# 5 Port Solenoid Valve
## Body Ported
### Series VZ3000

#### How to Order

<table>
<thead>
<tr>
<th>Body ported</th>
<th>VZ3</th>
<th>1</th>
<th>2</th>
<th>0</th>
<th>5</th>
<th>L</th>
<th>M5</th>
<th>Option</th>
</tr>
</thead>
</table>

**Type of actuation**

- **1**: 2 position single
- **2**: 2 position double
- **3**: 3 position closed center
- **4**: 3 position exhaust center
- **5**: 3 position pressure center

**Body option**

- **0**: 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
- **9**: Other

**4(A), 2(B) port size**

- **M5**: M5 x 0.8
- **C4**: One-touch fitting for ø4
- **C6**: One-touch fitting for ø6

**Manual override**

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

**Electrical entry**

- **G**: Lead wire length 300 mm
- **L**: With lead wire (Length 300 mm)
- **M**: With lead wire (Length 300 mm)
- **MN**: Without lead wire
- **D**: With connector

**Light/Surge voltage suppressor**

- **Z**: With light/surge voltage suppressor
- **S**: With surge voltage suppressor

*Type "LN", "MN": With 2 sockets.*
Series VZ3000

Applicable for cylinder actuation (up to ø40).
Compact size (Width: 15 mm)
Low power consumption: 1.8 W DC

Refer to pages 3-3-24 to 3-3-27 for manifold use.

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

Specifications

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Operating pressure range (MPa)</th>
<th>Response time (ms) (at the pressure of 0.5 MPa)</th>
<th>Max. operating frequency (Hz)</th>
<th>Effective area</th>
<th>Manual override</th>
<th>Pilot exhaust method</th>
<th>Lubrication</th>
<th>Mounting orientation</th>
<th>Impact/Vibration resistance (m/s²)</th>
<th>Enclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 position single</td>
<td>2 position double</td>
<td>3 position</td>
<td>2 position single, double</td>
<td>3 position</td>
<td>Non-locking push type, Locking slotted type, Locking lever type</td>
<td>Individual pilot exhaust type, Common exhaust (pilot and main valve) type</td>
<td>Not required</td>
<td>Unrestricted</td>
<td>300/50</td>
</tr>
</tbody>
</table>

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 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>Coil rated voltage (V)</th>
<th>Allowable voltage fluctuation (%)</th>
<th>Power consumption (W)</th>
<th>Apparent power (VA)</th>
<th>Surge voltage suppressor</th>
<th>Indicator light</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AC 50/60 Hz</td>
<td>DC</td>
<td>100, 200, 24&quot;, 48&quot;, 110&quot;, 220“</td>
<td>24, 6&quot;, 12&quot;, 48“</td>
<td>[24 VDC: 75 (With indicator light 87.5)]</td>
<td>DC: Diode, AC: ZNR</td>
</tr>
<tr>
<td></td>
<td>DC</td>
<td></td>
<td>DC</td>
<td>1.8 (With indicator light 2.1)</td>
<td></td>
<td>DC: LED (Red), AC: Neon bulb</td>
</tr>
</tbody>
</table>

Note) At rated voltage

Option

<table>
<thead>
<tr>
<th>Description</th>
<th>Part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>With foot bracket</td>
<td>DXT170-34-1B</td>
<td>For VZ312S</td>
</tr>
<tr>
<td>Silencer</td>
<td>AN120-M5</td>
<td>Noise reduction: 21dB or more (ø8 x 17 mm)</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: \( \frac{(\text{Load weight} \times 9.8)}{\text{Theoretical force}} \times 100\% \)

### 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>VZ320-M5</td>
<td>Single</td>
<td>M5 x 0.8</td>
<td>C [dm³/(s·bar)] b</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td>2 position</td>
<td></td>
<td>0.47 0.41 0.13</td>
<td>130</td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td></td>
<td>0.49 0.44 0.13</td>
<td>130</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.46 0.37 0.12</td>
<td>130</td>
</tr>
<tr>
<td>VZ320-C4</td>
<td>Double</td>
<td>M5 x 0.8</td>
<td>C4 [One-touch fitting for ø4]</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td>2 position</td>
<td></td>
<td>0.69 0.40 0.19</td>
<td>130</td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td></td>
<td>0.56 0.40 0.15</td>
<td>130</td>
</tr>
<tr>
<td>VZ320-C6</td>
<td>Single</td>
<td>M5 x 0.8</td>
<td>C6 [One-touch fitting for ø6]</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td>2 position</td>
<td></td>
<td>0.70 0.36 0.19</td>
<td>130</td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td></td>
<td>0.72 0.37 0.19</td>
<td>130</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>VZ3120-M5</td>
<td></td>
<td>ø6 ø10 ø16 ø20 ø25 ø32 ø40</td>
</tr>
</tbody>
</table>

- Perpendicular, upward actuation
- Horizontal actuation

* 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: \( \frac{(\text{Load weight} \times 9.8)}{\text{Theoretical force}} \times 100\% \)

### Conditions

<table>
<thead>
<tr>
<th>Body ported</th>
<th>Series CJ2</th>
<th>Series CM2</th>
<th>Series MB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tube bore x Length</td>
<td>ø4 x 1 m</td>
<td>ø6 x 1 m</td>
<td>ø8 x 1 m</td>
</tr>
<tr>
<td>Speed controller</td>
<td>AS1301F-04</td>
<td>AS3301F-06</td>
<td>AS3301F-08</td>
</tr>
<tr>
<td>Silencer</td>
<td>AN120-M5</td>
<td>AN110-01</td>
<td></td>
</tr>
</tbody>
</table>
Series VZ3000

Construction

2 position single

2 position double

3 position closed center

3 position exhaust center

3 position pressure center

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></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>OXT170-C-000</td>
<td>Common with Series VZ000</td>
</tr>
<tr>
<td>8</td>
<td>O-ring</td>
<td>NBR</td>
<td>13 x 11 x 1</td>
<td></td>
</tr>
</tbody>
</table>
2 Position Single

Grommet (G), (H)
VZ3120-□□□-M5

L plug connector (L)
VZ3120-□□□-L-M5

M plug connector (M)
VZ3120-□□□-M-M5

DIN terminal (D)
VZ3120-□□□-D-M5

Built-in One-touch fittings
VZ3120-□□□-□□□
Series VZ3000

2 Position Double

Grommet (G), (H)
VZ3220-□-□□-M5

Mounting hole for manifold
Non-locking
2-Ø2.6

Manual override

L plug connector (L)
VZ3220-□L□□-M5

M plug connector (M)
VZ3220-□M□□-M5

DIN terminal (D)
VZ3220-□D□□-M5

Built-in One-touch fittings
VZ3220-□□□□-□□

MAX: 10
Applicable cable O.D.
ø3.5 to ø7

Applicable tubing model
C4: T0425
C6: T0604

With light/surge voltage suppressor

ø3.5 to ø7

Series VZ3000

3-3-22
3 Position Closed Center/Exhaust Center/Pressure Center

Grommet (G), (H)
VZ3\(\frac{3}{5}\)20-[G/H]-M5

M plug connector (M)
VZ3\(\frac{3}{5}\)20-[M]-M5

L plug connector (L)
VZ3\(\frac{3}{5}\)20-[L]-M5

DIN terminal (D)
VZ3\(\frac{3}{5}\)20-[D]-M5

Built-in One-touch fittings
VZ3\(\frac{3}{5}\)20-[ ]-M5

Manual override
(Non-locking)

2-ø2.6
(Mounting hole for manifold)

2-M5 x 0.8 (PE port)

5-M5 x 0.8 (Piping port)

With light/surge voltage suppressor

Applicable tubing model
ø3.5 to ø7

MAX. 10
Applicable cable O.D.
C4: T0425
C6: T0604

2-One-touch fitting
(A, B port)
Applicable tubing model
C4: T0425
C6: T0604

Mounting hole for manifold
G: 300 mm
H: 600 mm

Mounting hole
(Lead wire length)
≅ 300
(Lead wire length)

Series VZ3000
5 Port Solenoid Valve
Body Ported

VK
VZ
VF
VFR
VP4
VZS
VFS
VS4
VQ7
EVS
VFN

3-3-23
Manifold Standard

Manifold Specifications

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

**Flow Characteristics**

<table>
<thead>
<tr>
<th>Manifold</th>
<th>Port size</th>
<th>Flow characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type VZ3-20</td>
<td>M5 x 0.8</td>
<td>1/8 0.36 0.36 0.19</td>
</tr>
<tr>
<td>Type VZ3-20P</td>
<td>M5 x 0.8</td>
<td>1/8 0.46 0.46 0.19</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) VZ32-20-031.............. 1 pc. (Manifold base)

* VZ3120-5G-M5........... 2 pcs. (Valve)

DXT192-13-1A ........... 1 pc. (Blanking plate assembly)

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

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.

**Flat Ribbon Cable Manifold Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>Manifold type</th>
<th>P(SUP), R(EXH)</th>
<th>Valve stations</th>
<th>4(A), 2(B) port location</th>
<th>Port size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 20P</td>
<td>Single base/B mount</td>
<td>Common SUP/Common EXH</td>
<td>3 to 12 stations</td>
<td>Valve</td>
<td>1(P), 3/5(R) port</td>
</tr>
</tbody>
</table>

**Applicable flat ribbon cable connector**

Socket: 26 pins MIL, with strain relief (Conforming to MIL-C-83503)

**Internal wiring**

+ COM (For – COM specifications, specify them separately.)

**Applicable valve model**

VZ323-12-12MOZ-C4-C6

**Rated voltage**

100 VAC 50/60 Hz, 110 VAC 50/60 Hz, 24 VDC, 12 VDC

**Flow Characteristics**

<table>
<thead>
<tr>
<th>Manifold</th>
<th>Port size</th>
<th>Flow characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type VZ323</td>
<td>M5 x 0.8</td>
<td>1/8 0.36 0.36 0.19</td>
</tr>
<tr>
<td>Type VZ323</td>
<td>M5 x 0.8</td>
<td>1/8 0.46 0.46 0.19</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) VZ3-20P-07 ................... 1 pc. (Manifold base)

* VZ3123-5MOZ-C4............ 3 pcs. (Valve)

DXT192-13-3A................. 1 pc. (Blanking plate assembly)

DXT192-52-1-4A.............. 3 pcs. (Connector 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**

<table>
<thead>
<tr>
<th>VV5Z3 – 20</th>
<th>05 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stations</strong></td>
<td><strong>P, R port thread type</strong></td>
</tr>
<tr>
<td>02</td>
<td>2 stations</td>
</tr>
<tr>
<td>1(P) port</td>
<td>Rc 1/8</td>
</tr>
<tr>
<td>3/5 (R) port</td>
<td>Rc 1/8</td>
</tr>
</tbody>
</table>

**Flat Ribbon Cable Type 20P**

**How to Order**

<table>
<thead>
<tr>
<th>VV5Z3 – 20P</th>
<th>05 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stations</strong></td>
<td><strong>P, R port thread type</strong></td>
</tr>
<tr>
<td>03</td>
<td>3 stations</td>
</tr>
<tr>
<td>1(P) port</td>
<td>Rc 1/8</td>
</tr>
<tr>
<td>3/5 (R) port</td>
<td>Rc 1/8</td>
</tr>
</tbody>
</table>

**Option**

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

- **Round head combination screw**
  - M2.5 x 25
  - (With spring washer)

- **Applicable base**
  - VV5Z3-20
  - VV5Z3-20P
  - VV5Z3-21

**Blanking Plate Assembly**

<table>
<thead>
<tr>
<th>VDX192-13-1A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round head combination screw</td>
</tr>
<tr>
<td>M2.5 x 7</td>
</tr>
<tr>
<td>(With spring washer)</td>
</tr>
<tr>
<td>Gasket</td>
</tr>
<tr>
<td>DXT192-10-2</td>
</tr>
</tbody>
</table>

**Individual EXH Spacer Assembly**

<table>
<thead>
<tr>
<th>VDX192-21-1A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round head combination screw</td>
</tr>
<tr>
<td>M2.5 x 36</td>
</tr>
<tr>
<td>(With spring washer)</td>
</tr>
<tr>
<td>Gasket</td>
</tr>
<tr>
<td>DXT192-10-9</td>
</tr>
</tbody>
</table>

**Individual SUP Spacer Assembly**

<table>
<thead>
<tr>
<th>VDX192-40-2A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round head combination screw</td>
</tr>
<tr>
<td>M2.5 x 40.5</td>
</tr>
<tr>
<td>(With spring washer)</td>
</tr>
<tr>
<td>Gasket</td>
</tr>
<tr>
<td>DXT192-10-2</td>
</tr>
</tbody>
</table>

**Installation of the VZ300 Valve on the VZ3000 Manifold**

- Use of an adaptor plate makes it possible to mount Series VZ300 on the manifold base of Series VZ3000.
- 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 VZ3000.

**Note**

- Please contact SMC when using an individual SUP spacer assembly, an individual EXH spacer assembly, or an adapter plate assembly on type 20P.

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**Caution**

**Mounting Screw Tightening Torques**

- M2.5: 0.45 N·m

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**3-3-25**
Series VZ3000

Type 20 Manifold

VV5Z3-20 Station 1

Grommet (G), (H)

2n-M5×0.8
(4(A), 2(B) port)

Manual override
(Non-locking)

L plug connector (L)

M plug connector (M)

DIN terminal (D)

Built-in One-touch fittings

Approximate sizes (mm)

<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>58</td>
<td>74</td>
<td>90</td>
<td>106</td>
<td>122</td>
<td>138</td>
<td>154</td>
<td>170</td>
<td>186</td>
<td>202</td>
<td>218</td>
<td>234</td>
<td>250</td>
<td>266</td>
<td>282</td>
<td>298</td>
<td>314</td>
<td>330</td>
<td>346</td>
</tr>
<tr>
<td>L₂</td>
<td>40</td>
<td>56</td>
<td>72</td>
<td>88</td>
<td>104</td>
<td>120</td>
<td>136</td>
<td>152</td>
<td>168</td>
<td>184</td>
<td>200</td>
<td>216</td>
<td>232</td>
<td>248</td>
<td>264</td>
<td>280</td>
<td>296</td>
<td>312</td>
<td>328</td>
</tr>
</tbody>
</table>

With light/surge voltage suppressor

Applicable cable O.D. ø3.5 to ø7

2n-One-touch fitting (A, B port)

Applicable tubing model
C4: T0425
C6: T0604

C4: MAX. 7
C6: MAX. 7.5

SMC

3-3-26
Type 20P Flat Ribbon Cable Manifold

VV5Z3-20P-Station

Manual override
(Non-locking)
2n-M5×0.8
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

C4: MAX. 7
C6: MAX. 7.5

2n-One-touch fitting
(A, B port)
Applicable tubing model
C4: T0425
C6: T0604

Series VZ3000
5 Port Solenoid Valve
Body Ported
**5 Port Solenoid Valve**

**Base Mounted**

**Series VZ3000**

---

**How to Order**

<table>
<thead>
<tr>
<th>Plug-in</th>
<th>Non plug-in</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>VZ3</strong></td>
<td><strong>VZ3</strong></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

**Type of actuation**
- 1: 2 position single
- 2: 2 position double
- 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

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

**Port size**
- Nil: Without sub-plate
- 01: Rc ½ With sub-plate

**Manual override/Plug-in type**
- Nil: Non-locking push type
- B: Locking type B (Slotted)
- C: Locking type C (Manual)

**Manual override/Non plug-in type**
- Nil: Non-locking push type
- B: Locking type B (Slotted)
- C: Locking type C (Manual)

**Electrical entry**
- Gm: Lead wire length 300 mm
- L: With lead wire (Length 300 mm)
- M: With lead wire (Length 300 mm)
- MN: Without lead wire
- D: With connector
- LN: Without lead wire
- LO: Without connector
- MO: Without connector
- DO: Without connector

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

* Not available for “GZ”, “HZ” and “DOZ”

---

* LN, MN: With 2 sockets.
**Series VZ3000**

Applicable for cylinder actuation (up to ø40).
Compact size (Width: 15 mm)
Low power consumption: 1.8 W DC

Refer to pages 3-3-37 to 3-3-52 for manifold use.

###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></td>
<td>3 position: 35 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>
<tr>
<td>Manual override</td>
<td>Non-locking push type, Locking slotted type, Locking lever type</td>
</tr>
<tr>
<td>Pilot exhaust method</td>
<td>Individual pilot exhaust type, Common exhaust (pilot and main valve) type</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)</td>
<td>300/50</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Dustproof</td>
</tr>
</tbody>
</table>

**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 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, DC 24, 6&quot;, 12&quot;, 48&quot;</td>
</tr>
<tr>
<td>Allowable voltage fluctuation (%)</td>
<td>–15 to +10% of rated voltage</td>
</tr>
</tbody>
</table>
| Power consumption (W) | 1.8 (With indicator light 2.1) [
| | [24 VDC: 75 (With indicator light 87.5)] |
| Apparent power (VA) | Inrush 4.5/50 Hz, 4.2/60 Hz, 100 VAC: 45/50 Hz, 42/60 Hz |
| | Holding 3.5/50 Hz, 3/60 Hz, 100 VAC: 35/50 Hz, 30/60 Hz |
| Surge voltage suppressor | DC: Diode, AC: ZNR [2]
| Indicator light | DC: LED (Red), AC: Neon bulb |

**Note 1)** At rated voltage
**Note 2)** Plug-in should be ZNR.

###Combinations of Solenoid Valve and Gasket

- **Round head combination screw**: M2.5 x 25 (With spring washer)
- **Gasket**: DXT192-10-5 (Use caution to the orientation.)

Made to Order Specifications
(For details, refer to page 3-3-85.)
# 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)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VZ3□40□-01</td>
<td>2 position</td>
<td>Rc 1/8</td>
<td>1 → 4/2 (P → A/B)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4/2 → 5/3 (A/B → EA/EB)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>C [dm³/(s·bar)]</td>
<td>b</td>
</tr>
<tr>
<td></td>
<td>Single</td>
<td></td>
<td>0.79</td>
<td>0.21</td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td></td>
<td>0.80</td>
<td>0.28</td>
</tr>
<tr>
<td></td>
<td>Closed center</td>
<td></td>
<td>0.71</td>
<td>0.26</td>
</tr>
<tr>
<td></td>
<td>Exhaust center</td>
<td></td>
<td>0.99 [0.47]</td>
<td>0.29 [0.38]</td>
</tr>
<tr>
<td></td>
<td>Pressure center</td>
<td></td>
<td>125 (75)</td>
<td>170 (120)</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.

<table>
<thead>
<tr>
<th>Series</th>
<th>Average speed (mm/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VZ314□□-01 □□</td>
<td>800</td>
</tr>
<tr>
<td>(Piping: ø4 x 1 m)</td>
<td>700</td>
</tr>
<tr>
<td>Speed controller/Silencer</td>
<td>600</td>
</tr>
<tr>
<td>AS2301F□□-01□□□□AN110-01</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Series</th>
<th>Average speed (mm/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VZ314□□-01 □□</td>
<td>800</td>
</tr>
<tr>
<td>(Piping: ø6 x 1 m)</td>
<td>700</td>
</tr>
<tr>
<td>Speed controller/Silencer</td>
<td>600</td>
</tr>
<tr>
<td>AS3301F□□-02□□□□AN110-01</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Series</th>
<th>Average speed (mm/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VZ314□□-01 □□</td>
<td>800</td>
</tr>
<tr>
<td>(Piping: ø8 x 1 m)</td>
<td>700</td>
</tr>
<tr>
<td>Speed controller/Silencer</td>
<td>600</td>
</tr>
<tr>
<td>AS3301F□□-02□□□□AN110-01</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%
Built-in Speed Controllers

VZ3□□5□

- An exhaust throttle valve is built into the solenoid valve itself, enabling a simple speed adjustment of the cylinder.
- If it is mounted on a manifold base, the exhaust air will converge in the common EXH port at the manifold base, thus simplifying the handling of the exhaust air.

How to Order Valve with Built-in Speed Controller

<table>
<thead>
<tr>
<th>Type of actuation</th>
<th>Body option</th>
<th>Rated voltage</th>
<th>Electrical entry</th>
<th>Thread type</th>
<th>Port size</th>
<th>Manual override</th>
<th>Light/Surge voltage suppressor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non plug-in VZ3</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Throttle Valve Characteristics (A → R)

Note)
- To use the VZ3□□53, open the throttle valve one turn or more from the fully closed position.
- To adjust the throttle valve apply torque of 0.3 N-m or less.
- Be careful not to open the throttle valve excessively as this could cause the throttle valve to fly out.
5 Port Solenoid Valve
Base Mounted  Series VZ3000

Construction

2 position single

2 position double

3 position closed center/exhaust center/pressure center

(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></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>DXT192-14-1-P</td>
<td>Platinum silver</td>
</tr>
<tr>
<td>8</td>
<td>Solenoid assembly</td>
<td>Epoxy/Stainless steel</td>
<td>DXT170-C-xxxx</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 VZ 1000</td>
</tr>
</tbody>
</table>

* Thread type
  Nil: Rc
  F: G
  N: NPT
  T: NPTF
Series VZ3000

2 Position Single

Grommet (G), (H) VZ3140-□□□□-01

M plug connector (M) VZ3140-□□□□-01

DIN terminal (D) VZ3140-□□□□-01

Built-in speed controllers VZ3150-□□□□

L plug connector (L) VZ3140-□□□□-01

− With light/surge voltage suppressor

Applicable cable Ø 3.5 to Ø 7

MAX 10

Pmax

MAX 1
2 Position Double

Grommet (G), (H)
VZ3240-□□□□-01

L plug connector (L)
VZ3240-□L□□-01

M plug connector (M)
VZ3240-□M□□-01

DIN terminal (D)
VZ3240-□D□□-01

Built-in speed controllers
VZ3250-□□□□

VZ3240

With light/surge voltage suppressor

Grommet (G), (H)
VZ3240-□□□□-01

L plug connector (L)
VZ3240-□L□□-01

M plug connector (M)
VZ3240-□M□□-01

DIN terminal (D)
VZ3240-□D□□-01

Built-in speed controllers
VZ3250-□□□□
Series VZ3000

3 Position Closed Center/Exhaust Center/Pressure Center

Grommet (G), (H)
VZ3 3/5 20-□□□-01

VZ3 3/5 40-□□□-01

VZ3 3/5 50-□□□-01

M plug connector (M)
VZ3 3/5 40-□□□-01

Built-in speed controllers
VZ3 3/5 50-□□□□

DIN terminal (D)
VZ3 3/5 40-□□□-01

L plug connector (L)
VZ3 3/5 40-□□□-01

2-M5 x 0.8 (PE port)

Mounting hole pitch: MAX. 11

(Piping port)

Rc 1/8

Mounting hole: G: 300 mm, H: 600 mm

(Lead wire length)

Mounting hole pitch: ≅ 300

Lead wire length: ≅ 300

Applicable cable O.D.: ø3.5 to ø7

MAX. 10

MAX. 11

With light/surge voltage suppressor
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.

Manifold Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Type 40</th>
<th>Type 41</th>
<th>Type 42</th>
<th>Type 43</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manifold type</td>
<td>Single base/B mount</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P/(SUP)/(EXH)</td>
<td>Common SUP/Common EXH</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valve stations</td>
<td>2 to 20 stations</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4(A), 2(B) port</th>
<th>Position</th>
<th>Base</th>
<th>Porting specifications</th>
<th>Direction</th>
<th>Base</th>
<th>Side</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1(P), 3(S) port</td>
<td>Rc 1/8</td>
<td>(One-touch fitting for ø6)</td>
<td>C6</td>
<td>C4 (One-touch fitting for ø4)</td>
<td>B3 (One-touch fitting for 5/32&quot;)</td>
</tr>
<tr>
<td></td>
<td>4(A), 2(B) port</td>
<td>M5 x 0.8</td>
<td>(Conforming to MIL-C-83503)</td>
<td>C6</td>
<td>C4 (One-touch fitting for ø4)</td>
<td>B3 (One-touch fitting for 5/32&quot;)</td>
</tr>
</tbody>
</table>

Flow Characteristics

<table>
<thead>
<tr>
<th>Manifold</th>
<th>Port size</th>
<th>Flow characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>VV5Z-40</td>
<td>1/8</td>
<td>M5 x 0.8</td>
</tr>
<tr>
<td>VV5Z-41</td>
<td>1/8</td>
<td>M5 x 0.8</td>
</tr>
<tr>
<td>VV5Z-42-01</td>
<td>1/4</td>
<td>1/8</td>
</tr>
<tr>
<td>VV5Z-42-C6</td>
<td>1/4</td>
<td>C6</td>
</tr>
<tr>
<td>VV5Z-43</td>
<td>1/8</td>
<td>C4</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) VV5Z3-40-031-M5······ 1 pc. (Manifold base)
  +VZ140-5G-M5······ 2 pcs. (Valve)
  +DX192-13-1A······ 1 pc. (Blanking plate assembly)
  VV5Z3-43-031-M5······ 1 pc. (Manifold base)
  +VZ140-5G-M5······ 2 pcs. (Valve)
  +DX192-13-1A······ 1 pc. (Blanking plate assembly)

Applicable flat ribbon cable connector

Socket: 26 pins MIL, with strain relief
(Conforming to MIL-C-83503)

Internal wiring

+COM specifications (For –COM specifications, specify them separately.)

Applicable valve model

VZ3·····8MOZ-VZ3·····8MOZ

Rated voltage

100 VAC 50/60 Hz, 110 VAC 50/60 Hz, 24 VDC, 12 VDC

Note) Withstand voltage specifications of wiring unit part is equivalent to JIS C 0704 class 1.

Flat Ribbon Cable Manifold Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Type 41P</th>
<th>Type 43P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manifold type</td>
<td>Single base/B mount</td>
<td></td>
</tr>
<tr>
<td>P/(SUP)/(EXH)</td>
<td>Common SUP/Common EXH</td>
<td></td>
</tr>
<tr>
<td>Valve stations</td>
<td>3 to 12 stations</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4(A), 2(B) port</th>
<th>Position</th>
<th>Base</th>
<th>Porting specifications</th>
<th>Direction</th>
<th>Base</th>
<th>Side</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1(P), 3(S) port</td>
<td>Rc 1/8</td>
<td>(One-touch fitting for ø6)</td>
<td>C6</td>
<td>C4 (One-touch fitting for ø4)</td>
<td>B3 (One-touch fitting for 5/32&quot;)</td>
</tr>
<tr>
<td></td>
<td>4(A), 2(B) port</td>
<td>M5 x 0.8</td>
<td>(Conforming to MIL-C-83503)</td>
<td>C6</td>
<td>C4 (One-touch fitting for ø4)</td>
<td>B3 (One-touch fitting for 5/32&quot;)</td>
</tr>
</tbody>
</table>

Flow Characteristics

<table>
<thead>
<tr>
<th>Manifold</th>
<th>Port size</th>
<th>Flow characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>VV5Z3-41P</td>
<td>1/8</td>
<td>M5 x 0.8</td>
</tr>
<tr>
<td>VV5Z3-43P</td>
<td>1/8</td>
<td>C4</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) VV5Z3-43P-07-C4······ 1 pc. (Manifold base)
  +VZ143-5MOZ······ 3 pcs. (Valve)
  +DX192-13-3A·... 1 pc. (Blanking plate assembly)
  +DX192-52-1-4A···· 3 pcs. (Connector assembly)
  VV5Z3-43P-07-C4······ 1 pc. (Manifold base)
  +VZ143-5MOZ······ 3 pcs. (Valve)
  +DX192-13-3A······ 1 pc. (Blanking plate assembly)
  +DX192-52-1-4A······ 3 pcs. (Connector assembly)

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

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

### Type 40
- 1(P) port: Rc 1/8
- 4(A), 2(B) port: M5 x 0.8

### How to Order

**VV5Z3** - 40

<table>
<thead>
<tr>
<th>Station</th>
<th>4(A), 2(B) port size</th>
<th>1(P), 3/5(R) port thread type</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>2 stations</td>
<td>M5</td>
</tr>
<tr>
<td>20</td>
<td>20 stations</td>
<td>M5 x 0.8</td>
</tr>
</tbody>
</table>

### Type 41
- 1(P) port: Rc 1/8
- 3/5(R) port: M5 x 0.8

### How to Order

**VV5Z3** - 41

<table>
<thead>
<tr>
<th>Station</th>
<th>4(A), 2(B) port size</th>
<th>1(P), 3/5(R) port thread type</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>2 stations</td>
<td>M5</td>
</tr>
<tr>
<td>20</td>
<td>20 stations</td>
<td>M5 x 0.8</td>
</tr>
</tbody>
</table>

### Type 42
- 1(P) port: Rc 1/8
- 3/5(R) port: M5 x 0.8

### How to Order

**VV5Z3** - 42

<table>
<thead>
<tr>
<th>Station</th>
<th>4(A), 2(B) port size</th>
<th>1(P), 3/5(R) port thread type</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>2 stations</td>
<td>M5</td>
</tr>
<tr>
<td>20</td>
<td>20 stations</td>
<td>M5 x 0.8</td>
</tr>
</tbody>
</table>

### Type 43
- 1(P) port: Rc 1/8
- 3/5(R) port: M5 x 0.8

### How to Order

**VV5Z3** - 43

<table>
<thead>
<tr>
<th>Station</th>
<th>4(A), 2(B) port size</th>
<th>1(P), 3/5(R) port thread type</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>2 stations</td>
<td>M5</td>
</tr>
<tr>
<td>20</td>
<td>20 stations</td>
<td>M5 x 0.8</td>
</tr>
</tbody>
</table>

### Flat ribbon cable type 41P
- 4(A), 2(B) port: M5 x 0.8
- 1(P) port: Rc 1/8

### How to Order

**VV5Z3** - 41P

<table>
<thead>
<tr>
<th>Station</th>
<th>4(A), 2(B) port size</th>
<th>1(P), 3/5(R) port thread type</th>
</tr>
</thead>
<tbody>
<tr>
<td>03</td>
<td>3 stations</td>
<td>M5</td>
</tr>
<tr>
<td>12</td>
<td>12 stations</td>
<td>M5 x 0.8</td>
</tr>
</tbody>
</table>

### Flat ribbon cable type 43P
- 4(A), 2(B) port: M5 x 0.8
- 1(P) port: Rc 1/8

### How to Order

**VV5Z3** - 43P

<table>
<thead>
<tr>
<th>Station</th>
<th>4(A), 2(B) port size</th>
<th>1(P), 3/5(R) port thread type</th>
</tr>
</thead>
<tbody>
<tr>
<td>03</td>
<td>3 stations</td>
<td>M5</td>
</tr>
<tr>
<td>12</td>
<td>12 stations</td>
<td>M5 x 0.8</td>
</tr>
</tbody>
</table>

### Applicable solenoid valve
- VZ334-C-□-□-□
- VZ335-□-□-□

### Applicable blanking plate assembly
- DXT192-13-1A
- DXT192-21-1A
- (Except VV5Z3-40 type)

### Applicable individual EXH spacer assembly
- DXT192-21-1A

### Applicable individual SUP spacer assembly
- DXT192-40-1A

### Applicable interface regulator
- ARBZ3000-00-P

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

For “How to order applicable connector assemblies”, refer to page 3-3-7.
### DIN Rail Manifold

#### 5 Port Solenoid Valve

**Base Mounted Series VZ3000**

---

**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/Common EXH</td>
<td></td>
</tr>
<tr>
<td>Valve stations</td>
<td>2 to 20 stations</td>
<td></td>
</tr>
<tr>
<td>A, B port Porting specifications</td>
<td>Location</td>
<td>Base</td>
</tr>
<tr>
<td></td>
<td>Plane: 3/5(R) port</td>
<td>C8 (One-touch fitting for ø8)</td>
</tr>
<tr>
<td></td>
<td>4(A), 2(B) port</td>
<td>C4 (One-touch fitting for ø4)</td>
</tr>
<tr>
<td>Port size</td>
<td></td>
<td>C6 (One-touch fitting for ø6)</td>
</tr>
<tr>
<td>Connector</td>
<td>—</td>
<td>MIL-C-24308</td>
</tr>
<tr>
<td>Internal wiring</td>
<td>—</td>
<td>D-sub connector</td>
</tr>
</tbody>
</table>

#### Flow Characteristics

<table>
<thead>
<tr>
<th>Manifold</th>
<th>Port size</th>
<th>Flow characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>VV5Z3-45</td>
<td>C8</td>
<td>1 → 4/2 (P → A/B)</td>
</tr>
<tr>
<td></td>
<td>C4</td>
<td>4/2 → 5/3 (A/B → R)</td>
</tr>
<tr>
<td></td>
<td>C8</td>
<td>0.59</td>
</tr>
<tr>
<td></td>
<td>C6</td>
<td>0.76</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) VV5Z3-45FD-06-C6C-1 pc. (Manifold base)

| Applicable solenoid valve | VZ3-40-0-0 |
| Applicable blanking plate assembly | VZ3000-69-1A |

---

### DIN Rail Manifold

**Common SUP/Common EXH**

#### Type 45 (Non plug-in type)

**How to Order**

VV5Z3-45

05 [D, C6, C]

<table>
<thead>
<tr>
<th>Stations</th>
<th>SUP/EXH block mounting position</th>
<th>DIN rail length specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>U: U side: 2 to 10 stations</td>
<td>Nil</td>
</tr>
<tr>
<td></td>
<td>D: D side: 2 to 10 stations</td>
<td>Standard length</td>
</tr>
<tr>
<td></td>
<td>B: Both sides: 2 to 20 stations</td>
<td>For 3 stations: Specify a longer rail than the standard length.</td>
</tr>
<tr>
<td></td>
<td>M*: Special specifications</td>
<td>For 20 stations: Specify a longer rail than the standard length.</td>
</tr>
</tbody>
</table>

#### Type 45F (Plug-in type)

**How to Order**

VV5Z3-45F

05 [D, C6, C]

<table>
<thead>
<tr>
<th>Stations</th>
<th>SUP/EXH block mounting position</th>
<th>DIN rail length specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>U: U side: 2 to 10 stations</td>
<td>Nil</td>
</tr>
<tr>
<td></td>
<td>D: D side: 2 to 10 stations</td>
<td>Standard length</td>
</tr>
<tr>
<td></td>
<td>B: Both sides: 11 to 20 stations</td>
<td>For 3 stations: Specify a longer rail than the standard length.</td>
</tr>
<tr>
<td></td>
<td>M*: Special specifications</td>
<td>For 20 stations: Specify a longer rail than the standard length.</td>
</tr>
</tbody>
</table>

---

**Flow Characteristics**

<table>
<thead>
<tr>
<th>Manifold</th>
<th>Port size</th>
<th>Flow characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>VV5Z3-45</td>
<td>C8</td>
<td>1 → 4/2 (P → A/B)</td>
</tr>
<tr>
<td></td>
<td>C4</td>
<td>4/2 → 5/3 (A/B → R)</td>
</tr>
<tr>
<td></td>
<td>C8</td>
<td>0.59</td>
</tr>
<tr>
<td></td>
<td>C6</td>
<td>0.76</td>
</tr>
</tbody>
</table>

---

**Note**

Value at manifold base mounted, 2 position single operating.

---

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

(Example) VV5Z3-45FD-06-C6C-1 pc. (Manifold base)

+VZ343-5FZ............2 pcs. (Valve)
+VZ343-5FZ............3 pcs. (Valve)
+VZ3000-69-1A...........1 pc. (Blanking plate assembly)

---

For special specifications, indicate separately on the manifold specification sheet.
Option/Standard Manifold, Flat Ribbon Cable Manifold

Combinations of Solenoid Valve, Manifold Gasket and Manifold Base

- Round head combination screw M2.5 x 7 (With spring washer)
- Gasket

Adaptation Plate Assembly

- Applicable base VV5Z3-40
  VV5Z3-41
  VV5Z3-42
  VV5Z3-43
- Spring washer for M2.5
- Round head combination screw M2.5 x 7 (With spring washer)

Installation of the VZ300 Valve on the VZ3000 Manifold

- Use of an adapter plate makes it possible to mount Series VZ300 on the manifold base of Series VZ3000.
- 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 VZ3000.
- 2(A) port of 3 port valve should be 2(B) port of manifold base.

Individual EXH Spacer Assembly

- Applicable base VV5Z3-40
  VV5Z3-41
  VV5Z3-42
  VV5Z3-43
  VV5Z3-41P
  VV5Z3-43P
- Blanking plate
- Dust cap
- Interface regulator (P port regulation)

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

Individual SUP Spacer Assembly

- Applicable base VV5Z3-40
  VV5Z3-41
  VV5Z3-42
  VV5Z3-43
- Round head combination screw M2.5 x 7 (With spring washer)

Before using, refer to page 3-3-8.

Note) Please contact SMC when using an individual EXH spacer assembly, an individual SUP spacer assembly, an adapter plate assembly, or an interface regulator on 41P and 43P types.

Mounting Screw Tightening Torques

- M2.5: 0.45 N·m

Caution
Option/DIN Rail Manifold

Blanking Plate Assembly
VZ3000-69-2A

Combination of Solenoid Valve, Gasket and Manifold Base

VZ3000-69-1A

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.
VZ3000-79-1A

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.
VZ3000-79-1A

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</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number of terminals: 25</td>
</tr>
<tr>
<td>3 m</td>
<td>VVZS3000-21A-2</td>
<td>Cable: 25 cores x 0.3 mm²</td>
</tr>
<tr>
<td>5 m</td>
<td>VVZS3000-21A-3</td>
<td></td>
</tr>
<tr>
<td>8 m</td>
<td>VVZS3000-21A-4</td>
<td></td>
</tr>
</tbody>
</table>

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

Type 45 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>VZ3000-50A-2-C4</td>
<td>C4: A, B port with One-touch fitting for ø4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></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>VZ3000-51A-2</td>
<td>P/R port with One-touch fitting for ø8</td>
</tr>
<tr>
<td>3</td>
<td>End block assembly</td>
<td>VZ3000-52A-2D</td>
<td>For D side</td>
</tr>
<tr>
<td>4</td>
<td>End block assembly</td>
<td>VZ3000-52A-2U</td>
<td>For U side</td>
</tr>
</tbody>
</table>

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 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) 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 ② 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.
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.
Type 40 Manifold: Bottom Ported

VV5Z3-40 Station 2-M5

Grommet (G), (H)

| Stations | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| L1       | 58 | 74 | 90 | 106| 122| 136| 154| 170| 186| 202| 218| 234| 250| 266| 282| 298| 314| 330| 316|
| L2       | 40 | 56 | 72 | 88 | 104| 120| 136| 152| 168| 184| 200| 216| 232| 248| 264| 280| 296| 312| 328|

L plug connector (L)  M plug connector (M)  DIN terminal (D)  Built-in speed controllers

□: With light/surge voltage suppressor
5 Port Solenoid Valve
Base Mounted Series VZ3000

Type 41 Manifold: Side Ported

VV5Z3-41-Station 1-M5

Grommet (G), (H)

Manual override
(Non-locking)

L plug connector (L)  M plug connector (M)  DIN terminal (D)  Built-in speed controllers

<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>52</td>
<td>68</td>
<td>84</td>
<td>100</td>
<td>116</td>
<td>132</td>
<td>148</td>
<td>164</td>
<td>180</td>
<td>196</td>
<td>212</td>
<td>228</td>
<td>244</td>
<td>260</td>
<td>276</td>
<td>292</td>
<td>308</td>
<td>324</td>
<td>340</td>
</tr>
<tr>
<td>L₂</td>
<td>43</td>
<td>59</td>
<td>75</td>
<td>91</td>
<td>107</td>
<td>123</td>
<td>139</td>
<td>155</td>
<td>171</td>
<td>187</td>
<td>203</td>
<td>219</td>
<td>235</td>
<td>251</td>
<td>267</td>
<td>283</td>
<td>299</td>
<td>315</td>
<td>331</td>
</tr>
</tbody>
</table>

L₁: ≅300 (Lead wire length)
L₂: ≅300 (Lead wire length)

M5 x 0.8 (PE port)

With filter

G: 300 mm
H: 600 mm

(Pitch)

(Pitch)

(Pitch)

Applicable cable O.D.
ø3.5 to ø7

□: With light/surge voltage suppressor

SMC

3-3-45
Series VZ3000

Type 42 Manifold: Side Ported

VV5Z3-42-Station 1-01

Grommet (G), (H)

Manual override
(Non-locking)

M5 x 0.8 (PE port)

G: 300 mm
H: 600 mm

(Lead wire length)

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>83</td>
<td>100</td>
<td>117</td>
<td>134</td>
<td>151</td>
<td>168</td>
<td>185</td>
<td>202</td>
<td>219</td>
<td>236</td>
<td>253</td>
<td>270</td>
<td>287</td>
<td>304</td>
<td>321</td>
<td>338</td>
<td>355</td>
<td>372</td>
</tr>
<tr>
<td>L2</td>
<td>53</td>
<td>70</td>
<td>87</td>
<td>104</td>
<td>121</td>
<td>138</td>
<td>155</td>
<td>172</td>
<td>189</td>
<td>206</td>
<td>223</td>
<td>240</td>
<td>257</td>
<td>274</td>
<td>291</td>
<td>308</td>
<td>325</td>
<td>342</td>
<td>359</td>
</tr>
</tbody>
</table>

L plug connector (L)  M plug connector (M)  DIN terminal (D)  Built-in speed controllers

☑️: With light/surge voltage suppressor
Type 42 Manifold: Side Ported

VV5Z3-42-C6

Manual override (Non-locking)

Grommet (G), (H)

Stations

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<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>65</td>
<td>81</td>
<td>97</td>
<td>113</td>
<td>129</td>
<td>145</td>
<td>161</td>
<td>177</td>
<td>193</td>
<td>209</td>
<td>225</td>
<td>241</td>
<td>257</td>
<td>273</td>
<td>289</td>
<td>305</td>
<td>321</td>
<td>337</td>
<td>353</td>
<td></td>
</tr>
<tr>
<td>L2</td>
<td>52</td>
<td>68</td>
<td>84</td>
<td>100</td>
<td>116</td>
<td>132</td>
<td>148</td>
<td>164</td>
<td>180</td>
<td>196</td>
<td>212</td>
<td>228</td>
<td>244</td>
<td>260</td>
<td>276</td>
<td>292</td>
<td>308</td>
<td>324</td>
<td>340</td>
<td></td>
</tr>
</tbody>
</table>

L plug connector (L)  M plug connector (M)  DIN terminal (D)  Built-in speed controllers

[Diagram and dimensions]
**Series VZ3000**

**Type 43 Manifold: Side Ported**

**VV5Z3-43 Station 1-C4**

Grommet (G), (H)

L plug connector (L)  M plug connector (M)  DIN terminal (D)  Built-in speed controllers

---

**Stations** | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20
L1 | 52 | 68 | 84 | 100 | 116 | 132 | 148 | 164 | 180 | 196 | 212 | 228 | 244 | 260 | 276 | 292 | 308 | 324 | 340
L2 | 43 | 59 | 75 | 91 | 107 | 123 | 139 | 155 | 171 | 187 | 203 | 219 | 235 | 251 | 267 | 283 | 299 | 315 | 331

---

With light/surge voltage suppressor

---

**Applicable tubing model:** T0425

**Applicable cable O.D.**  Ø3.5 to Ø7
Type 41P Flat Ribbon Cable Manifold: Side Ported

VV5Z3-41P-Station-M5

Built-in speed controllers

<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>77</td>
<td>94.5</td>
<td>112</td>
<td>129.5</td>
<td>147</td>
<td>164.5</td>
<td>182</td>
<td>199.5</td>
<td>217</td>
<td>234.5</td>
</tr>
<tr>
<td>L₂</td>
<td>62</td>
<td>79.5</td>
<td>97</td>
<td>114.5</td>
<td>132</td>
<td>149.5</td>
<td>167</td>
<td>184.5</td>
<td>202</td>
<td>219.5</td>
</tr>
</tbody>
</table>
### Type 43P Flat Ribbon Cable Manifold: Side Ported

**VV5Z3-43P-Station-C4**

**Built-in speed controllers**

<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>
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</table>
Type 45 DIN Rail Manifold (Non Plug-in): Side Ported

VV5Z3-45- Station D-C4C

Grommet (G), (H)

VV5Z3-45- Station B-C4C

C4

2n-One-touch
fitting
(Pitch)

VV5Z3-45- Station U-C4C

C6C

One-touch fitting port (P, R port)
Applicable tubing model: T0806

ρ = 16 28

C4: T0425

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

A side

DIN rail

Manual override
(Non-locking)

L1

L2

L3

L4

G: 300
H: 600
(Lead wire length)

Applicable tubing model: T0806

DIN rail holding screw

(Station n)··············(Station 1)

Separation lever
(Push type)

Stations

<table>
<thead>
<tr>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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</table>

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

|=300 (Lead wire length)

Applicable cable O.D. ø3.5 to ø7

≅ 300 (Lead wire length)

MAX. 10

ρ = 16

Applicable cable O.D. ø3.5 to ø7

With light/surge voltage suppressor

bases
Series VZ3000

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

VV5Z3-45FD Station C4C C6C

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

One-touch fitting port (P, R port)
Applicable tubing model: T0806

<table>
<thead>
<tr>
<th>Stations</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<th>7</th>
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<td>200</td>
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<td>16</td>
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VV5Z3-45FU Station C4C C6C

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

<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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<tbody>
<tr>
<td>L1</td>
<td>135.5</td>
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<td>185.5</td>
<td>198</td>
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<tr>
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<td>13.5</td>
<td>11.5</td>
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</tbody>
</table>

VV5Z3-45FB Station C4C C6C (2 to 10 stations)

PV5Z3-45FB Station C4C C6C (11 to 20 stations)
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.
VZ350 X20

Entry is the same as standard products.

Specifications

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

Pilot exhaust method
Pilot valve individual exhaust

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

2. Solenoid Valve: Special Manual Override

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

**Model no.**
VZ3

**Dimensions: Single**

**Push type A**

**Push-locking type E**

**Entry is the same as standard products.**

**Manual override**

A  Push type A

E  Push-locking type E

**Caution**

When operating the lock with the driver, use a watchmakers’ screwdriver and turn lightly.
(Torque: 0.1 N·m or less)

**Note** Because the manual override unit protrudes, the manual override could activate unintentionally if the protrusion is touched or an object falls on it. Therefore, take the proper preventative measures.

3. Solenoid Valve: Opposite Mount of Solenoid Assembly

**Applicable solenoid valve series**
VZ1000/3000/5000
(Non plug-in type only)

**Model no.**
VZ

**Dimensions: VZ1120-G-M5-X1**

**Entry is the same as standard products.**

**Manual override**

(Pushing makes the valve operate. The valve can be locked in the manual override position by turning it to the direction that the arrow shows while keeping it pressed. If it is not turned, it can be used as a non-locking push type.)
4. Manifold: Common SUP/Individual EXH Type

Applicable solenoid valve series
VZ3000

Common SUP/Individual EXH type
VV5Z3-21-C3

<table>
<thead>
<tr>
<th>Specification</th>
<th>Common SUP/Individual EXH type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(P) port</td>
<td>Rc 1/8</td>
</tr>
<tr>
<td>3/5(R1) port</td>
<td>M5 x 0.8</td>
</tr>
<tr>
<td>4(A), 2(B) port</td>
<td>Valve</td>
</tr>
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</table>

Model no.
VV5Z3 – 21 – 05 3 –

Applicable solenoid valve
VZ3000

Applicable blanking plate assembly
DXT192-13-1A

Applicable throttle valve
DXT154-34-1A

Applicable silencer
AN120-M5

Note) Refer to page 3-3-25 for manifold option.

Dimensions: Grommet Type

Note) To use the VZ3-23 with a throttle valve mounted on it, open the throttle valve one turn or more from the fully closed position.