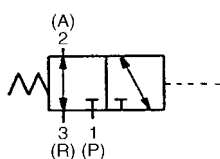


3 Port Air Operated Valve

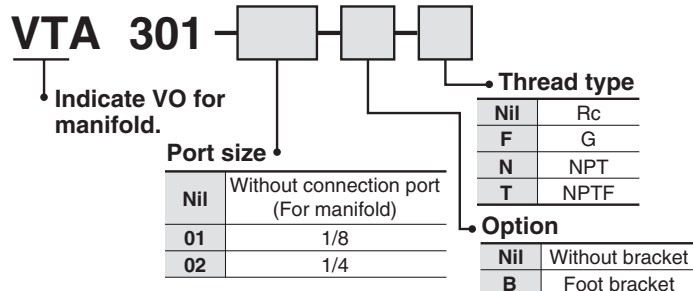
Series VTA301



JIS Symbol



How to Order



Specifications

| | |
|--|---|
| Fluid | Air |
| Operating pressure range (MPa) | 0 to 1.0 |
| Pilot pressure range (MPa) | 0.2 to 1.0 |
| Ambient and fluid temperature (°C) | -10 to 50°C (No freezing. Refer to page 5-11-4.) |
| Lubrication | Not required (Use turbine oil Class 1 ISO VG32, if lubricated.) |
| Impact/Vibration resistance (m/s ²) (Note) | 150/50 |
| Enclosure | Dustproof |



Note) Impact resistance: No malfunction from test using drop impact tester, to axis and right angle directions of main valve, each one time when pilot signal ON and OFF. (Value in the initial stage)

Vibration resistance: No malfunction from test with 45 to 2000 Hz one sweep, to axis and right angle direction of main valve, each one time when pilot signal ON and OFF. (Value in the initial stage)

Option

| Description | Part no. |
|----------------------|------------|
| Bracket (With screw) | DXT060-27A |

Flow Characteristics/Weight

| Valve model | Port size | Flow characteristics | | | | | | | | | | | | Weight (kg) |
|---------------|-------------------------|------------------------------|------|-------|------------------------------|------|-------|------------------------------|------|-------|------------------------------|------|-------|----------------------|
| | | 1 → 2 (P → A) | | | 2 → 3 (A → R) | | | 3 → 2 (R → A) | | | 2 → 1 (A → P) | | | |
| | | C [dm ³ /(s·bar)] | b | Cv | C [dm ³ /(s·bar)] | b | Cv | C [dm ³ /(s·bar)] | b | Cv | C [dm ³ /(s·bar)] | b | Cv | Grommet |
| VTA301-01-□-□ | 1/8 | 0.63 | 0.30 | 0.16 | 0.59 | 0.30 | 0.15 | 0.59 | 0.32 | 0.15 | 0.65 | 0.30 | 0.16 | 0.11 |
| VTA301-02-□-□ | 1/4 | 0.66 | 0.28 | 0.16 | 0.60 | 0.29 | 0.15 | 0.61 | 0.32 | 0.15 | 0.66 | 0.30 | 0.16 | (With bracket: 0.13) |
| VOA301 | Without connection port | 0.34 | 0.26 | 0.084 | 0.32 | 0.17 | 0.076 | 0.35 | 0.22 | 0.084 | 0.35 | 0.13 | 0.079 | 0.12 |



Note 1) The pilot port size is 1/8.

Note 2) Flow characteristics of VOA301 is the value when the valve is mounted on a manifold.

Series VTA301



Precautions

Be sure to read before handling.
Refer to pages 5-11-2 to 6 for
Safety Instruction and Solenoid
Valve Precautions.

For manifold

⚠ Caution

- Each valve is fixed on the manifold with two M4 mounting screws. Please tighten the screws properly when valves are reassembled.
Screw tightening torque: 1.4 N·m
- M4 or equivalent bolts should be tightened evenly to mount the valve onto the manifold base.
- In the case of common exhaust type, pressurization or vacuum suction through R port is not possible.
- In the case of 6 stations or more, supply pressure from both sides of P port.
In the case of common exhaust type, exhaust air from both sides of R port as well.

How to Order Manifold

VVTA300-05 1 01

Stations

| | |
|----|-------------|
| 02 | 2 stations |
| ⋮ | ⋮ |
| 20 | 20 stations |

Exhaust type

| | |
|---|--------------------|
| 1 | Individual exhaust |
| 3 | Common exhaust |

Thread type

| | |
|-----|------|
| Nil | Rc |
| F | G |
| N | NPT |
| T | NPTF |

A port size

| Symbol | Port size | Exhaust style |
|--------|-----------|--------------------------------------|
| 01 | 1/8 | Individual exhaust Common exhaust |
| 02 | 1/4 | Individual exhaust |

* To order valves and blanking plate assembly mounted onto the manifold, list valves and blanking plate assembly with manifold base part number.

<Example>

VVTA300-051-01..... 1 pc.
*VOA301..... 4 pcs.
*DXT060-51-13A..... 1 pc.



• Manifold bases same as those for Series VVT300 manifold valves are available. For the manifold specifications and precautions, refer to Best Pneumatics Vol. 4.

Manifold Model

| Model | Applicable manifold model | Accessory (Part no.) |
|--------|---------------------------|-------------------------------|
| VOA301 | Common/Individual exhaust | Function plate (DXT060-32-4A) |

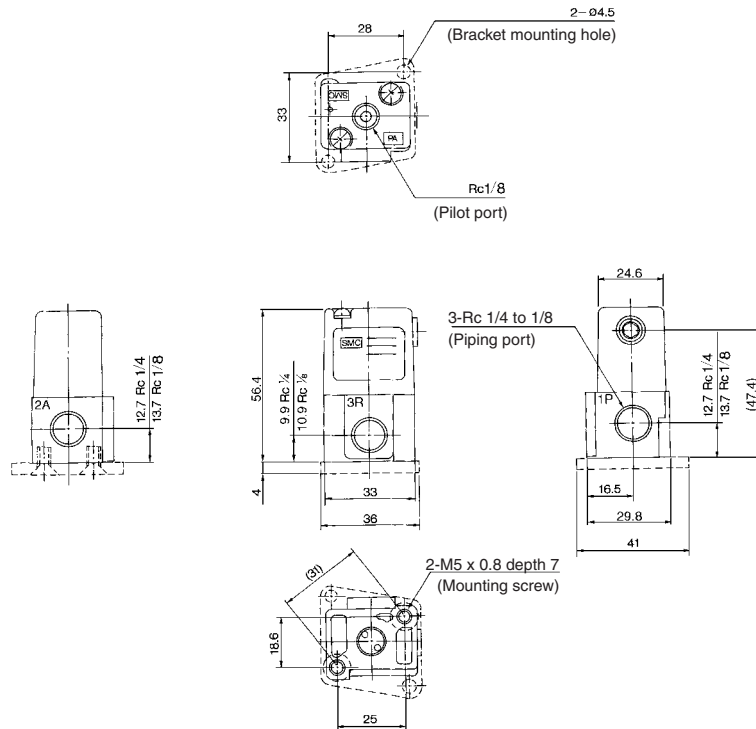
6 Valve Functions Available by Changing of Piping Port

| | 3 port N.C. | 3 port N.O. | 2 port N.C. | 2 port N.O. | Selector | Divider |
|-----------|-------------|-------------|-------------|-------------|----------|---------|
| Pilot OFF | | | | | | |
| Pilot ON | | | | | | |

3 Port Air Operated Valve Series VTA301

Base Mounted

VTA301-□□□



S□A

V□A

S□A

V□A

VM

VR

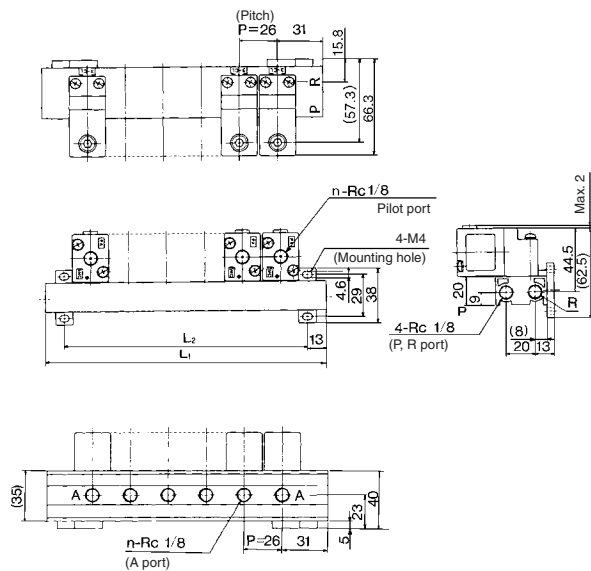
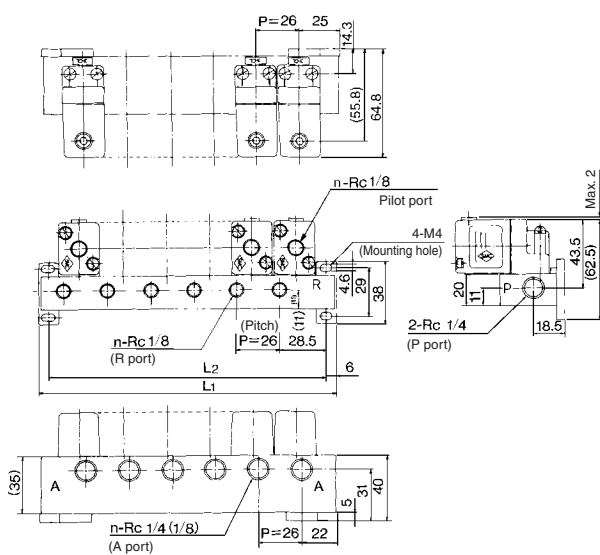
VH

VHS

Dimensions/Manifold

VVTA300-□□1

VVTA300-□□3



Individual Exhaust

n: Station

| Symbol | n | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|----------------|---|----|-----|-----|-----|-----|-----|-----|-----|-----|
| L ₁ | | 76 | 102 | 128 | 154 | 180 | 206 | 232 | 258 | 284 |
| L ₂ | | 64 | 90 | 116 | 142 | 168 | 194 | 220 | 246 | 272 |

Calculation formula: L₁ = 26n + 24, L₂ = 26n + 12

Common Exhaust

n: Station

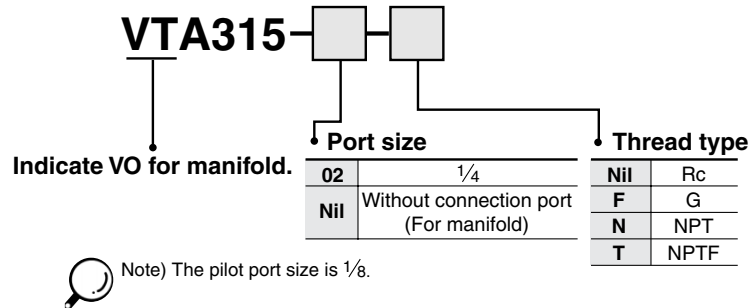
| Symbol | n | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|----------------|---|----|-----|-----|-----|-----|-----|-----|-----|-----|
| L ₁ | | 88 | 114 | 140 | 166 | 192 | 218 | 244 | 270 | 296 |
| L ₂ | | 62 | 88 | 114 | 140 | 166 | 192 | 218 | 244 | 270 |

Calculation formula: L₁ = 26n + 36, L₂ = 26n + 10

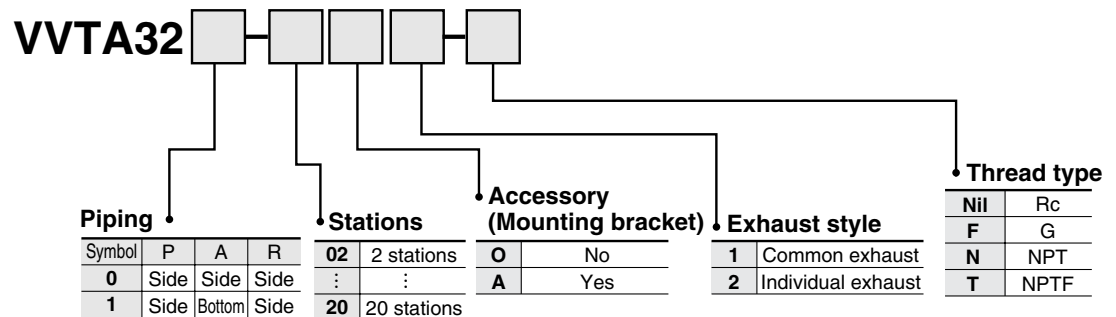
3 Port Air Operated Valve

Series VTA315

How to Order



How to Order Manifold



* To order valves and blanking plate assembly mounted onto the manifold, list valves and blanking plate assembly with manifold base part number.

Example) VVTA320-0501..... 1 pc.
 *VOA315..... 4 pcs.
 *DXT010-36-2A..... 1 pc.



- Manifold bases same as those for Series VVT320 manifold valves are available. Refer to Best Pneumatics Vol. 4 for manifold specifications, precautions and warnings.
- Port location on the bottom of a single valve for manifold is not related to the indication on the side of the body ① ② ③ (P, A, R). (Refer to page Best Pneumatics Vol. 4.)

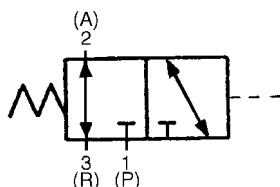
Manifold Model

| Model | Applicable manifold model | Accessory |
|--------|---------------------------|--|
| VOA315 | Common/Individual exhaust | O-ring ("P-8": 4 pcs.), Bolt (DXT010-66-2: 2 pcs.) |

Series VTA315



JIS Symbol



Specifications

| | |
|--|---|
| Fluid | Air |
| Operating pressure range (MPa) | 0 to 1.0 |
| Pilot pressure range (MPa) | 0.1 to 1.0 |
| Ambient and fluid temperature (°C) | -10 to 60°C (No freezing. Refer to page 5-11-4.) |
| Lubrication | Not required (Use turbine oil Class 1 ISO VG32, if lubricated.) |
| Impact/Vibration resistance (m/s ²) <small>Note)</small> | 150/50 |
| Enclosure | Dustproof |



Note) Impact resistance: No malfunction from test using drop impact tester, to axis and right angle directions of main valve, each one time when pilot signal ON and OFF. (Value in the initial stage)

Vibration resistance: No malfunction occurs on the test with one sweep from 45 to 1000 Hz, to axis and right angle directions of main valve each time when energized and de-energized. (Value in the initial stage)

Flow Characteristics/Weight

| Valve model | Flow characteristics | | | | | | | | | | | | Weight (kg) |
|-------------|----------------------|------|------|-----------------|------|------|-----------------|------|------|-----------------|------|------|-------------|
| | 1 → 2 (P → A) | | | 2 → 3 (A → R) | | | 3 → 2 (R → A) | | | 2 → 1 (A → P) | | | |
| | C [dm³/(s·bar)] | b | Cv | C [dm³/(s·bar)] | b | Cv | C [dm³/(s·bar)] | b | Cv | C [dm³/(s·bar)] | b | Cv | Grommet |
| VTA315 | 1.6 | 0.30 | 0.39 | 1.7 | 0.39 | 0.45 | 1.9 | 0.38 | 0.49 | 1.7 | 0.36 | 0.45 | 0.16 |
| VOA315 | 1.4 | 0.12 | 0.33 | 1.2 | 0.18 | 0.29 | 1.5 | 0.16 | 0.35 | 1.2 | 0.13 | 0.28 | |

⚠ Precautions

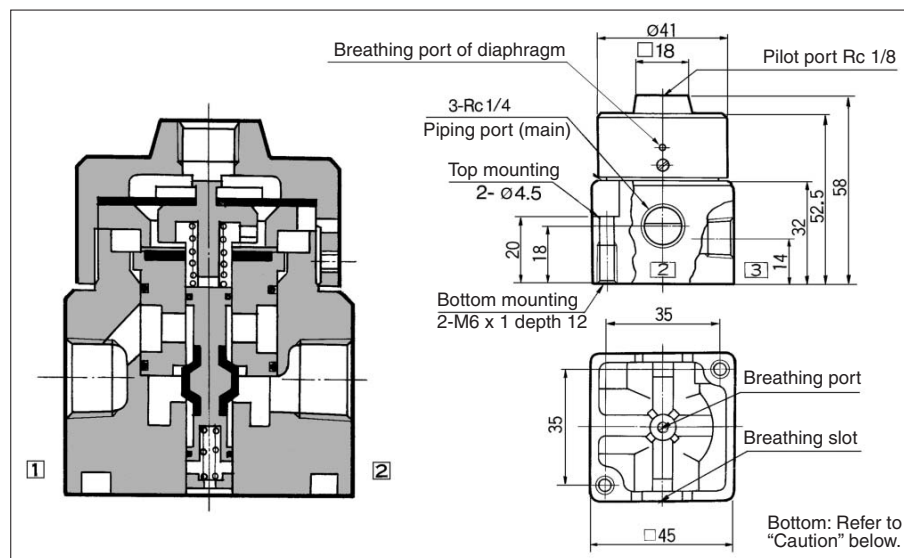
Be sure to read before handling. Refer to pages 5-11-2 to 6 for Safety Instruction and Solenoid Valve Precautions.

For manifold

⚠ Caution

- Each valve is fixed on the manifold with two M4 mounting screws. Please tighten the screws properly when valves are reassembled.
Screw tightening torque: 1.4 N·m
- When using 6 or more stations on the manifold, supply pressure from both sides of P port.
In the case of common exhaust type, exhaust air from both sides of R port as well.

Construction/Dimensions



⚠ Caution

- This valve has a breathing port for the main valve at the bottom. To prevent malfunctions, do not clog the breathing port.
(When mounted on a metal surface, breathing air can go through from the breathing port to the breathing groove; however, when the valve is mounted on a rubber surface, the breathing air may be blocked by the deformation of rubber.)
- Take measures to prevent ingress of dust and foreign matter from the exhaust port and other unused ports. Also, take measures to prevent ingress of water and foreign matter from the breathing port of the diaphragm.