5 Port Air Operated Valve

**VZA2000 Series**

### Specifications

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Air</th>
<th>VZA2121, 2141</th>
<th>VZA2121-2, 241</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating pressure range (MPa)</td>
<td>0.1 to 1.0</td>
<td>0 to 1.0</td>
<td></td>
</tr>
<tr>
<td>Pilot pressure range (MPa)</td>
<td>0.1 to 1.0</td>
<td>0 to 1.0</td>
<td></td>
</tr>
<tr>
<td>Ambient and fluid temperature (°C)</td>
<td>-10 to 60</td>
<td>(No freezing.)</td>
<td></td>
</tr>
<tr>
<td>Impact/Vibration resistance (m/s²)</td>
<td>150/50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Operating pressure ≤ Pilot pressure

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 8.3 to 2000 Hz 1 sweep, to axis and right angle directions of main valve, each one time when pilot signal ON and OFF. (Value in the initial stage)

### Model

<table>
<thead>
<tr>
<th>Valve model</th>
<th>Type of actuation</th>
<th>Port size</th>
<th>Flow rate characteristics</th>
<th>Pilot port size</th>
<th>Pilot port piping location</th>
</tr>
</thead>
<tbody>
<tr>
<td>VZA2121-M5</td>
<td>2 position single</td>
<td>M5 x 0.8</td>
<td>C = 0.60, Cv = 0.43</td>
<td>M5 x 0.8</td>
<td>Body side</td>
</tr>
<tr>
<td>VZA2221-M5</td>
<td>3 position closed</td>
<td>M5 x 0.8</td>
<td>C = 0.56, Cv = 0.15</td>
<td>M5 x 0.8</td>
<td>Body side</td>
</tr>
<tr>
<td>VZA2321-M5</td>
<td>Exhaust center</td>
<td></td>
<td>C = 0.60, Cv = 0.20</td>
<td>M5 x 0.8</td>
<td>Body side</td>
</tr>
<tr>
<td>VZA2141-1-01</td>
<td>2 position single</td>
<td>Rc 1/8</td>
<td>C = 1.0, Cv = 0.30</td>
<td>M5 x 0.8</td>
<td>Sub-plate side</td>
</tr>
<tr>
<td>VZA2141-2-01</td>
<td>3 position closed</td>
<td></td>
<td>C = 0.90, Cv = 0.25</td>
<td>M5 x 0.8</td>
<td>Sub-plate side</td>
</tr>
<tr>
<td>VZA2241-1-01</td>
<td>Exhaust center</td>
<td></td>
<td>C = 1.0, Cv = 0.25</td>
<td>M5 x 0.8</td>
<td>Sub-plate side</td>
</tr>
</tbody>
</table>

Note) Model number for base mounted type without sub-plate is VZA241-.

### Compatibility with universal porting is possible except for with the single type.

#### Symbol

**Body mounted**

- 2 position single A (R1)/(P)/R2
- 2 position double A (R1)/(P)/R2
- 3 position closed center A (R1)/(P)/R2
- 3 position exhaust center A (R1)/(P)/R2

**Base mounted**

- 2 position single A (R1)/(P)/R2
- 2 position double A (R1)/(P)/R2
- 3 position closed center A (R1)/(P)/R2
- 3 position exhaust center A (R1)/(P)/R2

### Thread type

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

### Caution

- Be sure to read this before handling the products.
- Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

© 1484
**How to Order Manifold**

**VZA2000 Series**

Manifold specifications

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Piping type</th>
<th>P, EA, EB port size</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>Body ported</td>
<td>Rc1/8</td>
</tr>
<tr>
<td>50</td>
<td>Base mounted</td>
<td></td>
</tr>
</tbody>
</table>

- **Stations**
  - 02: 2 Stations
  - 10: 10 Stations

- **Cylinder port size on the base**
  - Nil: Body ported 20 type
  - M5: M5 x 0.8
  - 01: Rc1/8
  - C4: Built-in ø4 One-touch fitting
  - C6: Built-in ø6 One-touch fitting

- **Thread type**
  - Nil
  - Rc
  - N: NPT
  - T: NPTF
  - F: G

- **Combination symbol (port specifications)**
  - 1: P, EA, EB common/side ported

**How to Order Valve**

**VZA2**

- **Type of actuation**
  - 1: 2 position single
  - 2: 2 position double
  - 3: 3 position closed center
  - 4: 3 position exhaust center

- **Body type**
  - 2: Body ported
  - 4: Base mounted

- **Pilot port piping type**
  - Nil: Body ported (Body side)
  - 1: Sub-plate side (Internal)
  - 2: Body side (External)

- **Option**
  - F: With foot bracket

- **Thread type**
  - Nil
  - Rc, M5
  - N: NPT
  - T: NPTF
  - F: G

- **Port size**
  - Symbol | Body ported | Base mounted |
  - Nil    | Without sub-plate |
  - M5     | M5 x 0.8         | —           |
  - 01     | —                | Rc1/8       |

**With Bracket**

- **VZA2000**
  - Air operated valve model: VZA2121-M5-F
  - Bracket assembly part no.: VZ2000-37A-2
Dimensions: Body Ported

2 position single: VZA2121-M5

2 x ø2.8 Mounting hole

2 x ø2.8

Pilot port (A side)

M5 x ø0.8

5 x M5 x 0.8

2 position double: VZA2221-M5

2 x ø2.8 Mounting hole

2 x ø2.8

Pilot port (A side)

2 x M5 x 0.8

Manual override (Non-locking)

3 position closed center: VZA2321-M5

3 position exhaust center: VZA2421-M5

2 x ø2.8

Mounting hole

2 x ø2.8

Pilot port (B side)

2 x M5 x 0.8

Mounting hole

Pilot port (B side)

Manual override (Non-locking)

Manual override (Non-locking)
Dimensions: Base Mounted

2 position single: VZA2141-1-01

Pilot port (A side)
body side
M5 x 0.8
2 x ø4.5
Mounting hole

5 x Rc ½

2 position double: VZA2241-1-01

Pilot port (A side)
body side
M5 x 0.8
2 x ø4.5
Mounting hole

Pilot port (B side)
M5 x 0.8
2 x ø4.5

Pilot port (A side)
sub-plate side
5 x Rc ½

Pilot port (B side)
2 x M5 x 0.8 sub-plate side

5 Port Air Operated Valve VZA2000 Series
Dimensions: Base Mounted

3 position closed center: VZA2341-\(\frac{1}{2}\)-01

3 position exhaust center: VZA2441-\(\frac{1}{2}\)-01
# 5 Port Air Operated Valve

## VZA4000 Series

### Specifications

**Fluid**

| Operating pressure range (MPa) | VZA4121, 4141 | 0.15 to 1.0 |
| Pilot pressure range (MPa)    | VZA4121, 4141 | 0.15 to 1.0 |
| Ambient and fluid temperature (°C) | VZA4121, 4141 | −10 to 60 (No freezing.) |

### Impact/Vibration resistance (m/s²) Note)

| 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 8.3 to 2000 Hz 1 sweep, to axis and right angle directions of main valve, each one time when pilot signal ON and OFF. (Value in the initial stage)

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Air</th>
<th>Pilot port size</th>
<th>Pilot port piping location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4</td>
<td>1/8</td>
<td>M5 x 0.8</td>
<td>Body side</td>
</tr>
<tr>
<td>1/2</td>
<td>1/4</td>
<td>M5 x 0.8</td>
<td>Sub-plate side</td>
</tr>
<tr>
<td>5/3</td>
<td>1/8</td>
<td>M5 x 0.8</td>
<td>Sub-plate side</td>
</tr>
</tbody>
</table>

### Model

#### Valve model

<table>
<thead>
<tr>
<th>Valve model</th>
<th>Type of actuation</th>
<th>Port size Rc</th>
</tr>
</thead>
<tbody>
<tr>
<td>VZA4121-01</td>
<td>2 position</td>
<td>1/8</td>
</tr>
<tr>
<td>VZA4221-01</td>
<td>2 position double</td>
<td>1/8</td>
</tr>
<tr>
<td>VZA4432-01</td>
<td>3 position</td>
<td>1/8</td>
</tr>
<tr>
<td>VZA4141-1-01</td>
<td>2 position</td>
<td>1/8</td>
</tr>
<tr>
<td>VZA4242-02</td>
<td>3 position</td>
<td>1/8</td>
</tr>
<tr>
<td>VZA4331-1-01</td>
<td>3 position</td>
<td>1/8</td>
</tr>
<tr>
<td>VZA4241-1-01</td>
<td>2 position</td>
<td>1/8</td>
</tr>
<tr>
<td>VZA4241-1-02</td>
<td>2 position</td>
<td>1/8</td>
</tr>
<tr>
<td>VZA4241-1-03</td>
<td>2 position</td>
<td>1/8</td>
</tr>
<tr>
<td>VZA4241-2-01</td>
<td>2 position</td>
<td>1/4</td>
</tr>
<tr>
<td>VZA4241-2-02</td>
<td>2 position</td>
<td>1/4</td>
</tr>
<tr>
<td>VZA4341-1-01</td>
<td>2 position</td>
<td>1/4</td>
</tr>
<tr>
<td>VZA4341-1-02</td>
<td>2 position</td>
<td>1/4</td>
</tr>
<tr>
<td>VZA4341-2-01</td>
<td>2 position</td>
<td>1/4</td>
</tr>
<tr>
<td>VZA4341-1-01</td>
<td>2 position</td>
<td>1/4</td>
</tr>
<tr>
<td>VZA4341-2-01</td>
<td>2 position</td>
<td>1/4</td>
</tr>
<tr>
<td>VZA4441-1-01</td>
<td>2 position</td>
<td>1/4</td>
</tr>
<tr>
<td>VZA4441-1-02</td>
<td>2 position</td>
<td>1/4</td>
</tr>
<tr>
<td>VZA4441-2-01</td>
<td>2 position</td>
<td>1/4</td>
</tr>
<tr>
<td>VZA4441-2-02</td>
<td>2 position</td>
<td>1/4</td>
</tr>
<tr>
<td>VZA4441-2-03</td>
<td>2 position</td>
<td>1/4</td>
</tr>
<tr>
<td>VZA4421-01</td>
<td>3 position</td>
<td>1/8</td>
</tr>
<tr>
<td>VZA4221-02</td>
<td>3 position</td>
<td>1/8</td>
</tr>
<tr>
<td>VZA4241-01</td>
<td>3 position</td>
<td>1/8</td>
</tr>
<tr>
<td>VZA4241-02</td>
<td>3 position</td>
<td>1/8</td>
</tr>
<tr>
<td>VZA4241-03</td>
<td>3 position</td>
<td>1/8</td>
</tr>
<tr>
<td>VZA4241-1-01</td>
<td>3 position</td>
<td>1/8</td>
</tr>
<tr>
<td>VZA4241-1-02</td>
<td>3 position</td>
<td>1/8</td>
</tr>
<tr>
<td>VZA4241-2-01</td>
<td>3 position</td>
<td>1/8</td>
</tr>
<tr>
<td>VZA4241-2-02</td>
<td>3 position</td>
<td>1/8</td>
</tr>
<tr>
<td>VZA4441-1-01</td>
<td>3 position</td>
<td>1/8</td>
</tr>
<tr>
<td>VZA4441-1-02</td>
<td>3 position</td>
<td>1/8</td>
</tr>
<tr>
<td>VZA4441-2-01</td>
<td>3 position</td>
<td>1/8</td>
</tr>
<tr>
<td>VZA4441-2-02</td>
<td>3 position</td>
<td>1/8</td>
</tr>
<tr>
<td>VZA4441-2-03</td>
<td>3 position</td>
<td>1/8</td>
</tr>
</tbody>
</table>

### Compatibility with universal porting is possible except for with the single type.

#### Symbol

- **Body mounted**
- **Base mounted**

#### Flow rate characteristics **(1)**

<table>
<thead>
<tr>
<th>C [dm³/s bar]</th>
<th>b</th>
<th>Cv [dm³/s bar]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4</td>
<td>0.14</td>
<td>0.49</td>
</tr>
<tr>
<td>1/2</td>
<td>0.14</td>
<td>0.49</td>
</tr>
<tr>
<td>5/3</td>
<td>0.15</td>
<td>0.47</td>
</tr>
</tbody>
</table>

### Flow rate characteristics **(2)**

<table>
<thead>
<tr>
<th>C [dm³/s bar]</th>
<th>b</th>
<th>Cv [dm³/s bar]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8</td>
<td>0.14</td>
<td>0.49</td>
</tr>
<tr>
<td>1/4</td>
<td>0.14</td>
<td>0.49</td>
</tr>
<tr>
<td>1/8</td>
<td>0.15</td>
<td>0.47</td>
</tr>
<tr>
<td>1/4</td>
<td>0.15</td>
<td>0.47</td>
</tr>
</tbody>
</table>

### Specifications

<table>
<thead>
<tr>
<th>Impact/Vibration resistance (m/s²) Note)</th>
</tr>
</thead>
</table>

### Impact/Vibration resistance (m/s²)

<table>
<thead>
<tr>
<th>Impact/Vibration resistance (m/s²) Note)</th>
</tr>
</thead>
</table>

### Notes

- **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 8.3 to 2000 Hz 1 sweep, to axis and right angle directions of main valve, each one time when pilot signal ON and OFF. (Value in the initial stage)***

### Caution

- **Be sure to read this before handling the products.**
- **Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.**

---

**Sub-platte Assembly Part No.: VZA4000-S-01**

**Thread type**

<table>
<thead>
<tr>
<th>Nil</th>
<th>Rc</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>NPT</td>
</tr>
<tr>
<td>T</td>
<td>NPTF</td>
</tr>
<tr>
<td>F</td>
<td>G</td>
</tr>
</tbody>
</table>
VZA4000 Series

How to Order Manifold

VZA4000 Series
Manifold

Manifold specifications
(P, EA, EB port size)

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Piping type</th>
<th>P, EA, EB port size</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>Body ported</td>
<td>Rc1/4</td>
</tr>
<tr>
<td>50</td>
<td>Base mounted</td>
<td></td>
</tr>
</tbody>
</table>

Stations

- 02 2 Stations
- 10 10 Stations

Thread type

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

Cylinder port size on the base

- Nil Body ported 20 type
- 01 Rc1/8
- 02 Rc1/4
- C6 Built-in ø6 One-touch fitting
- C8 Built-in ø8 One-touch fitting

Combination symbol (port specifications)

1 P, EA, EB common/side ported

How to Order Valve

VZA4

Type of actuation

- 1 2 position single
- 2 2 position double
- 3 3 position closed center
- 4 3 position exhaust center

Body type

- 2 Body ported
- 4 Base mounted

Pilot port piping type

- Nil Body ported (Body side)
- 1 Sub-plate side (Internal)
- 2 Body side (External)

Option

F With foot bracket

Note) Only VZA4121-01 (single) applicable.

Thread type

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

Port size

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Body ported</th>
<th>Base mounted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Without sub-plate</td>
<td></td>
</tr>
<tr>
<td>01</td>
<td>Rc1/8</td>
<td>Rc1/8</td>
</tr>
<tr>
<td>02</td>
<td>—</td>
<td>Rc1/4</td>
</tr>
</tbody>
</table>

With Bracket

VZA4000 Air operated valve model
Bracket assembly part no.

VZA4121-01-F
VZ4000-22A

1490
Dimensions: Body Ported

2 position single: VZA4121-01

2 position double: VZA4221-01

3 position closed center: VZA4321-01

3 position exhaust center: VZA4421-01
VZA4000 Series

Dimensions: Base Mounted

2 position single: VZA4141-□-01-02

![Diagram of 2 position single VZA4141 with dimensions and labels.]

2 position double: VZA4241-□-01-02

![Diagram of 2 position double VZA4241 with dimensions and labels.]

1492
Dimensions: Base Mounted

3 position closed center: VZA4341-□-01

3 position exhaust center: VZA4441-□-01