 68.5 | 47.5 | 20 | 151 | 23 | 20 | 157 |

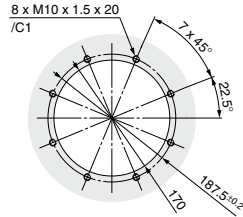
* (): When the symbol "D" for high temperature is selected.

Dimensions on the Mounting Side: **Flange body I/II type**

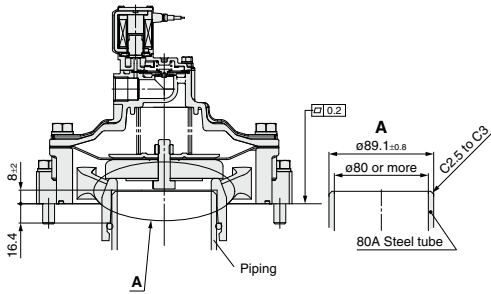
VXF26C□□□



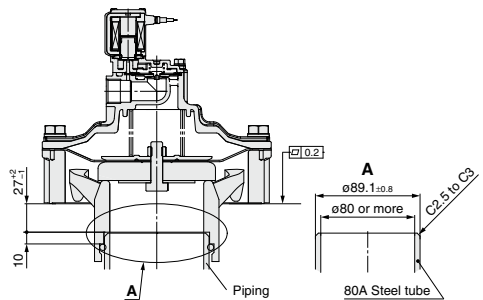
VXF26D□□□



VXF26C□□□ Piping



VXF26D□□□ Piping



* Machine the mounting surface shape so that there are no gaps between the mounting surface and the product. Refer to page 373 for details.

- VX2
- VXK
- VXD
- VXZ
- VXS
- VXB
- VXE
- VXP
- VXR
- VXH
- VXF**
- VX3
- VXA

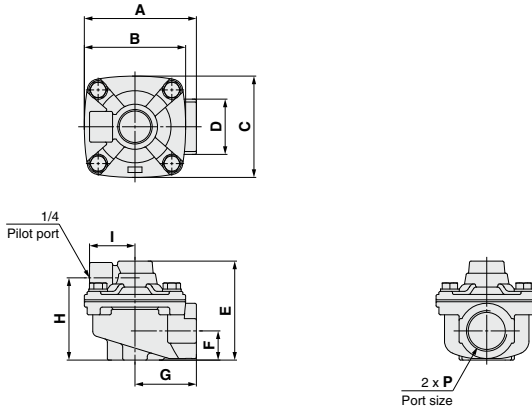
VXFA2 Series

Dimensions: **Direct piping type**

VXFA21A□□□

VXFA22A□□□

VXFA23A□□□

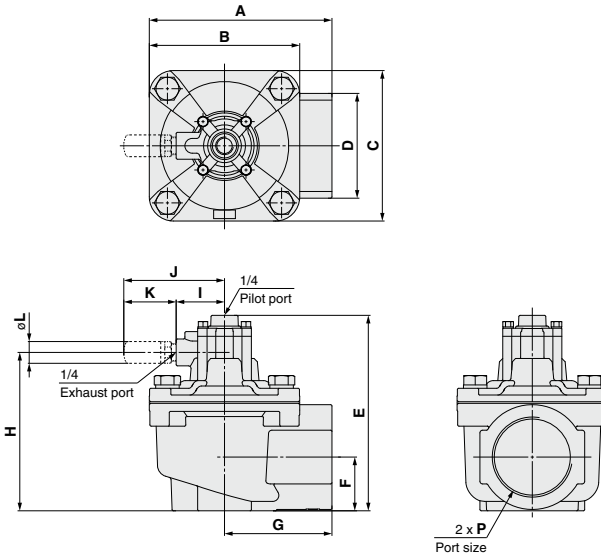


Dimensions

(mm)

| Model | Port size P | A | B | C | D | E | F | G | H | I |
|----------|-------------|-----|-----|-----|----|------|------|----|------|------|
| VXFA21A□ | 3/4 | 73 | 66 | 66 | 36 | 64.5 | 19 | 40 | 53.5 | 29.5 |
| VXFA22A□ | 1 | 84 | 74 | 74 | 45 | 74.5 | 23.5 | 47 | 64.5 | 29.5 |
| VXFA23A□ | 1 1/2 | 132 | 110 | 110 | 63 | 106 | 35 | 77 | 95 | 32 |

VXFA24A□□□



Dimensions

(mm)

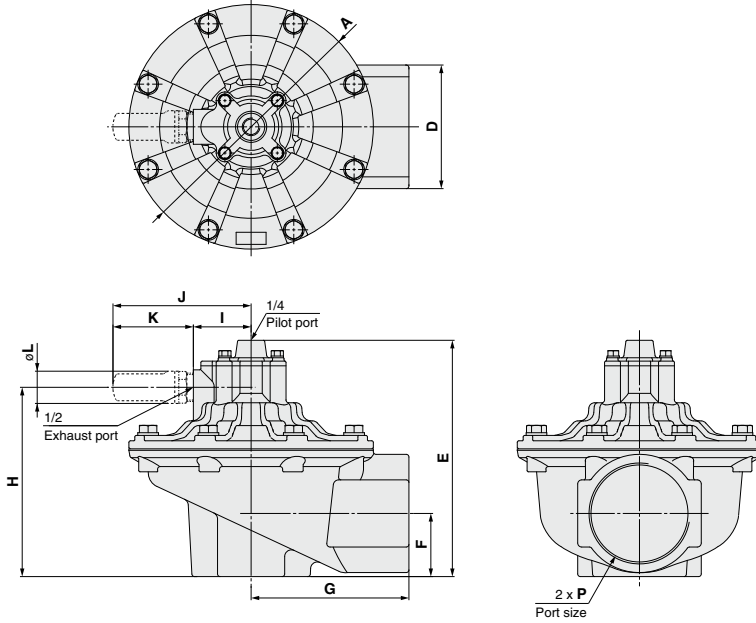
| Model | Port size P | A | B | C | D | E | F | G | H | I | J | K | L |
|----------|-------------|-----|-----|-----|----|-------|----|----|-----|----|-----------|-----------|-----------|
| VXFA24A□ | 2 | 136 | 112 | 112 | 78 | 145.5 | 40 | 80 | 118 | 36 | 75 (77.8) | 39 (41.3) | 16.5 (17) |

* () : When the symbol "D" for high temperature is selected.

Dimensions: **Direct piping type**

VXFA25A□□□

VXFA26A□□□



- VX2
- VXK
- VXD
- VXZ
- VXS
- VXB
- VXE
- VXP
- VXR
- VXH
- VXF**
- VX3
- VXA

Dimensions (mm)

| Model | Port size P | A | D | E | F | G | H | I | J | K | L |
|----------|----------------|-----|-----|-----|----|-------|-----|----|--------------|-------------|---------|
| VXFA25A□ | 2 1/2 | 182 | 92 | 176 | 47 | 117.5 | 141 | 43 | 102.8 (94.6) | 59.8 (43.1) | 24 (17) |
| VXFA26A□ | 3 | 206 | 102 | 211 | 63 | 119 | 176 | 43 | 102.8 (94.6) | 59.8 (43.1) | 24 (17) |

* () : When the symbol "D" for high temperature is selected.

VXFA2 Series

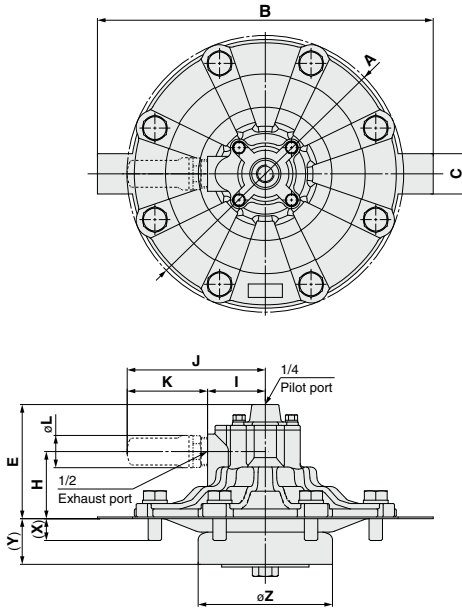
Dimensions: **Flange type**

VXFA25B□□□

VXFA26B□□□

VXFA27B□□□

VXFA28B□□□



Note) Refer to page 367 for the dimensions on the mounting side.

Dimensions

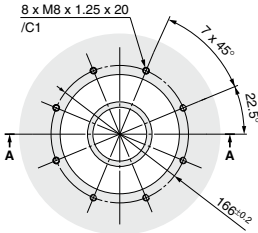
(mm)

| Model | A | B | C | E | Y | X | H | I | J | K | L | Z |
|----------|-----|-----|----|----|------|----|----|----|--------------|-------------|---------|-----|
| VXFA25B□ | 182 | — | — | 82 | 18.3 | 17 | 47 | 43 | 102.8 (94.6) | 59.8 (43.1) | 24 (17) | 90 |
| VXFA26B□ | 206 | 250 | 30 | 85 | 34 | 17 | 50 | 43 | 102.8 (94.6) | 59.8 (43.1) | 24 (17) | 100 |
| VXFA27B□ | 206 | 250 | 30 | 85 | 34 | 17 | 50 | 43 | 102.8 (94.6) | 59.8 (43.1) | 24 (17) | 110 |
| VXFA28B□ | 206 | 250 | 30 | 85 | 34 | 17 | 50 | 43 | 102.8 (94.6) | 59.8 (43.1) | 24 (17) | 120 |

* (): When the symbol "D" for high temperature is selected.

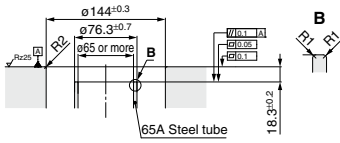
Dimensions on the Mounting Side: **Flange type**

VXFA25B□□□

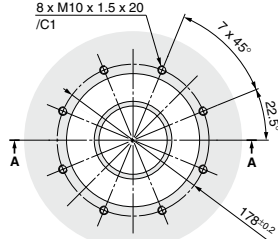


A-A

The surface roughness of the orifice machining should be Rz6.3 or less.

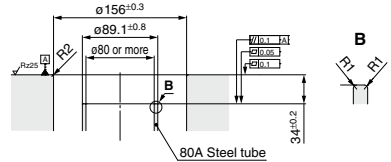


VXFA26B□□□

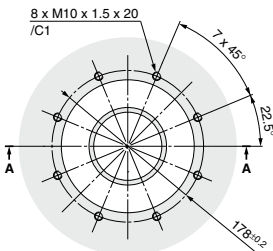


A-A

The surface roughness of the orifice machining should be Rz6.3 or less.

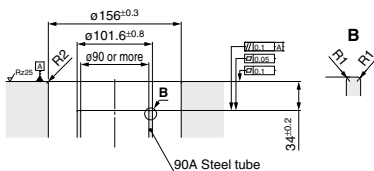


VXFA27B□□□

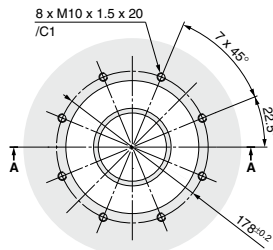


A-A

The surface roughness of the orifice machining should be Rz6.3 or less.

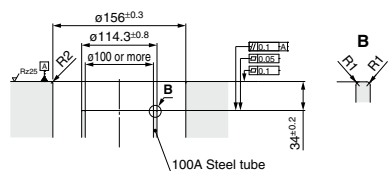


VXFA28B□□□



A-A

The surface roughness of the orifice machining should be Rz6.3 or less.



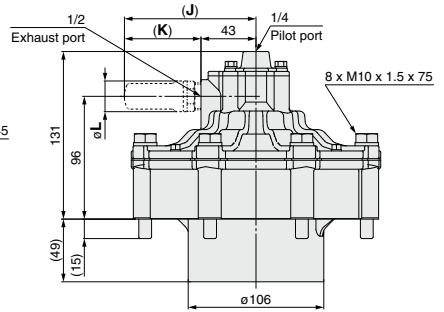
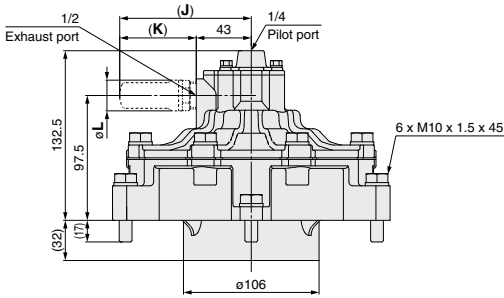
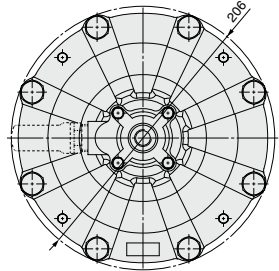
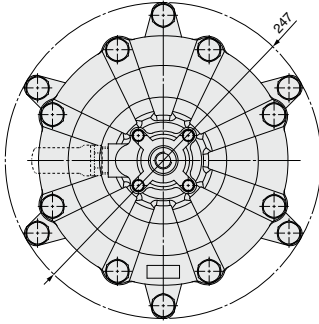
- VX2
- VXK
- VXD
- VXZ
- VXS
- VXB
- VXE
- VXP
- VXR
- VXH
- VXF**
- VX3
- VXA

VXFA2 Series

Dimensions: Flange body I/II type

VXFA26C□□□

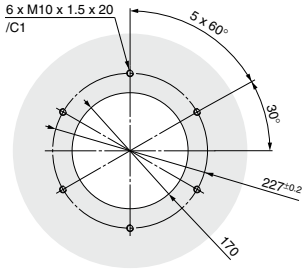
VXFA26D□□□



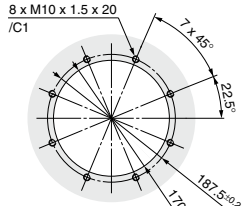
Note) Refer to page 369 for the dimensions on the mounting side.
Refer to page 366 for J, K, L dimensions.

Dimensions on the Mounting Side: **Flange body I/II type**

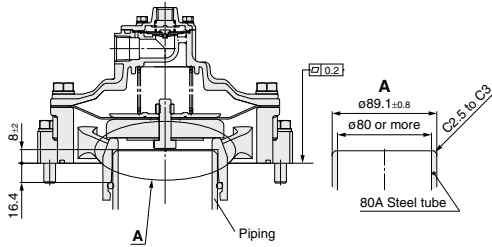
VXFA26C□□□



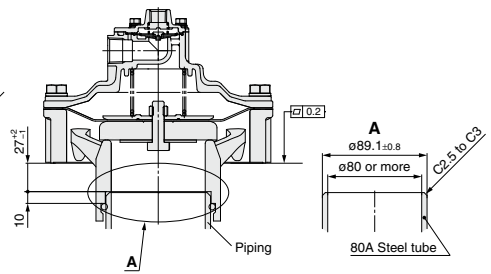
VXFA26D□□□



VXFA26C□□□ Piping



VXFA26D□□□ Piping



* Machine the mounting surface shape so that there are no gaps between the mounting surface and the product. Refer to page 373 for details.

| |
|------------|
| VX2 |
| VXK |
| VXD |
| VXZ |
| VXS |
| VXB |
| VXE |
| VXP |
| VXR |
| VXH |
| VXF |
| VX3 |
| VXA |

VXF2/VXFA2 Series



Dedicated Controller For Operation/VXFC Series

How to Order Controller

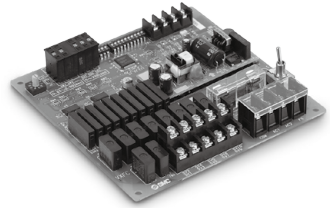
VXFC **06** **D**

Number of output points

| | |
|-----------|------------------|
| 06 | 6 output points |
| 10 | 10 output points |

Voltage

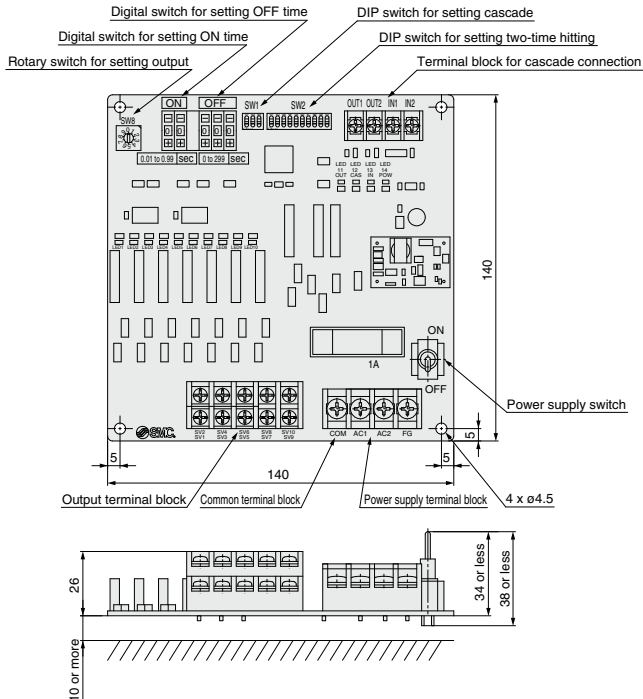
| | |
|------------|---------------|
| D | 24 to 48 VDC |
| D-6 | 12 VDC |
| A | 85 to 240 VAC |



Specifications

| Model | VXFC ⁰⁶ / ₁₀ A | VXFC ⁰⁶ / ₁₀ D | VXFC ⁰⁶ / ₁₀ D-6 |
|-------------------------------|--------------------------------------|--------------------------------------|--|
| Input voltage | 85 to 240 VAC | 24 to 48 VDC | 12 VDC |
| Output voltage | Same as input voltage | | |
| Time setting | ON | 0.01 to 0.99 sec | |
| | OFF | 0 to 299 sec | |
| | Time accuracy | ±2% | |
| Number of outputs | 6 to 10 points | | |
| Operating ambient temperature | 0 to 50°C (No condensation allowed) | | |
| Operating ambient humidity | 45 to 80% (No condensation allowed) | | |
| Output current | 0.5 A or less | 0.5 A or less | 0.5 A or less |
| Power supply fuse | 3 A | 1 A | 1 A |

Dimensions



Pressure Terminology

1. Maximum operating pressure differential

The maximum pressure differential (the difference between the inlet and outlet pressure) which is allowed for operation. When the outlet pressure is 0 MPa, this becomes the maximum operating pressure.

2. Minimum operating pressure differential

The minimum pressure differential (the difference between the inlet pressure and outlet pressure) required to keep the main valve fully open.

3. Maximum system pressure

The maximum pressure that can be applied inside the pipelines (line pressure).

[The pressure differential of the solenoid valve portion must not exceed the maximum operating pressure differential.]

4. Withstand pressure

The pressure in which the valve must be withstood without a drop in performance after holding for one minute under prescribed pressure and returning to the operating pressure range. [value under the prescribed conditions]

Electrical Terminology

1. Apparent power (VA)

Volt-ampere is the product of voltage (V) and current (A).

Power consumption (W): For AC, $W = V \cdot A \cdot \cos \theta$.

For DC, $W = V \cdot A$.

Note) $\cos \theta$ shows power factor. $\cos \theta = 0.9$

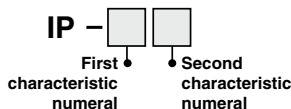
2. Surge voltage

A high voltage which is momentarily generated by shutting off the power in the shut-off area.

3. Degree of protection

A degree defined in the "JIS C 0920: Waterproof test of electric machinery/appliance and the degree of protection against the intrusion of solid foreign objects."

Verify the degree of protection for each product.



● First Characteristics:

Degrees of protection against solid foreign objects

| | |
|---|--|
| 0 | Non-protected |
| 1 | Protected against solid foreign objects of 50 mmφ and greater |
| 2 | Protected against solid foreign objects of 12 mmφ and greater |
| 3 | Protected against solid foreign objects of 2.5 mmφ and greater |
| 4 | Protected against solid foreign objects of 1.0 mmφ and greater |
| 5 | Dust-protected |
| 6 | Dust-tight |

Electrical Terminology

● Second Characteristics:

Degrees of protection against water

| | | |
|---|--|-------------------------------|
| 0 | Non-protected | — |
| 1 | Protected against vertically falling water drops | Dripproof type 1 |
| 2 | Protected against vertically falling water drops when enclosure tilted up to 15° | Dripproof type 2 |
| 3 | Protected against rainfall when enclosure tilted up to 60° | Rainproof type |
| 4 | Protected against splashing water | Splashproof type |
| 5 | Protected against water jets | Water-jet-proof type |
| 6 | Protected against powerful water jets | Powerful water-jet-proof type |
| 7 | Protected against the effects of temporary immersion in water | Immersible type |
| 8 | Protected against the effects of continuous immersion in water | Submersible type |

Example) IP65: Dust-tight, Water-jet-proof type

"Water-jet-proof type" means that no water intrudes inside an equipment that could hinder from operating normally by means of applying water for 3 minutes in the prescribed manner. Take appropriate protection measures, since a device is not usable in an environment where a droplet of water is splashed constantly.

Others

1. Material

NBR: Nitrile rubber

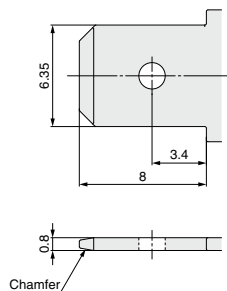
FKM: Fluoro rubber

2. Symbol

In the symbol ($\square \square \square \square \square$), when the valve is closed, flow is blocked from port 1 to port 2. However, if the pressure in port 2 is higher than port 1, the valve will not be able to block the fluid and it will flow from port 2 to port 1.

Flat Terminal

1. Flat terminal/Electrical connection size of molded coil



VX2

VXK

VXD

VXZ

VXS

VXB

VXE

VXP

VXR

VXH

VXF

VX3

VXA



VXF2/VXFA2 Series Specific Product Precautions 1

Be sure to read this before handling the products.

Refer to back page 50 for Safety Instructions and pages 17 to 19 for 2 Port Solenoid Valve for Fluid Control Precautions.

2 Port Solenoid Valve For Dust Collector VXF2/VXFA2 Series

Design

⚠ Warning

1. Cannot be used as an emergency shutoff valve etc.

The valves presented in this catalog are not designed for safety applications such as an emergency shutoff valve. If the valves are used in this type of system, other reliable safety assurance measures should also be adopted.

2. Extended periods of continuous energization

This is a valve for pulse operation. Do not energize it continuously. Since a large amount of air is consumed, the diaphragm will oscillate (chatter) due to insufficient air supply on the inlet side, and this can lead to failure.

3. When the conduit type is used as equivalent to an IP65 enclosure, install a wiring conduit etc.

Silencer

⚠ Caution

1. The silencer's response properties do not change in the initial stage, but will change due to the blockage after long use. Replace it after using about 500,000 times. This number is subject to change based on fluid quality and energizing time.

2. When using a silencer, make space for silencer replacement.

Selection

⚠ Warning

1. Air quality

1. Use clean air.

Do not use compressed air that contains chemicals, synthetic oils including organic solvents, salt or corrosive gases, etc., as it can cause damage or malfunction.

2. Install an air filter.

Install an air filter close to the valve on the upstream side. A filtration degree of 5 μm or less should be selected.

3. Install an aftercooler or air dryer, etc.

Compressed air that contains excessive drainage may cause malfunction of valves and other pneumatic equipment. To prevent this, install an aftercooler or air dryer, etc.

4. If excessive carbon powder is generated, eliminate it by installing a mist separator on the upstream side of valves.

If excessive carbon powder is generated by the compressor, it may adhere to the inside of the valves and cause a malfunction.

Refer to the Best Pneumatics No. 5 for further details on compressed air quality.

Selection

⚠ Warning

2. Ambient environment

Use within the allowable ambient temperature range. Check the compatibility between the product's composition materials and the ambient atmosphere. Be certain that the fluid used does not touch the external surface of the product.

3. Countermeasures against static electricity

Take measures to prevent static electricity since some fluids can cause static electricity.

4. Low temperature operation

- The valve can be used in fluid temperatures down to -10°C . However, take measures to prevent freezing or solidification of impurities, etc.
- When using the valve in cold climates, take appropriate countermeasures to prevent freezing in tubing by draining the water etc. When warming by a heater etc., be careful not to expose the coil portion to a heater. Installation of a dryer, heat retaining of the body is recommended to prevent a freezing condition in which the dew point temperature is high and the ambient temperature is low, and the high flow runs.

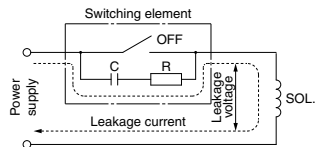
5. Fluid properties

Use a general compressed air with a filter of 5 μm or less mounted on the inlet of the piping. (Excluding dry air)

⚠ Caution

1. Leakage voltage

When the solenoid valve is operated using the controller, etc., the leakage voltage should be the product allowable leakage voltage or less. Particularly when using a resistor in parallel with a switching element and using a C-R element (surge voltage suppressor) to protect the switching element, take note that leakage current will flow through the resistor, C-R element, etc., creating a possible danger that the valve may not turn off.



AC coil: 5% or less of rated voltage
DC coil: 2% or less of rated voltage

- The response performance and start-up speed deteriorate in the case of air operated type (VXFA2) as compared with a solenoid valve type (VXF2). Refer to the data for pilot piping.
- Note that for DC, idle time and return time increase if the voltage is lowered. If a surge voltage suppressor is installed, the return speed decreases.



VXF2/VXFA2 Series

Specific Product Precautions 2

Be sure to read this before handling the products.

Refer to back page 50 for Safety Instructions and pages 17 to 19 for 2 Port Solenoid Valve for Fluid Control Precautions.

2 Port Solenoid Valve For Dust Collector VXF2/VXFA2 Series

Mounting

⚠ Warning

1. If air leakage increases or equipment does not operate properly, stop operation.

After mounting is completed, confirm that it has been done correctly by performing a suitable function test.

2. Do not apply external force to the coil section.

When tightening is performed, apply a wrench or other tool to the outside of the piping connection parts.

3. Mount a valve with its coil position upward, not downward.

When mounting a valve with its coil position downward, foreign objects in the fluid will adhere to the iron core leading to a malfunction. Especially for strict leakage control, such as with vacuum applications and non-leak specifications, the coil must be positioned upward.

4. Do not warm the coil assembly with a heat insulator etc.

Use tape, heaters, etc., for freeze prevention on the piping and body only. They can cause the coil to burn out.

5. Avoid sources of vibration, or adjust the arm from the body to the minimum length so that resonance will not occur.

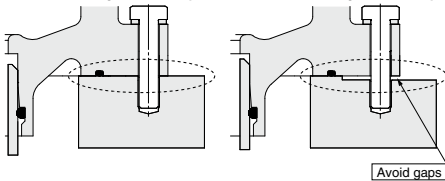
6. Painting and coating

Warnings or specifications printed or labeled on the product should not be erased, removed or covered up.

⚠ Caution

1. Machine the mounting surface shape so that there are no gaps between the mounting surface and the product.

Correct mounting surface shape Incorrect mounting surface shape



Piping

⚠ Warning

1. During use, deterioration of the tube or damage to the fittings could cause tubes to come loose from their fittings and thrash about.

To prevent uncontrolled tube movement, install protective covers or fasten tubes securely in place.

2. For piping the tube, fix the product securely using the mounting holes so that the product is not in the air.

Piping

⚠ Caution

1. Preparation before piping

Before piping is connected, it should be thoroughly blown out with air (flushing) or washed to remove chips, cutting oil and other debris from inside the pipe.

Install piping so that it does not apply pulling, pressing, bending or other forces on the valve body.

2. Avoid connecting ground lines to piping, as this may cause electric corrosion of the system.

3. Always tighten threads with the proper tightening torque.

When attaching fittings to valves, tighten with the proper tightening torque shown below.

Tightening Torque for Piping

| Connection thread | Proper tightening torque N·m |
|-------------------|------------------------------|
| Rc1/4 | 12 to 14 |
| Rc3/8 | 22 to 24 |
| Rc1/2 | 28 to 30 |
| Rc3/4 | 28 to 30 |
| Rc1 | 36 to 38 |
| Rc1 1/2 | 40 to 42 |
| Rc2 | 48 to 50 |
| Rc2 1/2 | 48 to 50 |
| Rc3 | 48 to 50 |

4. When connecting piping to a product

Avoid mistakes regarding the supply port etc.

5. If a regulator, or a restrictor, is installed immediately before or after the IN port of the valve, the main valve may oscillate (chatter). Install them away from the valve or change the restriction.

6. The header tank capacity should be sufficient. This is a valve for large flow rate, so if the capacity is small, the main valve may oscillate due to pressure drop or insufficient air supply.

Wiring

⚠ Caution

1. As a rule, use electrical wire with a cross sectional area of 0.5 to 1.25 mm² for wiring.

Furthermore, do not allow excessive force to be applied to the lines.

2. Use electrical circuits which do not generate chattering in their contacts.

3. Use voltage which is within $\pm 10\%$ of the rated voltage. In cases with a DC power supply where importance is placed on responsiveness, stay within $\pm 5\%$ of the rated value. The voltage drop is the value in the lead wire section connecting the coil.

4. When a surge from the solenoid affects the electrical circuitry, install a surge voltage suppressor etc. in parallel with the solenoid. Or, adopt an option that comes with the surge voltage protection circuit.

(However, a surge voltage occurs even if the surge voltage protection circuit is used. For details, please consult with SMC.)

VX2

VXK

VXD

VXZ

VXS

VXB

VXE

VXP

VXR

VXH

VXF

VX3

VXA



VXF2/VXFA2 Series Specific Product Precautions 3

Be sure to read this before handling the products.

Refer to back page 50 for Safety Instructions and pages 17 to 19 for 2 Port Solenoid Valve for Fluid Control Precautions.

2 Port Solenoid Valve For Dust Collector VXF2/VXFA2 Series

Operating Environment

⚠ Warning

1. Do not use in an atmosphere having corrosive gases, chemicals, sea water, water, water vapor, or where there is direct contact with any of these.
2. Do not use in explosive atmospheres.
3. Do not use in locations subject to vibration or impact.
4. Do not use in locations where radiated heat will be received from nearby heat sources.
5. Employ suitable protective measures in locations where there is contact with water droplets, oil or welding spatter, etc.

Maintenance

⚠ Warning

1. **Removing the product**
The valve becomes hot depending on the fluid temperature. Confirm that the valve temperature has dropped sufficiently before performing work. If touched inadvertently, there is a danger of being burned.
 1. Shut off the fluid supply and release the fluid pressure in the system.
 2. Shut off the power supply.
 3. Remove the product.
2. **Low frequency operation**
Switch valves at least once every 30 days to prevent malfunction. Also, in order to use it under the optimum state, conduct a regular inspection once a half year.

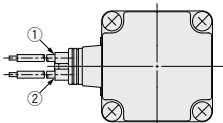
⚠ Caution

1. **Filters**
 1. Be careful regarding clogging of filters.
 2. Replace filter elements after one year of use, or earlier if the pressure drop reaches 0.1 MPa.
2. **Storage**
In case of long term storage after use, thoroughly remove all moisture to prevent rust and deterioration of rubber materials etc.
3. **Exhaust the drainage from an air filter periodically.**

Electrical Connections

⚠ Caution

- **Grommet**
Class B coil: AWG20 Outside insulator diameter of 2.5 mm



| Rated voltage | Lead wire color | |
|---------------|-----------------|------|
| | (1) | (2) |
| DC | Black | Red |
| 100 VAC | Blue | Blue |
| 200 VAC | Red | Red |
| Other AC | Gray | Gray |

* There is no polarity.

Electrical Connections

⚠ Caution

■ DIN terminal

Disassembly

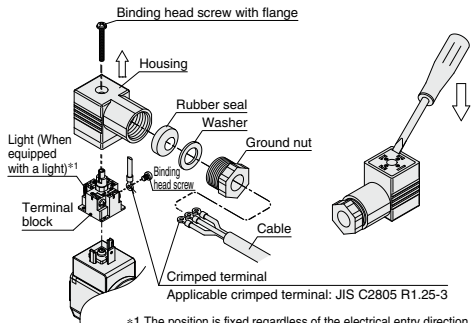
1. After loosening the binding head screw with flange, then if the housing is pulled in the direction of the arrow, the connector will be removed from the solenoid valve.
2. Pull out the binding head screw with flange from the housing.
3. There is a cutout on the bottom of the terminal block. Insert a small flat head screwdriver, etc. into this cutout, and remove the terminal block from the housing. (See figure below.)
4. Remove the ground nut, and pull out the washer and the rubber seal.

Wiring

1. Pass the cable through the ground nut, washer and rubber seal in this order, and insert these parts into the housing.
2. Loosen the binding head screw of the terminal block, then insert the core wire or the crimped terminal of the lead wire into the terminal, and securely fix it with the binding head screw. The binding head screw of the terminal block is M3.
Note 1) Tighten the screw to a torque of between 0.5 and 0.6 N·m.
Note 2) Cable O.D.: $\phi 6$ to $\phi 12$ mm
Note 3) For an outside cable diameter of $\phi 9$ to 12 mm, remove the internal parts of the rubber seal before using.

Assembly

1. Pass the cable through the ground nut, washer, rubber seal and the housing in this order, and connect to the terminal block. Then, set the terminal block inside the housing. (Push in the terminal block until it snaps into position.)
2. Insert the rubber seal and the washer in this order into the cable entry of the housing, and then tighten the ground nut securely.
3. Insert the gasket between the bottom part of the terminal block and the plug attached to the equipment, and then insert the binding head screw with flange from the top of the housing, and tighten it.
Note 1) Tighten the screw to a torque of between 0.5 and 0.6 N·m.
Note 2) The orientation of the connector can be changed in steps of 90° by changing the method of assembling the housing and the terminal block.



Applicable crimped terminal: JIS C2805 R1.25-3

*1 The position is fixed regardless of the electrical entry direction.



VXF2/VXFA2 Series Specific Product Precautions 4

Be sure to read this before handling the products.

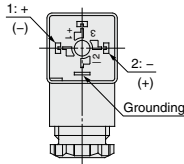
Refer to back page 50 for Safety Instructions and pages 17 to 19 for 2 Port Solenoid Valve for Fluid Control Precautions.

2 Port Solenoid Valve For Dust Collector VXF2/VXFA2 Series

Electrical Connections

⚠ Caution

Internal connections are as shown below. Make connections to the power supply accordingly.



| Terminal no. | 1 | 2 |
|--------------|-------|-------|
| DIN terminal | + (-) | - (+) |

* There is no polarity.

■ Conduit terminal

Disassembly

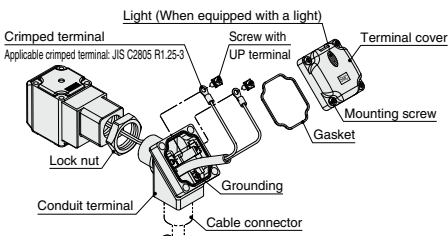
- Loosen the mounting screw, and remove the terminal cover from the conduit terminal.

Wiring

- Insert the cable into the conduit terminal.
- Loosen the screw with UP terminal of the conduit terminal, then insert the core wire or the crimped terminal of the lead wire into the terminal, and securely fix it with the screw with UP terminal.
Note 1) Tighten the screw to a torque of between 0.5 and 0.6 N·m.

Assembly

- Insert the gasket into the conduit terminal, and then clamp the terminal cover with the mounting screw.
Note 1) Tighten the screw to a torque of between 0.5 and 0.6 N·m.
Note 2) When changing the orientation of the conduit terminal, carry out the following procedure.
 - Apply a tool (monkey wrench, spanner, etc.) to the width across flats of the conduit terminal, and turn the terminal in the counterclockwise direction.
 - Loosen the lock nut.
 - Turn the conduit terminal in the clamping direction (clockwise direction) to about 15° ahead of the desired position.
 - Turn the lock nut by hand to the coil side until it is lightly tightened.
 - Apply a tool to the width across flats of the conduit terminal, and turn it to the desired position (through an angle of about 15°) so as to clamp the conduit terminal.
- Note) When changing the orientation by applying additional tightening force to the conduit terminal from the factory-set position, turn no more than one half a turn.

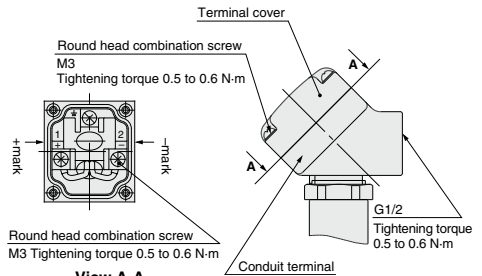


⚠ Caution

■ Conduit terminal

Make connections according to the marks shown below.

- Use the tightening torques below for each section.
- Properly seal the terminal connection (G1/2) with the special wiring conduit etc.

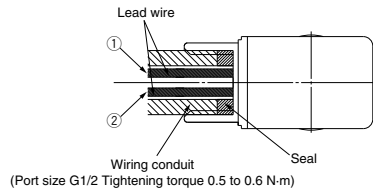


(Internal connection diagram)

■ Conduit

When used as an IP65 equivalent, use seal to install the wiring conduit. Also, use the tightening torque below for the conduit.

Class B coil: AWG20 Outside insulator diameter of 2.5 mm



| Rated voltage | Lead wire color | |
|---------------|-----------------|------|
| | ① | ② |
| DC | Black | Red |
| 100 VAC | Blue | Blue |
| 200 VAC | Red | Red |
| Other AC | Gray | Gray |

* There is no polarity.

| Description | Part no. |
|-------------|------------|
| Seal | VCW20-15-6 |

Note) Please order separately.

VX2

VXK

VXD

VXZ

VXS

VXB

VXE

VXP

VXR

VXH

VXF

VX3

VXA



VXF2/VXFA2 Series Specific Product Precautions 5

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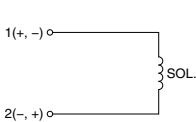
2 Port Solenoid Valve For Dust Collector VXF2/VXFA2 Series

Electrical Circuits

⚠ Caution

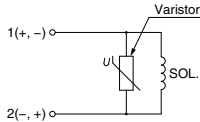
[DC circuit]

Grommet, Flat terminal



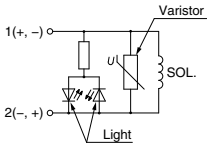
Without electrical option

Grommet, DIN terminal,
Conduit terminal, Conduit



With surge voltage suppressor

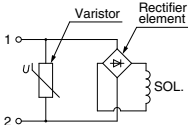
DIN terminal, Conduit terminal



With light and surge voltage suppressor

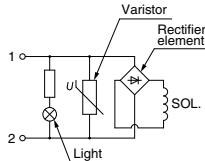
[AC circuit]

Grommet, DIN terminal
Conduit terminal, Conduit



Without electrical option

DIN terminal, Conduit terminal



With light and surge voltage suppressor

Dedicated Controller For Operation VXFC Series

Wiring

⚠ Warning

1. The controller starts its output the moment the power switch is turned ON. Be aware that even if the power switch is turned OFF, power is connected to the terminal block.

⚠ Caution

1. Make sure that the power supply voltage to be input matches the voltage in the controller's specifications. The power supply voltage that has been input becomes the voltage that is output to the solenoid valves.
2. Connect a ground that is rated Class 3 or greater to the power supply terminal block's FG.
3. If the power source is DC, use caution to its polarity. If the polarity is incorrect, it may result in a malfunction or damage.
4. For details, refer to the separate Operation Manual.
5. The solenoid valve mounted on the controller should be equipped with a surge voltage suppressor.

Operating Environment

⚠ Warning

1. Operate under conditions that are free of vibration and impact.
2. Operate in an ambient temperature range between 0°C and 50°C.
3. Operate in an ambient humidity range between 45% to 85% (with no condensation).