5 Port Solenoid Valve
Body Ported

Series VZ5000

How to Order

Body ported VZ5 1 2 0 5 L 01

Type of actuation
1 2 position single solenoid
2 2 position double solenoid
3 3 position closed center
4 3 position exhaust center
5 3 position pressure center

Body option
B: Individual exhaust for the pilot valve
3: Common exhaust type for main and pilot valve

Rated voltage
1 100 VAC, 50/60 Hz
2 200 VAC, 50/60 Hz
3 110 VAC, 50/60 Hz
4 220 VAC, 50/60 Hz
5 24 VDC
6 12 VDC

Thread type
Nil Rc
F G
N NPT
T NPTF

4(A), 2(B) port size
01 Rc 1/8
C6 One-touch fitting for ø6
C8 One-touch fitting for ø8

Manual override
0: Individual exhaust
1: Individual exhaust
2: Common exhaust type

Electrical entry
G: Lead wire length 300 mm
H: Lead wire length 600 mm
L: With lead wire (Length 300 mm)
LO: Without connector
M: With lead wire (Length 300 mm)
MN: Without lead wire
MO: Without connector
D: With connector
DO: Without connector

Option
F: With foot bracket
(2 position single type only)

Note) Do not remove the factory installed bracket from models with the bracket option.

Light/Surge voltage suppressor
Nil None
Z With light/surge voltage suppressor
S With surge voltage suppressor

* Type "LN", "MN": With 2 sockets.

* Not available for "GZ", "HZ" and "DOZ"
Series VZ5000

Applicable for cylinder actuation (up to ø50).
Compact size (Width: 18 mm)
Low power consumption: 1.8 W DC

Refer to pages 3-3-54 to 3-3-65 for manifold use.

Made to Order Specifications
(For details, refer to page 3-3-65.)

Specifications

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating pressure range (MPa)</td>
<td>2 position single 0.15 to 0.7</td>
</tr>
<tr>
<td></td>
<td>2 position double 0.1 to 0.7</td>
</tr>
<tr>
<td></td>
<td>3 position 0.15 to 0.7</td>
</tr>
<tr>
<td>Ambient and fluid temperature (°C)</td>
<td>–10 to 50°C (No freezing. Refer to page 3-13-4.)</td>
</tr>
<tr>
<td>Response time (ms)</td>
<td>2 position single, double 20 or less</td>
</tr>
<tr>
<td>(at the pressure of 0.5 MPa)</td>
<td>3 position 50 or less</td>
</tr>
<tr>
<td>Max. operating frequency (Hz)</td>
<td>2 position single, double 10</td>
</tr>
<tr>
<td></td>
<td>3 position 3</td>
</tr>
</tbody>
</table>

Effective area
Refer to the table below.

| Manual override | Non-locking push type, Locking slotted type, Locking lever type |
| Pilots exhaust method | Individual pilot exhaust type, Common exhaust (pilot and main valve) type |
| Lubrication | Not required |
| Mounting orientation | Unrestricted |
| Impact/Vibration resistance (m/s²) | 300/50 |
| Enclosure | Dustproof |

Note 1) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage, without surge suppressor)
Note 2) When operating the locking type manually, apply torque of 0.2 N·m or less.
Note 3) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states once for each condition. (Values at the initial period)
Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

Solenoid Specifications

| Electrical entry | Grommet (G)/(H), L plug connector (L), M plug connector (M), DIN terminal (D) |
| Coil rated voltage (V) | AC 50/60 Hz |
| | DC 24, 6, 12, 48 |
| Allowable voltage fluctuation (%) | –15 to +10% of rated voltage |
| Power consumption (W) | DC 1.8 (With indicator light 2.1) |
| [Current mA] | (With indicator light 2.1) |
| Apparent power (VA) | AC 4.5/50 Hz, 4.2/60 Hz |
| [Current mA] | 100 VAC: 45/50 Hz, 42/60 Hz |
| | 200 VAC: 22.5/50 Hz, 21/60 Hz |
| Surge voltage suppressor | DC: Diode, AC: ZNR |
| Indicator light | DC: LED (Red), AC: Neon bulb |

Note) At rated voltage

---

Refer to pages 3-3-54 to 3-3-65 for manifold use.
### Flow Characteristics/Weight

<table>
<thead>
<tr>
<th>Valve model</th>
<th>Type of actuation</th>
<th>Port size</th>
<th>Flow characteristics</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Grommet</td>
</tr>
<tr>
<td>VZ520-01</td>
<td></td>
<td>Rc 1/8</td>
<td></td>
<td>120</td>
</tr>
<tr>
<td>2 Position</td>
<td>Single</td>
<td>Rc 1/8</td>
<td>2.2 0.36 0.58 2.4 0.34 0.63</td>
<td>160</td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Position</td>
<td>Closed center</td>
<td></td>
<td>1.8 0.37 0.45 2.0 0.35 0.49</td>
<td>160</td>
</tr>
<tr>
<td></td>
<td>Exhaust center</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pressure center</td>
<td></td>
<td>3.0 [0.80] 0.37[0.50] 0.76[0.25] 1.8 0.37 0.45</td>
<td>160</td>
<td></td>
</tr>
<tr>
<td>VZ520-C6</td>
<td></td>
<td>Rc 1/8</td>
<td></td>
<td>120</td>
</tr>
<tr>
<td>2 Position</td>
<td>Single</td>
<td>Rc 1/8</td>
<td>1.6 0.33 0.4 2.2 0.32 0.53</td>
<td>160</td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Position</td>
<td>Closed center</td>
<td></td>
<td>1.4 0.27 0.35 1.9 0.33 0.49</td>
<td>160</td>
</tr>
<tr>
<td></td>
<td>Exhaust center</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pressure center</td>
<td></td>
<td>1.8 [0.78] 0.36[0.40] 0.45[0.22] 1.6 0.30 0.39</td>
<td>160</td>
<td></td>
</tr>
<tr>
<td>VZ520-C8</td>
<td></td>
<td>Rc 1/8</td>
<td></td>
<td>120</td>
</tr>
<tr>
<td>2 Position</td>
<td>Single</td>
<td>Rc 1/8</td>
<td>2.0 0.39 0.52 2.3 0.34 0.61</td>
<td>160</td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Position</td>
<td>Closed center</td>
<td></td>
<td>1.7 0.35 0.42 2.0 0.29 0.49</td>
<td>160</td>
</tr>
<tr>
<td></td>
<td>Exhaust center</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pressure center</td>
<td></td>
<td>1.9 [0.88] 0.5[0.48] 0.59[0.25] 1.7 0.39 0.42</td>
<td>160</td>
<td></td>
</tr>
</tbody>
</table>

### Cylinder Speed Chart

Use as a guide for selection. Please confirm the actual conditions with SMC Sizing Program.

<table>
<thead>
<tr>
<th>Series</th>
<th>Average speed (mm/s)</th>
<th>Bore size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>ø6 ø10 ø16 ø20 ø25 ø32 ø40 ø50 ø63 ø80 ø100</td>
</tr>
<tr>
<td>VZ5120-01</td>
<td>800 700 600 500 400 300 200 100 0</td>
<td>301 475 487 749 379 610 252 386 157 103 159</td>
</tr>
</tbody>
</table>

Note) []: Denotes the normal position. Exhaust center: 4/2 → 5/3, Pressure center: 1 → 4/2

* It is when the cylinder is extending that is meter-out controlled by speed controller which is directly connected with cylinder, and its needle valve with being fully open.

* The average velocity of the cylinder is what the stroke is divided by the total stroke time.

* Load factor: ((Load weight x 9.8)/Theoretical force) x 100%

Note) The Series CA1 has been changed to the Series CA2.

### Conditions

<table>
<thead>
<tr>
<th>Body ported</th>
<th>Series C2</th>
<th>Series CM2</th>
<th>Series MB</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>VZ5120-01</td>
<td>as2301f-06</td>
<td>as3301f-06</td>
<td>as4001f-12</td>
<td>AN110-01</td>
</tr>
</tbody>
</table>

**Note**
- 4/2: 4 port solenoid valve, 2 position
- 5/3: 5 port solenoid valve, 3 position
- C: [dm³/(s·bar)]
- V: [m³/s]
- T: [N·m]
- G: [g]
- Rc: [inch]
- W: [W]
- Q: [dm³/min]
- L: [m]

**Legend**
- Perpendicular, upward actuation
- Horizontal actuation
**Construction**

### 2 position single

![Diagram of 2 position single](image1)

### 2 position double

![Diagram of 2 position double](image2)

### 3 position closed center

![Diagram of 3 position closed center](image3)

### 3 position exhaust center

![Diagram of 3 position exhaust center](image4)

### 3 position pressure center

![Diagram of 3 position pressure center](image5)

### 3 position closed center/exhaust center/pressure center

![Diagram of 3 position closed center/exhaust center/pressure center](image6)

(This figure shows a closed center type.)

---

**Component Parts**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>①</td>
<td>Body</td>
<td>Aluminum die-casted</td>
<td>Platinum silver</td>
</tr>
<tr>
<td>②</td>
<td>Piston plate</td>
<td>Resin</td>
<td>Black</td>
</tr>
<tr>
<td>③</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
<tr>
<td>④</td>
<td>Spool valve</td>
<td>Aluminum, HNBR</td>
<td></td>
</tr>
<tr>
<td>⑤</td>
<td>End cover</td>
<td>Resin</td>
<td>Black painted</td>
</tr>
<tr>
<td>⑥</td>
<td>Spool spring</td>
<td>Stainless steel</td>
<td></td>
</tr>
</tbody>
</table>

---

**Replacement Parts**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>⑦</td>
<td>Solenoid assembly</td>
<td>Epoxy/Stainless steel</td>
<td>DXT170-C-xxxx</td>
<td>Common with Series VZ5000</td>
</tr>
<tr>
<td>⑧</td>
<td>O-ring</td>
<td>NBR</td>
<td>13 x 11 x 1</td>
<td>Common with Series VZ5000</td>
</tr>
</tbody>
</table>
Series VZ5000
3 Position Closed Center/Exhaust Center/Pressure Center

Grommet (G), (H) VZ5320-□□□□-□-01

345

L plug connector (L) VZ5320-□□□□-□-01

M plug connector (M) VZ5320-□□□□-□-01

Built-in One-touch fittings VZ5320-□□□□□□□□-□□-□-□

DIN terminal (D) VZ5320-□□□□□□□□-□□-□

Applicable cable O.D. ø3.5 to ø7

Leading wire length 300 mm

M: 300 mm H: 600 mm

Manual override (Non-locking)

Mounting hole for manifold

With light/surge voltage suppressor

Applyable tubing model C6: T0604 C8: T0806

Applications: 5 Port Solenoid Valve Body Ported Series VZ5000
Flat Ribbon Cable Manifold

- **One-touch wiring to consolidate connection of external wires.**
- **Clean appearance**
  The flat cable provides wiring on a printed circuit board to the individual valves at the manifold base, enabling the consolidation of external wiring at a touch through a 26 pins MIL connector.

### Flow Characteristics

<table>
<thead>
<tr>
<th>Model</th>
<th>Port size</th>
<th>Flow characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>VV5ZS-20-01</td>
<td>1/8, 1/8</td>
<td>2.2 0.35 0.57 2.3 0.26 0.55</td>
</tr>
<tr>
<td>VV5ZS-20-C6</td>
<td>1/8, C6</td>
<td>1.4 0.32 0.37 2.0 0.25 0.48</td>
</tr>
<tr>
<td>VV5ZS-20-C8</td>
<td>1/8, C8</td>
<td>1.7 0.38 0.45 2.1 0.29 0.51</td>
</tr>
<tr>
<td>VV5ZS-21-01</td>
<td>1/4, 1/8</td>
<td>2.1 0.36 0.55 2.3 0.26 0.54</td>
</tr>
<tr>
<td>VV5ZS-21-C6</td>
<td>1/4, C6</td>
<td>1.4 0.32 0.36 2.1 0.24 0.50</td>
</tr>
<tr>
<td>VV5ZS-21-C8</td>
<td>1/4, C8</td>
<td>1.8 0.37 0.50 2.1 0.20 0.50</td>
</tr>
</tbody>
</table>

### Manifold Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Type 20</th>
<th>Type 21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manifold type</td>
<td>Single base/B mount</td>
<td>Common SUP/Common EXH</td>
</tr>
<tr>
<td>Valve stations</td>
<td>2 to 15 stations</td>
<td>2 to 20 stations</td>
</tr>
<tr>
<td>4(A), 2(B) port location</td>
<td>Valve</td>
<td>Valve</td>
</tr>
<tr>
<td>Port size</td>
<td>1(P), 3/5(R) port</td>
<td>Rc 1/8</td>
</tr>
<tr>
<td></td>
<td>4(A), 2(B) port</td>
<td>Rc 1/8, C6, C8</td>
</tr>
</tbody>
</table>

**Note**

Value at manifold base mounted, 2 position single operating.

### How to Order Manifold

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.

Example) VV5ZS-20-031············1 pc. (Manifold base)
- VZ5120-5G-01·········2 pcs. (Valve)
- DXT199-22-1A·········1 pc. (Blanking plate assembly)

The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

## Series VZ5000/Body ported Manifold Specifications

### Manifold Standard

### Flow Characteristics

<table>
<thead>
<tr>
<th>Model</th>
<th>Port size</th>
<th>Flow characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>VV5ZS-21P-01</td>
<td>1/4, 1/8</td>
<td>2.1 0.36 0.55 2.3 0.26 0.54</td>
</tr>
<tr>
<td>VV5ZS-21P-C6</td>
<td>1/4, C6</td>
<td>1.4 0.32 0.36 2.1 0.24 0.50</td>
</tr>
<tr>
<td>VV5ZS-21P-C8</td>
<td>1/4, C8</td>
<td>1.8 0.37 0.50 2.1 0.20 0.50</td>
</tr>
</tbody>
</table>

**Note**

Value at manifold base mounted, 2 position single operating.

### How to Order Manifold

Instruct by specifying the valves, blanking plate assembly and connector assembly to be mounted on the manifold along with the manifold base model no.

Example) VV5ZS-20-031············1 pc. (Manifold base)
- VZ5120-5G-01·········2 pcs. (Valve)
- DXT199-22-1A·········1 pc. (Blanking plate assembly)

The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.
Common SUP/Common EXH

### Type 20

**How to Order**

```
VV5Z5 – 20 – [05] 1
```

<table>
<thead>
<tr>
<th>Stations</th>
<th>P, R port thread type</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>2 stations</td>
</tr>
<tr>
<td>15</td>
<td>15 stations</td>
</tr>
<tr>
<td>00F</td>
<td>G</td>
</tr>
<tr>
<td>00N</td>
<td>NPT</td>
</tr>
<tr>
<td>00T</td>
<td>NPTF</td>
</tr>
</tbody>
</table>

**Applicable solenoid valve**

VZ5122-1 23-01 1C 01 1C

**Applicable blanking plate assembly**

DXT199-22-1A

**Applicable individual EXH spacer assembly**

DXT199-29-1A

Note) For more than 6 stations, supply air to both sides of P port and exhaust air from both sides of R port.

### Type 21

**How to Order**

```
VV5Z5 – 21 – [05] 1
```

<table>
<thead>
<tr>
<th>Stations</th>
<th>P, R port thread type</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>2 stations</td>
</tr>
<tr>
<td>20</td>
<td>20 stations</td>
</tr>
<tr>
<td>00F</td>
<td>G</td>
</tr>
<tr>
<td>00N</td>
<td>NPT</td>
</tr>
<tr>
<td>00T</td>
<td>NPTF</td>
</tr>
</tbody>
</table>

**Applicable solenoid valve**

VZ5121G 01 1C 01 1C

**Applicable blanking plate assembly**

DXT199-22-1A

**Applicable individual EXH spacer assembly**

DXT199-29-1A

Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

### Flat Ribbon Cable Type 21P

**How to Order**

```
VV5Z5 – 21P – [05] 1
```

<table>
<thead>
<tr>
<th>Stations</th>
<th>P, R port thread type</th>
</tr>
</thead>
<tbody>
<tr>
<td>03</td>
<td>3 stations</td>
</tr>
<tr>
<td>12</td>
<td>12 stations</td>
</tr>
<tr>
<td>00F</td>
<td>G</td>
</tr>
<tr>
<td>00N</td>
<td>NPT</td>
</tr>
<tr>
<td>00T</td>
<td>NPTF</td>
</tr>
</tbody>
</table>

**Applicable solenoid valve**

VZ5121G 3-01 1C 01 1C

**Applicable blanking plate assembly**

DXT199-22-3A

**Applicable connector assembly**

DXT192-52-1-A

(For 2 position single)

DXT192-52-1-A

(For 2 position double, 3 position)

1: 100 VAC, 3: 110 VAC, 4: DC

For **“How to order applicable connector assemblies”**, refer to page 3-3-7.

Note) For more than 10 stations, supply air to both sides of 1(P) port and exhaust air from both sides of 3 and 5(R) port.
### Option

#### Combinations of Solenoid Valve, Manifold Gasket and Manifold Base

- Applicable base: VV5Z5-20, VV5Z5-21, VV5Z5-21P

#### Individual EXH Spacer Assembly

**DXT199-29-1A**

- Round head combination screw
  - DXT199-23-1
  - M3 x 31
  - With spring washer

**DXT199-29-3A**

- Round head combination screw
  - VK300-33-3
  - M3 x 8
  - With spring washer

**DXT199-29-5A**

- Round head combination screw
  - AXT624-28
  - M3 x 10
  - With spring washer

- EXH port 2-Rc 1/8

- Individual EXH spacer DXT199-29-1

- Gasket DXT199-21-4

- Applicable base: VV5Z5-20, VV5Z5-21

### Installation of the VZ500 Valve on the VZ5000 Manifold

- Use of an adaptor plate makes it possible to mount Series VZ500 on the manifold base of Series VZ5000.
- The mounting direction is shown in the diagram below. Mount the solenoid so that it will be on the same side as the single solenoid of the Series VZ5000.

#### Adapter plate assembly

**DXT201-3-1A**

- Round head combination screw
  - DXT199-23-1
  - M3 x 31
  - With spring washer

- Gasket

- Blanking plate DXT199-21-6

- Applicable base: VV5Z5-20, VV5Z5-21

### Blanking Plate Assembly

**DXT199-22-1A**

- Round head combination screw
  - DXT199-23-1
  - M3 x 31
  - With spring washer

- Blanking plate DXT199-22-2

- Gasket DXT199-21-6

- Applicable base: VV5Z5-20, VV5Z5-21

**DXT199-22-3A**

- Round head combination screw
  - VK300-33-3
  - M3 x 8
  - With spring washer

- Blanking plate DXT199-22-2

- Gasket DXT199-21-6

- Dust cap VJ3000-57-1

- Applicable base: VV5Z5-21P

### Note

- Please contact SMC when using an individual EXH spacer assembly, an individual or an adapter plate assembly on VV5Z5-21P.

### Caution

**Mounting Screw Tightening Torques**

- M3: 0.8 N·m
Type 20 Manifold

Grommet (G), (H)

L plug connector (L)  M plug connector (M)  DIN terminal (D)  Built-in One-touch fittings

<table>
<thead>
<tr>
<th>Stations</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>L₁</td>
<td>59</td>
<td>78</td>
<td>97</td>
<td>116</td>
<td>135</td>
<td>154</td>
<td>173</td>
<td>192</td>
<td>211</td>
<td>230</td>
<td>249</td>
<td>268</td>
<td>287</td>
<td>306</td>
</tr>
<tr>
<td>L₂</td>
<td>47</td>
<td>66</td>
<td>85</td>
<td>104</td>
<td>123</td>
<td>142</td>
<td>161</td>
<td>180</td>
<td>199</td>
<td>218</td>
<td>237</td>
<td>256</td>
<td>275</td>
<td>294</td>
</tr>
</tbody>
</table>

(Lead wire length)

(applicable cable O.D.)

C6: MAX. 6
C8: MAX. 6.5

2n-One-touch fitting

(Pitch)

(P) = 19

(Mounting hole)

4 φ 4.5

PE port

(Pilot EXH)

G: 300 mm
H: 600 mm

(MAX. 10)

With light/surge voltage suppressor

3-3-63
Series VZ5000
Type 21 Manifold
VV5Z5-21-Station 1

Stations

<table>
<thead>
<tr>
<th>Stations</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>66</td>
<td>85</td>
<td>104</td>
<td>123</td>
<td>142</td>
<td>161</td>
<td>180</td>
<td>199</td>
<td>218</td>
<td>237</td>
<td>256</td>
<td>275</td>
<td>294</td>
<td>313</td>
<td>332</td>
<td>351</td>
<td>370</td>
<td>389</td>
<td>408</td>
</tr>
<tr>
<td>L2</td>
<td>46</td>
<td>65</td>
<td>84</td>
<td>103</td>
<td>122</td>
<td>141</td>
<td>160</td>
<td>179</td>
<td>198</td>
<td>217</td>
<td>236</td>
<td>255</td>
<td>274</td>
<td>293</td>
<td>312</td>
<td>331</td>
<td>350</td>
<td>369</td>
<td>388</td>
</tr>
</tbody>
</table>

L plug connector (L) | M plug connector (M) | DIN terminal (D) | Built-in One-touch fittings

- L plug connector (L)
- M plug connector (M)
- DIN terminal (D)
- Built-in One-touch fittings

Grommet (G), (H)

L plug connector (L)
M plug connector (M)
DIN terminal (D)
Built-in One-touch fittings

- L plug connector (L)
- M plug connector (M)
- DIN terminal (D)
- Built-in One-touch fittings

G: 300 mm
H: 600 mm

(Lead wire length)

Cold: MAX. 10
Hot: MAX. 6

Applicable cable O.D.
ø3.5 to ø7

2n-One-touch fitting
(4(A), 2(B) port)
Applicable tubing model
C6: T0804
C8: T0806

☐: With light/surge voltage suppressor
Type 21P Manifold

VV5Z5-21P-Station

Manual override
(Non-locking)
2n-Rc 1/8
(4(A), 2(B) port)

(Light/Surge voltage suppressor)

Triangle mark

Connector polarity indicator
Applicable connector: 26 pins MIL
(Conforming to MIL-C-83503)

Built-in One-touch fittings

2n-One-touch fitting
(4(A), 2(B) port)
Applicable tubing model
C6: T0604
C8: T0806

<table>
<thead>
<tr>
<th>Stations</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>68</td>
<td>109</td>
<td>109</td>
<td>129.5</td>
<td>150</td>
<td>170.5</td>
<td>191</td>
<td>211.5</td>
<td>232</td>
<td>252.5</td>
</tr>
<tr>
<td>L2</td>
<td>88</td>
<td>108.5</td>
<td>129</td>
<td>149.5</td>
<td>170</td>
<td>190.5</td>
<td>211</td>
<td>231.5</td>
<td>252</td>
<td>272.5</td>
</tr>
</tbody>
</table>

Series VZ5000
5 Port Solenoid Valve
Body Ported
How to Order

5 Port Solenoid Valve
Base Mounted

Series VZ5000

Plugs-in

VZ5 [1 4 3 5 F Z]

Non plug-ins

VZ5 [1 4 0 5 L]

Type of actuation

1 2 position single solenoid
2 2 position double solenoid
3 3 position closed center
4 3 position exhaust center
5 3 position pressure center

Body option

0: Individual exhaust for the pilot valve
1: Common exhaust type for main and pilot valve

Rated voltage

1 100 VAC, 50/60 Hz
2 200 VAC, 50/60 Hz
3 110 VAC, 50/60 Hz
4 220 VAC, 50/60 Hz
5 24 VDC
6 12 VDC
9 Other

Manual override/Plug-in type

- Non-locking push type
- Locking type B (Slotted)
- Locking type C (Manual)

Manual override/Non plug-in type

- Non-locking push type
- Locking type B (Slotted)
- Locking type C (Manual)

Light/Surge voltage suppressor

- None
- With light/surge voltage suppressor
- With surge voltage suppressor

* Not available for "GZ", "HZ" and "DOZ"
### Specifications

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating pressure range (MPa)</td>
<td></td>
</tr>
<tr>
<td>2 position single</td>
<td>0.15 to 0.7</td>
</tr>
<tr>
<td>2 position double</td>
<td>0.1 to 0.7</td>
</tr>
<tr>
<td>3 position</td>
<td>0.15 to 0.7</td>
</tr>
<tr>
<td>Ambient and fluid temperature (°C)</td>
<td>–10 to 50°C (No freezing. Refer to page 3-13-4.)</td>
</tr>
<tr>
<td>Response time (ms)(1)</td>
<td></td>
</tr>
<tr>
<td>at the pressure of 0.5 MPa</td>
<td>20 or less</td>
</tr>
<tr>
<td>2 position single, double</td>
<td>20 or less</td>
</tr>
<tr>
<td>3 position</td>
<td>50 or less</td>
</tr>
<tr>
<td>Max. operating frequency (Hz)</td>
<td></td>
</tr>
<tr>
<td>2 position single, double</td>
<td>10</td>
</tr>
<tr>
<td>3 position</td>
<td>3</td>
</tr>
<tr>
<td>Effective area</td>
<td>Refer to the table below.</td>
</tr>
<tr>
<td>Manual override (2)</td>
<td>Non-locking push type, Locking slotted type, Locking lever type</td>
</tr>
<tr>
<td>Pilot exhaust</td>
<td>Individual pilot exhaust, Common exhaust (pilot and main valve) Common exhaust port for the pilot and main valve</td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not required</td>
</tr>
<tr>
<td>Mounting orientation</td>
<td>Unrestricted</td>
</tr>
<tr>
<td>Impact /Vibration resistance (m/s²) (3)</td>
<td>Refer to the table below.</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Dustproof</td>
</tr>
</tbody>
</table>

Note 1) Based on dynamic performance test, JIS B 8374-1981. (Coil temperature: 20°C, at rated voltage, without surge suppressor)

Note 2) When operating the locking type manually, apply torque of 0.2 N·m or less.

Note 3) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)

Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

### Solenoid Specifications

<table>
<thead>
<tr>
<th>Electrical entry</th>
<th>Grommet (G)/(H), L plug connector (L), M plug connector (M), DIN terminal (D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coil rated voltage (V)</td>
<td>AC 50/60 Hz 100, 200, 24°, 48°, 110°, 220°</td>
</tr>
<tr>
<td></td>
<td>DC 24, 6°, 12°, 48°</td>
</tr>
<tr>
<td>Allowable voltage fluctuation (%)</td>
<td>–15 to +10% of rated voltage</td>
</tr>
<tr>
<td>Power consumption (W) (1) (Current mA)</td>
<td>DC 1.8 (With indicator light 2.1) [24 VDC: 75 (With indicator light 87.5)]</td>
</tr>
<tr>
<td>Apparent power (VA) (1) (Current mA)</td>
<td>AC 4.5/50 Hz, 4.2/60 Hz 100 VAC: 45/50 Hz, 42/60 Hz 200 VAC: 22.5/50 Hz, 21/60 Hz</td>
</tr>
<tr>
<td></td>
<td>Holding 3.5/50 Hz, 3/60 Hz 100 VAC: 35/50 Hz, 30/60 Hz 200 VAC: 17.5/50 Hz, 15/60 Hz</td>
</tr>
<tr>
<td>Surge voltage suppressor</td>
<td>DC: Diode, AC: ZNR (2)</td>
</tr>
<tr>
<td>Indicator light</td>
<td>DC: LED (Red), AC: Neon bulb</td>
</tr>
</tbody>
</table>

Note 1) At rated voltage

Note 2) Plug-in should be ZNR

---

**Made to Order Specifications**

(For details, refer to page 3-3-85.)

Refer to pages 3-3-74 to 3-3-84 for manifold use.

---

**Series VZ5000**

Applicable for cylinder actuation (up to ø50).

Compact size (Width: 18 mm)

Low power consumption: 1.8 W DC
Flow Characteristics/Weight

<table>
<thead>
<tr>
<th>Valve model</th>
<th>Type of actuation</th>
<th>Port size</th>
<th>Flow characteristics 1)</th>
<th>Weight (g) 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VZ540-01</td>
<td>Single</td>
<td>Rc 1/8</td>
<td>C [dm³/(s·bar)] b Cv</td>
<td></td>
</tr>
<tr>
<td>2 position</td>
<td></td>
<td></td>
<td>2.3 0.45 0.57 2.8 0.37 0.71</td>
<td>200(120)</td>
</tr>
<tr>
<td>3 position</td>
<td>Closed center</td>
<td>Rc 1/8</td>
<td>1.9 0.36 0.48 2.1 0.46 0.57</td>
<td>240(160)</td>
</tr>
<tr>
<td></td>
<td>Exhaust center</td>
<td></td>
<td>1.2 0.48 0.35 3.4(1.3) 0.36(0.57) 0.86(0.41)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pressure center</td>
<td></td>
<td>3.8(0.83) 0.43(0.54) 0.78(0.25) 2.1 0.45 0.56</td>
<td></td>
</tr>
<tr>
<td>VZ540-02</td>
<td>Double</td>
<td>Rc 1/4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 position</td>
<td></td>
<td></td>
<td>2.3 0.41 0.61 2.9 0.35 0.74</td>
<td>200(120)</td>
</tr>
<tr>
<td>3 position</td>
<td>Closed center</td>
<td>Rc 1/4</td>
<td>1.9 0.48 0.50 2.2 0.44 0.60</td>
<td>240(160)</td>
</tr>
<tr>
<td></td>
<td>Exhaust center</td>
<td></td>
<td>1.3 0.45 0.35 3.7(1.4) 0.27(0.56) 0.87(0.43)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pressure center</td>
<td></td>
<td>3.8(0.83) 0.23(0.55) 0.84(0.25) 2.1 0.47 0.58</td>
<td></td>
</tr>
</tbody>
</table>

Note 1) [ ]: Denotes the normal position. Exhaust center: 4/2 → 5/3, Pressure center: 1 → 4/2
Note 2) (): Without sub-plate.

Cylinder Speed Chart

Use as a guide for selection.
Please confirm the actual conditions with SMC Sizing Program.

Flow characteristics 1)
1, 2, 3
(P, EA, EB)
4 (A, B)

Series CA1 Note) The CA1 series has been changed to the CA2 series.
Pressure 0.5 MPa
Load factor 50%
Stroke 500 mm

<table>
<thead>
<tr>
<th>Series</th>
<th>Average speed (mm/s)</th>
<th>Bore size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a40</td>
<td>a50</td>
</tr>
<tr>
<td>VZ514</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02-01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Piping: ø6 x 1 m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed controller/Silencer</td>
<td>AS3301F-□-□02-□-□/AN200-□</td>
<td></td>
</tr>
<tr>
<td>VZ514</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02-02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Piping: ø8 x 1 m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed controller/Silencer</td>
<td>AS3301F-□-□02-□-□/AN200-□</td>
<td></td>
</tr>
<tr>
<td>VZ514</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02-03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Piping: ø10 x 1 m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed controller/Silencer</td>
<td>AS3301F-□-□02-□-□/AN200-□</td>
<td></td>
</tr>
<tr>
<td>VZ514</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02-04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Piping: ø12 x 1 m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed controller/Silencer</td>
<td>AS4001F-□-□02-□-□/AN200-□</td>
<td></td>
</tr>
</tbody>
</table>

* It is when the cylinder is extending that is meter-out controlled by speed controller which is directly connected with cylinder, and its needle valve with being fully open.
* The average velocity of the cylinder is what the stroke is divided by the total stroke time.
* Load factor: ((Load weight x 9.8)/Theoretical force) x 100%
### Component Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Aluminum die-casted</td>
<td>Platinum silver</td>
</tr>
<tr>
<td>2</td>
<td>Piston plate</td>
<td>Resin</td>
<td>Black</td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Aluminum, HNBR</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Spool valve</td>
<td>Resin</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>End cover</td>
<td>Resin</td>
<td>Black painted</td>
</tr>
<tr>
<td>6</td>
<td>Spool spring</td>
<td>Stainless steel</td>
<td></td>
</tr>
</tbody>
</table>

### Replacement Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Sub-plate</td>
<td>Aluminum die-casted</td>
<td>DXT199-7-1-P</td>
<td>Rc 1/4</td>
</tr>
<tr>
<td>8</td>
<td>Solenoid assembly</td>
<td>Epoxy/Stainless steel</td>
<td>DXT170-C-0000</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>O-ring</td>
<td>NBR</td>
<td>13 x 11 x 1</td>
<td>Common with Series VZ5000</td>
</tr>
</tbody>
</table>

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

(This figure shows a closed center type.)
5 Port Solenoid Valve
Base Mounted Series VZ5000

2 Position Single

Grommet (G), (H)
VZ5140-□□□01

L plug connector (L)
VZ5140-□□□01

M plug connector (M)
VZ5140-□□□02

DIN terminal (D)
VZ5140-□□□01

Applicable cable O.D.
ø3.5 to ø7

Maximum 10
112.5

With light/surge voltage suppressor

SMC

3-3-71
Series VZ5000

2 Position Double

Grommet (G), (H)
VZ5240-□□□-□□

L plug connector (L)
VZ5240-□L□□-□□

DIN terminal (D)
VZ5240-□D□□-□□

M plug connector (M)
VZ5240-□M□□-□□

Manual override (Non-locking)
(Mounting hole)

3-Rc 1/8, 1/4
(1(P), 4(A), 2(B) port)

2-Rc 1/4
(5(R1), 3(R2) port)

Applicable cable O.D.
ø3.5 to ø7

With light/surge voltage suppressor

MAX. 10

Applicable cable O.D.
ø3.5 to ø7
**Series VZ5000/Base Mounted Manifold Specifications**

### Manifold Standard

#### Manifold Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Type 40</th>
<th>Type 41</th>
<th>Type 42</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manifold type</td>
<td>Single base/B mount</td>
<td>Common SUP and EXH</td>
<td></td>
</tr>
<tr>
<td>P(SUP), R(EXH)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valve stations</td>
<td>2 to 20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Porting specifications**

<table>
<thead>
<tr>
<th>Position</th>
<th>Base</th>
<th>Side</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(P), 3/5(R) port</td>
<td>Rc 1/4</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Port size</th>
<th>4(A), 2(B) port</th>
<th>Rc 1/8</th>
</tr>
</thead>
</table>

**Flow Characteristics**

<table>
<thead>
<tr>
<th>Manifold</th>
<th>Port size</th>
<th>Flow characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>VV5Z5-40</td>
<td>1/4, 1/8</td>
<td>2.1</td>
</tr>
<tr>
<td>VV5Z5-41</td>
<td>1/4, 1/8</td>
<td>2.0</td>
</tr>
<tr>
<td>VV5Z5-42-C6</td>
<td>1/4, C6</td>
<td>1.5</td>
</tr>
<tr>
<td>VV5Z5-42-C8</td>
<td>1/4, C8</td>
<td>1.9</td>
</tr>
</tbody>
</table>

**How to Order Manifold**

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.

*Example* VV5Z5-41-031-01····1 pc. (Manifold base)
- VZ5140-5G············2 pcs. (Valve)
- DXT199-22-1A······ 1 pc. (Blanking plate assembly)

The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

### DIN Rail Manifold

#### Manifold Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Type 45</th>
<th>Type 45F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manifold type</td>
<td>Stacking type non plug-in type</td>
<td>Stacking type plug-in type</td>
</tr>
<tr>
<td>P(SUP), R(EXH)</td>
<td>Common SUP and EXH</td>
<td></td>
</tr>
<tr>
<td>Valve stations</td>
<td>2 to 20</td>
<td></td>
</tr>
<tr>
<td>4(A), 2(B) port</td>
<td>Position</td>
<td>Base</td>
</tr>
<tr>
<td>Porting specifications</td>
<td>Direction</td>
<td>Side</td>
</tr>
<tr>
<td>1(P), 3/5(R) port</td>
<td>C10 (One-touch fitting for ø10)</td>
<td></td>
</tr>
<tr>
<td>4(A), 2(B) port</td>
<td>C6 (One-touch fitting for ø10)</td>
<td>C8 (One-touch fitting for ø8)</td>
</tr>
</tbody>
</table>

**Connector**

- MIL-C-24308 Applicable for D-sub connector
- MIL-C-24308  J16-X-5101 connector

**Internal wiring**

- COM

*Note* It is available at +COM or –COM.

**Flow Characteristics**

<table>
<thead>
<tr>
<th>Manifold</th>
<th>Port size</th>
<th>Flow characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>VV5Z5-45</td>
<td>C10, C6</td>
<td>1.5</td>
</tr>
<tr>
<td>VZ5140-5G</td>
<td>C10, C6</td>
<td>2.1</td>
</tr>
</tbody>
</table>

*Note* Value at manifold base mounted, 2 position single operating

**How to Order Manifold**

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.

*Example* VV5Z5-45FD-06-2C8····1 pc. (Manifold base)
- VZ5143-5FZ············2 pcs. (Valve)
- VZ5243-5FZ············3 pcs. (Valve)
- VZ5000-65-1A···········1 pc. (Blanking plate assembly)

The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.
5 Port Solenoid Valve
Base Mounted Series VZ5000

Common SUP/Common EXH

Type 40

How to Order
VV5Z5 – 40 – 05 2 – 01

P, R port thread type
02 2 stations
20 20 stations

Rc 1/4

Nil Rc

P, R port thread type
Note) For more than 10 stations, supply air to both sides of 1(P) port and exhaust air from both sides of 3 and 5(R) port.

Applicable solenoid valve
VZ5C4D-C4D

Applicable blanking plate assembly
DXT199-22-1A

Applicable individual EXH spacer assembly
DXT199-29-2A

Applicable individual SUP
spacer assembly
DXT199-35-1A

Applicable interface regulator
ARBZ5000-00-P

Common SUP/Common EXH

Type 41

How to Order
VV5Z5 – 41 – 05 1 – 01

P, R port thread type
02 2 stations
20 20 stations

Rc 1/4

Nil Rc

P, R port thread type
Note) For more than 8 stations, supply air to both sides of 1(P) port and exhaust air from both sides of R port.

Applicable solenoid valve
VZ5C4D-C4D

Applicable blanking plate assembly
DXT199-22-1A

Applicable individual EXH spacer assembly
DXT199-29-2A

Applicable individual SUP
spacer assembly
DXT199-35-1A

Applicable interface regulator
ARBZ5000-00-P

DIN Rail Manifold

Common SUP/Common EXH

Type 45 (Non plug-in type)

How to Order
VV5Z5 – 45 – 05 D – C8 C –

C6, C8

1(P) port
Rc 1/4

20 stations

4(A), 2(B) port
Rc 1/4

3/5(R) port
3/5(R) port

4(A), 2(B) port
Rc 1/4

C6

One-touch fitting for ø6

C8

One-touch fitting for ø8

C

Mixed

A, B port size
02 2 stations
20 20 stations

Note) For special specifications, indicate separately on the manifold specification sheet.

Applicable solenoid valve
VZ5C4D-C4D

Applicable blanking plate assembly
DXT199-22-1A

Applicable individual EXH spacer assembly
DXT199-29-2A

Applicable individual SUP
spacer assembly
DXT199-35-1A

Applicable interface regulator
ARBZ5000-00-P

DIN rail length specified
Nil Standard length
3 For 3 stations
20 For 20 stations

● DIN rail length specified
For 20 stations
Specify a longer rail than the standard length.

Type 45F (Plug-in type)

How to Order
VV5Z5 – 45F D – 05 C8 C –

C6

One-touch fitting for ø6

C8

One-touch fitting for ø8

C

Mixed

A, B port size
02 2 stations
20 20 stations

Note) For special specifications, indicate separately on the manifold specification sheet.

Applicable solenoid valve
VZ5C4D-C4D

Applicable blanking plate assembly
DXT199-22-1A

Applicable individual EXH spacer assembly
DXT199-29-2A

Applicable individual SUP
spacer assembly
DXT199-35-1A

Applicable interface regulator
ARBZ5000-00-P

DIN rail length specified
Nil Standard length
3 For 3 stations
20 For 20 stations

● DIN rail length specified
For 20 stations
Specify a longer rail than the standard length.

Note) For more than 8 stations, supply air to both sides of 1(P) port and exhaust air from both sides of R port.

Connector mounting direction
Symbol U D B

Mounting direction U side D side Both sides

Applicable stations
2 to 10 stations
2 to 10 stations
11 to 10 stations

Note) For 2 to 10 stations: One side (Same as direction of connector mount)
For 11 to 20 stations: Both sides

For special specifications, indicate separately on the manifold specification sheet.

Series VZ5000

DIN Rail length specified
Nil Standard length
3 For 3 stations
20 For 20 stations

● DIN rail length specified
For 20 stations
Specify a longer rail than the standard length.

Note) For more than 8 stations, supply air to both sides of 1(P) port and exhaust air from both sides of 3 and 5(R) port.
Option/Standard Manifold

Combinations of Solenoid Valve, Manifold Gasket and Manifold Base

- Round head combination screw
- DXT199-23-1
- M3 x 31
- (With spring washer)

Applicable base
- VV5Z5-40
- VV5Z5-41
- VV5Z5-42

Blanking Plate Assembly

- Round head combination screw
- DXT199-22-2
- M3 x 8
- (With spring washer)
- Blanking plate

Gasket
- DXT199-21-6

Applicable base
- VV5Z5-40
- VV5Z5-41
- VV5Z5-42

Individual SUP Spacer Assembly

- Round head combination screw
- AXT623-14
- M3 x 47
- (With spring washer)

Applicable base
- VV5Z5-40
- VV5Z5-41
- VV5Z5-42

Individual EXH Spacer Assembly

- Round head combination screw
- AXT623-14
- M3 x 47
- (With spring washer)

Applicable base
- VV5Z5-40
- VV5Z5-41
- VV5Z5-42

Interface Regulator (P port regulation)

Interface style regulators can be placed on top of the manifold base to reduce the pressure of each of the valves.

ARBZ5000-00-P

Installation of the VZ500 Valve on the VZ5000 Manifold

- Use of an adaptor plate makes it possible to mount Series VZ5000 on the manifold base of Series VZ5000.
- The mounting direction is shown in the diagram below. Mount the solenoid so that it will be on the same side as the single solenoid of the Series VZ5000.
- In the case of base mounting, 2(A) port of 3 port valve should be 2(B) port of manifold base.

Adapter Plate Assembly

- Round head combination screw
- DXT199-23-1
- M3 x 31
- (With spring washer)
- Adapter plate

Gasket
- DXT199-21-7

Applicable base
- VV5Z5-40
- VV5Z5-41
- VV5Z5-42

Caution

Mounting Screw Tightening Torques

- M3: 0.8 N·m
Option/DIN Rail Manifold

Blanking Plate Assembly

**VZ5000-65-2A**
- Round head combination screw
  - VK300-33-3 (M3 x 8)
  - DXT199-22-2
- Blanking plate
- Manifold gasket
  - VZ5000-57-2

Applicable base
- VV5Z5-45

Combination of Solenoid Valve, Gasket and Manifold Base

**VZ5000-65-1A**
- Round head combination screw
  - VK300-33-3 (M3 x 8)
  - DXT199-22-2
- Blanking plate
- Manifold gasket
  - VZ5000-57-2

Applicable base
- VV5Z5-45F

**VZ5000-68-1A**
- Round head combination screw
  - VZ5000-68-1A
- Manifold gasket
  - VZ5000-57-2

**SUP Block Disk**
By installing a SUP block disk in the pressure supply passage of a manifold valve, it is possible to supply two or more different high and low pressures to one manifold.

**EXH Block Disk**
By installing an EXH block disk in the exhaust passage of a manifold valve, it is possible to divide the valve’s exhaust so that it does not affect another valve.

**Applicable Plug Assembly (D-sub connector cable assembly)**

<table>
<thead>
<tr>
<th>Cable length</th>
<th>Assembly part no.</th>
<th>Component parts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>VVZS3000-21A-1</td>
<td>Plug MIL standard D-sub connector</td>
</tr>
<tr>
<td>3 m</td>
<td>VVZS3000-21A-2</td>
<td>Number of terminals: 25</td>
</tr>
<tr>
<td>5 m</td>
<td>VVZS3000-21A-3</td>
<td>Cable: 25 cores x 0.3 mm²</td>
</tr>
<tr>
<td>8 m</td>
<td>VVZS3000-21A-4</td>
<td></td>
</tr>
</tbody>
</table>

For details, refer to page 3-3-8.

**Caution**
Mounting Screw Tightening Torques
- M2.5: 0.32 N·m
  (For stacking type manifold)
**Exploded View/DIN Rail Manifold**

**Type 45 Manifold**

1. Loosen (both) bolts (a), which are securing the manifold onto the DIN rail, 1 to 2 turns. (To remove the manifold base from the DIN rail, loosen the bolts 4 to 5 turns.)

2. Press lever (b) to disconnect the manifold block assembly at the location in which you wish to place an additional manifold block assembly. (However, there are no levers between ③ and ④ or between ③ and ④. They can be disconnected by merely pulling them apart.)

3. Mount additional manifold block assembly on the DIN rail as shown in the Fig. (2).

4. Press the block assemblies and tighten the bolts (a) to fix them to the DIN rail.

**Replacement Parts**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>①</td>
<td>Manifold block assembly</td>
<td>VZ5000-50A-2-CA</td>
<td>C6: A, B port with One-touch fitting for ø6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>C8: A, B port with One-touch fitting for ø8</td>
</tr>
<tr>
<td>②</td>
<td>SUP/EXH block assembly</td>
<td>VZ5000-51A-2</td>
<td>P/R port with One-touch fitting for ø10</td>
</tr>
<tr>
<td>③</td>
<td>End block assembly</td>
<td>VZ50000-52A-2D</td>
<td>For D side</td>
</tr>
<tr>
<td>④</td>
<td>End block assembly</td>
<td>VZ50000-52A-2U</td>
<td>For U side</td>
</tr>
</tbody>
</table>

**How to Increase Manifold Base**

Station expansion is possible at any position.

1. Loosen (both) bolts (a), which are securing the manifold onto the DIN rail, 1 to 2 turns. (To remove the manifold base from the DIN rail, loosen the bolts 4 to 5 turns.)

2. Press lever (b) to disconnect the manifold block assembly at the location in which you wish to place an additional manifold block assembly. (However, there are no levers between ① and ④ or between ③ and ④. They can be disconnected by merely pulling them apart.)

3. Mount additional manifold block assembly on the DIN rail as shown in the Fig. (2).

4. Press the block assemblies and tighten the bolts (a) to fix them to the DIN rail.

**Note** When there are 10 or fewer manifold block assemblies, and more are added to make a total of 11 or more, a supply/exhaust block assembly must also be added.
Exploded View/DIN Rail Manifold
Type 45F Manifold

Replacement Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>①</td>
<td>Manifold block assembly</td>
<td>VZ5000-50A-1-8</td>
<td>C6: A, B port with One-touch fitting for ø6</td>
</tr>
<tr>
<td>②</td>
<td>SUP/EXH block assembly</td>
<td>VZ5000-51A-1D</td>
<td>For D side, With D-sub connector and P/R port with One-touch fitting for ø10</td>
</tr>
<tr>
<td>③</td>
<td>SUP/EXH block assembly</td>
<td>VZ5000-51A-1U</td>
<td>For U side, With D-sub connector and P/R port with One-touch fitting for ø10</td>
</tr>
<tr>
<td>④</td>
<td>End block assembly</td>
<td>VZ5000-52A-2D</td>
<td>For D side, set with ②</td>
</tr>
<tr>
<td>⑤</td>
<td>End block assembly</td>
<td>VZ5000-52A-1U</td>
<td>For U side</td>
</tr>
<tr>
<td>⑥</td>
<td>End block assembly</td>
<td>VZ5000-52A-1D</td>
<td>For D side</td>
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<tr>
<td>⑦</td>
<td>SUP/EXH block assembly</td>
<td>VZ5000-52A-2U</td>
<td>For U side, set with ③</td>
</tr>
<tr>
<td>⑧</td>
<td>SUP/EXH block assembly</td>
<td>VZ5000-51A-1M</td>
<td>Without D-sub connector, For indicated location</td>
</tr>
</tbody>
</table>

How to Increase Manifold Base

(1) Loosen (both) bolts (a), which are securing the manifold onto the DIN rail, 1 to 2 turns. (To remove the manifold base from the DIN rail, loosen the bolts 4 to 5 turns.)

(2) Using a flat screwdriver, press lever (b) to disengage the link of the manifold block assembly on the U side or the D side from the SUP/EXH block assembly or from the end block assembly. (However, there are no levers between ⑤ and ①. They can be disconnected by merely pulling them apart.)

(3) Remove the housing cover from the D-sub connector portion of the SUP/EXH block assembly. (Refer to Fig. (1).)

(4) Following the procedure shown in Fig. (2), mount the manifold block assembly to be added onto the DIN rail. As shown in Fig. (3), insert the pin of the lead wire assembly into the D-sub connector, and attach the round crimped terminal to the screw that connects the wires.

(5) Press the block assemblies and tighten the bolts (a) to fix them to the DIN rail.

Note) When there are 10 or fewer manifold block assemblies, and more are added to make a total of 11 or more, a supply/exhaust block assembly must also be added.

How to Insert Lead Wire Assembly Pin

After inserting the pin, lightly pull on the lead wire to verify the lock.

Location of addition

Housing cover

DIN rail
Series VZ5000

Type 40 Manifold: Bottom Ported

VV5Z5-40- Station 2-01

Grommet (G), (H)

<table>
<thead>
<tr>
<th>Stations</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<td>104</td>
<td>123</td>
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<td>L2</td>
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<td>84</td>
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<td>312</td>
<td>331</td>
<td>350</td>
<td>369</td>
<td>388</td>
</tr>
</tbody>
</table>

L plug connector (L)

M plug connector (M)

DIN terminal (D)

Applicable cable O.D. ø3.5 to ø7

With light/surge voltage suppressor

3-3-80
Type 41 Manifold: Side Ported

VV5Z5-41-Station1-01

Grommet (G), (H)

Manual override (Non-locking)

PE port (Pilot EXH)

6-Rc 1/4
(1(P), 3/5(R) port)

G: 300 mm
H: 600 mm
(Lead wire length)

Stations

<table>
<thead>
<tr>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
<th>L5</th>
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<td>350</td>
<td>370</td>
<td>390</td>
<td>410</td>
<td></td>
</tr>
</tbody>
</table>

L plug connector (L)

M plug connector (M)

DIN terminal (D)

\[ \approx 300 \] (Lead wire length)

\[ \approx 300 \] (Lead wire length)

MAX. 10

Applicable cable O.D.
\( \phi 3.5 \) to \( \phi 7 \)

\( \Box \): With light/surge voltage suppressor

3-3-81
**Series VZ5000**

Type 42 Manifold: Side Ported

**VV5Z5-42-Station 1-C6-C8**

Grommet (G), (H)

- Manual override (Non-locking)
- PE port (Pilot EXH)
- 6-Rc 1/4 (1(P), 3/5(R) port)
- MAX. 10 PE port (Pilot EXH)
- G: 300 mm (Lead wire length)
- H: 600 mm (Mounting hole)
- 4-0.45 (Mounting hole)
- 2-in-One-touch fitting (4(A), 2(B) port)
- Applicable tubing model
  - C6: T0604
  - C8: T0805
- MAX. 6 C6: MAX. 6.5 C8: MAX. 6.5

**Stations**

<table>
<thead>
<tr>
<th>Stations</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<td>353</td>
<td>372</td>
<td>391</td>
</tr>
</tbody>
</table>

- **L plug connector (L)**
- **M plug connector (M)**
- **DIN terminal (D)**

- Applicable cable O.D.
  - ø3.5 to ø7

- With light/surge voltage suppressor

---

*SMC*
### Type 45 DIN Rail Manifold (Non Plug-in): Side Ported

#### VV5Z5-45- Station D C6C C8C

- **Grommet (G), (H):**
  - 2n-One-touch fitting
  - (A, B port) Applicable tubing model
  - C6: T0604
  - C8: T0806

- **Manual override (Non-locking):**
  - DIN rail holding screw
  - DIN rail separation lever

- **One-touch fitting:**
  - (P, R port) Applicable tubing model
  - T1075

- **(Pitch):**
  - P = 19.29.5

### Stations

<table>
<thead>
<tr>
<th>Stations</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<td>160.5</td>
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<tr>
<td>L2</td>
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</tr>
</tbody>
</table>

#### L plug connector (L)  M plug connector (M)  DIN terminal (D)

- **Applicable cable O.D. ø3.5 to ø7**

---

### VV5Z5-45- Station B C6C C8C

- **(Pitch):**
  - P = 19.29.5

### Stations

<table>
<thead>
<tr>
<th>Stations</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<tbody>
<tr>
<td>L1</td>
<td>148</td>
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<td>249</td>
<td>268</td>
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<tr>
<td>L4</td>
<td>16</td>
<td>13</td>
<td>16</td>
<td>12.5</td>
<td>15.5</td>
<td>12.5</td>
<td>15.5</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

#### (Station n)······················(Station 1)

- **Separation lever**

---

### VV5Z5-45- Station U C4C C6C

- **(Pitch):**
  - P = 29.5

### Stations

<table>
<thead>
<tr>
<th>Stations</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
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</thead>
<tbody>
<tr>
<td>L1</td>
<td>12</td>
<td>15</td>
<td>11.5</td>
<td>14.5</td>
<td>11.5</td>
<td>14.5</td>
<td>11</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>L2</td>
<td>13</td>
<td>16</td>
<td>13</td>
<td>16</td>
<td>12.5</td>
<td>15.5</td>
<td>12.5</td>
<td>15.5</td>
<td></td>
</tr>
</tbody>
</table>

---

### Series VZ5000

- **5 Port Solenoid Valve**
- **Base Mounted**

---

**Notes:**

- Applicable cable O.D. ø3.5 to ø7
- Lead wire length: ≈ 300
Series VZ5000

Type 45F DIN Rail Manifold (Plug-in): Side Ported

VV5Z5-45FD-Station C6C C8C

2n-One-touch fitting (A, B port)
Applicable tubing model
C6: TO604
C8: TO806

One-touch fitting port (P, R port)
Applicable tubing model: T1075

VV5Z5-45FU-Station C6C C8C

2n-One-touch fitting port (A, B port)
Applicable tubing model
C6: T0604
C8: T0806

Applicable tubing model
C6: T0604
C8: T0806

VV5Z5-45FU-Station C6C C8C

Stations
123 148 160.5 185.5 198 223 235.5 260.5 273
L1 112.5 137.5 150 175 187.5 212.5 225 250 262.5
L2 97 116 135 154 173 192 211 230 249
L3 13 16 13 16 12.5 15.5 12.5 15.5 12

Stations
2 3 4 5 6 7 8 9 10
L1 123 148 160.5 185.5 198 223 235.5 260.5 273
L2 112.5 137.5 150 175 187.5 212.5 225 250 262.5
L3 97 116 135 154 173 192 211 230 249
L4 13 16 13 16 12.5 15.5 12.5 15.5 12

Stations
2 3 4 5 6 7 8 9 10
L1 148 160.5 185.5 198 223 235.5 260.5 273 298
L2 137.5 150 175 187.5 212.5 225 250 262.5 287.5
L3 116 135 154 173 192 211 230 249 268
L4 16 13 16 12.5 15.5 12.5 15.5 12 15

Stations
11 12 13 14 15 16 17 18 19 20
L1 310.5 335.5 348 373 385.5 410.5 423 448 473 485.5
L2 300 325 337.5 362.5 375 400 412.5 437.5 462.5 475
L3 287 306 325 344 363 382 401 420 439 458
L4 12 15 11.5 14.5 11.5 14.5 11 14 17 14

3-3-84
Series VZ

Made to Order Specifications:
Please contact SMC for detailed specifications, dimensions, and delivery.

1. Solenoid Valve: External Pilot Specifications

Applicable solenoid valve series
VZ3000/5000
(Non plug-in type only)

Model no.
VZ\(^3\)\(^5\) 0-[ ]-[ ]-[ ]-[ ] X20

Entry is the same as standard products.

Specifications

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Operating pressure range (MPa)</th>
<th>Main pressure</th>
<th>External pilot pressure</th>
<th>Pilot exhaust method</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>–100 kPa to 0.7</td>
<td>0.15 to 0.7</td>
<td></td>
<td>Pilot valve individual exhaust</td>
</tr>
</tbody>
</table>

Dimensions

VZ3000: 8 mm longer
VZ5000: 8 mm longer

JIS Symbol

Body ported
2 position single

3 position closed center

2 position double

3 position exhaust center

3 position pressure center