Body Ported
Metal Seal/Rubber Seal
Series VQ

A variety of product groups meet all FA needs.

- Flip type demonstrates space-saving effect.
- Cassette type enables flexible, speedy station increasing/decreasing.

**Flip type**

VQ0000

VQ1000

VQ2000

**Cassette type**

VQ1000

**Unprecedented high speed response and long service life**

(Time response: 10 ms, 20 ms, 10 ms)

200 million cycles

Dispersion accuracy ±2 ms

**Innovative mounting methods**

A valve can be changed without entirely disassembling the manifold.

**Built-in One-touch fittings for easier piping.**

<table>
<thead>
<tr>
<th>Model</th>
<th>Manifold pitch (mm)</th>
<th>Flow characteristics</th>
<th>Cylinder size</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ0000</td>
<td>10.5</td>
<td>0.50</td>
<td>0.59</td>
</tr>
<tr>
<td>VQ1000</td>
<td>11</td>
<td>0.84</td>
<td>1.0</td>
</tr>
<tr>
<td>VQ2000</td>
<td>16</td>
<td>2.3</td>
<td>2.7</td>
</tr>
</tbody>
</table>

* Flow characteristics: 4/2 → 5/3 (A/B → R1/R2)

**A variety of common wiring methods are standardized.**

F kit (D-sub connector)

P kit (Flat ribbon cable connector)

J kit (Flat ribbon cable connector)

T kit (Terminal block)

L kit (Lead wire)

S kit (Serial transmission unit)
## Valve Specifications

<table>
<thead>
<tr>
<th>Sonic conductance: ( C \cdot \text{[um/(s·bar)]} )</th>
<th>Type of actuation</th>
<th>Voltage</th>
<th>Electrical entry</th>
<th>Manual override</th>
</tr>
</thead>
<tbody>
<tr>
<td>42 → 5/3 ((A/B \rightarrow R1/R2))</td>
<td>Single</td>
<td>12 VDC</td>
<td>Plug-in</td>
<td>Push type, Tool required</td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td>110 V</td>
<td>Grommet</td>
<td>Locking type (Manual)</td>
</tr>
<tr>
<td></td>
<td>Closed center</td>
<td>200 V</td>
<td>L plug connector</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exhaust center</td>
<td>50/60 Hz</td>
<td>M plug connector</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pressure center</td>
<td>50/60 Hz</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Body Ported</th>
<th>Plug-in</th>
<th>Voltage</th>
<th>Electrical entry</th>
<th>Manual override</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series VQ1000</td>
<td>VQ1□30</td>
<td>12 VDC</td>
<td>Plug-in</td>
<td>Push type, Tool required</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Grommet</td>
<td>Locking type (Manual)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L plug connector</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>M plug connector</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Body Ported</th>
<th>Plug-lead</th>
<th>Voltage</th>
<th>Electrical entry</th>
<th>Manual override</th>
</tr>
</thead>
<tbody>
<tr>
<td>SERIES VQ1000</td>
<td>VQ1□31</td>
<td>12 VDC</td>
<td>Plug-in</td>
<td>Push type, Tool required</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Grommet</td>
<td>Locking type (Manual)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L plug connector</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>M plug connector</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Body Ported</th>
<th>Cassette</th>
<th>Voltage</th>
<th>Electrical entry</th>
<th>Manual override</th>
</tr>
</thead>
<tbody>
<tr>
<td>SERIES VQ1000</td>
<td>VQ1□70</td>
<td>12 VDC</td>
<td>Plug-in</td>
<td>Push type, Tool required</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Grommet</td>
<td>Locking type (Manual)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L plug connector</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<td>M plug connector</td>
<td></td>
</tr>
<tr>
<td>Option</td>
<td>D-sub connector 15P</td>
<td>Flat ribbon cable 10P, 16P, 20P</td>
<td>Negative common specifications</td>
<td>One-touch fitting Inch size</td>
</tr>
<tr>
<td>----------------------</td>
<td>---------------------</td>
<td>---------------------------------</td>
<td>--------------------------------</td>
<td>----------------------------</td>
</tr>
<tr>
<td>P. 2-4-82</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P. 2-4-88</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Except S kit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P. 2-4-68</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Except S kit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P. 2-4-23</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Except S kit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P. 2-4-68</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Except S kit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P. 2-4-28</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Except L kit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P. 2-4-23</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Except L kit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P. 2-4-68</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Except L kit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P. 2-4-87</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Except L kit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P. 2-4-68</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Except L kit</td>
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</tr>
<tr>
<td>P. 2-4-68</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Except L kit</td>
<td></td>
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<tr>
<td>P. 2-4-68</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Except L kit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P. 2-4-87</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P. 2-4-68</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUP/EXH passage spacer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name plate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIN rail mounting style</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Built-in silencer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silencer for EXH port</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elbow fitting for cylinder port</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plug for cylinder port</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Double check block</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For special wiring spec.

**Manifold Option**

- P. 2-4-82
- P. 2-4-68
- P. 2-4-23
- P. 2-4-68
- P. 2-4-28
- P. 2-4-87
- Except S kit
- Except L kit
- Standard
- SUP/EXH passage spacer
- Built-in silencer
- Silencer for EXH port
- Elbow fitting for cylinder port
- Plug for cylinder port
- Double check block
## Series VQ/Body Ported: Variations

### Manifold Variations

<table>
<thead>
<tr>
<th>F kit</th>
<th>P kit</th>
<th>J kit</th>
<th>T kit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>D-sub connector</strong>&lt;br&gt;Conforming to MIL D-sub connector</td>
<td><strong>Flat ribbon cable connector</strong>&lt;br&gt;(26, 20, 16, 10 pins)&lt;br&gt;Conforming to MIL flat ribbon cable connector</td>
<td><strong>Flat ribbon cable connector</strong>&lt;br&gt;(20 pins)&lt;br&gt;Conforming to MIL flat ribbon cable connector PC Wiring System compatible</td>
<td><strong>Terminal block</strong>&lt;br&gt;Two kinds of terminal are available in accordance with the number of stations.</td>
</tr>
</tbody>
</table>

### Plug-in Series
- **Series VQ1000**
  - Plug-in: VQ1000
  - P/J kit: P. 2-4-12
  - P/J kit: P. 2-4-14
- **Series VQ0000**
  - Plug-in: VQ0000
  - P kit: P. 2-4-38
  - P kit: P. 2-4-42
  - P kit: P. 2-4-46
- **Series VQ1000**
  - Plug-in: VQ1000
  - P kit: P. 2-4-38
  - P kit: P. 2-4-42
  - P kit: P. 2-4-46
- **Series VQ2000**
  - Plug-in: VQ2000
  - P kit: P. 2-4-38
  - P kit: P. 2-4-42
  - P kit: P. 2-4-46

### Plug Lead Series
- **Series VQ1000**
  - Plug Lead: VQ1000
  - P kit: P. 2-4-38
  - P kit: P. 2-4-42
  - P kit: P. 2-4-46

### Cassette Series
- **Series VQ1000**
  - Cassette: VQ1000
  - P kit: P. 2-4-76
  - P kit: P. 2-4-78
  - P kit: P. 2-4-80
## Manifold Variations

<table>
<thead>
<tr>
<th>Kit</th>
<th>Lead wire</th>
<th>Serial transmission unit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C</strong> kit</td>
<td>Direct electrical entry type</td>
<td>Enables single-wire solenoid valve-PLC operation</td>
</tr>
</tbody>
</table>

### L kit
- **Lead wire**
  - Direct electrical entry type
- **Serial transmission unit**
  - Enables single-wire solenoid valve-PLC operation

### S kit
- **Port size**
<table>
<thead>
<tr>
<th>SUP</th>
<th>EXH</th>
<th>Cylinder port</th>
</tr>
</thead>
<tbody>
<tr>
<td>P, R</td>
<td>A, B</td>
<td></td>
</tr>
</tbody>
</table>

#### C6 (⌀6)
- C3 (⌀3.2)
- C4 (⌀4)
- C6 (⌀6)
- M5 (M5 thread)
- N7 (⌀1/4")
- N1 (⌀1/8")
- N3 (⌀5/32")
- N7 (⌀1/4")

#### C6 (⌀6)
- C3 (⌀3.2)
- C4 (⌀4)
- C6 (⌀6)
- M5 (M5 thread)
- N7 (⌀1/4")
- N1 (⌀1/8")
- N3 (⌀5/32")
- N7 (⌀1/4")

#### C6 (⌀6)
- C3 (⌀3.2)
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- C6 (⌀6)
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#### C6 (⌀6)
- C3 (⌀3.2)
- C4 (⌀4)
- C6 (⌀6)
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- N7 (⌀1/4")
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#### C6 (⌀6)
- C3 (⌀3.2)
- C4 (⌀4)
- C6 (⌀6)
- M5 (M5 thread)
- N7 (⌀1/4")
- N1 (⌀1/8")
- N3 (⌀5/32")
- N7 (⌀1/4")

#### C6 (⌀6)
- C3 (⌀3.2)
- C4 (⌀4)
- C6 (⌀6)
- M5 (M5 thread)
- N7 (⌀1/4")
- N1 (⌀1/8")
- N3 (⌀5/32")
- N7 (⌀1/4")

### Options
- Built-in silencer
### 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>
<th>Series CJ2</th>
<th>Series CM2</th>
<th>Series MB, CA1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pressure 0.5 MPa</td>
<td>Pressure 0.5 MPa</td>
<td>Pressure 0.5 MPa</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Load factor 50%</td>
<td>Load factor 50%</td>
<td>Load factor 50%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Stroke 60 mm</td>
<td>Stroke 300 mm</td>
<td>Stroke 500 mm</td>
</tr>
<tr>
<td>VQ0149-C4</td>
<td>800, 700, 600, 500, 400, 300, 200, 100</td>
<td>ø6, ø10, ø16, ø20, ø25, ø32, ø40, ø40, ø50, ø63, ø80, ø100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQ014-C4</td>
<td>800, 700, 600, 500, 400, 300, 200, 100</td>
<td>ø6, ø10, ø16, ø20, ø25, ø32, ø40, ø40, ø50, ø63, ø80, ø100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQ11-C6</td>
<td>800, 700, 600, 500, 400, 300, 200, 100</td>
<td>ø6, ø10, ø16, ø20, ø25, ø32, ø40, ø40, ø50, ø63, ø80, ø100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQ2149-C8</td>
<td>800, 700, 600, 500, 400, 300, 200, 100</td>
<td>ø6, ø10, ø16, ø20, ø25, ø32, ø40, ø40, ø50, ø63, ø80, ø100</td>
<td></td>
<td></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%

### Conditions

<table>
<thead>
<tr>
<th>Body ported</th>
<th>Series CJ2</th>
<th>Series CM2</th>
<th>Series MB, CA1</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ0149-C4</td>
<td>Tube bore x Length T0425 x 1 m</td>
<td>Speed controller AS2001F-04</td>
<td>Silencer AN103-X233</td>
</tr>
<tr>
<td>VQ112-C6</td>
<td>Tube bore x Length T0604 x 1 m</td>
<td>Speed controller AS3001F-06</td>
<td>Silencer AN103-X233</td>
</tr>
<tr>
<td>VQ2149-C8</td>
<td>Tube bore x Length T0806 x 1 m</td>
<td>Speed controller AS3001F-08</td>
<td>Silencer AN200-KM8</td>
</tr>
</tbody>
</table>
## Series VQ1000
### Body Ported
#### Plug-in Unit: Flip Type

### How to Order Manifold

**VV5Q1 3-08 F S1 N**

<table>
<thead>
<tr>
<th>Kit type</th>
<th>Option</th>
<th>Station</th>
<th>Without cable</th>
<th>With cable (1.5 m)</th>
<th>With cable (3 m)</th>
<th>With cable (5 m)</th>
<th>Without cable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kit F</td>
<td>Kit F</td>
<td>1 station</td>
<td>Max. 16 stations</td>
<td>S0</td>
<td>S1</td>
<td>S2</td>
<td>S3</td>
</tr>
<tr>
<td>Kit P</td>
<td>Kit P</td>
<td>1 station</td>
<td>Max. 16 stations</td>
<td>U0</td>
<td>U1</td>
<td>U2</td>
<td>U3</td>
</tr>
<tr>
<td>Kit J</td>
<td>Kit J</td>
<td>1 station</td>
<td>Max. 16 stations</td>
<td>01</td>
<td>02</td>
<td>03</td>
<td>04</td>
</tr>
</tbody>
</table>

### Kit/Electrical entry/Cable length

- **F** kit: (D-sub connector)
- **P** kit: (Flat ribbon cable connector)
- **J** kit: (Flat ribbon cable connector)
- **L** kit: (Lead wire cable)
- **S** kit: (Serial transmission unit)

### Note 1)
- Besides the above, F and P kits with different number of pins are available. For details, refer to page 2-4-28.
- For details, refer to page 2-4-29.
- Please consult with SMC for the following serial transmission kits: Matsushita Electric Works, Ltd.; Rockwell Automation, Inc.; SUNX Corporation; Fuji Electric Co., Ltd.; OMRON Corporation.

### Kit entry direction

- **Top entry**: Side entry

### Cable length

- **Max. 16 stations**

### Series VQ1000

**Body Ported**

**Plug-in Unit: Flip Type**

For details about certified products conforming to international standards, visit us at www.smcworld.com.
How to Order Valves

Series VQ1000

Type of actuation

1
2 position single
2
2 position double (Latching)

2
Metal seal

3 position closed center
4
3 position exhaust center
5
3 position pressure center

Note) 3 position occupies two stations.

Cylinder ports

C6 With One-touch fitting for ø6

Manual override

Nil: Non-locking push type (Tool required)
B: Locking type (Tool required)
C: Locking type (Manual)

Note) A manual override for pilot valve is provided to the standard model for double type. (Refer to page 2-4-26.)

Light/Surge voltage suppressor

Function

Symbol Specifications DC AC
Nil Standard type 1.0 W 0.5 W
H High pressure type 1.5 W –
Y Low wattage type 0.5 W –

Note) For power consumption of AC type, refer to page 2-4-10. Except double (latching).

Coil 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

Note) Specify the part numbers for valves and options together beneath the manifold base part number. Besides, when the arrangement will be complicated, specify them by means of the manifold specification sheet.

Manifold Option

Blanking plate assembly
VVQ1000-10A-3

Name plate [-N3]
VVQ1000-N3-Station (1 to Max. stations)

Built-in silencer, direct exhaust [-S]
VVQ0000-58A

Port plug
VVQ0000-58A

Individual SUP spacer
VVQ1000-P-3-C6

Double Check block
VG1000-FPG

Silencer
AN103-X233

Blanking plug
KQ2P-

C6 (SUP) port
One-touch fitting for ø6

C6 (EXH) port
One-touch fitting for ø6

Individual EXH spacer
VVQ1000-R-3-C6

DIN rail mounting bracket [-D]
VVQ1000-57A-3

Block valve
VQ13-1-5-3C-C6

Refer to page 2-4-27 for cylinder port fitting.
For replacement parts, refer to page 2-4-103.
### Model

<table>
<thead>
<tr>
<th>Series</th>
<th>Number of solenoids</th>
<th>Model</th>
<th>Flow characteristics</th>
<th>Response time (ms)</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>2 position Single</td>
<td>Metal seal</td>
<td>VQ1130</td>
<td>C [dm³/(s·bar)]</td>
<td>b</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td>VQ1131</td>
<td>0.77</td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Metal seal</td>
<td>VQ1230</td>
<td>0.77</td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td>VQ1231</td>
<td>0.91</td>
<td>0.19</td>
</tr>
<tr>
<td></td>
<td>3 position Closed center</td>
<td>Metal seal</td>
<td>VQ1330</td>
<td>0.67</td>
<td>0.13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td>VQ1331</td>
<td>0.78</td>
<td>0.22</td>
</tr>
<tr>
<td></td>
<td>3 position Exhaust center</td>
<td>Metal seal</td>
<td>VQ1430</td>
<td>0.74</td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td>VQ1431</td>
<td>0.78</td>
<td>0.28</td>
</tr>
<tr>
<td></td>
<td>3 position Pressure center</td>
<td>Metal seal</td>
<td>VQ1530</td>
<td>0.74</td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td>VQ1531</td>
<td>0.78</td>
<td>0.28</td>
</tr>
</tbody>
</table>

### Standard Specifications

**Valve construction**: Metal seal | Rubber seal

**Valve specifications**

<table>
<thead>
<tr>
<th>Valve construction</th>
<th>Metal seal</th>
<th>Rubber seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum operating pressure</td>
<td>0.7 MPa (High pressure type: 0.8 MPa)</td>
<td>0.1 MPa</td>
</tr>
<tr>
<td>Minimum operating pressure</td>
<td>Single</td>
<td>Double (Latching)</td>
</tr>
<tr>
<td>3 position</td>
<td>0.1 MPa</td>
<td>0.2 MPa</td>
</tr>
</tbody>
</table>

**Ambient and fluid temperature**: –10 to 50°C

**Lubrication**: Not required

**Manual override**: Push type/Locking type (Tool required, Manual) Option

**Impact/Vibration resistance**: 150/30 m/s²

**Enclosure**: Dust-protected

**Coil rated voltage**: 12, 24 VDC, 100, 110, 200, 220 VAC (50/60 Hz)

**Allowable voltage fluctuation**: ±10% of rated voltage

**Coil insulation type**: Class B or equivalent

**Power consumption** (Current)

<table>
<thead>
<tr>
<th>Voltage (VAC)</th>
<th>24 VDC</th>
<th>12 VDC</th>
<th>100 VAC</th>
<th>110 VAC</th>
<th>200 VAC</th>
<th>220 VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current (mA)</td>
<td>42 mA</td>
<td>21 mA</td>
<td>7.5 mA</td>
<td>7.5 mA</td>
<td>7.5 mA</td>
<td>7.5 mA</td>
</tr>
</tbody>
</table>

**Flow characteristics**

<table>
<thead>
<tr>
<th>1 → 4/2 (P → A/B)</th>
<th>4/2 → 5/3 (A/B → R1/R2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow characteristics</td>
<td>Response time (ms)</td>
</tr>
<tr>
<td>C [dm³/(s·bar)]</td>
<td>b</td>
</tr>
<tr>
<td>0.77</td>
<td>0.14</td>
</tr>
<tr>
<td>0.77</td>
<td>0.14</td>
</tr>
<tr>
<td>0.91</td>
<td>0.19</td>
</tr>
<tr>
<td>0.67</td>
<td>0.13</td>
</tr>
<tr>
<td>0.78</td>
<td>0.22</td>
</tr>
<tr>
<td>0.74</td>
<td>0.14</td>
</tr>
<tr>
<td>0.78</td>
<td>0.28</td>
</tr>
<tr>
<td>0.74</td>
<td>0.14</td>
</tr>
<tr>
<td>0.78</td>
<td>0.28</td>
</tr>
</tbody>
</table>

**Note 1)** Cylinder port size C6

**Note 2)** As per JIS B 8375-1981 (Supply pressure: 0.5 MPa; with indicator light/surge voltage suppressor; clean air). Subject to the pressure and air quality.

**Note 3)** Values in the case of high pressure type (1.5 W).

**Note 4)** Values in the case of low wattage (0.5 W) specifications.
### Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Base model</th>
<th>Type of connection</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
<th>Applicable solenoid valve</th>
<th>5 station weight (g)</th>
</tr>
</thead>
</table>
| VQ1000 | VV5Q13-□□□ | P kit—D-sub connector  
J kit—Flat ribbon cable connector (20P)  
L kit—Lead wire cable  
S kit—Serial transmission unit | Side  
Option: Built-in silencer, Direct exhaust  
C6 (ø6)  
C4 (ø4)  
C6 (ø6)  
M5 (M5 thread) | 1 to 16 stations | VQ1□30  
VQ1□31 | 424 |

Note 1) Inch-size One-touch fittings are also available. For details, refer to page 2-4-29.

Note 2) For details, refer to page 2-4-29.
The D-sub connector reduces installation labor for electrical connections.

Using the D-sub connector (25P), (15P as an option) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.

Top or side receptacle position can be selected in accordance with the available mounting space.

Maximum stations are 16.

D-sub Connector (25 pins)

---

### How to Order Manifold

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>Side C6</td>
<td>C3, C4, C5, M5</td>
</tr>
</tbody>
</table>

---

### Cable assembly

- The D-sub connector cable assembly can be ordered individually or included in a specific manifold model no. Refer to How to Order Manifold.

### Electric Characteristics

<table>
<thead>
<tr>
<th>Item</th>
<th>Characteristics</th>
<th>Conductor resistance</th>
<th>Voltage limit</th>
<th>Insulation resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0.3 mm² x 25C</td>
<td>1000 V, 1 min, AC</td>
<td>Max, 20°C</td>
</tr>
</tbody>
</table>

- Note: The min. bending radius of D-sub cable assembly is 20 mm.

- Note: Types with 15 pin are also available. For details, refer to page 2-4-29.

### Wire Color by Terminal No. of D-sub Connector Cable Assembly

- Terminal no. 1: Lead wire color = Black
- Terminal no. 2: Lead wire color = Brown
- Terminal no. 3: Lead wire color = Red
- Terminal no. 4: Lead wire color = Yellow
- Terminal no. 5: Lead wire color = Orange
- Terminal no. 6: Lead wire color = Pink
- Terminal no. 7: Lead wire color = Blue
- Terminal no. 8: Lead wire color = Purple
- Terminal no. 9: Lead wire color = Gray
- Terminal no. 10: Lead wire color = Black
- Terminal no. 11: Lead wire color = White
- Terminal no. 12: Lead wire color = Yellow
- Terminal no. 13: Lead wire color = Purple
- Terminal no. 14: Lead wire color = Gray
- Terminal no. 15: Lead wire color = Black
- Terminal no. 16: Lead wire color = White

### D-sub connector assembly

- Wire Color
- Dot marking
- Note: Types with 15 pin are also available.

### Electrical wiring specifications

- Terminal no.
- Polarity
- Lead wire color
- Dot marking
- Note: Types with 15 pin are also available.

---

### How to Order Manifold

<table>
<thead>
<tr>
<th>Series VQ1000</th>
<th>Manifold</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Plug-in unit/Flip</td>
<td>None</td>
</tr>
<tr>
<td>01</td>
<td>1 station</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>16 stations</td>
<td></td>
</tr>
</tbody>
</table>

- Note 1) When two or more symbols are specified, indicate them alphabetically. Example: D/S
- Note 2) Specify the wiring specifications on the manifold specification sheet.

---

### Connector entry direction

- U: Top entry
- S: Side entry

---

### Notes

- Note: For details, refer to page 2-4-29.
### Dimensions

<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>
<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>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>26.5</td>
<td>37.5</td>
<td>48.5</td>
<td>59.5</td>
<td>70.5</td>
<td>81.5</td>
<td>92.5</td>
<td>103.5</td>
<td>114.5</td>
<td>125.5</td>
<td>136.5</td>
<td>147.5</td>
<td>158.5</td>
<td>169.5</td>
<td>180.5</td>
<td>191.5</td>
</tr>
<tr>
<td>L2</td>
<td>71</td>
<td>82</td>
<td>93</td>
<td>104</td>
<td>115</td>
<td>126</td>
<td>137</td>
<td>148</td>
<td>159</td>
<td>170</td>
<td>181</td>
<td>192</td>
<td>203</td>
<td>214</td>
<td>225</td>
<td>236</td>
</tr>
<tr>
<td>L3</td>
<td>100</td>
<td>100</td>
<td>112.5</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>212.5</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>250</td>
<td>262.5</td>
</tr>
<tr>
<td>L4</td>
<td>110.5</td>
<td>110.5</td>
<td>123</td>
<td>135.5</td>
<td>148</td>
<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
</tr>
</tbody>
</table>

### How to Order Valves

**Series VQ1000**

**Type of actuation**

- 1: 2 position single
- 2: 2 position double (Latching)
- 3: 3 position closed center
- 4: 3 position exhaust center
- 5: 3 position pressure center

**Seal**

- 0: Metal seal
- 1: Rubber seal

**Function**

- Symbol: Nil, H (2), Y (2)
- Specifications: Standard type, High pressure type, Low wattage type
- DC: 100 VAC (50/60 Hz), 200 VAC (50/60 Hz), 110 VAC (50/60 Hz), 220 VAC (50/60 Hz)
- AC: 24 VDC, 12 VDC

**Coil 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

**Light/Surge voltage suppressor**

- Nil
- Yes
- E
- None

**Note 1:** For power consumption of AC type, refer to page 24-10.

**Note 2:** Except double (latching).
VQ1000
Kit (Flat ribbon cable connector)

- MIL flat ribbon cable connector reduces installation labor for electrical connection.
- Using the connector for flat ribbon cable (26P), (10P, 16P, 20P as an option) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
- Top or side receptacle position can be selected in accordance with the available mounting space.
- Maximum stations are 16.

Flat Ribbon Cable (26 pins)

**Connector manufacturers' example**
- Sumitomo 3M Limited
- Fujitsu Limited
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Oki Electric Cable Co., Ltd.

**Flat Ribbon Cable Connector Assembly (Option)**

<table>
<thead>
<tr>
<th>Cable length (L)</th>
<th>Assembly part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>AXT100-FC26-1</td>
<td></td>
</tr>
<tr>
<td>3 m</td>
<td>AXT100-FC26-2</td>
<td></td>
</tr>
<tr>
<td>5 m</td>
<td>AXT100-FC26-3</td>
<td></td>
</tr>
</tbody>
</table>

* For other commercial connectors, use a 26 pins type with strain relief conforming to MIL-C-83503.

**Electrical wiring specifications**

As the standard electrical wiring specifications, double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station for 12 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-4-29.

**Porting specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Port location</th>
<th>Port size</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Side</td>
<td>C6</td>
<td>C3, C4, C6, M5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Max. 16 stations</td>
<td></td>
</tr>
</tbody>
</table>

**How to Order Manifold**

**VV5Q1 3 08 P S 1 N**

<table>
<thead>
<tr>
<th>Option</th>
<th>Nil</th>
<th>D</th>
<th>K</th>
<th>N</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>None</td>
<td>DIN rail mounting style</td>
<td>Special wiring specifications (Except double wiring)</td>
<td>With name plate</td>
<td>Built-in silencer, direct exhaust (U side only)</td>
</tr>
</tbody>
</table>

Note 1) When two or more symbols are specified, indicate them alphabetically. Example) -DNS

Note 2) Specify the wiring specifications on the manifold specification sheet.

**Flat Ribbon Cable Connector Assembly**

* Flat ribbon cable connector assembly can be ordered individually or included in a specific manifold model no. Refer to How to Order Manifold.

**Wire Diagram**

- Red
- Green
- Blue

**Terminal no.**

- SOL. A
- SOL. B
- COM.

**Maximum stations**

- Max. 16 stations

**Cable assembly**

The total number of stations is tabulated starting from station one on the D side.

**Note**

Types with 10, 16, or 20 pin are also available. For details, refer to page 2-4-28.
The broken lines indicate the DIN rail mounting style [-D] and the top entry connection [-PU].

Note) 3 position types need two stations.
Cylinder port is located at U side of body.

### Dimensions

<table>
<thead>
<tr>
<th>L1</th>
<th>1</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>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>35</td>
<td>36</td>
<td>37</td>
<td>38</td>
<td>39</td>
<td>40</td>
<td>41</td>
<td>42</td>
<td>43</td>
<td>44</td>
<td>45</td>
<td>46</td>
<td>47</td>
<td>48</td>
<td>49</td>
<td>50</td>
</tr>
<tr>
<td>L2</td>
<td>36</td>
<td>37</td>
<td>38</td>
<td>39</td>
<td>40</td>
<td>41</td>
<td>42</td>
<td>43</td>
<td>44</td>
<td>45</td>
<td>46</td>
<td>47</td>
<td>48</td>
<td>49</td>
<td>50</td>
<td>51</td>
</tr>
<tr>
<td>L3</td>
<td>37</td>
<td>38</td>
<td>39</td>
<td>40</td>
<td>41</td>
<td>42</td>
<td>43</td>
<td>44</td>
<td>45</td>
<td>46</td>
<td>47</td>
<td>48</td>
<td>49</td>
<td>50</td>
<td>51</td>
<td>52</td>
</tr>
</tbody>
</table>

### How to Order Valves

**Series VQ1000**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specifications</th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Standard type</td>
<td>1.0 W</td>
<td>1.0 W</td>
</tr>
<tr>
<td>H</td>
<td>High pressure type</td>
<td>1.2 W</td>
<td>1.2 W</td>
</tr>
<tr>
<td>L</td>
<td>Low wattage type</td>
<td>0.5 W</td>
<td>0.5 W</td>
</tr>
</tbody>
</table>

**C6**

- Cylinder port
- Manual override
- Coil voltage
- Light/Surge voltage suppressor

**Seal**

0 Metal seal
1 Rubber seal

### How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

**Example**

Flat ribbon cable kit with 3 m cable

VQC13-08PU2-···· 1 set — Manifold base no.
VQC1130-5-C6····· 4 sets — Valve part no. (Stations 1 to 4)
VQC1230-5B-C6··· 4 sets — Valve part no. (Stations 5 to 8)

Cylinder port is located at U side of body.

Note) 3 position types need two stations.

For inch-size One-touch fittings, refer to "Option" on page 2-4-29.

Write sequentially from the 1st station on the D side. When part nos. written collectively are complicated, specify by using the manifold specification sheet.
VQ1000 Kit (Flat ribbon cable connector)

- MIL flat ribbon cable connector reduces installation labor savings for electrical connection.
- Using the connector for flat ribbon cable (20P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
- Top or side receptacle position can be selected in accordance with the available mounting space.
- Maximum stations are 16.

Flat Ribbon Cable (20 pins)

**Cable assembly**

AXT100-FC20-1 to 3
Flat ribbon cable connector assembly can be ordered individually or included in a specific manifold model no. Refer to How to Order Manifold.

**Flatt Ribbon Cable Connector Assembly (Option)**

<table>
<thead>
<tr>
<th>Cable length (L)</th>
<th>Assembly part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>AXT100-FC20-1</td>
<td></td>
</tr>
<tr>
<td>3 m</td>
<td>AXT100-FC20-2</td>
<td></td>
</tr>
<tr>
<td>5 m</td>
<td>AXT100-FC20-3</td>
<td></td>
</tr>
</tbody>
</table>

- For other commercial connectors, use a 20 pins with strain relief conforming to MIL-C-83503.

**Connecter manufacturers’ example**
- Hirose Electric Co., Ltd.
- Japan Aviation Electronics Industry, Ltd.
- Oki Electric Cable Co. Ltd.
- Sumitomo 3M Limited
- J.S.T. Mfg. Co., Ltd.
- Fujitsu Limited

**Electrical wiring specifications**

As the standard electrical wiring specifications, double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station for 8 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-4-29.

How to Order Manifold

**Series VQ1000 Manifold**

- **Plug-in unit/Flip**
- **Stations**

<table>
<thead>
<tr>
<th>Series</th>
<th>Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>VV5Q1</td>
<td>08</td>
</tr>
<tr>
<td>J</td>
<td>S</td>
</tr>
<tr>
<td>3</td>
<td>N</td>
</tr>
</tbody>
</table>

**Cable (Length)**

- **Without cable**
- With cable (1.5 m)
- With cable (3 m)
- With cable (5 m)

**Connector entry direction**

- **U** Top entry
- **S** Side entry

**Option**

- **D** DIN rail mounting style
- **K** Special wiring specifications (Except double wiring)
- **N** With name plate
- **S** Built-in silencer, direct exhaust (U side only)

**Note**

- When using the negative common specifications, use valves for negative common. (Refer to page 2-4-29.)

- Note 1) When using the negative common specifications, use valves for negative common. (Refer to page 2-4-29.)

- Note 2) Specify the wiring specifications on the manifold specification sheet.
Dimensions

<table>
<thead>
<tr>
<th>n</th>
<th>L1 (mm)</th>
<th>L2 (mm)</th>
<th>L3 (mm)</th>
<th>L4 (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>26.5</td>
<td>66</td>
<td>87.5</td>
<td>98</td>
</tr>
<tr>
<td>2</td>
<td>37.5</td>
<td>77</td>
<td>100</td>
<td>110.5</td>
</tr>
<tr>
<td>3</td>
<td>48.5</td>
<td>88</td>
<td>112.5</td>
<td>123</td>
</tr>
<tr>
<td>4</td>
<td>59.5</td>
<td>99</td>
<td>125</td>
<td>135.5</td>
</tr>
<tr>
<td>5</td>
<td>70.5</td>
<td>110</td>
<td>137.5</td>
<td>150</td>
</tr>
<tr>
<td>6</td>
<td>81.5</td>
<td>121</td>
<td>150</td>
<td>160.5</td>
</tr>
<tr>
<td>7</td>
<td>92.5</td>
<td>132</td>
<td>160.5</td>
<td>180.5</td>
</tr>
<tr>
<td>8</td>
<td>103.5</td>
<td>143</td>
<td>180.5</td>
<td>190.5</td>
</tr>
</tbody>
</table>

Formula: \( L_1 = 11n + 15.5, \quad L_2 = 11n + 55 \)

n: Station (Maximum 16 stations)

How to Order Valves

Series VQ1000
Type of actuation

1 2 position single
2 2 position double (Latching)
3 3 position closed center
4 3 position exhaust center
5 3 position pressure center

Note) 3 position types need two station.

Seal

0 Metal seal
1 Rubber seal

Note) For negative common specifications, refer to "Option" on page 2-4-29.

Function

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specifications</th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1</td>
<td>Standard type</td>
<td>1 0 W</td>
<td>(1)</td>
</tr>
<tr>
<td>N2</td>
<td>High pressure type</td>
<td>1 5 W</td>
<td></td>
</tr>
<tr>
<td>N3</td>
<td>Low wattage type</td>
<td>0 5 W</td>
<td></td>
</tr>
</tbody>
</table>

Note 1) For power consumption of AC type, refer to page 2-4-10.
Note 2) Except double (latching).

Coil voltage

1 100 VAC (50/60 Hz)
2 110 VAC (50/60 Hz)
3 24 VDC
4 12 VDC

How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

Example: VQ513-C6U2····1 set — Manifold base no.
        * VQ5130-5-C6·····4 sets — Valve part no. (Stations 1 to 4)
        * VQ51230-5B-C6···4 sets — Valve part no. (Stations 5 to 8)

Notes:
1) For power consumption of AC type, refer to page 2-4-10.
2) Except double (latching).
3) For inch-size One-touch fittings, refer to "Option" on page 2-4-29.
4) A manual override for pilot valve is provided to the standard model for double type.
5) For negative common specifications, refer to "Option" on page 2-4-29.
VQ1000
Kit (Lead wire cable)

- It is the standard type which lead wire is extracted directly.
- Maximum stations are 16.

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Port location</td>
<td>Port size</td>
</tr>
<tr>
<td>VQ1000</td>
<td>Side</td>
<td>C6</td>
</tr>
</tbody>
</table>

**Wiring specifications: Positive COM**

Irrespective of the valve mounted, three lead wires are attached to each station. The red wire is for COM connection.

3 position uses two stations. The A side solenoid of a 3 position valve is connected to SOL A at the station with the smaller number in the above figure and the B side solenoid to SOL A at the next station.

![Diagram of wiring specifications: Positive COM](image)

**Wiring specifications: Negative COM (Option)**

Irrespective of the valve mounted, three lead wires are attached to each station. The black wire is for COM connection.

3 position uses two stations. The A side solenoid of a 3 position valve is connected to SOL A at the station with the smaller number in the above figure and the B side solenoid to SOL A at the next station.

![Diagram of wiring specifications: Negative COM](image)

**How to Order Manifold**

- **VV5Q1 3-06 L D 1 N**
  - Series VQ1000
  - Manifold
  - 3: Plug-in unit/Flip
  - Stations 01: 1 station
  - 16: 16 stations

<table>
<thead>
<tr>
<th>Cable (Length)</th>
<th>Lead wire entry direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 With cable (0.6 m)</td>
<td>D Entry on D side Max. 16 stations</td>
</tr>
<tr>
<td>1 With cable (1.5 m)</td>
<td>U Entry on U side</td>
</tr>
<tr>
<td>2 With cable (3 m)</td>
<td></td>
</tr>
</tbody>
</table>

**Option**

<table>
<thead>
<tr>
<th>Nil</th>
<th>D</th>
<th>N</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>DIN rail mounting style</td>
<td>Name plate</td>
<td>Built-in silencer, direct exhaust</td>
</tr>
</tbody>
</table>

**Note:** When two or more symbols are specified, indicate them alphabetically. Example) -DNS
Plug-in Unit: Flip Type  Series VQ1000

**Dimensions**

<table>
<thead>
<tr>
<th>L1</th>
<th>1</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>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>26.5</td>
<td>37.5</td>
<td>48.5</td>
<td>59.5</td>
<td>70.5</td>
<td>81.5</td>
<td>92.5</td>
<td>103.5</td>
<td>114.5</td>
<td>125.5</td>
<td>136.5</td>
<td>147.5</td>
<td>158.5</td>
<td>169.5</td>
<td>180.5</td>
<td>191.5</td>
</tr>
<tr>
<td>L2</td>
<td>39</td>
<td>50</td>
<td>61</td>
<td>72</td>
<td>83</td>
<td>94</td>
<td>105</td>
<td>116</td>
<td>127</td>
<td>138</td>
<td>149</td>
<td>160</td>
<td>171</td>
<td>182</td>
<td>193</td>
<td>204</td>
</tr>
<tr>
<td>(L3)</td>
<td>62.5</td>
<td>75</td>
<td>87.5</td>
<td>100</td>
<td>112.5</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>212.5</td>
<td>225</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(L4)</td>
<td>73</td>
<td>85.5</td>
<td>98</td>
<td>110.5</td>
<td>123</td>
<td>135.5</td>
<td>148</td>
<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**How to Order Valves**

**VQ1130C6**

**Series VQ1000**

**Type of actuation**

1. 2 position single
2. 2 position double (Latching)
3. 3 position closed center
4. 3 position exhaust center
5. 3 position pressure center

**Seal**

0. Metal seal
1. Rubber seal

**Function**

**Cylinder port**

- With One-touch fitting for ø3.2
- With One-touch fitting for ø4
- With One-touch fitting for ø6
- M5 thread

**Manual override**

- Non-locking push type (Tool required)
- Locking type (Tool required)
- Locking type (Manual)

**Coil 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

**Light/Surge voltage suppressor**

- Nil
- Yes
- E
- None

**How to Order Manifold Assembly**

Specify the part numbers for valves and options together beneath the manifold base part number.

Example>

Lead wire kit
V5Q13-08LD2...1 set — Manifold base part no.
+VQ1230-5-C6...4 sets — Valve part no. (Stations 1 to 4)
+VQ1230-5B-C6...4 sets — Valve part no. (Stations 5 to 8)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Write sequentially from the 1st station on the D side. When part nos. written collectively are complicated, specify by using the manifold specification sheet. Specify by using a manifold specification form.
The serial transmission system reduces wiring work, while minimizing wiring and saving space.

The system comes in an type SA (generic for small scale systems) for equipment with a small number of I/O points, or 32 points max., type SB (applicable to Mitsubishi Electric models) for controlling 512 I/O points max., type SC (applicable to OMRON models), and type SD (applicable to SHARP models; 504 points max.).

16 stations max. (Specify a model with 9 to 16 stations by using the manifold specification sheet.)

Stations are counted from station 1 on the D side.

As the standard electrical wiring specifications, double wiring (connected to SOL A and SOL B) is adopted for the internal wiring of each station for 8 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-4-29.

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>External power supply</td>
<td>24 VDC±10%</td>
</tr>
<tr>
<td>Current consumption</td>
<td>SA, SB, SD, SFL, SH: 0.1 A/SC: 0.3 A</td>
</tr>
</tbody>
</table>

How to Order Manifold

**VV5Q1 3 08 S A D**

Series VQ1000

- **Option**
  - DIN rail mounting style
  - Special wire specifications (Except double wiring)
  - With name plate
  - Built-in isolator, direct exhaust (U side only)

Note 1) When two or more symbols are specified, indicate them alphabetically.

Note 2) S kits are DIN rail mounting styles, so include suffix D.

Note 3) Specify the wiring specifications on the manifold specification sheet.

For details, please contact SMC.

The dust-protected type SI unit is applicable, too.

For details, contact SMC.

For details, refer to page 2-4-29.
How to Order Valves

**Series VQ1000**

Type of actuation:
- **VQ1** (no symbol) 3 0 Y 5 C6

- **C3** With One-touch fitting for ø3.2
- **C4** With One-touch fitting for ø4
- **C6** With One-touch fitting for ø6
- **MS** MS thread

- **Nil** Non-locking push type (Tool required)
- **B** Locking type (Tool required)
- **C** Locking type (Manual)

---

**Function**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specifications</th>
<th>DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Standard type</td>
<td>1.0 W</td>
</tr>
<tr>
<td>H</td>
<td>High pressure type</td>
<td>1.5 W</td>
</tr>
<tr>
<td>Y</td>
<td>Low wattage type</td>
<td>0.5 W</td>
</tr>
</tbody>
</table>

**Note**
- Except double (latching)

---

**How to Order Manifold Assembly**

Specify the part numbers for valves and options together beneath the manifold base part number.

<Example>

Serial transmission kit: VV5O13-08SA-D—1 set — Manifold base part no.
- VVQ1230-5-C6—4 sets — Valve part no. (Stations 1 to 4)
- VVQ1230-5B-C6—4 sets — Valve part no. (Stations 5 to 8)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Write sequentially from the 1st station on the D side. When part nos. written collectively are complicated, specify by using the manifold specification sheet.
VQ1000
Kit (Serial transmission unit)

Dimensions

<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>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>26.5</td>
<td>37.5</td>
<td>48.5</td>
<td>59.5</td>
<td>70.5</td>
<td>81.5</td>
<td>92.5</td>
<td>103.5</td>
<td>114.5</td>
<td>125.5</td>
<td>136.5</td>
<td>147.5</td>
<td>158.5</td>
<td>169.5</td>
<td>180.5</td>
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</tr>
<tr>
<td>L2</td>
<td>66</td>
<td>77</td>
<td>88</td>
<td>99</td>
<td>110</td>
<td>121</td>
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<td>187</td>
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<td>209</td>
<td>220</td>
<td>231</td>
</tr>
<tr>
<td>L3</td>
<td>187.5</td>
<td>200</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>250</td>
<td>262.5</td>
<td>275</td>
<td>275</td>
<td>287.5</td>
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<td>312.5</td>
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<td>337.5</td>
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<tr>
<td>L4</td>
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<td>210.5</td>
<td>223</td>
<td>235.5</td>
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<td>285.5</td>
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<td>310.5</td>
<td>323</td>
<td>335.5</td>
<td>348</td>
<td>360.5</td>
<td>373</td>
</tr>
</tbody>
</table>

Formula: \( L1 = 11n + 15.5, \ L2 = 11n + 55 \)

Note) 3 position types need two stations.
Cylinder port is located at U side body.
Manifold Option Parts

Blanking plate assembly
VQ1000-10A-3

It is used when a blanking plate is mounted to a manifold in advance for possible valve mounting, etc.

Individual SUP spacer
VQ1000-P-3-C6

When the same manifold is to be used for different pressures, individual SUP spacers are used as SUP ports for different pressures. (One station space is occupied.)

Since the SUP passage on the spacer’s D side is blocked in advance, it is mounted on the D side of the valves U side. (Refer to the application example.)

- Specify the spacer mounting position and SUP block plate mounting position on the manifold specification sheet.
- Electric wiring is connected to the position of the manifold station where the individual SUP spacer is mounted.

Individual EXH spacer
VQ1000-R-3-C6

When valve exhaust affects other stations due to the circuit configuration, this spacer is used for individual valve exhaust. (1 station space is occupied.)

Since the EXH passage on the spacer’s D side is blocked in advance, it is mounted on the D side of the valve for individual supply while blocking the valves U side. (Refer to the application example.)

- Specify the spacer mounting position and EXH block plate mounting position on the manifold specification sheet.
- Electric wiring is connected to the position of the manifold station where the individual EXH spacer is mounted.

Block valve
VQ1000-P-3

For a flip plug-in unit, block plate is built in the valve for blocking SUP and EXH passages. Since the no. is classified by the passage to be blocked, specify it by attaching the option no. to the valve no. The block valve is constructed so that D sides of SUP and EXH passages are blocked.

- Specify the number of stations on the manifold specification sheet.

<Shut off label>

When using block plates for SUP, EXH passage, indication label for confirmation of the blocking position from outside is attached. (One label for each)

- When ordering a block plate incorporated with the manifold no., a block indication label is attached to the manifold.

Note: P block valve is mounted in the blocking position when ordering an individual SUP spacer incorporated with a manifold. When separately ordering an individual SUP spacer, separately order a R block valve.

Note: R block valve is mounted in the blocking position when ordering an individual EXH spacer incorporated with a manifold. When separately ordering an individual EXH spacer, separately order a R block valve.
### Manifold Option Parts

**Name plate [-N3]**
VQ1000-N3-Station (1 to Max. stations)

It is a transparent resin plate for placing a label that indicates solenoid valve function, etc. Insert it into the groove on the side of the end plate and bend it as shown in the figure.

**Blanking plug**
KQ2P-

It is inserted into an unused cylinder port and SUP/EXH ports. Purchasing order is available in units of 10 pieces.

<table>
<thead>
<tr>
<th>Applicable fittings size</th>
<th>Model</th>
<th>A</th>
<th>L</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2</td>
<td>KQ2P-23</td>
<td>16</td>
<td>31</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>KQ2P-34</td>
<td>16</td>
<td>33</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>KQ2P-56</td>
<td>16</td>
<td>35</td>
<td>8</td>
</tr>
</tbody>
</table>

**DIN rail mounting bracket**
VQ1000-57A-3

It is used for mounting a manifold on a DIN rail. The DIN rail mounted bracket is fixed to the manifold end. (The specification is the same as that for the option "-D"). 1 set of DIN rail mounting bracket is used for 1 manifold (2 DIN rail mounting brackets).

**Built-in silencer, Direct exhaust [-S]**

This is an exhaust port on top of the manifold end plate. The built-in silencer exhibits an excellent noise suppression effect. F, P and S kits are provided with single exhaust on U side. Note) A large quantity of drainage generated in the air.

**Silencer**
AN103-X233

This is inserted into the centralized type EXH port (One-touch fitting).

**Port plug**
VQ0000-58A

The plug is used to block the cylinder port when using a 4 port valve as a 3 port valve. When ordering it incorporated with a manifold, suffix A or B, the symbol of the plug port, to the valve no.

Example) VQ1130-5L-C6-A

- A port, Plug
Double check block (Separated type)  
VQ1000-FPG-M5

It is used on the outlet side piping to keep the cylinder in the intermediate position for a long time. Combining the double check block with a built-in pilot type double check valve and a 3 position exhaust center solenoid valve will enable the cylinder to stop in the middle or maintain its position for a long time. The combination with a two position single/double solenoid valve will permit this block to be used for preventing the dropping at the cylinder stroke end when the SUP residual pressure is released.

Specifications

Max. operating pressure: 0.8 MPa  
Min. operating pressure: 0.15 MPa  
Ambient and fluid temperature: –5 to 50°C  
Flow characteristics: 0.60 dm³/(s·bar)  
Max. operating frequency: 180 CPM

Dimensions

<table>
<thead>
<tr>
<th>Single unit</th>
<th>Manifold</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Manifold

VVQ1000-FPG-06  
Stations: 01 1 station  
16 16 stations

<Example>

VVQ1000-FPG-06 6 types of manifold  
+VQ1000-FPG-C4M5-D, 3 sets  
+VQ1000-FPG-C6M5-D, 3 sets  
Double Check block

<Example>

Cylinder pressure (P₁)  
SUP side pressure (P₃)

Caution

- Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for a long time. Check the leakage using neutral household detergent, such as dish washing soap.  
- Since One-touch fittings allow slight air leakage, screw piping (with M5 thread) is recommended when stopping the cylinder in the middle for a long time.  
- Combining double check block with 3 position closed center or pressure center solenoid valve will not work.  
- M5 fitting assembly is attached, not incorporated into the double check block. After screwing in the M5 fittings, mount the assembly on the double check block. (Tightening torque: 0.8 to 1.2 N·m)  
- If the exhaust of the double check block is throttled too much, the cylinder may not operate properly and may not stop intermediately.  
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.


**Precautions**

Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to page 2-9-2.

**Light/Surge Voltage Suppressor**

**Caution**

The lighting positions are concentrated on one side for both single solenoid and double (latching) type. In the double (latching) type, A side and B side energization are indicated by two colors which match the colors of the manual overrides.

**DC type circuit diagram**

- **Single solenoid**
  - A (Set)
  - C+ (COM)
  - Light
  - ZNR

- **Double (Latching) solenoid (DC)**
  - A (Set)
  - C+ (COM)
  - SOL

**Note 1)** A side energization: A light (orange) illuminates.

**Note 2)** B side energization: B light (green) illuminates.

**Note 3)** Equipped with a wiring error prevention (stop diode) mechanism.

**Surge absorption (ZNR/surge absorption diode/mechanism).**

**Note 4)** Applicable to negative COM specification models.

**Double (Latching solenoid) Type**

**Caution**

Different from the conventional double solenoid, the double uses a latching (self-holding system) solenoid. Although the appearance is the same as the single solenoid, it is constructed so that the movable iron core in the solenoid is held in the ON position on A and B sides by instantaneous energization (20 ms or more). The usage and function is the same as the double solenoid.

**<Special Cautions for Latching Solenoid>**

1. Select the circuit in which ON and OFF signals are not energized simultaneously.

2. 20 ms energization time is necessary for self-holding.

3. Avoid using the latching solenoid valves in environments where impact or collisions with the valve might occur. Also, do not use in places where strong magnetic fields are present.

4. Even though the armature in the solenoid of this valve is held on to B side, ON position (Reset), verify either A side, ON position or B side, ON position by energizing prior to use. After manual operation, the main valve will return to its original position.

5. Manual override on the pilot valve side can retain its switching position after manipulation.

6. Please contact SMC for long-term energization applications.

7. If the metal seal type goes down below the minimum operating pressure of supply air (0.1 MPa or less), the main valve will get back the home position (B side ON position). Therefore, in the event of shutting the supply air or applying the air with being A side ON position remained, cylinder may be pulsed. In the event of manipulating the supply air, the valve’s switching position has to be set in the home position side (B side ON position side).

**How to Mount/Remove Solenoid Valve**

**Caution**

**<Procedure>**

**How to remove**

1. Loosen tie-rod bolt B. (Two to four turns)
2. After fully loosening the tie-rod bolt, take off bold A upward as shown above.
3. Slide the valves aside to make a 1 mm clearance between the valve to betaken off and the others. As shown above, remove the whole valve while holding up the (a) side.

**Mounting**

Reverse the sequence of steps above to remount. Torque applied to tie-rod bolt should be 1.0 to 1.4 N-m. Tighten evenly.

Note) Be careful not to push on the light cover while mounting/removing the valve.

**Manual Override**

**Warning**

Without an electric signal for the solenoid valve the manual override is used for switching the main valve.

**Push type (Tool required)**

Push down on the manual override button with a small screwdriver until it stops. Release the screwdriver and the manual override will return.

**Locking slotted type**

Push down completely on the manual override button with a small screwdriver. While down, turn clockwise 90° to lock it.

**Locking lever type (Option)**

Push down completely on the manual override button with a small screwdriver. While down, turn clockwise 90° to lock it. Turn it counterclockwise to release it.

**Manual override for double (latching) type**

In the case of a double (latching) type, a manual override is provided not only on the body side but to the pilot as a standard. After manual operation, the main valve of the manual on the body side returns to the position before the manual operation, however, the pilot valve manual override maintains the change-over position.

- If the manual override is turned by 180° clockwise and the mark is adjusted to A, then pushed in the direction of an arrow ( ), it will be back to the reset condition. (passage P → A)
- If the manual override is turned by 180° counterclockwise and the mark is adjusted to B, then pushed in the direction of an arrow ( ), it will be back to the reset condition. (passage P → B)

**Caution**

Do not apply excessive torque when turning the locking type manual override. (0.1 N-m or less)
**Replacement of Cylinder Port Fittings**

**Caution**
The cylinder port fittings are a cassette for easy replacement. The fittings are blocked by a clip inserted from the top of the valve. Remove the clip with a screwdriver to remove fittings. For replacement, insert the fitting assembly until it strikes against the inside wall and then re-insert the clip to the specified position.

<table>
<thead>
<tr>
<th>Applicable tubing O.D.</th>
<th>Fitting assembly part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø3.2</td>
<td>VQ1000</td>
</tr>
<tr>
<td>ø4</td>
<td>VVO1000-50A-C4</td>
</tr>
<tr>
<td>ø6</td>
<td>VVO1000-50A-C6</td>
</tr>
</tbody>
</table>

Purchasing order is available in units of 10 pieces.

**Mounting/Removing from the DIN Rail**

**Caution**
1. Use caution that O-rings must be free from scratches and dust. Otherwise, air leakage may result.
2. The tightening torque for inserting fittings to the M5 thread assembly should be 0.8 to 1.4 N·m.

**How to Calculate the Flow Rate**

For obtaining the flow rate, refer to pages 2-1-8 to 2-1-11.

**Built-in Silencer Replacement Element**

**Caution**
A silencer element is incorporated in the end plate on both sides of the base. A dirty and choked element may reduce cylinder speed or cause malfunction. Clean or replace the dirty element.

<table>
<thead>
<tr>
<th>Type</th>
<th>Element part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Built-in silencer,</td>
<td>VVQ1000-82A-3</td>
</tr>
<tr>
<td>direct exhaust (-S)</td>
<td></td>
</tr>
</tbody>
</table>

* The minimum order quantity is 10 pcs.

Remove the cover from the side of the end plate and remove the old element with a screwdriver, etc.
Option

Different Number of Connector Pins

F and P kits with the following number of pins are available. Besides the standard number (F = 25; P = 26) select the desired number of pins and cable length from the cable assembly list. Place an order for the cable assembly separately.

**F**

- kit (D-sub connector) 15 pins

**P**

- kit (Flat ribbon cable connector) 10 pins, 16 pins, 20 pins

---

How to order manifold

**VV5Q13-06 FSA N**
- **Option**

Stations

How to Order

D-sub connector, 15 pins

Connector location—Side (horizontal)

Without cable

**VV5Q13-06 PSC N**
- **Option**

Stations

How to Order

Flat ribbon cable, 20 pins

Connector location—Side (horizontal)

Without cable

---

**Wire Color by Terminal No. of D-sub Connector Cable Assembly**

<table>
<thead>
<tr>
<th>Terminal No.</th>
<th>Color</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Black</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>Brown</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>Red</td>
<td>None</td>
</tr>
<tr>
<td>4</td>
<td>Orange</td>
<td>None</td>
</tr>
<tr>
<td>5</td>
<td>Yellow</td>
<td>None</td>
</tr>
<tr>
<td>6</td>
<td>Pink</td>
<td>None</td>
</tr>
<tr>
<td>7</td>
<td>Blue</td>
<td>None</td>
</tr>
<tr>
<td>8</td>
<td>Purple</td>
<td>White</td>
</tr>
<tr>
<td>9</td>
<td>Gray</td>
<td>Black</td>
</tr>
<tr>
<td>10</td>
<td>White</td>
<td>Black</td>
</tr>
<tr>
<td>11</td>
<td>White</td>
<td>Red</td>
</tr>
<tr>
<td>12</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>13</td>
<td>Orange</td>
<td>Red</td>
</tr>
<tr>
<td>14</td>
<td>Yellow</td>
<td>Black</td>
</tr>
<tr>
<td>15</td>
<td>Pink</td>
<td>Black</td>
</tr>
</tbody>
</table>

---

**Flat Ribbon Cable Assembly**

<table>
<thead>
<tr>
<th>Cable Length (m)</th>
<th>Pins</th>
<th>10P</th>
<th>16P</th>
<th>20P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>AX100-FC10-1</td>
<td>AX100-FC16-1</td>
<td>AX100-FC20-1</td>
<td></td>
</tr>
<tr>
<td>3 m</td>
<td>AX100-FC10-2</td>
<td>AX100-FC16-2</td>
<td>AX100-FC20-2</td>
<td></td>
</tr>
<tr>
<td>5 m</td>
<td>AX100-FC10-3</td>
<td>AX100-FC16-3</td>
<td>AX100-FC20-3</td>
<td></td>
</tr>
</tbody>
</table>

*For other commercial connectors, use a type conforming to MIL-C-24308.

---

**For other commercial connectors, use a type with strain relief that conform to MIL-C-83503.
**Inch-size One-touch Fittings**

Refer to following model no. for inch-size One-touch fittings.

**How to order manifold**

**VV5Q13—08FSO—DN—00T**

1(P), 3(R) port size: ø1/4

**How to order valves**

**VV1130—5—N7**

Cylinder ports

<table>
<thead>
<tr>
<th>Symbol</th>
<th>N1</th>
<th>N3</th>
<th>N7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable tub (inch)</td>
<td>ø1/8</td>
<td>ø5/32</td>
<td>ø1/4</td>
</tr>
</tbody>
</table>

**DIN Rail Mounting**

Each manifold can be mounted on a DIN rail. Order it by indicating an option symbol for DIN rail mounting style, -D. In this case, a DIN rail which is approx. 30 mm longer than the manifold with the specified number of stations is attached. Besides, it is also available in the following cases.

- **When DIN rail is unnecessary (Except S kit)**
  
  (DIN rail mounting brackets only are attached.)
  
  Indicate the option symbol, -DO, for the manifold no.
  
  **Example**

  VV5Q13-08LD1-DOS

- **When using DIN rail longer than the manifold with specified number of stations**
  
  Clearly indicate the necessary number of stations next to the option symbol, -D, for the manifold no.
  
  **Example**

  VV5Q13-08FS1-D09S

- **When changing the manifold style into a DIN rail mount**
  
  Order brackets for mounting a DIN rail. (Refer to “Option” on page 2-4-24.)
  
  No. VV1000-57A-3 2 pcs. per one

- **When ordering DIN rail only**

  DIN rail no.: AXT100-DR-n

  - Refer to the DIN rail dimension table for determining the length.

**Negative Common Specifications**

Specify the valve model no. as shown below for negative COM specification. The manifold no. shown below is for the L kits. For other kits the standard manifold can be used. Please contact for negative COM S kit.

**How to order negative COM valves**

**VV1130 N—5—C6**

**How to order negative COM manifold**

**L kit:**

VV5Q13—08 L N D 1 N

**Stations**

**Negative common specifications**

**Cable length**

**Lead wire entry on D side**

**Special Wiring Specifications**

In the internal wiring of F kit, P kit, and JS kit, double wiring (connected to SOL. A and SOL. B) is adopted for each station regardless of the valve and option types. Mixed single and double wiring is available as an option.

**1. How to order valves**

Indicate an option symbol, -K, for the manifold no. and be sure to specify the mounting position and number of stations of the single and double wiring by means of the manifold specification sheet.

**Example**

VV5Q13-09FS0-D K S

Others, option symbols: to be indicated alphabetically.

**2. Wiring specifications**

Connector terminal numbers are connected from solenoid station 1 on the A side in the order indicated by the arrows without shipping any terminal numbers.

**3. Max. number of stations**

The maximum number of stations depends upon the number of solenoids. Assuming one for a single and two for a double, determine the number of stations so that the total number is not more than the maximum number given in the following table.

<table>
<thead>
<tr>
<th>Kit</th>
<th>F kit (D-sub connector)</th>
<th>P kit (Flat ribbon cable connector)</th>
<th>J kit (Flat ribbon cable connector)</th>
<th>S kit (Serial)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>F26 25P</td>
<td>P16 15P</td>
<td>J26 20P</td>
<td>S20 16P</td>
</tr>
<tr>
<td>Max. points</td>
<td>24 16 stations</td>
<td>14 16 stations</td>
<td>14 16 stations</td>
<td>16 16</td>
</tr>
</tbody>
</table>

**Negative Common Specifications**

Specify the valve model no. as shown below for negative COM specification. The manifold no. shown below is for the L kits. For other kits the standard manifold can be used. Please contact for negative COM S kit.

**How to order negative COM valves**

**VV1130 N—5—C6**

**How to order negative COM manifold**

**L kit:**

VV5Q13—08 LN D 1 N

**Stations**

**Negative common specifications**

**Cable length**

**Lead wire entry on D side**

**Others, option symbols:** to be indicated alphabetically.
Series **VQ0000**

**Body Ported**

**Plug Lead Unit: Flip Type**

### How to Order Manifold

#### VV5Q

**Option**

- **None (C kit only)**
- **D** (DIN rail mounting style)
- **K** (Special wiring specifications (Except double wiring))
- **N** (With name plate)
- **S** (<sup>(1)</sup>) (Built-in silencer, direct exhaust)

#### Stations

- **01** 1 station
  - The number of max. stations differs from kit to kit. (Refer to the table below.)

#### Kit/Electrical entry/Cable length

**F** kit

- **(D-sub connector)**
  - Top entry
  - Side entry
  - 25P (Note 1)

**P** kit

- **(Flat ribbon cable connector)**
  - Top entry
  - Side entry
  - 26P (Note 2)

**T** kit

- **(Terminal block)**

**C** kit

- **(Connector)**

**S** kit

- **(Serial transmission unit)**

### Simple specials are available with SMC Simple Specials System. For details about applicable models, please contact SMC.

### Connected products and details

- Note 1: Besides the above, F and P kits with different number of pins are available. For details, refer to page 2-4-69 for details.
- Note 2: See page 2-4-69 for details.
- Note 3: Please consult with SMC for the following serial transmission kits: Matsushita Electric Works, Ltd.; Rockwell Automation, Inc.; SUNX Corporation; Fuji Electric Co., Ltd.; OMRON Corporation.

### For details about certified products conforming to international standards, visit us at www.smcworld.com.
### How to Order Valves

<table>
<thead>
<tr>
<th>Series</th>
<th>Type of actuation</th>
<th>Function</th>
<th>Electrical entry</th>
<th>Cylinder port</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ 0 4 0 Y 5 L C4</td>
<td>1 position single</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 position double (Latching)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 position closed center</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 position exhaust center</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Coil voltage

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>100 VAC (50/60 Hz)</td>
<td>200 VAC (50/60 Hz)</td>
<td>110 VAC (50/60 Hz)</td>
<td>220 VAC (50/60 Hz)</td>
<td>24 VDC</td>
<td>12 VDC</td>
</tr>
</tbody>
</table>

#### Manual override

- Nil: Non-locking push type (Tool required)
- B: Locking type (Tool required)

#### Metal seal

- 0: Rubber seal
- 1: Metal seal

#### Manifold Option

- **Blanking plate assembly**: VVQ0000-10A-4
- **Name plate [-N]**: VVQ0000-N4-Station (1 to Max. stations)
- **Built-in silencer, Direct exhaust [-S]**
- **Individual SUP spacer**: VVQ0000-P-4-C4
- **Double Check block**: VQ1000-FPG-
- **Individual EXH spacer**: VVQ0000-R-4-C4
- **DIN rail mounting bracket**: VVQ0000-57A-4
- **Blanking plug**: KQ2P-

#### How to Order Manifold Assembly

**Example**

- Single solenoid (24 VDC) VQ0140-5MO-C4 (4 sets)
- Double (latching) Solenoid 24 VDC VQ0240-5MO-C4 (4 sets)

Please indicate manifold base type, corresponding valve, and option parts. When entry of part numbers becomes complicated, indicate on the manifold specification sheet.

### Note

- For replacement parts, refer to page 2-4-105.
**Series VQ1000**

**Body Ported**

**Plug Lead Unit: Flip Type**

---

**How to Order Manifold**

**VV5Q 1 4 08 F S1 D**

**Option**

- Nil: None (C kit only)
- D: DIN rail mounting style
- K: Special wiring specifications (Except double wiring)
- N: With name plate
- S: Built-in silencer, direct exhaust

**Stations**

- 01: 1 station

The number of max. stations differs from kit to kit. (Refer to the table below.)

**Kit/Electrical entry/Cable length**

**F**

- (D-sub connector)

- The valve is equipped with an indicator light/surge voltage suppressor and the voltage is 24 VDC.

- The dust-protected type SI unit is applicable, too. For details, please contact SMC.

- Note 1: Besides the above, F and P kits with different number of pins are available. For details, refer to page 2-4-69.

- Note 2: See page 2-4-69 for details.

- Note 3: Please consult with SMC for the following serial transmission kits: Matsushita Electric Works, Ltd.; Rockwell Automation, Inc.; SUNX Corporation; Fuji Electric Co., Ltd.; OMRON Corporation.

---

**Note 1:** When two or more symbols are specified, indicate them alphabetically. Example: -DNS

**Note 2:** F, P, T, and S kits are DIN rail mounting styles, so include suffix -D.

**Note 3:** Specify the wiring specifications in the manifold specification sheet. (Except C kit)

**Note 4:** F, P, T and S kits are provided with an exhaust on one side, while C kits are with an exhaust on both sides.
How to Order Valves

**Coil 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

**Cylinder port**
- Symbol: Port size
- C3: With One-touch fitting for ø3.2
- C4: With One-touch fitting for ø4
- C6: With One-touch fitting for ø6
- M5: M5 thread

**Manual override**
- Note) For inch-size One-touch fittings, refer to “Option” on page 2-4-69.
- Nil: Non-locking push type (Tool required)
- B: Locking type (Tool required)
- C: Locking type (Manual)

**Manifold Option**
- Blanking plate assembly
  - VQ1000-10A-4
- Individual SUP spacer
  - VVQ1000-P-4-C6
  - C6 (SUP) port
  - One-touch fitting for ø6
- Individual EXH spacer
  - VVQ1000-R-4-C6
  - C6 (EXH) port
  - One-touch fitting for ø6
- Name plate [-N4]
  - VVQ1000-N4-Station (1 to Max. stations)
- Silencer (For EXH port)
  - AN103-X233
- Built-in silencer, direct exhaust [-S]
- Blocks valve VQ1000-FPG-
- SUP/EXH passage block
- Port plug
  - VVQ0000-58A
- Blanking plug
  - KQ2P-

**Electrical entry**
- V01000
- G: Grommet C kit single only. (Except AC.)
- L: L plug connector With lead wire
- LO: L plug connector Without connector
- M: M plug connector With lead wire
- MO: M plug connector Without connector
- N: Non-locking push type (Tool required)
- B: Locking type (Tool required)
- C: Locking type (Manual)

**Seal**
- 0: Metal seal
- 1: Rubber seal

For negative common specifications, refer to “Option” on page 2-4-69. Connector assembly will be required when the F, P, T, S kits add a valve.

For part nos., refer to “Option” on page 2-4-69.

**How to Order Manifold Assembly**

**Example**
- Single solenoid (24 VDC)
- Double solenoid (24 VDC)
- VQ140-SLO-C6 (4 sets)
- VQ140-5L5LO-C6 (4 sets)
- VVQ140-8FLU2-D I set (F kit 8 station manifold base no.)
- VQ140-5L5L-C6 ... 4 sets (Single solenoid part no.)
- VQ1240-5LO-C6 ... 4 sets (Double solenoid part no.)

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

Please indicate manifold base type, corresponding valve, and option parts. When entry of part numbers becomes complicated, indicate on the manifold specification sheet.

For replacement parts, refer to page 2-4-107.
### Series VQ2000

**Body Ported**

**Plug Lead Unit: Flip Type**

#### How to Order Manifold

<table>
<thead>
<tr>
<th>Series</th>
<th>Manifold</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>VV5Q</td>
<td>F S1 D</td>
<td>None (C kit only)</td>
</tr>
<tr>
<td>2</td>
<td>VQ2000</td>
<td>DIN rail mounting style</td>
</tr>
<tr>
<td>4</td>
<td>Plug lead unit/Flip</td>
<td>Special wiring specifications (Except double wiring)</td>
</tr>
<tr>
<td>08</td>
<td></td>
<td>With name plate</td>
</tr>
</tbody>
</table>

#### Stations

<table>
<thead>
<tr>
<th>Stations</th>
<th>1 station</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[ ]</td>
</tr>
</tbody>
</table>

The number of max. stations differs from kit to kit. (Refer to the table below.)

#### Kit/Electrical entry/Cable length

**F** kit (D-sub connector)

- **Connector entry direction**
  - **Top entry**: Without cable
  - **Side entry**: With cable (1.5 m)
  - **Max. 16 (2) stations**

**P** kit (Flat ribbon cable connector)

- **Connector entry direction**
  - **Top entry**: Without cable
  - **Side entry**: With cable (5 m)
  - **Max. 16 (2) stations**

**T** kit (Terminal block)

- **Connector entry direction**
  - **Top entry**: Without cable
  - **Side entry**: With cable (3 m)
  - **Max. 16 (2) stations**

**C** kit (Connector)

- **Connector entry direction**
  - **Top entry**: Without cable
  - **Side entry**: With cable (5 m)
  - **Max. 16 (2) stations**

**S** kit (Serial transmission unit)

- **Connector entry direction**
  - **Top entry**: Without cable
  - **Side entry**: With cable (5 m)
  - **Max. 16 (2) stations**

- **The valve is equipped with an indicator light/surge voltage suppressor and the voltage is 24 VDC.**

- **The dust-protected type SI unit is applicable, too. For details, please contact SMC.**

<table>
<thead>
<tr>
<th>Kit</th>
<th>T</th>
<th>No. of terminals: 1 row</th>
<th>Applicable stations 1 to 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Connectors**
  - **T**: No. of terminals: 1 row, Applicable stations 1 to 8
  - **C**: Connectors
    - **K**: Max. 16
    - **S**: Max. 16

**Note 1)** Besides the above, F and P kits with different number of pins are available. For details, refer to page 2-4-68.

**Note 2)** See page 2-4-69 for details.

**Note 3)** Please consult with SMC for the following serial transmission kits: Matsushita Electric Works, Ltd.; Rockwell Automation, Inc.; SUNX Corporation; Fuji Electric Co., Ltd.; OMRON Corporation.
How to Order Valves

### VQ2000 Plug Lead Unit: Flip Type Series

#### VQ Type 2

<table>
<thead>
<tr>
<th>1</th>
<th>4</th>
<th>0</th>
<th>Y</th>
<th>5</th>
<th>L</th>
<th>C6</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ2000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Type of actuation

- **2 position single**
- **2 position double (latching)**

#### Coil voltage

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specifications</th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>Standard type</td>
<td>1.5 W</td>
<td>1.5 W</td>
</tr>
<tr>
<td>C2</td>
<td>High pressure type</td>
<td>1.5 W</td>
<td>1.5 W</td>
</tr>
<tr>
<td>C3</td>
<td>Low wattage type</td>
<td>0.5 W</td>
<td>0.5 W</td>
</tr>
</tbody>
</table>

#### Electrical entry

- **G**: Grommet
- **H**: High pressure type
- **L**: Low wattage type

#### Manual override

- **C4**: With One-touch fitting for ø4
- **C6**: With One-touch fitting for ø6
- **C8**: With One-touch fitting for ø8

#### Cylinder port

- **P**: Non-locking push type
- **B**: Locking type (Tool required)
- **C**: Locking type (Manual)

#### Seal

- 0: Metal seal
- 1: Rubber seal

Note 1) For negative common specifications, refer to "Option" on page 2-4-69.

Note 2) For part nos., refer to "Option" on page 2-4-69.

### Manifold Option

#### Blanking plate assembly

- **VQ2000-10A-4**

#### Name plate [-N4]

- **VVQ2000-N4-Station**
  (1 to Max. stations)

#### Silencer (For EXH port)

- **AN200-KM8**

#### Blanking plug

- **KQ2P-06**

#### How to Order Manifold Assembly

**Example**

- Single solenoid (24 VDC)
  - VQ2140-SLO-C8 (4 sets)
- Double solenoid (24 VDC)
  - VQ2240-SLOB-C8 (4 sets)

**Notes**

- The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.
- Please indicate manifold base type, corresponding valve, and option parts. When entry of part numbers becomes complicated, indicate on the manifold specification sheet.

- For replacement parts, refer to page 2-4-109.
## Series VQ0000/1000/2000

### Body Ported

#### Plug Lead Unit: Flip Type

### Model

<table>
<thead>
<tr>
<th>Series</th>
<th>Number of solenoids</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ0000</td>
<td>Single 2 position 3 position</td>
<td>Metal seal VQ0140</td>
</tr>
<tr>
<td></td>
<td>Rubber seal VQ0141</td>
<td>0.49</td>
</tr>
<tr>
<td></td>
<td>Metal seal VQ0240</td>
<td>0.43</td>
</tr>
<tr>
<td></td>
<td>Rubber seal VQ0241</td>
<td>0.49</td>
</tr>
<tr>
<td></td>
<td>Metal seal VQ0340</td>
<td>0.34</td>
</tr>
<tr>
<td></td>
<td>Rubber seal VQ0341</td>
<td>0.37</td>
</tr>
<tr>
<td></td>
<td>Metal seal VQ0440</td>
<td>0.36</td>
</tr>
<tr>
<td></td>
<td>Rubber seal VQ0441</td>
<td>0.37</td>
</tr>
<tr>
<td>VQ1000</td>
<td>Single 2 position 3 position</td>
<td>Metal seal VQ1140</td>
</tr>
<tr>
<td></td>
<td>Rubber seal VQ1141</td>
<td>0.91</td>
</tr>
<tr>
<td></td>
<td>Metal seal VQ1240</td>
<td>0.77</td>
</tr>
<tr>
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<td>Rubber seal VQ1341</td>
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<td>Single 2 position</td>
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<td>Rubber seal VQ2241</td>
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### Flow characteristics

<table>
<thead>
<tr>
<th>1 → 4/2 (P → A/B)</th>
<th>4/2 → 5/3 (A/B → R1/R2)</th>
<th>Standard: 1 W H: 1.5 W Low wattage: 0.5 W AC</th>
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</thead>
<tbody>
<tr>
<td>( \frac{[\text{dm}^3/\text{s} \cdot \text{bar}]}{b} )</td>
<td>( \frac{[\text{dm}^3/\text{s} \cdot \text{bar}]}{b} )</td>
<td>( \frac{[\text{dm}^3/\text{s} \cdot \text{bar}]}{b} )</td>
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<td>0.12</td>
<td>0.06</td>
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<td>0.84</td>
</tr>
<tr>
<td>0.21</td>
<td>1.0</td>
<td>0.21</td>
</tr>
<tr>
<td>0.19</td>
<td>0.21</td>
<td>1.0</td>
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</tr>
<tr>
<td>0.21</td>
<td>0.54</td>
<td>2.7</td>
</tr>
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</table>

### Valve construction

- **Metal seal**
  - Fluid: Air/Inert gas
  - Maximum operating pressure: 0.7 MPa (High pressure type: 0.8 MPa) (3)
  - Min. operating pressure: Single 0.1 MPa, Double (Latching) 0.1 MPa
  - Ambient and fluid temperature: –10 to 50°C (1)
  - Lubrication: Not required
  - Manual override: Push type/Locking type (Tool required, Manual type) Option
  - Impact resistance/Vibration resistance: 150/30 m/s^2
  - Enclosure: Dust-protected
  - Coil rated voltage: 12, 24 VDC, 100, 110, 200, 220 VAC (50/60 Hz)
  - Allowable voltage fluctuation: ±10% of rated voltage

- **Rubber seal**
  - Fluid: Air/Inert gas
  - Maximum operating pressure: 0.15 MPa
  - Min. operating pressure: Single 0.1 MPa, Double (Latching) 0.1 MPa
  - Ambient and fluid temperature: –10 to 50°C (1)
  - Lubrication: Not required
  - Manual override: Push type/Locking type (Tool required, Manual type) Option
  - Impact resistance/Vibration resistance: 150/30 m/s^2
  - Enclosure: Dust-protected
  - Coil rated voltage: 12, 24 VDC, 100, 110, 200, 220 VAC (50/60 Hz)
  - Allowable voltage fluctuation: ±10% of rated voltage

### Solenoid

- **Power consumption (Current)**
  - 24 VDC: 1 W DC (42 mA), 1.5 W DC (63 mA) (3), 0.5 W DC (21 mA) (3)
  - 12 VDC: 1 W DC (83 mA), 1.5 W DC (125 mA) (3), 0.5 W DC (42 mA) (3)
  - 100 VAC: Inrush 0.5 VA (5 mA), Holding 0.5 VA (5 mA)
  - 110 VAC: Inrush 0.55 VA (5 mA), Holding 0.55 VA (5 mA)
  - 200 VAC: Inrush 1.0 VA (5 mA), Holding 1.0 VA (5 mA)
  - 220 VAC: Inrush 1.1 VA (5 mA), Holding 1.1 VA (5 mA)

### Notes

1. Cylinder port size C4: (VQ0000), C6: (VQ1000), C8: (VQ2000)
2. As per JIS B 8375-1981 (Supply pressure: 0.5 MPa; with indicator light/urge voltage suppressor; clean air) Subject to the pressure and air quality.
3. Values in the case of high pressure type (1.5 W) specifications.
4. Values in the case of low wattage type (0.5 W) specifications.
## Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Base model</th>
<th>Type of connection</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
<th>Applicable solenoid valve</th>
<th>5 station weight (g)</th>
</tr>
</thead>
</table>
| VQ0000 | VV5Q04     | ■ F kit-D-sub connector  
■ P kit-Flat cable connector  
■ T kit-Terminal block  
■ C kit-Individual connector  
■ S kit-Serial transmission unit | Side  
\( \text{Port size (1)} \)  
\( \text{Port location} \)  
\( 1(P), 3(R) \) | C6 (ø6)  
Option  
Built-in silencer,  
direct exhaust  
\( \text{C3 (ø3.2)} \)  
\( \text{C4 (ø4)} \)  
\( \text{M5 (M5 thread)} \) | VQ0□40  
VQ0□41 | 225 |
| VQ1000 | VV5Q14     | ■ F kit-D-sub connector  
■ P kit-Flat cable connector  
■ T kit-Terminal block  
■ C kit-Individual connector  
■ S kit-Serial transmission unit | Side  
\( \text{Port size (1)} \)  
\( \text{Port location} \)  
\( 1(P), 3(R) \) | C6 (ø6)  
Option  
Built-in silencer,  
direct exhaust  
\( \text{C3 (ø3.2)} \)  
\( \text{C4 (ø4)} \)  
\( \text{M5 (M5 thread)} \) | VQ1□40  
VQ1□41 | 380 |
| VQ2000 | VV5Q24     | ■ F kit-D-sub connector  
■ P kit-Flat cable connector  
■ T kit-Terminal block  
■ C kit-Individual connector  
■ S kit-Serial transmission unit | Side  
\( \text{Port size (1)} \)  
\( \text{Port location} \)  
\( 1(P), 3(R) \) | C8 (ø8)  
Option  
Built-in silencer,  
direct exhaust  
\( \text{C4 (ø4)} \)  
\( \text{C6 (ø6)} \)  
\( \text{C8 (ø8)} \) | VQ2□40  
VQ2□41 | 671 |

Note 1) Inch-size One-touch fittings are also available. For details, refer to page 2-4-69.

Note 2) See page 2-4-69 for details.
D-sub Connector (25 pins)

AXT100-DS25-015

The D-sub connector cable assembly can be ordered individually or included in a specific manifold model no. Refer to How to Order Manifold.

The total number of stations is tabulated starting from station one on the D side.

The minimum bending radius of D-sub cable assembly is 20 mm.

Note) Types with 15 pin are also available. For details, refer to page 2-4-68.

Cable assembly

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Lead wire color</th>
<th>Dot marking</th>
<th>Description</th>
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<td>None</td>
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</tr>
<tr>
<td>2</td>
<td>Brown</td>
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<td>Red</td>
</tr>
<tr>
<td>3</td>
<td>Red</td>
<td>None</td>
<td>Yellow</td>
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<tr>
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<td>Orange</td>
</tr>
<tr>
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</tr>
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<td>8</td>
<td>Purple</td>
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</tr>
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<td>Red</td>
</tr>
<tr>
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</tr>
<tr>
<td>25</td>
<td>Yellow</td>
<td>Pink</td>
<td>Pink</td>
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</table>

Conductor manufacturers’ example
- Fujitsu Limited
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.

Electric Characteristics

<table>
<thead>
<tr>
<th>Item</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conductor resistance</td>
<td>65 Ω/m, 20°C</td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>1000 Ω/m, 20°C</td>
</tr>
</tbody>
</table>

Note) As the standard electrical wiring specifications, double wiring (connected to SOL A and SOL B) is adopted for the internal wiring of each station for 8 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-4-69.

As the standard electrical wiring specifications, double wiring (connected to SOL A and SOL B) is adopted for the internal wiring of each station for 8 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-4-69.

How to Order Manifold

VV5Q 14 -08 F S 1 D

Series  | 0 VVQ0000  | 1 VVQ1000  | 2 VVQ2000  |
|--------|------------|------------|------------|

Manifold  | 4 Plug lead unit/Flip  |
|----------|------------------------|

Stations  | 01 | 1 station  |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>16 stations</td>
</tr>
</tbody>
</table>

Note) For details, refer to page 2-4-69.

Cable (Length)

- Without cable
- With cable (1.5 m)
- With cable (3 m)
- With cable (5 m)

Connector entry direction

U | Top entry  |
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
</tr>
</tbody>
</table>

Option

D  | DIN rail mounting style  |
|---|-------------------------|
K  | Special wiring specifications  |
|   | (Except double wiring)  |
N  | With name plate  |
S  | Built-in silencer, direct exhaust  |

| Note 1) | When two or more symbols are specified, indicate them alphabetically.  |
| Note 2) | K kits are DIN rail mounting styles, include suffix -DNS.  |
| Note 3) | Specify the wiring specifications on the manifold specification sheet.  |

F kits are DIN rail mounting styles, include suffix -DNS.
**Plug Lead Unit: Flip Type**  
**Series VQ0000/1000/2000**

### Dimensions: Side Entry Connector [-FS]

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<td>160.5</td>
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<td>297.5</td>
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### Dimensions: Top Entry Connector [-FU]

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<td>260.5</td>
<td>273</td>
</tr>
</tbody>
</table>

### How to Order Valves

**Series**

- 0 VQ0000
- 1 VQ1000
- 2 VQ2000

**Function**

- Specification: AC
- DC (10 W)
- AC

**Seal**

- Metal seal
- Rubber seal

**Type of actuation**

- 1 2 position single
- 2 2 position double (Latching)
- 3 3 position closed center
- 4 3 position exhaust center
- 5 3 position pressure center

**Note 1) For power consumption of AC type, refer to page 2-4-36.**

**Note 2) Except double (latching).**

**Coil voltage**

- 1 100 VAC (50/60 Hz)
- 2 110 VAC (50/60 Hz)
- 3 24 VDC
- 4 12 VDC

**Electrical entry**

- LO L plug connector without connector
- MO M plug connector without connector

**Manual override**

- Non-locking push type (Tool required)
- Locking type (Manual)
- Locking type (Tool required)

**Coil voltage**

- 1 100 VAC (50/60 Hz)
- 2 110 VAC (50/60 Hz)
- 3 24 VDC
- 4 12 VDC

Note 1) For negative common specifications, refer to “Option” on page 2-4-69.

Note 2) Connector assembly will be required when the F kits add a valve. For part nos., refer to “Option” on page 2-4-69.
Top entry connector [-FU]

Dimensions: Side Entry Connector [-FS]

\[
\begin{align*}
L1 & = 11n + 15.5 \\
L2 & = 11n + 28
\end{align*}
\]

n: Stations (Maximum 16 stations)

Dimensions: Top Entry Connector [-FU]
### Dimensions: Side Entry Connector [-FS]

Formula: \( L1 = 16n + 29, \ L2 = 16n + 40 \)

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### Dimensions: Top Entry Connector [-FU]

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<tbody>
<tr>
<td>L3</td>
<td>112.5</td>
<td>137.5</td>
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<td>175</td>
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<td>212.5</td>
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<td>L4</td>
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<td>298</td>
<td>323</td>
<td>335.5</td>
<td>348</td>
<td>360.5</td>
</tr>
</tbody>
</table>
**VQ0000/1000/2000 Kit (Flat ribbon cable connector)**

- MIL flat ribbon cable connector reduces installation labor savings for electrical connection.
- Using the connector for flat ribbon cable (26P), (10P, 16P, 20P as an option) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
- Top or side receptacle position can be selected in accordance with the available mounting space.
- Maximum stations are 16.

**Flat Ribbon Cable (26 pins)**

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ0000</td>
<td>Side C6, 3(P), 4(A), 2(B)</td>
<td>Max. 16 stations</td>
</tr>
<tr>
<td>VQ1000</td>
<td>Side C6, 3, C4, C5, 5(P), 3(R)</td>
<td>Max. 16 stations</td>
</tr>
<tr>
<td>VQ2000</td>
<td>Side C8, C4, C6, 8(P), 3(R)</td>
<td>Max. 16 stations</td>
</tr>
</tbody>
</table>

**Electrical wiring specifications**

- Flat ribbon cable connector assembly can be ordered individually or included in a specific manifold model no. Refer to How to Order Manifold.
- For other commercial connectors, use a 26 pins type with strain relief conforming to MIL-C-83503.
- Connector manufacturers’ example
  - Hirose Electric Co., Ltd.
  - Sumitomo 3M Limited
  - Fujitsu Limited
  - Japan Aviation Electronics Industry, Ltd.
  - J.S.T. Mfg. Co., Ltd.
  - Oki Electric Cable Co., Ltd.

**Flat Ribbon Cable Connector Assembly (Option)**

<table>
<thead>
<tr>
<th>Cable length (L)</th>
<th>Assembly part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>AXT100-FC26-1</td>
<td>Cable 26 core x 28AWG</td>
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<tr>
<td>3 m</td>
<td>AXT100-FC26-2</td>
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</tr>
<tr>
<td>5 m</td>
<td>AXT100-FC26-3</td>
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</table>

**Cable assembly**

**How to Order Manifold**

<table>
<thead>
<tr>
<th>Series</th>
<th>VV5Q</th>
<th>4</th>
<th>08</th>
<th>P</th>
<th>S</th>
<th>1</th>
<th>D</th>
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<tr>
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<tr>
<td>2</td>
<td>VQ1000</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Note** Types with 10, 16, or 20 pin are also available. For details, refer to page 2-4-69.

**Option**

- D: DIN rail mounting style
- K: Special wiring specifications (Except double wiring)
- N: With name plate
- S: Built-in silencer, direct exhaust (U side only)

**Note**

1) When two or more symbols are specified, indicate them alphabetically. Example) -DNS
2) P kits are DIN rail mounting styles, so include suffix -D
3) Specify the wiring specifications on the manifold specification sheet.

**Port size**

- C6
- C8
- C3, C4, M5
- C4, C6, C8

**Port location**

- Side
- Side
- Side

**Side**

- Porting specifications
  - Side
  - Side
  - Side

**Applicable stations**

- Max. 16 stations

**Positive common specifications**

- SOL.A
- SOL.B

**Negative common specifications**

- SOL.A
- SOL.B

**Terminal no.**

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- COM

**Electrical wiring specifications**

- Flat ribbon cable connector

**Triangle mark indicator position**

**Connector terminal no.**

**Note** When using the negative common specifications, use valves for negative common. (Refer to page 2-4-69.)

**As the standard electrical wiring specifications, double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station for 8 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-4-69.
**Plug Lead Unit: Flip Type Series VQ0000/1000/2000**

**VQ0000**

![Image of VQ0000](image)

**Dimensions: Side Entry Connector [-PS]**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
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<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>25</td>
<td>35.5</td>
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<td>56.5</td>
<td>67</td>
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<td>151</td>
<td>161.5</td>
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</tr>
<tr>
<td>L2</td>
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<td>77.5</td>
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<td>161.5</td>
<td>172</td>
<td>182.5</td>
</tr>
<tr>
<td>(L3)</td>
<td>112.5</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
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<td>212.5</td>
<td>225</td>
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<tr>
<td>(L4)</td>
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<td>160.5</td>
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<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
</tr>
</tbody>
</table>

**Formula**

\[ L1 = 10.5n + 14.5 \]
\[ L2 = 10.5n + 25 \]

**Dimensions: Top Entry Connector [-PU]**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
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</thead>
<tbody>
<tr>
<td>L3</td>
<td>87.5</td>
<td>100</td>
<td>112.5</td>
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<td>125</td>
<td>137.5</td>
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<td>200</td>
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<td>212.5</td>
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<td>198</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
</tr>
</tbody>
</table>

**How to Order Valves**

- **Series**
  - VQ 1 1 4 0 Y 5 LO C6
- **Function**
  - Symbol: VQ0000 VQ1000 VQ2000
- **Seal**
  - Metal seal
  - Rubber seal
- **Type of actuation**
  - 2 position single
  - 2 position double (Latching)
  - 3 position closed center
  - 3 position exhaust center
  - 3 position pressure center
- **Coil voltage**
  - 1 100 VAC (50/60 Hz)
  - 2 110 VAC (50/60 Hz)
  - 3 24 VDC
  - 4 12 VDC
- **Electrical entry**
  - LO L plug connector without connector
  - MO M plug connector without connector

**How to Order Manifold Assembly**

Specify the part numbers for valves and options together beneath the manifold base part number.

**Cylinder port**

- Symbol: C3 C4 C5 C6 C8 M5
- Port size: Non-locking push type (Tool required)
- Locking type (Tool required)
- Locking type (Manual)

**Manual override**

- Note 1) All double latching valves of VQ0000 are non-locking push type.
- Note 2) A manual override for pilot valve is provided to the standard model for double type.

**Notes**

- Note 1) For power consumption of AC type, refer to page 2-4-36.
- Note 2) Except double (latching).
- Note 1) For inch-size One-touch fittings, refer to "Option" on page 2-4-69.
- Note 2) For negative common specifications, refer to "Option" on page 2-4-69.

**Formulas**

\[ L1 = 10.5n + 14.5 \]
\[ L2 = 10.5n + 25 \]

**Notes**

- (1) Built-in silencer types are equipped with a 1 (P) SUP port on both D and U sides.
- (2) 3 position needs two stations.
- Cylinder port is located at U side of body.
Dimensions: Side Entry Connector [-PS]

<table>
<thead>
<tr>
<th>L</th>
<th>1</th>
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<th>3</th>
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<th>5</th>
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<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
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<tbody>
<tr>
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</table>

Dimensions: Top Entry Connector [-PU]

<table>
<thead>
<tr>
<th>L</th>
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<td>248</td>
<td>260.5</td>
<td>273</td>
</tr>
</tbody>
</table>

Formula: L1 = 11n + 15.5, L2 = 11n + 28  n: Stations (Maximum 16 stations)
**Plug Lead Unit: Flip Type Series VQ0000/1000/2000**

**VQ2000**

Dimensions: Side Entry Connector [-PS]

<table>
<thead>
<tr>
<th></th>
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<th>2</th>
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<tbody>
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</table>

Dimensions: Top Entry Connector [-PU]

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<td>310.5</td>
<td>323</td>
<td>348</td>
<td>360.5</td>
</tr>
</tbody>
</table>

Formula L1 = 16n + 29, L2 = 16n + 40 n: Stations (Maximum 16 stations)
It is a standard terminal block type.

Two quantities of terminals can be selected in accordance with the number of stations.
(8 terminals/16 terminals)

Maximum stations are 16.

Electrical wiring specifications

In the case of double wiring (standard spec.)
T1 (Terminal block of 1 row): 1 to 4 stations
T2 (Terminal block of 2 rows): 5 to 8 stations
T1 and T2 can be optionally chosen by adopting the combinations of single and double wiring (optional spec.), etc.

The quantity of terminal blocks used depends on the number of manifold stations.

<table>
<thead>
<tr>
<th>Manifold</th>
<th>No. of terminals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 4 stations</td>
<td>1 row</td>
</tr>
<tr>
<td>5 to 8 stations</td>
<td>2 rows</td>
</tr>
</tbody>
</table>

Wiring other than those above is possible. See page 2-4-69 for details.

Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring is available as an option.
For details, refer to page 2-4-69.

How to Order Manifold

<table>
<thead>
<tr>
<th>Series</th>
<th>Manifold</th>
<th>Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ0000</td>
<td>0</td>
<td>1 station</td>
</tr>
<tr>
<td>VQ1000</td>
<td>1</td>
<td>16 stations</td>
</tr>
<tr>
<td>VQ2000</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Note 1) For negative common specifications, refer to “Option” on page 2-4-69.
Note 2) As option, the maximum number of stations can be increased based on special wiring specifications. For details, refer to page 2-4-69.

Option

- D: DIN rail mounting style
- K: Special wiring specifications (Except double wiring)
- N: With name plate
- S: Built-in silencer, direct exhaust (U side only)

Note 1) When two or more symbols are specified, indicate them alphabetically.
Example) -DNS
Note 2) T kits are DIN rail mounted type, so include suffix -D.
Note 3) Specify the wiring specifications in the manifold specification sheet.

Number of terminals

<table>
<thead>
<tr>
<th>Terminals</th>
<th>Station specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 terminals in 1 row</td>
<td>Applicable stations 1 to 4 stations (Double), 8 stations (Single)</td>
</tr>
<tr>
<td>16 terminals in 2 rows</td>
<td>Applicable stations 5 to 8 stations (Double), 16 stations (Single)</td>
</tr>
</tbody>
</table>

Note) The number of terminal blocks can be chosen regardless of station qty.
Suffix the option symbol, K, when the wiring specification is special.
**Plug Lead Unit: Flip Type Series VQ0000/1000/2000**

**Dimensions**

<table>
<thead>
<tr>
<th>Station</th>
<th>1</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>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>110.5</td>
<td>120.5</td>
<td>130</td>
<td>140</td>
<td>150</td>
<td>160</td>
<td>170</td>
<td>180</td>
<td>190</td>
<td>200</td>
<td>210</td>
<td>220</td>
<td>230</td>
<td>240</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td>L2</td>
<td>123</td>
<td>135.5</td>
<td>148</td>
<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1) 2 stations space are occupied. Note 2) L plug connector is used for AC.

**How to Order Valves**

<table>
<thead>
<tr>
<th>VQ1140Y5LO-C6</th>
</tr>
</thead>
</table>

**Function**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specifications</th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nill</td>
<td>Standard type</td>
<td>10.5</td>
<td>12.5</td>
</tr>
<tr>
<td>H1(1)</td>
<td>High pressure type</td>
<td>1.5 W</td>
<td>—</td>
</tr>
<tr>
<td>Y1(1)</td>
<td>Low wattage type</td>
<td>0.5 W</td>
<td>—</td>
</tr>
</tbody>
</table>

Note 1) For power consumption of AC type, refer to page 2-4-36.
Note 2) Except double (latching).

**Type of actuation**

<table>
<thead>
<tr>
<th>VQ0000</th>
<th>VQ1000</th>
<th>VQ2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2 position single</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2 position double (Latching)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3 position closed center</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>3 position exhaust center</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>5 position pressure center</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

Note 1) 2 stations space are occupied. Note 2) L plug connector is used for AC.

**Coil voltage**

| 1 | 100 VAC (50/60 Hz) |
| 2 | 110 VAC (50/60 Hz) |
| 3 | 24 VDC |
| 4 | 12 VDC |

**How to Order Manifold Assembly**

Specify the part numbers for valves and options together beneath the manifold base part number.

**Cylinder port**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Port size</th>
<th>VQ0000</th>
<th>VQ1000</th>
<th>VQ2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3</td>
<td>With One-touch fitting for ø3.2</td>
<td>•</td>
<td>•</td>
<td>—</td>
</tr>
<tr>
<td>C4</td>
<td>With One-touch fitting for ø4</td>
<td>•</td>
<td>•</td>
<td>—</td>
</tr>
<tr>
<td>C6</td>
<td>With One-touch fitting for ø6</td>
<td>—</td>
<td>—</td>
<td>•</td>
</tr>
<tr>
<td>C8</td>
<td>With One-touch fitting for ø8</td>
<td>—</td>
<td>—</td>
<td>•</td>
</tr>
<tr>
<td>M5</td>
<td>M5 thread</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Note 1) For inch-size One-touch fittings, refer to "Option" on page 2-4-69.

**Manual override**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Non-locking push type (Tool required)</th>
<th>Locking type (Tool required)</th>
<th>Locking type (Manual)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nill</td>
<td>—</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>B</td>
<td>—</td>
<td>•</td>
<td>—</td>
</tr>
<tr>
<td>C</td>
<td>•</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Note 1) All double latching valves of VQ0000 are non-locking push type. (Refer to page 2-4-66.)
Note 2) A manual override for pilot valve is provided to the standard model for double type.

**Electrical entry**

<table>
<thead>
<tr>
<th>LO</th>
<th>L plug connector without connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>MO</td>
<td>M plug connector without connector</td>
</tr>
</tbody>
</table>

Note 1) For negative common specifications, refer to "Option" on page 2-4-69.
Note 2) Connector assembly will be required when the T kits add a valve. For model no., refer to "Option" on page 2-4-69.

**Built-in silencer types are equipped with a 1 (P) SUP port on both D and U sides.**

**This drawing shows the case of VVSQ04-.T2-D-2.**

**Note 1) Built-in silencer types are equipped with a 1 (P) SUP port on both D and U sides.**

**Note 2) 3 position needs two stations. Cylinder port is located at U side of body.**

**Plugin connection: 7 plug connector/AC, Latching**

**Note 1) For power consumption of AC type, refer to page 2-4-36.**

**Note 2) Except double (latching).**

**Note 3) 2 stations space are occupied.**

**Note 4) L plug connector is used for AC.**

**Note 5) Connector assembly will be required when the T kits add a valve. For model no., refer to "Option" on page 2-4-69.**

**Note 6) Plug connector and lead wire layers are attached to the manifold.**
This drawing shows the case of VV5Q04-T2-D.

Dimensions

Formula \( L1 = 11n + 15.5 \), \( L2 = 11n + 28 \)  

<table>
<thead>
<tr>
<th>Station</th>
<th>1</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>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>26.5</td>
<td>37.5</td>
<td>48.5</td>
<td>59.5</td>
<td>70.5</td>
<td>81.5</td>
<td>92.5</td>
<td>103.5</td>
<td>114.5</td>
<td>125.5</td>
<td>136.5</td>
<td>147.5</td>
<td>158.5</td>
<td>169.5</td>
<td>180.5</td>
<td>191.5</td>
</tr>
<tr>
<td>L2</td>
<td>39</td>
<td>50</td>
<td>61</td>
<td>72</td>
<td>83</td>
<td>94</td>
<td>105</td>
<td>116</td>
<td>127</td>
<td>138</td>
<td>149</td>
<td>160</td>
<td>171</td>
<td>182</td>
<td>193</td>
<td>204</td>
</tr>
<tr>
<td>L3</td>
<td>112.5</td>
<td>112.5</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>200</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>250</td>
<td>262.5</td>
<td>275</td>
</tr>
<tr>
<td>L4</td>
<td>123</td>
<td>123</td>
<td>135.5</td>
<td>148</td>
<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
<td>285.5</td>
</tr>
</tbody>
</table>
The drawing shows the case of VV5Q24-L50132 T2.

Dimensions

<table>
<thead>
<tr>
<th>n</th>
<th>0</th>
<th>1</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>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>45</td>
<td>61</td>
<td>77</td>
<td>93</td>
<td>109</td>
<td>125</td>
<td>141</td>
<td>157</td>
<td>173</td>
<td>189</td>
<td>205</td>
<td>221</td>
<td>237</td>
<td>253</td>
<td>269</td>
<td>285</td>
<td></td>
</tr>
<tr>
<td>L2</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></td>
</tr>
<tr>
<td>L3</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>225</td>
<td>237.5</td>
<td>250</td>
<td>262.5</td>
<td>275</td>
<td>287.5</td>
<td>300</td>
<td>312.5</td>
<td>325</td>
<td>337.5</td>
<td>350</td>
</tr>
<tr>
<td>L4</td>
<td>135.5</td>
<td>148</td>
<td>160.5</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
<td>298</td>
<td>310.5</td>
<td>323</td>
<td>348</td>
<td>360.5</td>
<td>373</td>
<td></td>
</tr>
</tbody>
</table>

Formula \( L1 = 16n + 29 \), \( L2 = 16n + 40 \) \( n \): Station (Maximum 16 stations)
### Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Port location</td>
<td>Port size</td>
</tr>
<tr>
<td>VQ0000</td>
<td>Side C6</td>
<td>C3, C4, M5</td>
</tr>
<tr>
<td>VQ1000</td>
<td>Side C6, C4, C6, M5</td>
<td>Max. 16 stations</td>
</tr>
<tr>
<td>VQ2000</td>
<td>Side C8, C4, C6, C8</td>
<td>Max. 16 stations</td>
</tr>
</tbody>
</table>

#### Wiring specifications: Positive COM

- The lead wires are connected to the valve as shown below. Connect each to the power supply side.

- Plug connector lead wire length
  - Note) The lead wire length of the valves with lead wire is 300 mm. When ordering a valve with a lead wire of 600 mm or longer, be sure to indicate the model number of the valve without connector and connector assembly.

#### Wiring specifications: Negative COM (Option)

- The lead wires are connected to the valve as shown below. Connect each to the power supply side.

- Plug connector lead wire length
  - Note) The lead wire length of the valves with lead wire is 300 mm. When ordering a valve with a lead wire of 600 mm or longer, be sure to indicate the model number of the valve without connector and connector assembly.

#### How to Order Manifold

**VV5Q 1 4 08 C N**

- **Series**
  - 0: VQ0000
  - 1: VQ1000
  - 2: VQ2000

- **Manifold**
  - 4: Plug lead unit/Flip

- **Stations**
  - 01: 1 station
  - 16: 16 stations

---

**Option**

- **Nil**: None
- **D**: DIN rail mounting style
- **N**: With name plate
- **S**: Built-in silencer, direct exhaust

Note 1) When using the negative common specifications, use valves for negative common.

Note 2) 3 position type requires 2 sets for A side and B side.
Plug Lead Unit: Flip Type  Series VQ0000/1000/2000

VQ0000

L/M type plug connector

Grommet

The broken lines indicate the DIN rail mounting style [-D].

Note 1) Built-in silencer types are equipped with a 1 (P) SUP port on both D and U sides.

Note 2) 3 position needs two stations. Cylinder port is located at U side of body.

Dimensions

Formula \[ L_1 = 10.5n + 14.5, L_2 = 10.5n + 25 \]  \( n \): Station (Maximum 16 stations)

How to Order Valves

Series

<table>
<thead>
<tr>
<th>Series</th>
<th>VQ0000</th>
<th>VQ1000</th>
<th>VQ2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>11 4 0 Y 5 L</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Function

 Seal

 Symbol Specifications DC AC

0 Metal seal

1 Rubber seal

Standard type

H High pressure type (1.5 W)

Y Low voltage type (0.5 W)

Note 1) For power consumption of AC type, refer to page 2-4-36.

Note 2) Except double (latching)

Type of actuation

<table>
<thead>
<tr>
<th></th>
<th>VQ0000/VQ1000/VQ2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2 position single</td>
</tr>
<tr>
<td>2</td>
<td>2 position double (Latching)</td>
</tr>
<tr>
<td>3</td>
<td>3 position closed center</td>
</tr>
<tr>
<td>4</td>
<td>3 position exhaust center</td>
</tr>
<tr>
<td>5</td>
<td>3 position pressure center</td>
</tr>
</tbody>
</table>

Note 1) For negative common specifications, refer to “Option” on page 2-4-69.

Note 2) 2 stations space are occupied. Note 2) L plug connector is used for AC.

Coil voltage

<table>
<thead>
<tr>
<th></th>
<th>VQ0000/VQ1000/VQ2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>100 VAC (50/60 Hz)</td>
</tr>
<tr>
<td>2</td>
<td>200 VAC (50/60 Hz)</td>
</tr>
<tr>
<td>3</td>
<td>110 VAC (50/60 Hz)</td>
</tr>
<tr>
<td>4</td>
<td>220 VAC (50/60 Hz)</td>
</tr>
<tr>
<td>5</td>
<td>24 VDC</td>
</tr>
<tr>
<td>6</td>
<td>12 VDC</td>
</tr>
</tbody>
</table>

How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

Cylinder port

Symbol Port size

C3 With One-touch fitting for ø3.2

C4 With One-touch fitting for ø4

C6 With One-touch fitting for ø6

C8 With One-touch fitting for ø8

M5 M thread

Note) For inch-size One-touch fittings, refer to “Option” on page 2-4-69.

Manual override

Nil Non-locking push type (Tool required)

B Locking type (Tool required)

C Locking type (Manual)

Note 1) All double latching valves of VQ0000 are non-locking push type.

Note 2) A manual override for pilot valve is provided to the standard model for double type.

Electrical entry

G Grommet (Except latching and 100/110 VAC type)

L L plug connector with lead wire

LO L plug connector without connector

M M plug connector with lead wire

MO M plug connector without connector
### Dimensions

<table>
<thead>
<tr>
<th>n</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>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>26.5</td>
<td>37.5</td>
<td>48.5</td>
<td>59.5</td>
<td>70.5</td>
<td>81.5</td>
<td>92.5</td>
<td>103.5</td>
<td>114.5</td>
<td>125.5</td>
<td>136.5</td>
<td>147.5</td>
<td>158.5</td>
<td>169.5</td>
<td>180.5</td>
<td>191.5</td>
</tr>
<tr>
<td>L2</td>
<td>39</td>
<td>50</td>
<td>61</td>
<td>72</td>
<td>83</td>
<td>94</td>
<td>105</td>
<td>116</td>
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<td>138</td>
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<td>160</td>
<td>171</td>
<td>182</td>
<td>193</td>
<td>204</td>
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<tr>
<td>L3</td>
<td>62.5</td>
<td>75</td>
<td>87.5</td>
<td>100</td>
<td>112.5</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
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<td>212.5</td>
<td>225</td>
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</tr>
<tr>
<td>L4</td>
<td>73</td>
<td>85.5</td>
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<td>110.5</td>
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<td>135.5</td>
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<td>160.5</td>
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<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>223</td>
<td>235.5</td>
<td></td>
</tr>
</tbody>
</table>

Formula: \( L1 = 11n + 15.5, \ L2 = 11n + 28 \)

n: Station (Maximum 16 stations)
Plug Lead Unit: Flip Type Series VQ0000/1000/2000

**Dimensions**

Formula: \( L_1 = 16n + 29, L_2 = 16n + 40 \)

<table>
<thead>
<tr>
<th>n</th>
<th>1</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>
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<th>11</th>
<th>12</th>
<th>13</th>
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<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>45</td>
<td>61</td>
<td>77</td>
<td>93</td>
<td>109</td>
<td>125</td>
<td>141</td>
<td>157</td>
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<td>189</td>
<td>205</td>
<td>221</td>
<td>237</td>
<td>253</td>
<td>269</td>
<td>285</td>
</tr>
<tr>
<td>L2</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>
</tr>
<tr>
<td>L3</td>
<td>87.5</td>
<td>100</td>
<td>112.5</td>
<td>125</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
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<td>225</td>
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<td>262.5</td>
<td>275</td>
<td>287.5</td>
<td>300</td>
<td>325</td>
</tr>
<tr>
<td>L4</td>
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<td>110.5</td>
<td>123</td>
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<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>223</td>
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<td>273</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
<td>335.5</td>
</tr>
</tbody>
</table>

n: Station (Maximum 16 stations)

---

Image of the document page showing a diagram of the VQ2000 plug lead unit with dimensions and labels.
• The serial transmission system reduces wiring work, while minimizing wiring and saving space.

• The system comes in an type SA (generic for small scale systems) for equipment with a small number of I/O points, or 32 points max., type SB (applicable to Mitsubishi Electric models) for controlling 512 I/O points max., type SC (applicable to OMRON models), and type SD (applicable to SHARP models; 504 points max.).

• Maximum 8 stations, optional 16 stations possible. (16 stations available as an option. Indicate 9 to 16 stations on the manifold specification sheet.)

Station numbers are sequentially numbered from the D side.

Double wiring (connected to SOL A and SOL B) is adopted for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-4-69.

The serial transmission system reduces wiring work, while minimizing wiring and saving space.

For details, refer to page 2-4-69.

Max. 16 stations

Maximum 8 stations, optional 16 stations possible. (16 stations available as an option. Indicate 9 to 16 stations on the manifold specification sheet.)

The serial transmission system reduces wiring work, while minimizing wiring and saving space.

For details, refer to page 2-4-69.

For details, refer to page 2-4-69.

VQ0000 Kit (Serial transmission unit)

VQ0000/1000/2000

How to Order Manifold

VV5Q  1  4  08  S  A  D

Series

0  VQ0000
1  VQ1000
2  VQ2000

Manifold

4  Plug lead unit/Flip

Stations

01  1 station
08  8 station (Double)
16  16 stations (Single)

Model

0  Without SI unit
A  With general type SI unit (Series EX300)
B  Mitsubishi Electric Corp.: MELSECNET/MINI-S3 Data Link System
C  OMRON Corp.: SYSBUS Wire System
D  SHARP Corp.: Satellite I/O Link System
F1  NKE Corp.: Uni-wire System (16 output points)
F2  NKE Corp.: Uni-wire II System
H  NKE Corp.: Uni-wire III System (16 output points)

Option

D  DIN rail mounting style
K  Special wiring specifications
N  With name plate
S  Built-in silencer, direct exhaust

Note 1) When two or more symbols are specified, indicate them alphabetically.

Example) D5S

Note 2) S kits are DIN rail mounting styles, so include suffix -D.

Note 3) Specify the wiring specifications in the manifold specification sheet.
Si unit output and coil numbering

**Wiring example 1** Double wiring (Standard)

<table>
<thead>
<tr>
<th>Si unit output no.</th>
<th>A</th>
<th>B</th>
<th>A</th>
<th>B</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Looked by double solenoid valve)</td>
<td>Double</td>
<td>Double</td>
<td>Single</td>
<td>Single</td>
<td>3-position</td>
<td></td>
</tr>
<tr>
<td>SOL. location</td>
<td>Stations</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

The places of asterisk are not used.

**Wiring example 2** Single/Double Mixed Wiring (Option)

Mixed wiring is available as an option. Use the manifold specification sheet to specify.

**Si unit output and coil numbering**

<table>
<thead>
<tr>
<th>Type SC</th>
<th>Type SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>OMROM Corporation</td>
<td>SHARP Corporation</td>
</tr>
<tr>
<td>SYSBUS Wire System</td>
<td>Satellite I/O Link System</td>
</tr>
</tbody>
</table>

**Name of terminal block (LED)**

- **LED**
  - **RUN**: Lights when transmission is normal and PLC is in operation mode
  - **T/R**: Blinks during data transmission/reception
  - **ERR**: ON when transmission is abnormal.

**Description**

- **Lights when power supply is ON**
- **Lights when power is ON and slave stations are operating normally**
- **Lights when slave station switch setting is abnormal, communication is abnormal, PLC stopped and defective slave unit**
- **ON for master unit control input**

**Notes**

- **Master station unit:**
  - **OMRON PLC**
  - **SYSMAC C(CV) series** Types C500-RM201 and C200H-RM201
  - 32 units max., transmission terminal connection (512 points max.)
  - No. of output points, 16 points

- **Master station unit:**
  - **SHARP's PLC**
  - Max. 31 units, I/O slave stations connected (504 points max.)
  - No. of output points, 16 points

**How to Order Valves**

- **Series**
  - VQ 1140 Y 5 LO C6

**Function**

- **Symbol**
  - **Nil**: Standard type
  - **H**: High pressure type
  - **L**: Low wattage type

**DC**

- **Note**: Except double (latching).
- **24 VDC**
- **With light/surge voltage suppressor**
- **Note 1)** Connector assembly will be required when the S kits add a valve.
- **For part nos., refer to "Option" on page 2-4-69.

**Manual override**

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

**Cylinder port**

- **Symbol**
  - **Port size**
  - **VQ0000**
  - **VQ1000**
  - **VQ2000**
  - **C3** With One-touch fitting for ø3.2
  - **C4** With One-touch fitting for ø4
  - **C5** With One-touch fitting for ø5
  - **C6** With One-touch fitting for ø6
  - **M5**: M5 thread

**Electrical entry**

- **LO**: L plug connector without connector
- **M**: M plug connector without connector

**Notes**

- **Note 1)** Plug connector and lead wire layers are attached to the manifold.

**Part numbers**

- **For inch-size One-touch fittings, refer to "Option" on page 2-4-69.

**Specifications**

- **DC**
  - **5 W**

**Part numbers**

- **Series VQ0000/1000/2000**
  - **Plug Lead Unit: Flip Type**
  - **Body Ported**

**Name of terminal block (LED)**

- **ADDRESS NO.**
  - **Power**
  - **RUN**
  - **ERR**

**Port size**

- **VQ0000**: —
- **VQ1000**: —
- **VQ2000**: —

**Material**

- **Body Ported**

**Unit**

- **12 VDC**
- **24 VDC**
- **With light/surge voltage suppressor**

**Note**

- **Note 1)** All double latching valves of VQ0000 are non-locking push type. (Refer to page 2-4-66.)
The DWG shows the SA type (General type).

The table shows the dimensions for various stations:

<table>
<thead>
<tr>
<th>Station</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>25</td>
<td>35.5</td>
<td>46</td>
<td>56.5</td>
</tr>
<tr>
<td>2</td>
<td>35.5</td>
<td>46</td>
<td>56.5</td>
<td>67</td>
</tr>
<tr>
<td>3</td>
<td>200</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
</tr>
<tr>
<td>4</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
</tr>
</tbody>
</table>

Note 1) Built-in silencer styles are equipped with a 1(P) SUP port on both D and U sides.
Note 2) 3 position needs two stations.
Cylinder port is located U side of body.
**Dimensions**

Formula: \( L1 = 11n + 15.5 \), \( L2 = 11n + 28 \)

<table>
<thead>
<tr>
<th>n</th>
<th>1</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>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>26.5</td>
<td>37.5</td>
<td>48.5</td>
<td>59.5</td>
<td>70.5</td>
<td>81.5</td>
<td>92.5</td>
<td>103.5</td>
<td>114.5</td>
<td>125.5</td>
<td>136.5</td>
<td>147.5</td>
<td>158.5</td>
<td>169.5</td>
<td>180.5</td>
<td>191.5</td>
</tr>
<tr>
<td>L2</td>
<td>39</td>
<td>50</td>
<td>61</td>
<td>72</td>
<td>83</td>
<td>94</td>
<td>105</td>
<td>116</td>
<td>127</td>
<td>138</td>
<td>149</td>
<td>160</td>
<td>171</td>
<td>182</td>
<td>193</td>
<td>204</td>
</tr>
<tr>
<td>L3</td>
<td>212.5</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>250</td>
<td>262.5</td>
<td>275</td>
<td>287.5</td>
<td>300</td>
<td>312.5</td>
<td>325</td>
<td>337.5</td>
<td>350</td>
<td>362.5</td>
<td>375</td>
<td></td>
</tr>
<tr>
<td>L4</td>
<td>223</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
<td>310.5</td>
<td>323</td>
<td>335.5</td>
<td>348</td>
<td>360.5</td>
<td>373</td>
<td>385.5</td>
</tr>
</tbody>
</table>
Manifold Option Parts for VQ0000

Blanking plate assembly
VVQ0000-10A-4
It is used when a blanking plate is mounted to a manifold in advance for possible valve mounting, etc.

Individual SUP spacer
VVQ0000-P-4-C4
When the same manifold is to be used for different pressures, individual SUP spacers are used as SUP ports for different pressures. (One station space is occupied.) Since the SUP passage on the spacer’s D side is blocked in advance, it is mounted on the D side of the valve for individual supply while blocking the valve’s U side. (See the application ex.)

* Specify the spacer mounting position and SUP block plate mounting position on the manifold specification sheet.

Individual EXH spacer
VVQ0000-R-4-C4
When valve exhaust affects other stations due to the circuit configuration, this spacer is used for individual valve exhaust. (One station space is occupied.) Since the EXH passage on the spacer’s D side is blocked in advance, it is mounted on the D side of the valve for individual supply while blocking the valve’s U side. (See the application ex.)

* Specify the spacer mounting position and EXH block plate mounting position on the manifold specification sheet.

P Block valve
VVQ01 P-41-L50132-45/01

For a flip plug-in unit, block plate is built in the valve for blocking SUP and EXH passages. Since the no. is classified by the passage to be blocked, specify it by attaching the option no. to the valve no. The block valve is constructed so that U sides of SUP and EXH passages are blocked.

* Specify the number of stations on the manifold specification sheet.

<Shut off label>
When using block plates for SUP, EXH passage, indication label for confirmation of the blocking position from outside is attached. (One label for each)

+ When ordering a block plate incorporated with the manifold no., a block indication label is attached to the manifold.
+ Caution on handling P/R block valve
  For manifold other than C kit which is silencer built-in, there’s no exhaust port on the D side end plate. Install a spacer for individual EXH on the 1st station separately.

Name plate [-N4]
VVQ0000-N4-Station (1 to Max. stations)
It is a transparent resin plate for placing a label that indicates solenoid valve function, etc. Insert it into the groove on the side of the end plate and bend it as shown in the figure.

Blanking plug
KQ2P-23
It is inserted into an unused cylinder port and SUP/EXH ports.
Purchasing order is available in units of 10 pieces.
Manifold Option Parts for VQ0000

DIN rail mounting bracket
VVQ0000-57A-4
It is used for mounting a manifold on a DIN rail. The DIN rail mounted bracket is fixed to the manifold end plate. (The specification is the same as that for the option -D.) 1 set of DIN rail mounting bracket is used for 1 manifold (2 DIN rail mounting brackets).

Built-in silencer, Direct exhaust [-S]
This is a type with an exhaust port atop the manifold end plate. The built-in silencer exhibits an excellent noise suppression effect. F, P, T and S kits are provided with exhaust on one side. Note) A large quantity of drainage generated in the air source results in exhaust of air together with drainage.

Manifold Option Parts for VQ1000

Blanking plate assembly
VVQ1000-10A-4
It is used when a blanking plate is mounted to a manifold in advance for possible valve mounting, etc.

Individual SUP spacer
VVQ1000-P-4-C6
When the same manifold is to be used for different pressures, individual SUP spacers are used as SUP ports for different pressures. (One station space is occupied.) Since the SUP passage on the spacer’s D side is blocked in advance, it is mounted on the D side of the valve for individual supply while blocking the valve’s U side. (See the application ex.)

Individual EXH spacer
VVQ1000-R-4-C6
When valve exhaust affects other stations due to the circuit configuration, this spacer is used for individual valve exhaust. (One station space is occupied.) Since the EXH passage on the spacer’s D side is blocked in advance, it is mounted on the D side of the valve for individual supply while blocking the valve’s U side. (Refer to the application example.)

Note) Specify the spacer mounting position and SUP block plate mounting position on the manifold specification sheet.

Note) When ordering assemblies incorporated with a manifold, add suffix -D to the manifold no.

Note) When ordering assemblies incorporated with a manifold, add suffix -S to the manifold no.

When ordering assemblies incorporated with a manifold, add suffix -D to the manifold no.

Note) When ordering assemblies incorporated with a manifold, add suffix -S to the manifold no.

Note) R block valve is mounted in the blocking position when ordering an individual EXH spacer incorporated with a manifold.

When separately ordering an individual EXH spacer, separately order a P block valve.
Manifold Option Parts for VQ1000

Block valve
VQ14-L50132
For a flip plug-in unit, block plate is built in the valve for blocking SUP and EXH passages. Since the no. is classified by the passage to be blocked, specify it by attaching the option no. to the valve no. The block valve is constructed so that D sides of SUP and EXH passages are blocked.

* Specify the number of stations on the manifold specification sheet.

<Shut off label>
When using block plates for SUP, EXH passage, indication label for confirmation of the blocking position from outside is attached. (One label for each)

* Caution on using R/PR block valve If the electrical entry is selected for an option for built-in silencer when F, P, T, S kit, there will not be the exhaust port on the D side end plate. In this case, mount an individual EXH spacer for the 1st station.

Name plate [-N4]
VQ10000-N4-Station (1 to Max. stations)
It is a transparent resin plate for placing a label that indicates solenoid valve function, etc. Insert it into the groove on the side of the end plate and bend it as shown in the figure.

Blanking plug
KQ2P-23
It is inserted into an unused cylinder port and SUP/EXH ports. Purchasing order is available in units of 10 pieces.

DIN rail mounting bracket
VQ1000-57A-4
It is used for mounting a manifold on a DIN rail. The DIN rail mounted bracket is fixed to the manifold end plate. (The specification is the same as that for the option -D.) 1 set of DIN rail mounting bracket is used for 1 manifold (2 DIN rail mounting brackets).

Built-in silencer, Direct exhaust [-S]
This is an exhaust port on top of the manifold end plate. The built-in silencer exhibits an excellent noise suppression effect. F, P, T and S kits are provided with exhaust on one side.

Note) A large quantity of drainage generated in the air source results in exhaust of air together with drainage. 
* For maintenance, refer to page 2-4-67.

Silencer (For EXH port)
This is inserted into the centralized type EXH port (One-touch fitting).

Port plug
VQ00000-58A
The plug is used to block the cylinder port when using a 4 port valve as a 3 port valve. When ordering it incorporated with a manifold, suffix A or B, the symbol of the plug port, to the valve no.

Example) VQ1400-58A 
A port, Plug

Dimensions

<table>
<thead>
<tr>
<th>Applicable fittings size ed</th>
<th>Model</th>
<th>A</th>
<th>L</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2</td>
<td>KQ2P-23</td>
<td>16</td>
<td>31.5</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>KQ2P-06</td>
<td>16</td>
<td>33</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>KQ2P-06</td>
<td>18</td>
<td>35</td>
<td>8</td>
</tr>
</tbody>
</table>

Dimensions

<table>
<thead>
<tr>
<th>Series</th>
<th>Applicable fittings size ed</th>
<th>Model</th>
<th>A</th>
<th>L</th>
<th>D</th>
<th>Effective area (mm²)</th>
<th>Noise reduction (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>6</td>
<td>AN103-X233</td>
<td>20</td>
<td>37</td>
<td>11</td>
<td>7</td>
<td>25</td>
</tr>
</tbody>
</table>
Manifold Option Parts

Double check block (Separated type): For VQ0000/1000
VQ1000-FPG-

It is used on the outlet side piping to keep the cylinder in the intermediate position for a long time. Combining the double check block with a built-in pilot type double check valve and a 3 position exhaust center solenoid valve will enable the cylinder to stop in the middle or maintain its position for a long time.

The combination with a two position single/double solenoid valve will permit this block to be used for preventing the dropping at the cylinder stroke end when the SUP residual pressure is released.

Specifications

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. operating pressure</td>
<td>0.8 MPa</td>
</tr>
<tr>
<td>Min. operating pressure</td>
<td>0.15 MPa</td>
</tr>
<tr>
<td>Ambient and fluid temperature</td>
<td>–5 to 50°C</td>
</tr>
<tr>
<td>Flow characteristics:</td>
<td>C</td>
</tr>
<tr>
<td>Max. operating frequency</td>
<td>180 CPM</td>
</tr>
</tbody>
</table>

Note: Based on JIS B 8375-1981 (Supply pressure: 0.5 MPa)

Dimensions

Manifold

How to Order

Double check block
VQ1000-FPG-C4 M5 F
IN side port size
C4 One-touch fitting for ø4
C6 One-touch fitting for ø6
OUT side port size
M5 M5 thread
C3 One-touch fitting for ø3.2
C4 One-touch fitting for ø4
C6 One-touch fitting for ø6
Option
Nil None
F With bracket
D DIN rail mounting style (For manifold)
N Name plate

Note: When two or more symbols are specified, indicate them alphabetically. Example) -DN

<Example>
VQ1000-FPG-06-6 types of manifold
VQ1000-FPG-C4M5-D, 3 sets
VQ1000-FPG-C6M5-D, 3 sets

Caution

Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for a long time. Check the leakage using neutral household detergent, such as dish washing soap. Also check the cylinder’s tube gasket, piston packing and rod packing for air leakage.

Since One-touch fittings allow slight air leakage, screw piping (with M5 thread) is recommended when stopping the cylinder in the middle for a long time.

Combining double check block with 3 position closed center or pressure center solenoid valve will not work.

M5 fitting assembly is attached, not incorporated into the double check block. After screwing in the M5 fittings, mount the assembly on the double check block. (Tightening torque: 0.8 to 1.2 N·m)

If the exhaust of the double check block is throttled too much, the cylinder may not operate properly and may not stop immediately.

Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.
Manifold Option Parts for VQ2000

Blanking plate assembly
VQ2000-10A-4
It is used when a blanking plate is mounted to a manifold in advance for possible valve mounting, etc.

Individual SUP spacer
VQ2000-P-4-C8
When the same manifold is to be used for different pressures, individual SUP spacers are used as SUP ports for different pressures. (One station space is occupied.)
Since the SUP passage on the spacer’s D side is blocked in advance, it is mounted on the D side of the valves U side. (Refer to the application example.)
* Specify the spacer mounting position and SUP block plate mounting position on the manifold specification sheet.

Individual EXH spacer
VQ2000-R-4-C8
When valve exhaust affects other stations due to the circuit configuration, this spacer is used for individual valve exhaust. (1 station space is occupied.)
Since the EXH passage on the spacer’s D side is blocked in advance, it is mounted on the D side of the valve for individual supply while blocking the valves U side. (Refer to the application example.)
* Specify the spacer mounting position and EXH block plate mounting position on the manifold specification sheet.
* When the electrical entry is F, P, T, S kit, and if you choose the option with built-in silencer, no exhaust port will be supplied on the D side end plate. In this case, mount a spacer for individual EXH on the 1st station.

Block valve
VQ2000-4-PR
For a flip plug-in unit, block plate is built in the valve for blocking SUP and EXH passages. Since the no. is classified by the passage to be blocked, specify it by attaching the option no. to the valve no. The block valve is constructed so that U sides of SUP and EXH passages are blocked.
* Specify the number of stations on the manifold specification sheet.

<Shut off label>
When using block plates for SUP, EXH passage, indication label for confirmation of the blocking position from outside is attached.
(One label for each)
* When ordering a block plate incorporated with the manifold no., a block indication label is attached to the manifold.
* Caution on handling P/R block valve
When the electrical entry is F, P, T, S kit, and if you choose the option with built-in silencer, no exhaust port will be supplied on the D side end plate. In this case, mount a spacer for individual EXH on the 1st station.

<table>
<thead>
<tr>
<th>SUP passage blocked</th>
<th>EXH passage blocked</th>
<th>SUP/EXH passage blocked</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note)
* P block valve is mounted in the blocking position when ordering an individual SUP spacer incorporated with a manifold. When separately ordering an individual SUP spacer, separately order a P block valve.
* R block valve is mounted in the blocking position when ordering an individual EXH spacer incorporated with a manifold. When separately ordering an individual EXH spacer, separately order a R block valve.
* P block valve (To be ordered using the no. of the standard valve.)
* R block valve (To be ordered using the no. of the standard valve.)
* PR block valve (To be ordered using the no. of the standard valve.)

For SUP passage block
VQ2000-4-PP
For EXH passage block
VQ2000-4-RR
For SUP/EXH passage block
VQ2000-4-PR

<Shut off label>
When using block plates for SUP, EXH passage, indication label for confirmation of the blocking position from outside is attached.
(One label for each)
* When ordering a block plate incorporated with the manifold no., a block indication label is attached to the manifold.
* Caution on handling P/R block valve
When the electrical entry is F, P, T, S kit, and if you choose the option with built-in silencer, no exhaust port will be supplied on the D side end plate. In this case, mount a spacer for individual EXH on the 1st station.

<table>
<thead>
<tr>
<th>SUP passage blocked</th>
<th>EXH passage blocked</th>
<th>SUP/EXH passage blocked</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note)
* P block valve is mounted in the blocking position when ordering an individual SUP spacer incorporated with a manifold. When separately ordering an individual SUP spacer, separately order a P block valve.
* R block valve is mounted in the blocking position when ordering an individual EXH spacer incorporated with a manifold. When separately ordering an individual EXH spacer, separately order a R block valve.
* P block valve (To be ordered using the no. of the standard valve.)
* R block valve (To be ordered using the no. of the standard valve.)
* PR block valve (To be ordered using the no. of the standard valve.)

For SUP passage block
VQ2000-4-PP
For EXH passage block
VQ2000-4-RR
For SUP/EXH passage block
VQ2000-4-PR
Manifold Option Parts for VQ2000

Name plate [-N4]
VVQ2000-N4-Station (1 to Max. stations)
It is a transparent resin plate for placing a label that indicates solenoid valve function, etc.
Insert it into the groove on the side of the end plate and bend it as shown in the figure.

Blanking plug
KQ2P-

It is inserted into an unused cylinder port and SUP/EXH ports.
Purchasing order is available in units of 10 pieces.

DIN rail mounting bracket
VVQ2000-57A-4
It is used for mounting a manifold on a DIN rail. The DIN rail mounting bracket is fixed to the manifold end plate. (The specification is the same as that for the option -D.)
1 set of DIN rail mounting bracket is used for 1 manifold (2 DIN rail mounting brackets).

Built-in silencer, Direct exhaust [-S]
This is type with an exhaust port atop the manifold endplate. The built-in silencer exhibits an excellent noise suppression effect.
F, P, T and S kits are provided with exhaust on one side.
Note) A large quantity of drainage generated in the air source results in exhaust of air together with drainage.

Port plug
VVQ1000-58A
The plug is used to block the cylinder port when using a 4 port valve as a 3 port valve.
When ordering it incorporated with a manifold, suffix A or B, the symbol of the plug port, to the valve no.
Example) VQ2140-5L-C8-A
Manifold Option

Double check block (Separated type)

VQ2000-FPG-□□□□

It is used on the outlet side piping.
Combining the double check block with built-in pilot double check valve and a two-position single/double solenoid valve will prevent the dropping at the cylinder stroke end when the SUP residual pressure is released.

Specifications

- Maximum operating pressure: 0.8 MPa
- Ambient and fluid temperature: 0.15 MPa
- Ambient and fluid temp.: –5 to 50°C
- Flow characteristics: C
- Max. operating frequency: 180 c.p.m

Dimensions

- Single unit


How to Order

Double check block

VQ2000-FPG-□□□□

IN side port size

- 01: Rc 1/8
- 02: Rc 1/4
- C6: One-touch fitting for ø6
- C8: One-touch fitting for ø8

OUT side port size

- 01: Rc 1/8
- 02: Rc 1/4
- C6: One-touch fitting for ø6
- C8: One-touch fitting for ø8

Option

- D: DIN rail mounting style (For manifold)
- F: With bracket
- N: Name plate

Note) When two or more symbols are specified, indicate them alphabetically. (Example) -DN

Manifold

VQ2000-FPG-□□□□

- Stations

  01: 1 station
  16: 16 stations

- Double check block

<Check valve operation principle>

- 2-Rc 1/8, 1/4, C6, C8
- C6: One-touch fitting for ø6
- C8: One-touch fitting for ø8

<Example>

- VQ2000-FPG-□□□□
- VQ2000-FPG-□□□□
- VQ2000-FPG-□□□□
- Double check block

⚠️ Caution

- Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for a long time. Check the leakage using neutral household detergent, such as dish washing soap.
- Also check the cylinder’s tube gasket, piston packing and rod packing for air leakage.
- Since One-touch fittings allow slight air leakage, screw piping (with M5 thread) is recommended when stopping the cylinder in the middle for a long time.
- If the exhaust of the double check block is throttled too much, the cylinder may not operate properly and may not stop immediately.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.
**Precautions**

**Caution**

The lighting positions are concentrated on one side for both single solenoid and double (latching) type. In the double (latching) type, A side and B side energization are indicated by two colors which match the colors of the manual overrides.

**Light/Surge Voltage Suppressor**

**Note**

2. B-side energization: B light (green) illuminates.

**DC circuit diagram**

![Diagram of DC circuit diagram]

**Double (Latching solenoid) Type**

**Caution**

Different from the conventional double solenoid, the double type uses a latching (self-holding system) solenoid. Although the appearance is the same as the single solenoid, it is constructed so that the movable iron core in the solenoid is held in the ON position on A and B sides by instantaneous energization (20 ms or more). The usage and function is the same as the double solenoid.

**<Special Cautions for Latching Solenoid>**

1. Select the circuit in which ON and OFF signals are not energized simultaneously.
2. 20 ms energization time is necessary for self-holding.
3. Avoid using the latching solenoid valves in environments where impact or collisions with the valve might occur. Also, do not use in places where strong magnetic fields are present.
4. Even though the armature in the solenoid of this valve is held on to A side, ON position (Reset), verify either A side, ON position or B side, ON position by energizing prior to use.
5. After manual operation, the main valve will return to its original position. Manual override on the pilot valve side can retain its switching position after manipulation.
6. Please contact SMC for long-term energization applications.
7. If the metal seal type goes down below the minimum operating pressure of supply air (0.1 MPa or less), the main valve will get back the home position. (B side ON position) Therefore, in the event of shutting the supply air or applying the air with being A side ON position remained, cylinder may be pulsated. In the event of manipulating the supply air, the valve's switching position has to be set in the home position side (B side ON position side).

**How to Mount/Remove Solenoid Valve**

**Caution**

**<Procedure>**

1. Loosen tie-rod bolt B. (Two to four turns)
2. After fully loosening the tie-rod bolt, take off bolt A upward as shown above.
3. Slide the valves aside to make a 1 mm clearance between the valve to be taken off and the others. As shown above, remove the whole valve while holding up the (a) side. (Avoid rough handling of the connector.)

**Mounting**

Reverse the sequence of steps above to remount. Tighten the tie-rod bolts with the tightening torque at the right table while using caution not to tighten the only one side unevenly.

**Note**

Be careful not to push on the light cover while mounting/removing the valve.

**Double (Latching solenoid) Type**

**Warning**

Without an electric signal for the solenoid valve the manual override is used for switching the main valve.

**Push type (Tool required)**

Push down on the manual override button with a small screwdriver until it stops. Release the screwdriver and the manual override will return.

**Locking slotted type**

Push down completely on the manual override button with a small screwdriver. While down, turn clockwise 90° to lock it. Turn it counterclockwise to release it.

**Locking lever type (Option)**

Push down completely on the manual override button with a small screwdriver. While down, turn clockwise 90° to lock it. Turn it counterclockwise to release it.

**Manual override for double (latching) type**

In the case of a double (latching) type, a manual override is provided not only on the body side but to the pilot as a standard. (VQ0000: Pilot valve only). After manual operation, the main valve of the manual override before the manual operation, however, the pilot valve manual override maintains the change-over position.

**Caution**

Do not apply excessive torque when turning the locking type manual override. (0.1 N·m or less)
Replacement of Cylinder Port Fittings

⚠️ Caution
The cylinder port fittings are a cassette for easy replacement. (Except VQ1000)
The fittings are blocked by a clip inserted from the top of the valve. Remove the clip with a screwdriver to remove fittings. For replacement, insert the fitting assembly until it strikes against the inside wall and then re-insert the clip to the specified position.

<table>
<thead>
<tr>
<th>Applicable tubing ø D</th>
<th>Fitting assembly part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable tubing ø3.2</td>
<td>VQ1000-50A-C3</td>
</tr>
<tr>
<td>Applicable tubing ø4</td>
<td>VQ1000-50A-C4</td>
</tr>
<tr>
<td>Applicable tubing ø6</td>
<td>VQ1000-51A-C6</td>
</tr>
<tr>
<td>Applicable tubing ø8</td>
<td>VQ1000-51A-C8</td>
</tr>
</tbody>
</table>

Purchasing order is available in units of 10 pieces.

Caution
1. Protect O-rings from scratches and dust to prevent air leakage.
2. The tightening torque for inserting fittings to the M5 thread assembly should be 0.8 to 1.4 N·m.

Mounting/Removing from the DIN Rail

⚠️ Caution
How to Remove
1. Loosen the clamp screw on side (a) of the end plate.
2. Lift side (a) of the manifold base and slide the end plate in the direction of (2) shown in the figure to remove.

Mounting
1. Hook side (b) of the manifold base on the DIN rail.
2. Press down side (a) and mount the end plate on the DIN rail. Tighten the clamp screw on side (a) of the end plate. The proper tightening torque for screws is 0.4 to 0.6 N·m.

How to Calculate the Flow Rate
For obtaining the flow rate, refer to pages 2-1-8 to 2-1-11.

Built-in Silencer Replacement Element

⚠️ Caution
A silencer element is incorporated in the end plate on both sides of the manifold base. A dirty and choked element may reduce cylinder speed or cause malfunction. Clean or replace the dirty element.

Element Part No.

<table>
<thead>
<tr>
<th>Type</th>
<th>Element part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Built-in silencer, direct exhaust (-S)</td>
<td>VQ0000-82A-4</td>
</tr>
<tr>
<td></td>
<td>VQ1000-82A-4</td>
</tr>
<tr>
<td></td>
<td>VQ2000-82A-4</td>
</tr>
</tbody>
</table>

* The minimum order quantity is 10 pcs.

Remove the cover from the side of the end plate and remove the old element with a screwdriver, etc.

How to Use Plug Connector

⚠️ Caution
Attaching and detaching connectors
To attach a connector, hold the lever and connector unit between your fingers and insert straight onto the pins of the solenoid valve so that the lever’s pawl is pushed into the groove and locks.

To detach a connector, remove the pawl from the groove by pushing the lever downward with your thumb, and pull the connector straight out.

Crimping the lead wire and socket
Peel 3.2 to 3.7 mm of the tip of lead wire, enter the core wires and press contact it by a press tool. Be careful so that the cover of lead wire does not enter into the core pressing part.

Attaching and detaching lead wires with sockets
Attaching
Insert a socket in the square hole (Indicated as +, –) of connector, push in the lead wire and lock by hanging the hook of the socket to the seat of connector. (Pushing-in can open the hook and lock it automatically.) Then confirm the lock by lightly pulling on the lead wire.

Detaching
To detach a socket from a connector, pull out the lead wire while pressing the socket’s hook with a stick having a thin tip (approx. 1 mm). The socket will be used again, first spread the hook outward.
**Option**

**Different Number of Connector Pins**

F and P kits with the following number of pins are available. Besides the standard number (F = 25; P = 26) select the desired number of pins and cable length from the cable assembly list. Place an order for the cable assembly separately.

**F** kit (D-sub connector) 15 pins

**P** kit (Flat ribbon cable connector) 10 pins, 16 pins, 20 pins

---

**How to order manifold**

**Series VQ0000/1000/2000**

**Wiring specifications**

<table>
<thead>
<tr>
<th>Pins</th>
<th>Location</th>
<th>Top entry</th>
<th>Side entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>15P</td>
<td>Kit F</td>
<td>UA</td>
<td>Kit F</td>
</tr>
</tbody>
</table>

**Multi-core vinyl cable**

<table>
<thead>
<tr>
<th>Pin</th>
<th>Location</th>
<th>Top entry</th>
<th>Side entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>15P</td>
<td>Kit F</td>
<td>UA</td>
<td>Kit F</td>
</tr>
</tbody>
</table>

**Wiring Specifications**

*In the same way as the 25-pin models (standard) the terminal no. 1 is for SOL.A at the 1st station, the terminal no. 9 for SOL.B at the 1st station, and the terminal no. 8 for COM.

---

**Flat Ribbon Cable Assembly**

<table>
<thead>
<tr>
<th>Cable length (m)</th>
<th>10P</th>
<th>16P</th>
<th>20P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>AXT100-FC10-1</td>
<td>AXT100-FC16-1</td>
<td>AXT100-FC20-1</td>
</tr>
<tr>
<td>3 m</td>
<td>AXT100-FC10-2</td>
<td>AXT100-FC16-2</td>
<td>AXT100-FC20-2</td>
</tr>
<tr>
<td>5 m</td>
<td>AXT100-FC10-3</td>
<td>AXT100-FC16-3</td>
<td>AXT100-FC20-3</td>
</tr>
</tbody>
</table>

* For other commercial connectors, use a type with strain relief conforming to MIL-C-83503.
Special Wiring Specifications

In the internal wiring of F kit, P kit, T kit and S kit, double wiring (connected to SOL A and SOL B) is adopted for each station regardless of the valve and option types. Mixed single and double wiring is available as an option.

1. How to order valves

Indicate an option symbol, -K, for the manifold no. and be sure to specify the mounting position and number of stations of the single and double wiring by means of the manifold specification sheet.

Example)

VV5Q14-09FS0-DK S

Others, option symbols: to be indicated alphabetically.

2. Wiring specifications

Connector terminal numbers are connected from solenoid station 1 on the A side in the order indicated by the arrows without skipping any terminal numbers.

3. Max. number of stations

The maximum number of stations depends upon the number of solenoids. Assuming one for a single and two for a double, determine the number of stations so that the total number is not more than the maximum number given in the following table.

<table>
<thead>
<tr>
<th>Kit</th>
<th>F kit D-sub connector (25P)</th>
<th>P kit Flat ribbon cable connector (26P)</th>
<th>T kit Terminal block (16 terminals)</th>
<th>S kit (Serial)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Ð Fكي</td>
<td>Ð فkit</td>
<td>Ð سkit</td>
<td></td>
</tr>
<tr>
<td>Max. points</td>
<td>16</td>
<td>14</td>
<td>16</td>
<td>16</td>
</tr>
</tbody>
</table>

Note) Due to the limitation of internal wiring.

Negative Common Specifications

Specify the valve model no. as shown below for negative COM specification. The standard manifold no. can be used. Please contact SMC for negative COM S kit.

How to order negative COM valves

VQ1140 N—5LO—C6

Negative common specifications
Option

DIN Rail Mounting

Each manifold can be mounted on a DIN rail. Order it by indicating an option symbol for DIN rail mounting style, -D. In this case, a DIN rail which is approx. 30 mm longer than the manifold with the specified number of stations is attached. Besides, it is also available in the following cases.

- **When DIN rail is unnecessary (C kit only.)**
  - (DIN rail mounting brackets only are attached.)
  - Indicate the option symbol, -DO, for the manifold no.

Example)

**VV5Q14-08C-DOS**  
Others, option symbols: to be indicated alphabetically.

- **When using DIN rail longer than the manifold with specified number of stations**
  - Clearly indicate the necessary number of stations next to the option symbol, -D, for the manifold no.

Example)

**VV5Q14-08FS1-D09S**  
DIN rail for 9 stations  
Others, option symbols: to be indicated alphabetically.

- **When changing the manifold style into a DIN rail mount**
  - Order brackets for mounting a DIN rail. (Refer to “Option” on pages 2-4-60, 61 and 64.)

- **When ordering DIN rail only**
  - **DIN rail no.: AXT100-DR-n**
    - Refer to the DIN rail dimension table for determining the length.

### L Dimension

<table>
<thead>
<tr>
<th>No.</th>
<th>L Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>23</td>
</tr>
<tr>
<td>2</td>
<td>35.5</td>
</tr>
<tr>
<td>3</td>
<td>48</td>
</tr>
<tr>
<td>4</td>
<td>60.5</td>
</tr>
<tr>
<td>5</td>
<td>73</td>
</tr>
<tr>
<td>6</td>
<td>85.5</td>
</tr>
<tr>
<td>7</td>
<td>98</td>
</tr>
<tr>
<td>8</td>
<td>110.5</td>
</tr>
<tr>
<td>9</td>
<td>123</td>
</tr>
<tr>
<td>10</td>
<td>135.5</td>
</tr>
<tr>
<td>11</td>
<td>148</td>
</tr>
<tr>
<td>12</td>
<td>160.5</td>
</tr>
<tr>
<td>13</td>
<td>173</td>
</tr>
<tr>
<td>14</td>
<td>185.5</td>
</tr>
<tr>
<td>15</td>
<td>198</td>
</tr>
<tr>
<td>16</td>
<td>210.5</td>
</tr>
<tr>
<td>17</td>
<td>223</td>
</tr>
<tr>
<td>18</td>
<td>235.5</td>
</tr>
<tr>
<td>19</td>
<td>248</td>
</tr>
<tr>
<td>20</td>
<td>260.5</td>
</tr>
<tr>
<td>21</td>
<td>273</td>
</tr>
<tr>
<td>22</td>
<td>285.5</td>
</tr>
<tr>
<td>23</td>
<td>308</td>
</tr>
<tr>
<td>24</td>
<td>323</td>
</tr>
<tr>
<td>25</td>
<td>335.5</td>
</tr>
<tr>
<td>26</td>
<td>348</td>
</tr>
<tr>
<td>27</td>
<td>360.5</td>
</tr>
<tr>
<td>28</td>
<td>373</td>
</tr>
<tr>
<td>29</td>
<td>385.5</td>
</tr>
<tr>
<td>30</td>
<td>398</td>
</tr>
<tr>
<td>31</td>
<td>410.5</td>
</tr>
<tr>
<td>32</td>
<td>423</td>
</tr>
<tr>
<td>33</td>
<td>430.5</td>
</tr>
<tr>
<td>34</td>
<td>444</td>
</tr>
<tr>
<td>35</td>
<td>460.5</td>
</tr>
<tr>
<td>36</td>
<td>473</td>
</tr>
<tr>
<td>37</td>
<td>485.5</td>
</tr>
<tr>
<td>38</td>
<td>498</td>
</tr>
<tr>
<td>39</td>
<td>510.5</td>
</tr>
</tbody>
</table>

\[ L = 12.5 \times n + 10.5 \]
How to Order Manifold

**Series VQ1000**

**Body Ported**

**Plug Lead Unit: Cassette Type**

**How to Order Manifold**

![Manifold Diagram](image)

- **Series VQ1000**
- **Manifold**
- **Stations**
  - **01** 1 station
  - The number of max. stations differs from kit to kit. (Refer to the table below.)

**Option**

- **D** DIN rail mounting style
- **K** Special wiring specifications (Except double wiring)
- **N** With name plate

**Note 1)** Since the manifold is all with DIN rail, and so suffix -D to the part number.
**Note 2)** Specify the wiring specifications on the manifold specification sheet. (Except C kit)
**Note 3)** Unmountable when the valve’s manual override is a locking lever type.
**Note 4)** When two or more symbols are specified, indicate them alphabetically.

**Kit/Electrical entry/Cable length**

- **F** kit (D-sub connector)
  - Top entry
  - Side entry
  - **T** kit (Terminal block)
  - Top entry
  - Side entry
  - **C** kit (Connector)
  - Top entry
  - Side entry
  - **S** kit (Serial transmission unit)
  - Top entry
  - Side entry

**Connector entry direction**

- **Top entry**
- **Side entry**

**P. 2-4-76**

**P. 2-4-78**

**Max. 16 stations**

**P. 2-4-80**

**P. 2-4-82**

**P. 2-4-84**

**P. 2-4-86**

**2-4-72**

For details about certified products conforming to international standards, visit us at [www.smcworld.com](http://www.smcworld.com).

---

**Note 1)** Besides the above, F and P kits with different number of pins are available. For details, refer to page 2-4-92.

**Note 2)** See page 2-4-93 for details.
How to Order Manifold Assembly

**Example**

- Single solenoid (24 VDC)
  - VQ1170-5MO-C6 (4 sets)
- Double solenoid (24 VDC)
  - VQ1170-5MOB-C6 (4 sets)

**Example**

- Double (latching) solenoid (24 VDC)
  - VQ1170-5MO-C6 (4 sets)

**The asterisk denotes the symbol for assembly.

Prefix it to the part nos. of the solenoid valve, etc.

Add the valve and option part number under the manifold base part number. In the case of complex arrangement, specify them on the manifold specification sheet.**

**How to Order Valves**

**Cylinder port**
- C3 (With one-touch fitting for 2 sets)
- C4 (With one-touch fitting for 4 sets)
- C6 (With one-touch fitting for 6 sets)

**Manifold override**
- Manual override
  - Type: Non-locking push (tool required)
  - Type: Locking (manual)

**Electrical entry**
- L: L plug connector with lead wire
- LO: L plug connector without lead wire
- M: M plug connector with lead wire
- MO: M plug connector without lead wire

**Seal**
- Rubber seal
- Metal seal

**Function**
- Symbol Specifications
  - DC: Standard type
  - AC: High pressure type
  - Low wattage type

**Coil voltage**
- 1: 100 VAC (50/60 Hz)
- 2: 200 VAC (50/60 Hz)
- 3: 220 VAC (50/60 Hz)
- 4: 380 VAC (50/60 Hz)
- 5: 24 VDC
- 6: 12 VDC

**Type of actuation**
- 1: 2 position single
- 2: 3 position pressure center
- 3: 3 position closed center
- 4: 2 position double (latching)
- 5: L type plug connector for 3 position AC

**Manifold Option**

**Individual SUP spacer**
- VQ1000-P-7-C6

**SUP/EXH block bush assembly**
- VQ1000-87A-B-S5

**Double Check block**
- VQ1000-FPG-

**Blanking plug**
- KQZP-

**Elbow fitting assembly**
- VQ1000-F7-L

**Silencer**
- AN103-X233

**Name plate [-N7]**
- VQ1000-N7-station (1 to Max. stations)

**Port plug**
- VQ0000-58A

**Example**

- Single solenoid (24 VDC)
- VQ1170-5MO-C6 (4 sets)
- Double (latching) solenoid (24 VDC)
- VQ1170-5MOB-C6 (4 sets)

**Note**
- LO and MO valves are used for F, P, T, and S kits. Plug connector and lead wire layers are attached to the manifold.

**Note**
- For negative common types, refer to page 2-4-93.

**Note**
- For power consumption of AC, refer to page 2-4-74.

**Note**
- For inch-size One-touch fittings, refer to “Option” on page 2-4-93.
# Model Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Number of solenoids</th>
<th>Model</th>
<th>Flow characteristics</th>
<th>Response time (ms)</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 → 4/2 (P → A/B)</td>
<td>4/2 → 5/3 (A/B → R1/R2)</td>
<td>Standard 1 W</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>C (dm³/s·bar)</td>
<td>b</td>
<td>Cv</td>
</tr>
<tr>
<td>Single</td>
<td>Metal seal</td>
<td>VQ1170</td>
<td>0.56</td>
<td>0.15</td>
<td>0.13</td>
</tr>
<tr>
<td></td>
<td>Rubber seal</td>
<td>VQ1171</td>
<td>0.71</td>
<td>0.20</td>
<td>0.17</td>
</tr>
<tr>
<td>Double (Latching)</td>
<td>Metal seal</td>
<td>VQ1270</td>
<td>0.56</td>
<td>0.15</td>
<td>0.13</td>
</tr>
<tr>
<td></td>
<td>Rubber seal</td>
<td>VQ1271</td>
<td>0.71</td>
<td>0.20</td>
<td>0.17</td>
</tr>
<tr>
<td>Closed center</td>
<td>Metal seal</td>
<td>VQ1370</td>
<td>0.53</td>
<td>0.16</td>
<td>0.12</td>
</tr>
<tr>
<td></td>
<td>Rubber seal</td>
<td>VQ1371</td>
<td>0.65</td>
<td>0.23</td>
<td>0.16</td>
</tr>
<tr>
<td>Exhaust center</td>
<td>Metal seal</td>
<td>VQ1470</td>
<td>0.54</td>
<td>0.16</td>
<td>0.12</td>
</tr>
<tr>
<td></td>
<td>Rubber seal</td>
<td>VQ1471</td>
<td>0.65</td>
<td>0.23</td>
<td>0.16</td>
</tr>
<tr>
<td>Pressure center</td>
<td>Metal seal</td>
<td>VQ1570</td>
<td>0.54</td>
<td>0.16</td>
<td>0.12</td>
</tr>
<tr>
<td></td>
<td>Rubber seal</td>
<td>VQ1571</td>
<td>0.70</td>
<td>0.20</td>
<td>0.17</td>
</tr>
</tbody>
</table>

Note 1) Cylinder port size C6
Note 2) As per JIS B 8375-1981 (Supply pressure: 0.5 MPa; with indicator light/surge voltage suppressor; clean air. Subject to the pressure and air quality.)

## Standard Specifications

**Valve construction**

- **Metal seal**: Air/Inert gas
- **Rubber seal**: Air/Inert gas

**Fluid**

- Minimum operating pressure: 0.7 MPa (High pressure type: 0.8 MPa)
- Maximum operating pressure: 0.1 MPa
- Minimum operating pressure: 0.15 MPa
- Maximum operating pressure: 0.2 MPa

**Ambient and fluid temperature**

- 10 to 50°C

**Lubrication**

- Not required

**Manual override**

- Push type/Locking type (Tool required, Manual) Option

**Impact/Vibration resistance**

- 150/30 m/s²

**Enclosure**

- Dust-protected

**Coil rated voltage**

- 24 DC, 120 VDC, 100, 110, 200, 220 VAC (50/60 Hz)

**Allowable voltage fluctuation**

- ±10% of rated voltage

**Coil insulation type**

- Class B or equivalent

**Power consumption (Current)**

- 1 W DC (42 mA), 1.5 W DC (63 mA), 0.5 W DC (21 mA)
- 12 VDC: 1 W DC (83 mA), 1.5 W DC (125 mA), 0.5 W DC (42 mA)
- 100 VAC: 1.5 W (5 mA), Holding 0.5 VA (5 mA)
- 110 VAC: 0.55 VA (5 mA), Holding 0.5 VA (5 mA)
- 200 VAC: 1.5 W (5 mA), Holding 1.0 VA (5 mA)
- 220 VAC: 1.5 W (5 mA), Holding 1.1 VA (5 mA)

Note 1) Use dry air to prevent condensation when operating at low temperatures.

Note 2) 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)

Note 3) Values in the case of high pressure type (1.5 W).

Note 4) Values in the case of low wattage (0.5 W) specifications.
## Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Base model</th>
<th>Type of connection</th>
<th>Port location</th>
<th>Port size</th>
<th>Applicable stations</th>
<th>Applicable solenoid valve</th>
<th>5 station weight (g)</th>
</tr>
</thead>
</table>
| VQ1000 | VV5Q17-□□□-D | - F kit–D-sub connector  
- P kit–Flat ribbon cable connector  
- T kit–Terminal block  
- C kit–Individual connector  
- S kit–Serial transmission unit | Top | C6 (ø6) | 1 to 16 stations | VQ1□70/VQ1□71 | 405 |

Note 1) Inch-size One-touch fittings are also available. For details, refer to page 2-4-93.
Note 2) For details, refer to page 2-4-93.
How to Order Manifold

**VV5Q1**
- **F** U1 D
- Series VQ1000
- **7** Plug lead unit/Cassette

**Stations**
- **01** 1 station
- **16** 16 stations

**Connector entry direction**
- **U** Top entry
- **S** Side entry

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>Top C6 C3 C4 C5 MS</td>
<td>Max. 16 stations</td>
</tr>
</tbody>
</table>

**Cable (Length)**
- 0 Without cable
- 1 With cable (1.5 m)
- 2 With cable (3 m)
- 3 With cable (5 m)

**Wire Color by Terminal No.**

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Lead wire color</th>
<th>Dot marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Brown</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>Red</td>
<td>None</td>
</tr>
<tr>
<td>4</td>
<td>Orange</td>
<td>None</td>
</tr>
<tr>
<td>5</td>
<td>Yellow</td>
<td>None</td>
</tr>
<tr>
<td>6</td>
<td>Pink</td>
<td>None</td>
</tr>
<tr>
<td>7</td>
<td>Blue</td>
<td>None</td>
</tr>
<tr>
<td>8</td>
<td>Purple</td>
<td>White</td>
</tr>
<tr>
<td>9</td>
<td>Gray</td>
<td>Black</td>
</tr>
<tr>
<td>10</td>
<td>White</td>
<td>Black</td>
</tr>
<tr>
<td>11</td>
<td>White</td>
<td>Red</td>
</tr>
<tr>
<td>12</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>13</td>
<td>Orange</td>
<td>Black</td>
</tr>
<tr>
<td>14</td>
<td>Yellow</td>
<td>Black</td>
</tr>
<tr>
<td>15</td>
<td>Blue</td>
<td>Black</td>
</tr>
<tr>
<td>16</td>
<td>Purple</td>
<td>None</td>
</tr>
<tr>
<td>17</td>
<td>Orange</td>
<td>None</td>
</tr>
<tr>
<td>18</td>
<td>Gray</td>
<td>None</td>
</tr>
<tr>
<td>19</td>
<td>Orange</td>
<td>Black</td>
</tr>
<tr>
<td>20</td>
<td>Red</td>
<td>White</td>
</tr>
<tr>
<td>21</td>
<td>Brown</td>
<td>White</td>
</tr>
<tr>
<td>22</td>
<td>Pink</td>
<td>Red</td>
</tr>
<tr>
<td>23</td>
<td>Gray</td>
<td>Red</td>
</tr>
<tr>
<td>24</td>
<td>Black</td>
<td>White</td>
</tr>
<tr>
<td>25</td>
<td>White</td>
<td>None</td>
</tr>
</tbody>
</table>

**Electrical wiring specifications**

- **D-sub cable assembly**
  - AXT100-DS25-015
  - 1.5 m
  - 25 core 2.54 mm² x 25C
  - Terminal side
  - Socket size 2-M2.6 x 0.45

**Note**
- Types with 15 pin are also available. Refer to page 2-4-92 for details.

**D-sub Connector (25 pins)**

- The D-sub connector reduces installation labor for electrical connections.
- Using the D-sub connector (25P), (15P as an option) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
- Top or side receptacle position can be selected in accordance with the available mounting space.
- Maximum stations are 16.
**Plug Lead Unit: Cassette Type Series VQ1000**

**How to Order Valves**

<table>
<thead>
<tr>
<th>Series</th>
<th>VQ1</th>
<th>1</th>
<th>7</th>
<th>0</th>
<th>Y</th>
<th>5MO</th>
<th>C6</th>
</tr>
</thead>
</table>

**Type of actuation**

1. 2 position single
2. 2 position double (Latching)
3. 3 position closed center
4. 3 position exhaust center
5. 3 position pressure center

**Function**

- Seal: Metal seal
- Coil voltage: 100 VAC (50/60 Hz), 110 VAC (50/60 Hz), 24 VDC, 12 VDC

**Note 1:** For power consumption of AC type, refer to page 2-4-74.

**How to Order Manifold Assembly**

Specify the part numbers for valves and options together beneath the manifold base part number.

**Example**

D-sub connector kit with 3 m cable
V5QG17-D8FU2-D ~ 1 set Manifold base part no.
VQ1170-5MO-C6 ~ 4 sets Valve part no. (Stations 1 to 4)
VQ1270-5MOB-C6 ~ 4 sets Valve part no. (Stations 5 to 8)

Prefix the asterisk to the part nos. of the manifold, etc.

Enter in order starting from the first station on the D side. Besides, when the arrangement will be complicated, fill out the Manifold Specification Sheet to instruct us.

**Dimensions: Top Entry Connector [-FU]**

<table>
<thead>
<tr>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
</tr>
</thead>
<tbody>
<tr>
<td>34.5</td>
<td>45</td>
<td>55.5</td>
<td>66</td>
</tr>
<tr>
<td>76.5</td>
<td>87</td>
<td>97.5</td>
<td>108</td>
</tr>
<tr>
<td>118.5</td>
<td>129</td>
<td>139.5</td>
<td>150</td>
</tr>
<tr>
<td>160.5</td>
<td>171</td>
<td>181.5</td>
<td>192</td>
</tr>
</tbody>
</table>

**Dimensions: Side Entry Connector [-FS]**

<table>
<thead>
<tr>
<th>L3</th>
<th>L4</th>
</tr>
</thead>
<tbody>
<tr>
<td>137.5</td>
<td>150</td>
</tr>
<tr>
<td>162.5</td>
<td>175</td>
</tr>
<tr>
<td>187.5</td>
<td>200</td>
</tr>
<tr>
<td>212.5</td>
<td>225</td>
</tr>
<tr>
<td>237.5</td>
<td>250</td>
</tr>
<tr>
<td>250</td>
<td>262.5</td>
</tr>
<tr>
<td>262.5</td>
<td>275</td>
</tr>
</tbody>
</table>

**How to Specify**

- C6: One-touch fitting for ø3.2
- C3: One-touch fitting for ø4
- C2: One-touch fitting for ø6
- M5: M5 type

**Manual override**

- Nil
- Latching type (Manual)

**Cylinder port**

- C3: With one-touch fitting for ø3.2
- C4: With one-touch fitting for ø4
- C6: With one-touch fitting for ø6

**Electrical entry**

- LO: L plug connector without connector
- MO: M plug connector without connector

**Note:** For power consumption of AC type, refer to page 2-4-74.
**VQ1000 Kit (Flat ribbon cable connector)**

- MIL flat ribbon cable connector reduces installation labor savings for electrical connection.
- Using the connector for flat ribbon cable (26P), (10P, 16P, 20P as an option) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
- Top or side receptacle position can be selected in accordance with the available mounting space.
- Maximum stations are 16.

### Flat Ribbon Cable (26 pins)

**Cable assembly**

- Flat ribbon cable connector assembly can be ordered individually or included in a specific manifold model no. Refer to How to Order Manifold.

**Flat Ribbon Cable Connector Assembly (Option)**

<table>
<thead>
<tr>
<th>Cable length (L)</th>
<th>Assembly part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>AXT100-FC26-1</td>
<td>Cable 26 core</td>
</tr>
<tr>
<td>3 m</td>
<td>AXT100-FC26-2</td>
<td>x 28AWG</td>
</tr>
<tr>
<td>5 m</td>
<td>AXT100-FC26-3</td>
<td></td>
</tr>
</tbody>
</table>

- For other commercial connectors, use a 26 pins type with strain relief conforming to MIL-C-83503.

**Connector manufacturers’ example**

- Sumitomo 3M Limited
- Japan Aviation Electronics Industry, Ltd.
- Fujitsu Limited
- J.S.T. Mfg. Co., Ltd.
- Oki Electric Cable Co., Ltd.

*Note: Types with 10, 16, or 20 pin are also available. For details, refer to page 2-4-92.

### VQ1000 Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Port location</th>
<th>Port size</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>Top</td>
<td>C6</td>
<td>C3, C4, C6, M5</td>
</tr>
</tbody>
</table>

**Manifold Specifications**

- Porting specifications
- Applicable stations

#### Connector entry direction

- U Top entry
- S Side entry

#### Cable (Length)

- 0 Without cable
- 1 With cable (1.5 m)
- 2 With cable (3 m)
- 3 With cable (5 m)

#### Electrical wiring specifications

- Flat ribbon cable connector
- Terminal no.
- Polarity
- Triangle mark indicator position
- Connector terminal no.
- Positive common specifications
- Negative common specifications
- Max. 16 stations

As the standard electrical wiring specifications, double wiring (connected to SOL A and SOL B) is adopted for the internal wiring of each station for 8 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-4-93.

*Note: When using the negative common specifications, use valves for negative common. (Refer to page 2-4-93.)

### How to Order Manifold

**VV5Q1 7**

- Series VQ1000
- Plug lead unit/Cassette

**Manifold**

- 7

**Stations**

- 01 1 station
- 16 16 stations

*Note: For details, refer to page 2-4-93.

**Option**

- **D** DIN rail mounting style
- **N** Special wiring specifications (Except double wiring)
- **M** With name plate

*Note 1: Since the manifold is all with DIN rail, and so suffix -D to the part number.

*Note 2: Specify the wiring specifications on the manifold specification sheet.

*Note 3: Unmountable when the valve's manual override is a locking lever type.

*Note 4: When two or more symbols are specified, indicate them alphabetically.

**Cable (Length)**

- 0 Without cable
- 1 With cable (1.5 m)
- 2 With cable (3 m)
- 3 With cable (5 m)
**Plug Lead Unit: Cassette Type Series VQ1000**

**How to Order Valves**

**Series VQ1000**

<table>
<thead>
<tr>
<th>Type of actuation</th>
<th>Symbol</th>
<th>Specifications</th>
<th>DC</th>
<th>AC</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>2 position single</td>
<td>2</td>
<td>2</td>
<td>2 position double (Latching)</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>3 position exhaust center</td>
<td>3</td>
<td>3</td>
<td>3 position closed center</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>4 position pressure center</td>
<td>4</td>
<td>4</td>
<td>4 position pressure center</td>
</tr>
</tbody>
</table>

**Function**

- **Seal**
  - 0: Metal seal
  - 1: Rubber seal

- **Coil voltage**
  - 1: 100 VAC [50/60 Hz]
  - 2: 110 VAC [50/60 Hz]
  - 5: 24 VDC
  - 6: 12 VDC

**Note**

1. For power consumption of AC type, refer to page 2-4-74.
2. Except double (latching).
3. For negative common specifications, refer to "Option" on page 2-4-93.
4. Note 2) Connector assembly will be required when the P kits add a valve. For model no., refer to "Option" on page 2-4-93.

**How to Order Manifold Assembly**

Specify the part numbers for valves and options together beneath the manifold base part number.

*Example*

Connector kit

VQ5Q17-08PU2-D: ...

- 1 set –Manifold base part no.

VQ1170-SMO-C6: ...

- 4 sets –Valve part no. (Stations 1 to 4)

VQ1270-SMOB-C6: ...

- 4 sets –Valve part no. (Stations 5 to 8)

Prefix the asterisk to the part nos. of the manifold to instruct.

**Electrical entry**

- LO: L plug connector without connector
- MO: M plug connector without connector

Note) Plug connector and lead wire layers are attached to the manifold.

---

**Dimensions: Top Entry Connector [-PU]**

<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>
<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>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>34.5</td>
<td>45</td>
<td>55.5</td>
<td>66</td>
<td>76.5</td>
<td>87</td>
<td>97.5</td>
<td>108</td>
<td>118.5</td>
<td>129</td>
<td>139.5</td>
<td>150</td>
<td>160.5</td>
<td>171</td>
<td>181.5</td>
<td>192</td>
</tr>
<tr>
<td>L2</td>
<td>54.5</td>
<td>65</td>
<td>75.5</td>
<td>86</td>
<td>96.5</td>
<td>107</td>
<td>117.5</td>
<td>128</td>
<td>138.5</td>
<td>149</td>
<td>159.5</td>
<td>170</td>
<td>180.5</td>
<td>191</td>
<td>201.5</td>
<td>212</td>
</tr>
<tr>
<td>L3</td>
<td>112.5</td>
<td>112.5</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>237.5</td>
<td>250</td>
<td>262.5</td>
</tr>
<tr>
<td>L4</td>
<td>123</td>
<td>123</td>
<td>135.5</td>
<td>148</td>
<td>60.5</td>
<td>173</td>
<td>185.5</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>248</td>
<td>250</td>
<td>262.5</td>
</tr>
</tbody>
</table>

**Dimensions: Side Entry Connector [-PS]**

<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>
<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>
</tr>
</thead>
<tbody>
<tr>
<td>L3</td>
<td>137.5</td>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>200</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>250</td>
<td>262.5</td>
<td>275</td>
<td>287.5</td>
<td>295</td>
</tr>
<tr>
<td>L4</td>
<td>148</td>
<td>148</td>
<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
<td>273</td>
<td>285.5</td>
<td>296</td>
</tr>
</tbody>
</table>

**Cylinder port**

- C3: With One-touch fitting for ø3.2
- C4: With One-touch fitting for ø4
- C6: With One-touch fitting for ø6
- M5: M5 thread

**Manual override**

- Nil: Non-locking push type (Tool required)
- B: Locking type (Tool required)
- C: Locking type (Manual)

**Note**

1. The code is L for elbow piping for all manifold stations.
2. Besides, when the arrangement will be complicated, fill out the Manifold Specification Sheet to instruct.

---

**How to Order Valves**

- **Series VQ1000**
  - Top Entry Connector [-PU]
  - Side Entry Connector [-PS]

**Note**

- For inch-size One-touch fittings, refer to "Option" on page 2-4-93.
- For AC type, Latching)
  - M5: M5 thread

- For power consumption of AC type, refer to page 2-4-74.
- Except double (latching).

---

**How to Order Manifold Assembly**

Specify the part numbers for valves and options together beneath the manifold base part number.

*Example*

Connector kit

VQ5Q17-08PU2-D: ...

- 1 set –Manifold base part no.

VQ1170-SMO-C6: ...

- 4 sets –Valve part no. (Stations 1 to 4)

VQ1270-SMOB-C6: ...

- 4 sets –Valve part no. (Stations 5 to 8)

Prefix the asterisk to the part nos. of the manifold to instruct.
### Electrical wiring specifications

The number of terminal blocks used depends on the number of manifold stations.

<table>
<thead>
<tr>
<th>Manifold</th>
<th>Number of terminals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 4 stations</td>
<td>1 row</td>
</tr>
<tr>
<td>5 to 8 stations</td>
<td>2 rows</td>
</tr>
</tbody>
</table>

Wiring other than those above is possible. For details, refer to page 2-4-93.

Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-4-93.

### How to connect wires to terminal block

Open the terminal block cover to connect the wires to the terminal block. (With M3 thread)

### How to Order Manifold

**VV5Q1 7-08 T 2 D**

<table>
<thead>
<tr>
<th>Option</th>
<th>DIN rail mounting style</th>
<th>Special wiring specifications (Except double wiring)</th>
<th>With name plate</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note 1)** Since the manifold is all with DIN rail, and so suffix -D to the part number.
**Note 2)** Specify the wiring specifications in the manifold specification sheet.
**Note 3)** Unmountable when the valve’s manual override is a locking lever type.
**Note 4)** When two or more symbols are specified, indicate them alphabetically.

---

**Number of terminals**

1. 8 terminals in 1 row
   - Applicable stations 1 to 4 stations (Double)
2. 16 terminals in 2 rows
   - Applicable stations 5 to 8 stations (Double)

**Note)** The number of terminal blocks can be chosen regardless of station qty. Suffix the option symbol, K, when the wiring specification is special.
How to Order Valves

Series VQ1000 Plug Lead Unit: Cassette Type

Type of actuation

1 2 position single
2 2 position double (Latching)
3 3 position closed center
4 3 position exhaust center
5 3 position pressure center

Note 1) L type plug connector is used for 3 position AC.

Function

Symbol Specifications DC AC
Nil Standard type
H High pressure
Y Low voltage type

Note 1) For power consumption of AC type, refer to page 2-4-74.
Note 2) Except double (latching).

Coil voltage

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specifications</th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Non-locking push type (Tool required)</td>
<td>0 W</td>
<td>0 W</td>
</tr>
<tr>
<td>H</td>
<td>Locking type (Manual)</td>
<td>24 VDC</td>
<td>24 VDC</td>
</tr>
</tbody>
</table>

Note) A manual override for pilot valve is provided to the standard model for double type.

Manual override

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>LO</td>
<td>L plug connector without connector</td>
</tr>
<tr>
<td>MO</td>
<td>M plug connector without connector</td>
</tr>
</tbody>
</table>

Note) Plug connector and lead wire layers are attached to the manifold.

How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

Series VQ1000 Plug Lead Unit: Cassette Type

Connector kit

VVSQ17-08T2-D - 1 set-Manifold base part no.
VQ1170-SMO-C6 - 4 sets-Valve part no. (Stations 1 to 4)
VQ1270-SMOB-C6 - 4 sets-Valve part no. (Stations 5 to 8)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Enter in order starting from the first station on the D side. Besides, when the arrangement will be complicated, fill out the Manifold Specification Sheet to instruct us.

Dimensions

Formula L1 = 10.5n + 24, L2 = 10.5n + 44

<table>
<thead>
<tr>
<th>Stations</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>34.5</td>
<td>54.5</td>
<td>125</td>
<td>135.5</td>
</tr>
<tr>
<td>2</td>
<td>45</td>
<td>65</td>
<td>137.5</td>
<td>148</td>
</tr>
<tr>
<td>3</td>
<td>55.5</td>
<td>75.5</td>
<td>137.5</td>
<td>148</td>
</tr>
<tr>
<td>4</td>
<td>66</td>
<td>86</td>
<td>150</td>
<td>160.5</td>
</tr>
<tr>
<td>5</td>
<td>76.5</td>
<td>96.5</td>
<td>162.5</td>
<td>173</td>
</tr>
<tr>
<td>6</td>
<td>87</td>
<td>107</td>
<td>175</td>
<td>185.5</td>
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<tr>
<td>7</td>
<td>97.5</td>
<td>117.5</td>
<td>187.5</td>
<td>198</td>
</tr>
<tr>
<td>8</td>
<td>108</td>
<td>128</td>
<td>200</td>
<td>210.5</td>
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<tr>
<td>9</td>
<td>118.5</td>
<td>138.5</td>
<td>200</td>
<td>210.5</td>
</tr>
<tr>
<td>10</td>
<td>129</td>
<td>149</td>
<td>212.5</td>
<td>223</td>
</tr>
<tr>
<td>11</td>
<td>139.5</td>
<td>159.5</td>
<td>225</td>
<td>235.5</td>
</tr>
<tr>
<td>12</td>
<td>150</td>
<td>170</td>
<td>237.5</td>
<td>248</td>
</tr>
<tr>
<td>13</td>
<td>160.5</td>
<td>180.5</td>
<td>250</td>
<td>260.5</td>
</tr>
<tr>
<td>14</td>
<td>171</td>
<td>191</td>
<td>273</td>
<td>285.5</td>
</tr>
<tr>
<td>15</td>
<td>181.5</td>
<td>201.5</td>
<td>285</td>
<td>285.5</td>
</tr>
<tr>
<td>16</td>
<td>192</td>
<td>212</td>
<td>275</td>
<td>275</td>
</tr>
</tbody>
</table>

Note)

Note 1) L type plug connector is used for 3 position AC.

Note 2) Except double (latching).

Note 3) Connector assembly will be required when the T kits add a valve. For model no., refer to "Option" on page 2-4-93.

Note 4) For negative common specifications, refer to "Option" on page 2-4-93.
Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>Top C6 C3 C4 C5 M5</td>
<td>Max. 16 stations</td>
</tr>
</tbody>
</table>

Wiring specifications: Positive COM

- The lead wires are connected to the valve as shown below.
- Connect each to the power supply side.

<table>
<thead>
<tr>
<th>Lead wire color</th>
<th>Lead wire color</th>
<th>Lead wire color</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 VDC 100 VAC 200 VAC</td>
<td>24 VDC 100 VAC 200 VAC</td>
<td></td>
</tr>
<tr>
<td>220 V</td>
<td>220 V</td>
<td></td>
</tr>
</tbody>
</table>

Example: Lead wire length 1000 mm VQ1170-SLO-C6 - 3 pcs.
AXT661-14A-10
AXT661-13A-10
AXT661-14A-20
AXT661-13A-20
AXT661-14A-30
AXT661-13A-30

Plug connector lead wire length

Note 1) The length of the lead wire provided is 300 mm. When ordering a valve with a lead wire of 600 mm or longer, be sure to indicate the model number of the valve without connector and connector assembly.

Connector Assembly Part No. (For DC)

<table>
<thead>
<tr>
<th>Lead wire length</th>
<th>Single position part no</th>
<th>Double position part no</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socket only (3 pcs.)</td>
<td>AXT661-14A</td>
<td>AXT661-13A</td>
</tr>
<tr>
<td>300 A</td>
<td>600 A</td>
<td></td>
</tr>
<tr>
<td>1000 A</td>
<td>2000 A</td>
<td></td>
</tr>
<tr>
<td>3000 A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1) 100/110 VAC for single: AXT661-31A-; for double: AXT661-32A-;
200/220 VAC for single: AXT661-34A-; for double: AXT661-35A-; are in accordance with the above table.

Note 2) 3 position type requires 3 sets for A side and B side.

How to Order Manifold

Series VQ1000

<table>
<thead>
<tr>
<th>Stations</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>1 station</td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>16 stations</td>
</tr>
</tbody>
</table>

Option

D DIN rail mounting style
N With name plate

Note 1) Manifolds are a DIN rail mounting style, and so suffix -D should be indicated.

Note 2) Unmountable when the valve’s manual override is a locking lever type.

Note 3) When both options are specified, indicate as DN.
Plug Lead Unit: Cassette Type  Series VQ1000

Body Mounted

Plugs Lead Unit: Cassette Type  Series VQ1000

How to Order Valves

<table>
<thead>
<tr>
<th>VQ1</th>
<th>1</th>
<th>7</th>
<th>0</th>
<th>Y</th>
<th>5</th>
<th>M</th>
<th>C6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series VQ1000</td>
<td>Type of actuation</td>
<td>Seal</td>
<td>Cap</td>
<td>Coil voltage</td>
<td>Cylinder port</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 position single</td>
<td>0</td>
<td>Metal seal</td>
<td>1</td>
<td>Rubber seal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 position double (Latching)</td>
<td>3</td>
<td>100 VAC (50/60 Hz)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 position closed center</td>
<td>1</td>
<td>200 VAC (50/60 Hz)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 position exhaust center</td>
<td>1</td>
<td>10 VAC (50/60 Hz)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 position pressure control</td>
<td>1</td>
<td>110 VAC (50/60 Hz)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note) L type plug connector is used for 3 position AC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Function</td>
<td>Symbol</td>
<td>Specifications</td>
<td>DC</td>
<td>AC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nil</td>
<td>Standard type</td>
<td>1.5 W</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>High pressure type</td>
<td>1.5 W</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Low wattage type</td>
<td>0.5 W</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Note 1) For power consumption of AC type, refer to page 2-4-74.  
Note 2) Except double (latching). |

How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold basic part number.

<Example>  
Connector kit with 3 m cable
VVQ17-08C-D  1 set—Manifold base part no.  
VVQ1170-5MB-C6  4 sets—Valve part no. (Stations 1 to 4)  
VVQ1270-5MB-C6  4 sets—Valve part no. (Stations 5 to 8)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Enter in order starting from the first station on the D side.  
When entry of part numbers becomes complicated, indicate on the manifold specification sheet.
The serial transmission system reduces wiring work, while minimizing wiring and saving space.

The system comes in an type SA (generic for small scale systems) for equipment with a small number of I/O points, or 32 points max., type SB (applicable to Mitsubishi Electric models) for controlling 512 I/O points max., type SC (applicable to OMRON models), and type SD (applicable to SHARP models; 504 points max.).

16 stations max. (Specify a model with more than 8 stations by using a manifold specification sheet.)

Stations are counted from station 1 on the D side.

As the standard electrical wiring specifications, double wiring (connected to SOL A and SOL B) is adopted for the internal wiring of each station for 8 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-4-93.

How to Order Manifold

**VV5Q1**

**S** A D **XP**

Series **Q1000**

**D** [DIM rail mounting style]

**K** [Special wiring specifications (Except double wiring)]

**N** [With name plate]

**M** [For the general purpose type, a transmission unit is required on the CPU side.]

**How to Order Manifold**

**S** VQ1000

Kit (Serial transmission unit)

- Stations are counted from station 1 on the D side.
- As the standard electrical wiring specifications, double wiring (connected to SOL A and SOL B) is adopted for the internal wiring of each station for 8 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-4-93.

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications (Applicable stations)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port location</td>
<td>Port size</td>
</tr>
<tr>
<td>1(P), 3(R)</td>
<td>4(A), 2(B)</td>
</tr>
<tr>
<td>C6</td>
<td>C3, C4, C5, M5</td>
</tr>
</tbody>
</table>

**Type SA** With general type SI unit (Series EX300)

- Can be connected with PLC I/O card for serial transmission.

**Type SB** Mitsubishi Electric Corporation MELSECNET/MINI-53 Data Link System

- Master station: PLC made by Mitsubishi Electric Corporation

- Special wiring specifications (Except double wiring)

- Maximum number of stations can be increased based on special wiring specifications. For details, refer to page 2-4-93.
### Type SC
OMRON Corporation
SYSSMAC C(CV) series

**Name of terminal block (LED)**

- **Description**: Name of terminal block (LED)
- **Note**: Note)

**Type SD**
SHARP Corporation
Satellite I/O Link System

**Name of terminal block (LED)**

- **LED**
  - **Description**: Description
  - **Note**: Note)

### How to Order Valves

**Series VQ1000**

**Type of actuation**

- **1**: 2 position single
- **2**: 2 position double (Latching)
- **3**
  - **3 position exhaust center**
  - **3 position closed center**
- **5**: 3 position pressure center
- **Note**: L type plug connector is used for 3 position AC.

**Function**

- **Symbol**: Specified function
- **Specifications**: DC
- **Nil**: Standard type
- **H**: High pressure
- **V**: Low wattage
- **Note**: Except double (latching).

**Coil voltage**

- **5**: 24 VDC, With indicator light and surge voltage suppressor
- **Note**: Connector assembly will be required when the S kits add a valve. For model no., refer to “Option” on page 2-4-93.

### Cylinder ports

- **C3**: With One-touch fitting for ø3.2
- **C4**: With One-touch fitting for ø4
- **C6**: With One-touch fitting for ø6
- **M5**: M6 thread
- **Note 1**: The code is L for elbow piping for all manifold stations.
- **Note 2**: For inch-size One-touch fittings, refer to “Option” on page 2-4-93.

### Manual override

- **Nil**: Non-locking push type (Tool required)
- **B**: Locking type (Tool required)
- **C**: Locking type (Manual)
- **Note**: A manual override for pilot valve is provided to the standard model for double type.

### Electrical entry

- **LO**: L plug connector without connector
- **MO**: M plug connector without connector
- **Note**: Plug connector and lead wire layers are attached to the manifold.

### How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

**Example**

Serial transmission unit kit
VV5Q17-08SA-D 1 set—Manifold base part no.
VVQ1170-SMO-C6 4 sets—Valve part no. (Stations 1 to 4)
VVQ1270-SMOB-C6 4 sets—Valve part no. (Stations 5 to 8)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

**Enter in order starting from the first station on the D side.**

Besides, when the arrangement will be complicated, fill out the Manifold Specification Sheet to instruct us.
Dust-protected type SI unit

The DWG shows a SB type. (Applicable to Mitsubishi Electric's models)

Applicable connector: Flat ribbon cable connector (20P)
(Conforming to MIL-C-83503)

Dimensions

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</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>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>34.5</td>
<td>45</td>
<td>55.5</td>
<td>66</td>
<td>76.5</td>
<td>87</td>
<td>97.5</td>
<td>108</td>
<td>118.5</td>
<td>129</td>
<td>139.5</td>
<td>150</td>
<td>160.5</td>
<td>171</td>
<td>181.5</td>
<td>192</td>
<td></td>
</tr>
<tr>
<td>L2</td>
<td>54.5</td>
<td>65</td>
<td>75.5</td>
<td>86</td>
<td>96.5</td>
<td>107</td>
<td>117.5</td>
<td>128</td>
<td>138.5</td>
<td>149</td>
<td>159.5</td>
<td>170</td>
<td>180.5</td>
<td>191</td>
<td>201.5</td>
<td>212</td>
<td></td>
</tr>
<tr>
<td>L3</td>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>250</td>
<td>262.5</td>
<td>275</td>
<td>287.5</td>
<td>300</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L4</td>
<td>148</td>
<td>160.5</td>
<td>173</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
<td></td>
</tr>
</tbody>
</table>

Lead wire length: ≅300 mm

2-C3, C4, C6, M5
C3: One-touch fitting for ø3.2
C4: One-touch fitting for ø4
C6: One-touch fitting for ø6
M5: M5 thread

C3: One-touch fitting for ø3.2
C4: One-touch fitting for ø4
C6: One-touch fitting for ø6
M5: M5 thread

Dust-protected type SI unit: L5 = L3 + 25, L6 = L4 + 25

2-C6, C4, C6, M5
C3: One-touch fitting for ø3.2
C4: One-touch fitting for ø4
C6: One-touch fitting for ø6
M5: M5 thread

Dust-protected type SI unit: L5 = L3 + 25, L6 = L4 + 25

Manifolds with SI unit for Matsushita Electric Works’ MEWNET FP and Rockwell Automation’s model are the same with L5 and L6 dimensions of dust-protected type SI unit.
Manifold Option Parts

**Individual SUP spacer**
**VQ1000-P-7-C6**

When the same manifold is to be used for different pressures, individual SUP spacers are used as SUP ports for different pressures. (One station space is occupied.) Block both sides of the station, for which the supply pressure from the individual SUP spacer is used, with SUP block plates. (See the application ex.)

- Specify the spacer mounting position and SUP block plate mounting position on the manifold specification sheet. The block plate are used in two places for one set. (Two SUP block plates for blocking SUP station are attached to the individual SUP spacer.)
- The spacer's specification can be changed (from an individual SUP spacer to an individual EXH spacer) by changing the coupling of the fittings and bushing.

**Individual EXH spacer**
**VQ1000-R-7-C6**

When valve exhaust affects other stations due to the circuit configuration, this spacer is used for individual valve exhaust. (One station space is occupied.)

Block both sides of the individual valve EXH station.

- Specify the spacer mounting position and EXH block plate mounting position on the manifold specification sheet. The block plate are used in two places for one set. (Four EXH block plates for blocking EXH station are attached to the individual EXH spacer.)
- The spacer’s specification can be changed (from an individual EXH spacer to an individual SUP spacer) by changing the coupling of the fittings and bushing.

**Individual SUP/EXH spacer**
**VQ1000-PR-7-C6**

This spacer has both functions of the above individual SUP and EXH spacers. (Refer to the application example.)

- Specify the spacer mounting position and SUP/EXH block plate mounting position on the manifold specification sheet. The block plates are used in two places for one set. (A SUP/EXH block plate for blocking SUP/EXH station are attached to the individual SUP/EXH spacer.)
- When using the spacer not for individual SUP/EXH but for improving the ability to supply/exhaust air, it is unnecessary to block the SUP/EXH passage. In this case, place an order via VQ1000-PRA-7-C6.
- The spacer’s specification can be changed by changing the coupling of the fittings and bushing.
Body Ported

Series VQ1000

Manifold Option Parts

SUP
EXH Block bushing assembly
VQ1000-87A-B-50

<For SUP>
When one manifold is to be used for different, high and low pressures, this block bushing assembly is used between the stations under a different pressure. The block assembly is mounted on the U side of the valve’s SUP passage.
* Specify the number stations on the manifold specification sheet.

<For EXH>
When a valve exhaust affects other stations due to the circuit configuration, this block bushing assembly is used between the stations whose EXH passages are to be separated each other. Since the block bushing assembly is mounted on the U side of the valve’s R1 and R2 passages, two assemblies are necessary for one station.
* Specify the number stations on the manifold specification sheet.

<Shut off label>
When using block bushing assembly for SUP, EXH passage, indication label for confirmation of the blocking position from outside is attached. (One label for each)

Elbow fitting assembly
VQ1000-F7-L (C3, C4, C6)
It is used in a side-valve-port application.

Name plate [-N7]
VQ1000-N7-Station (1 to Max. stations)
It is a transparent resin plate for placing a label that indicates solenoid valve function, etc. Insert it into the groove on the side of the end plate and bend it as shown in the figure. Open the face plate seating when the manual override is operating.
* It is not applicable to locking manual override.

Blanking plug
KQ2P-23
Used for unused cylinder port, SUP and EXH port. Purchasing order is available in units of 10 pieces.

Silencer
AN103-X233
This silencer is to be inserted into the EXH port (One-touch fittings) of the common exhaust type.

Port plug
VQ00000-58A
The plug is used to block the cylinder port when using a 4 port valve as a 3 port valve.
When ordering it incorporated with a manifold, suffix A or B, the symbol of the plug port, to the valve no.
Example) VQ1170-5L-C6-A

* Can be included in manifold model no.
* When ordering a block bush incorporated with the manifold, a block indication label is attached to the manifold.

* When ordering it incorporated with a valve, the port size of the valve no. is L50132.

* When ordering assemblies incorporated with a manifold, suffix -N to the manifold no.

* When ordering it incorporated with a valve, the port size of the valve no. is L50132.

* When ordering assemblies incorporated with a manifold, suffix -N to the manifold no.

Dimensions

<table>
<thead>
<tr>
<th>Applicable fittings size</th>
<th>Model</th>
<th>A</th>
<th>L</th>
<th>D</th>
<th>Effective area (mm²)</th>
<th>Noise reduction (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>KQ2P-23</td>
<td>16</td>
<td>31.5</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>KQ2P-04</td>
<td>16</td>
<td>32</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>KQ2P-06</td>
<td>18</td>
<td>35</td>
<td>8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dimensions

<table>
<thead>
<tr>
<th>Series</th>
<th>Applicable fittings size</th>
<th>Model</th>
<th>A</th>
<th>L</th>
<th>D</th>
<th>Effective area (mm²)</th>
<th>Noise reduction (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td></td>
<td>AN103-X233</td>
<td>20</td>
<td>37</td>
<td>11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Example) VQ1170-5L-C6-A
A port, Plug
Double check block (Separated type) VQ1000-FPG-□□

It is used on the outlet side piping to keep the cylinder in the intermediate position for a long time. Combining the double check block with a built-in pilot type double check valve and a 3 position exhaust center solenoid valve will enable the cylinder to stop in the middle or maintain its position for a long time. The combination with a two position single/double solenoid valve will permit this block to be used for preventing the dropping at the cylinder stroke end when the SUP residual pressure is released.

Specifications

- **Max. operating pressure**: 0.8 MPa
- **Min. operating pressure**: 0.15 MPa
- **Ambient and fluid temperature**: –5 to 50°C
- **Flow characteristics**: C
- **Max. operating frequency**: 180 CPM

Note) Based on JIS B 8375-1981 (Supply pressure: 0.5 MPa)

Dimensions

**Single unit**

**Dimensions**

<table>
<thead>
<tr>
<th>L1</th>
<th>L2</th>
<th>L3</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
<td>50</td>
<td>60.5</td>
</tr>
</tbody>
</table>

**Manifold**

**Dimensions**

<table>
<thead>
<tr>
<th>L1</th>
<th>L2</th>
<th>L3</th>
</tr>
</thead>
<tbody>
<tr>
<td>163</td>
<td>174</td>
<td>180</td>
</tr>
</tbody>
</table>

How to Order

Double check block

**VQ1000-FPG□□ □□**

- **IN side port size**: C4 One-touch fitting for ø4, C6 One-touch fitting for ø6
- **OUT side port size**: C4 One-touch fitting for ø3.2, C6 One-touch fitting for ø4, M5 M5 thread

**Manifold**

**VVQ1000-FPG□□ □□**

- **Stations**: 01 1 station, 16 16 stations

**Bracket Assembly**

- **Part no.**: VQ1000-FPG-FB
- **Tightening torque**: 0.22 to 0.25 N·m

**Option**

- **N**: None
- **F**: With bracket
- **D**: DIN rail mounting style
- **N**: Name plate

Note) When two or more symbols are specified, indicate them alphabetically. Example) -DN

**Example**

- **SUP side pressure (P1)**
- **Drop prevention**
- **Intermediate stops**

**Caution**

- Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for a long time. Check the leakage using neutral household detergent, such as dish washing soap.
- Check the cylinder’s tube gasket, piston packing and rod packing for air leakage.
- Since One-touch fittings allow slight air leakage, screw piping (with M5 thread) is recommended when stopping the cylinder in the middle for a long time.
- Combining double check block with 3 position closed center or pressure center solenoid valve will not work. M5 fitting assembly is attached, not incorporated into the double check block.
- After screwed in the M5 fittings, mount the assembly on the double check block. (Tightening torque: 0.8 to 1.2 N·m) If the exhaust of the double check block is throttled too much, the cylinder may not operate properly and may not stop immediately.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.
Body Ported
Series VQ1000

⚠️ Precautions

**Caution**

The standard model is equipped with an indicator light and surge voltage suppressor. The lighting positions are concentrated on one side for both single solenoid type and double (latching) type. In the double (latching) type, A side and B side energization are indicated by two colors which match the colors of the manual overrides.

**Light/Surge Voltage Suppressor**

- **Caution**
  - Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to page 2-3-2.

**Manual Override**

- **Warning**
  - Without an electric signal for the solenoid valve the manual override is used for switching the main valve.
  - **Push type (Tool required)**
    - Push down on the manual override button with a small screwdriver until it stops. Release the screwdriver and the manual override will return.
  - **Locking slotted type**
    - Push down on the manual override button with a small screwdriver. While down, turn clockwise 90° to lock it. Turn it counterclockwise to release it.
  - **Locking lever type (Option)**
    - Push down completely on the manual override button with a small screwdriver. While down, turn clockwise 90° to lock it. Turn it counterclockwise to release it.
  - **Manual override for double (latching) type**
    - In case of a double (latching) type, a manual override is provided not only on the body side but to the pilot as a standard specification. After manual operation, the main valve of the manual override on the body side returns to the position before the manual operation, however, the pilot valve manual override maintains the change-over position.
    - Turn before pushing.
    - If the manual override is turned by 180° clockwise and the mark is adjusted to A, then pushed in the direction of an arrow (●), it will be back to the reset condition. (passage P → A)
    - If the manual override is turned by 180° counterclockwise and the mark is adjusted to B, then pushed in the direction of an arrow (●), it will be back to the reset condition. (passage P → B)
    - It is in the reset state at the time of shipment.

**Double (Latching solenoid) Type**

- **Caution**
  - Different from the conventional double solenoid, the double type uses a latching (self-holding system) solenoid. Although the appearance is the same as the single solenoid, it is constructed so that the movable iron core in the solenoid is held in the ON position on A and B sides by instantaneous energization (20 ms or more). The usage and function is the same as the double solenoid type.

  **Special Cautions for Latching Solenoid:**
  1. Select the circuit in which ON and OFF signals are not energized simultaneously.
  2. 20 ms energization time is necessary for self-holding.
  3. Avoid using the latching solenoid valves in environments where impact or collisions with the valve might occur.
  4. Even though the armature in the solenoid of this valve is held on to B side, ON position (Reset), verify either A side, ON position or B side, ON position by energizing prior to use.
  5. After manual operation, the main valve will return to its original position.
  7. Please contact SMC for long-term energization applications.

**DC Circuit Diagram**

- Single solenoid
- Double (Latching) solenoid (DC)

**Manual Override**

- Orange
- Green

**Indicators**

- DC circuit diagram
  - Single solenoid
  - Double (Latching) solenoid (DC)

**Double (Latching) Type**

- Self-holding of the main valve possible.

**Warning**

- Do not apply excessive torque when turning the locking type manual override. (0.1 N-m or less)
How to Mount/Remove Solenoid Valve

\[\text{Caution}\]

\(<\text{Procedure}>\)

How to Remove
1. Loosen the clamp screw on one side.
2. Slightly slide a part the valve stations on both sides of the station to be removed.
3. Pull up side (a) of the valve station and remove it from the DIN rail.

How to Mount
1. Take procedures 1 and 2 above to make an open space in the position for mounting a new valve station.
2. Diagonally insert the clip on the side (b) of the valve station to the DIN rail.
3. Press down on the valve station and insert the clip on the side (a) of the valve station to the DIN rail.
4. Slide the valve stations together so that there is no clearance between them. Position the clamp screw and tighten. (Proper tightening torque: 0.7 to 1.0 N·m)

\(<\text{Note}>\)
Be careful to keep O-ring or gallery dust free since dirt may cause air leakage.

Be sure both hooks of the bracket are fixed to the DIN rail.
Use caution not to apply force on the light cover when mounting or dismounting the valve.

Replacement of Cylinder Port Fittings

\[\text{Caution}\]

The cylinder port fittings are a cassette for easy replacement. The fittings are blocked by a clip inserted from the side of the valve. Remove the clip with a screwdriver and remove fittings. For replacement, insert the fitting assembly until it strikes against the inside wall and then reinsert the clip to the specified position.

Applicable tubing Ø3.2
- VVQ1000-50A-C3
- VVQ1000-50A-C4
- VVQ1000-50A-C6

\(<\text{Note}>\)
Purchasing order is available in units of 10 pieces.

Caution
1. Protect O-rings from scratches and dust to prevent air leakage.
2. The tightening torque for inserting fittings to the M5 thread ass’y should be 0.8 to 1.4 N·m.

How to Use Plug Connector

\[\text{Caution}\]

For details, refer to page 2-4-67.
Option

Different Number of Connector Pins

F and P kits with the following number of pins are available besides the standard number (F = 25; P = 26). Select the desired number of pins and cable length from the cable assembly list. Place an order for the cable assembly separately.

**F**

kit (D-sub connector) 15 pins

**P**

kit (Flat ribbon cable connector) 10 pins, 16 pins, 20 pins

### How to order manifold

**VV5Q17**

- **FSA**
- **06**
- **D**

Option

#### Stations

- Top entry
- Side entry

<table>
<thead>
<tr>
<th>Kit/Electrical entry</th>
<th>Top entry</th>
<th>Side entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kit F</td>
<td>UA</td>
<td>Kit F</td>
</tr>
<tr>
<td></td>
<td>SA</td>
<td></td>
</tr>
</tbody>
</table>

### Wiring Specifications

Like 25-pin models (standard), terminal no. 1 will be the 1st station SOL.A, and terminal no. 9 for the 1st station SOL.B. Then COM will be the terminal no. 8.

#### D-sub Connector Cable Assembly

<table>
<thead>
<tr>
<th>Cable length (L)</th>
<th>Pins</th>
<th>15P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>AXT100-DS15-1</td>
<td></td>
</tr>
<tr>
<td>3 m</td>
<td>AXT100-DS15-2</td>
<td></td>
</tr>
<tr>
<td>5 m</td>
<td>AXT100-DS15-3</td>
<td></td>
</tr>
</tbody>
</table>

* For other commercial connectors, use a type conforming to MIL-C-24308.

### Flat Ribbon Cable Assembly

<table>
<thead>
<tr>
<th>Cable length (L)</th>
<th>Pins</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>AXT100-FC10-1</td>
</tr>
<tr>
<td></td>
<td>AXT100-FC16-1</td>
</tr>
<tr>
<td></td>
<td>AXT100-FC20-1</td>
</tr>
<tr>
<td>3 m</td>
<td>AXT100-FC10-2</td>
</tr>
<tr>
<td></td>
<td>AXT100-FC16-2</td>
</tr>
<tr>
<td></td>
<td>AXT100-FC20-2</td>
</tr>
<tr>
<td>5 m</td>
<td>AXT100-FC10-3</td>
</tr>
<tr>
<td></td>
<td>AXT100-FC16-3</td>
</tr>
<tr>
<td></td>
<td>AXT100-FC20-3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Connector width (W)</th>
<th>10P</th>
<th>16P</th>
<th>20P</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.2</td>
<td>24.8</td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

* For other commercial connectors, use a type with strain relief conforming to MIL-C-83503.
Special Wiring Specifications

In the internal wiring of F kit, P kit, J kit, G kit, T kit and S kit, double wiring (connected to SOL. A and SOL. B) is adopted for each station regardless of the valve and option types. Mixed single and double wiring is available as an option.

1. How to order valves

Indicate an option symbol, -K, for the manifold no. and be sure to specify the mounting position and number of stations of the single and double wiring by means of the manifold specification sheet.

Example)

VV5Q17-09FU0-D K S

Others, option symbols: to be indicated alphabetically.

2. Wiring specifications

Connector terminal numbers are connected from solenoid station 1 on the A side in the order indicated by the arrows without shipping any terminal numbers.

3. Max. number of stations

The maximum number of stations depends upon the number of solenoids. Assuming one for a single and two for a double, determine the number of stations so that the total number is not more than the maximum number given in the following table.

<table>
<thead>
<tr>
<th>kit</th>
<th>F kit</th>
<th>P kit</th>
<th>T kit</th>
<th>S kit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>D-sub connector (25P)</td>
<td>Flat ribbon cable connector (26P)</td>
<td>Terminal block (16 terminals)</td>
<td>Serial (Serial)</td>
</tr>
<tr>
<td>Max. points</td>
<td>None</td>
<td>14</td>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>

Note) Due to the limitation of internal wiring.

Negative Common Specifications

Specify the valve model no. as shown below for negative COM specification. The standard manifold no. can be used. Please contact SMC for negative COM S kit.

How to order negative COM valves

VQ1170 N — 5MO — C6

Negative common specifications

Inch-size One-touch Fittings

Refer to following model no. for inch-size One-touch fittings.

How to order manifold

VV5Q17 — 08FSO — DN — 00T

How to order valves

VQ1170 — 5M— [N7]

Plug Connector Assembly Model

Connector assembly will be required when the F, P, T, S kits add a valve. Specify the valve and connector assembly.

Connector Assembly Part No.

Plug Rail Mounting

Each manifold can be mounted on a DIN rail. Order it by indicating an option symbol for DIN rail mounting style, -D. In this case, a DIN rail which is approx. 30 mm longer than the manifold with the specified number of stations is attached. Besides, it is also available in the following cases.

- When using DIN rail longer than the manifold with specified number of stations

Clearly indicate the necessary number of stations next to the option symbol, -D, for the manifold no.

Example)

VV5Q17-08FU1-D09S

Others, option symbols: to be indicated alphabetically.

- When ordering DIN rail only

DIN rail no.: AXT100-DR-n

Refer to the DIN rail dimension table for determining the length.
### Series VQ

#### Single Unit

For individual use of a single valve.

#### Model Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Response time (ms) (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>12 or less 15 or less 20 or less 25 or less 30 or less 35 or less 40 or less 45 or less 50 or less</td>
</tr>
<tr>
<td>VQ1160</td>
<td>0.56 0.71 0.56 0.71 0.53 0.71 0.56 0.71 0.53 0.71</td>
</tr>
<tr>
<td>VQ1161</td>
<td>0.15 0.20 0.15 0.20 0.16 0.20 0.16 0.20 0.16 0.20</td>
</tr>
<tr>
<td>VQ1260</td>
<td>0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80</td>
</tr>
<tr>
<td>VQ1261</td>
<td>0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19</td>
</tr>
<tr>
<td>VQ1360</td>
<td>0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12</td>
</tr>
<tr>
<td>VQ1361</td>
<td>0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12</td>
</tr>
<tr>
<td>VQ1460</td>
<td>0.58 0.58 0.58 0.58 0.58 0.58 0.58 0.58 0.58 0.58</td>
</tr>
<tr>
<td>VQ1461</td>
<td>0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12</td>
</tr>
<tr>
<td>VQ1560</td>
<td>0.72 0.72 0.72 0.72 0.72 0.72 0.72 0.72 0.72 0.72</td>
</tr>
<tr>
<td>VQ1561</td>
<td>0.17 0.17 0.17 0.17 0.17 0.17 0.17 0.17 0.17 0.17</td>
</tr>
<tr>
<td>VQ1660</td>
<td>0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60 0.60</td>
</tr>
<tr>
<td>VQ1661</td>
<td>0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14</td>
</tr>
<tr>
<td>VQ1760</td>
<td>0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80</td>
</tr>
<tr>
<td>VQ1761</td>
<td>0.17 0.17 0.17 0.17 0.17 0.17 0.17 0.17 0.17 0.17</td>
</tr>
</tbody>
</table>

#### Standard Specifications

<table>
<thead>
<tr>
<th>Valve construction</th>
<th>Metal seal</th>
<th>Rubber seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid</td>
<td>Air/Inert gas</td>
<td>Air/Inert gas</td>
</tr>
<tr>
<td>Maximum operating pressure</td>
<td>0.7 MPa (High pressure type: 0.8 MPa)</td>
<td>0.1 MPa</td>
</tr>
<tr>
<td>Min. operating pressure</td>
<td>Single: 0.1 MPa</td>
<td>Double (Latching): 0.1 MPa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 position: 0.15 MPa</td>
</tr>
<tr>
<td>Ambient and fluid temperature</td>
<td>–10 to 50°C (1)</td>
<td></td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not required</td>
<td></td>
</tr>
<tr>
<td>Manual override (2)</td>
<td>Push type/locking type (tool required, manual type) option</td>
<td></td>
</tr>
<tr>
<td>Impact/Vibration resistance</td>
<td>150/30 m/s²</td>
<td></td>
</tr>
<tr>
<td>Enclosure</td>
<td>Dust tight</td>
<td></td>
</tr>
<tr>
<td>Coil rated voltage</td>
<td>12, 24 VDC, 100, 110, 200, 220 VAC (50/60 Hz)</td>
<td></td>
</tr>
<tr>
<td>Allowable voltage fluctuation</td>
<td>±10% of rated voltage</td>
<td></td>
</tr>
<tr>
<td>Solenoid type</td>
<td>Class B or equivalent</td>
<td></td>
</tr>
<tr>
<td>Power consumption (Current)</td>
<td>24 VDC: 1 W DC (42 mA), 1.5 W DC (63 mA) (3), 0.5 W DC (21 mA) (4)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12 VDC: 1 W DC (63 mA), 1.5 W DC (125 mA) (3), 0.5 W DC (42 mA) (4)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100 VAC: Inrush 0.5 VA (5 mA), Holding 0.5 VA (5 mA)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>110 VAC: Inrush 0.55 VA (5 mA), Holding 0.55 VA (5 mA)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>200 VAC: Inrush 1.0 VA (5 mA), Holding 1.0 VA (5 mA)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>220 VAC: Inrush 1.1 VA (5 mA), Holding 1.1 VA (5 mA)</td>
<td></td>
</tr>
</tbody>
</table>

---

(1) Cylinder port size C6 (VQ1000)
(2) As per JIS B 8375-1981 (Supply pressure: 0.5 MPa; with indicator light/surge voltage suppressor; clean air. Subject to the pressure and air quality.)

---

**Note 1:** Use dry air to prevent condensation when operating at low temperatures.
**Note 2:** 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)

**Note 3:** Values in the case of high pressure type (1.5 W) specifications.
**Note 4:** Values in the case of low wattage type (0.5 W) specifications.
How to Order Valves

**Series VQ1000**

**Symbol**
- 1: 2 position single
- 2: 2 position double (Latch)ing)
- 3: 3 position closed center
- 4: 3 position exhaust center
- 5: 3 position pressure center

**Seal**
- 0: Metal seal
- 1: Rubber seal

**Function**
- Nil: Standard type
- H: High pressure type (1.5 W)
- N: Negative common type (—)
- Y: Low wattage type (0.5 W)

**Note**
- 1) For power consumption of AC type, refer to page 2-4-94.
- 2) Except double (latching).
- 3) When two or more symbols are specified, indicate them alphabetically.

**Coil 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

**Wiring Specifications: Positive COM**
- The lead wires are connected to the valve as shown below. Connect each to the power supply side.

**Lead wire color**
- Black (Blue) [Red]: For 200/200 VAC
- Black (Yellow) [Yellow]: For 100/110 VAC
- Black (Blue): COM (-)
- Red (Blue) [Red]: A side solenoid (+)
- Red (Blue) [Red]: COM (+)
- Black (Yellow) [Yellow]: B side solenoid (-)

**Note**
- For 100/110 VAC
- For 200/200 VAC

**Single solenoid**

**Double solenoid**

**Plug connector lead wire length**
- Note: The length of the lead wire provided is 300 mm. When ordering a valve with a lead wire of 600 mm or longer, be sure to indicate the model number of the valve without connector and connector assembly.

**Connector Assembly Part No. (For DC)**

<table>
<thead>
<tr>
<th>Lead wire length</th>
<th>Single 3 position part no.</th>
<th>Double solenoid part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socket only (3 pcs.) AXT661-12A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>300 mm</td>
<td>AXT661-14A</td>
<td>AXT661-13A</td>
</tr>
<tr>
<td>600 mm</td>
<td>AXT661-14A-8</td>
<td>AXT661-13A-8</td>
</tr>
<tr>
<td>1000 mm</td>
<td>AXT661-14A-10</td>
<td>AXT661-13A-10</td>
</tr>
<tr>
<td>2000 mm</td>
<td>AXT661-14A-20</td>
<td>AXT661-13A-20</td>
</tr>
<tr>
<td>3000 mm</td>
<td>AXT661-14A-30</td>
<td>AXT661-13A-30</td>
</tr>
</tbody>
</table>

**Note**
- 1) 100/110 VAC for single: AXT661-31A-; for double: AXT661-32A-; 200/200 VAC for single: AXT661-34A-; for double: AXT661-35A-; are in accordance with the above table.
- 2) 3 position type requires 2 sets for A side and B side.

**Wiring Specifications: Negative COM (Option)**
- The lead wires are connected to the valve as shown below. Connect each to the power supply side.

**Lead wire color**
- Red: A side solenoid (+)
- Black: COM (-)
- White: B side solenoid (-)

**Plug connector lead wire length**
- Note: The length of the lead wire provided is 300 mm. When ordering a valve with a lead wire of 600 mm or longer, be sure to indicate the model number of the valve without connector and connector assembly.

**Connector Assembly Part No.**

<table>
<thead>
<tr>
<th>Lead wire length</th>
<th>Single 3 position part no.</th>
<th>Double solenoid part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socket only (3 pcs.) AXT661-12A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>300 mm</td>
<td>AXT661-14AN</td>
<td>AXT661-13AN</td>
</tr>
<tr>
<td>600 mm</td>
<td>AXT661-14AN-8</td>
<td>AXT661-13AN-8</td>
</tr>
<tr>
<td>1000 mm</td>
<td>AXT661-14AN-10</td>
<td>AXT661-13AN-10</td>
</tr>
<tr>
<td>2000 mm</td>
<td>AXT661-14AN-20</td>
<td>AXT661-13AN-20</td>
</tr>
<tr>
<td>3000 mm</td>
<td>AXT661-14AN-30</td>
<td>AXT661-13AN-30</td>
</tr>
</tbody>
</table>

**Note**
- 1) When using the negative common specifications, use valves for negative common.
- 2) 3 position type requires 2 sets for A side and B side.

**Sub-plate SUP, Cylinder port**

- C3: With One-touch fitting for ø3.2
- C4: With One-touch fitting for ø4
- C5: M5 thread

**Manual override**
- Note 1: For inch-size One-touch fittings, refer to “Option” on page 2-4-93.
- Note 2: EXH port is a direct exhaust (with built-in silencer).

**Electrical entry**
- G: Grommet (Except double (latching) and AC)
- L: L plug connector with lead wire
- LO: L plug connector without connector
- M: M plug connector with lead wire
- MO: M plug connector without connector
Series VQ

Dimensions

2 position single/double (Latching): VQ1^2_1^0

3 position closed center/exhaust center/pressure center: VQ1^3_9^0
Series VQ
Construction
Main Parts, Replacement Parts

Construction: VQ1000/Plug-in Unit, Flip Type

Metal seal
Single/Double (Latching)

Rubber seal
Single/Double (Latching)

3 position

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></td>
</tr>
<tr>
<td>2</td>
<td>Spool/Sleeve</td>
<td>Stainless steel</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

Pilot valve assembly

Single/3 position

Double (Latching)

Note) (H): 1.5 W, (Y): 0.5 W

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></td>
</tr>
<tr>
<td>2</td>
<td>Spool valve</td>
<td>Aluminum/HNBR</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

Pilot valve assembly

Single/3 position

Double (Latching)

Note) (H): 1.5 W, (Y): 0.5 W
Component Parts

**Body**
- No. 1: Aluminum die-casted
- No. 2: Stainless steel
- No. 3: Resin

**Pilot Valve Assembly**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Pilot Valve</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**VQ1000**
- Single/Double (Latching)
- 3 position
- Body: VQ0000
- Spool/Sleeve: VQ1340, VQ1440, VQ1540
- Piston: VQ1140, VQ1240

**VQ2000**
- Single/Double (Latching)
- 3 position
- Body: VQ0000
- Spool valve: VQ1314, VQ1414, VQ1514
- Piston: VQ1114, VQ1214

**Note**
- 1) (H): 1.5 W, (Y): 0.5 W, G type: DC only
- Note 1) (H): 1.5 W, (Y): 0.5 W, G type: DC only
Construction: VQ1000/Plug Lead Unit, Cassette Type

Metal seal
Single/Double (Latching)

3 position

L plug connector

Pilot valve assembly

<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>Zinc die-casted</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Spool/Sleeve</td>
<td>Stainless steel</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

<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>Zinc die-casted</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Spool valve</td>
<td>Aluminum/HNBR</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

Component Parts

Note: 1) (H): 1.5 W, (Y): 0.5 W, G type: DC only

Note 1) (H): 1.5 W, (Y): 0.5 W, G type: DC only
### Construction: VQ1000/Single Unit

#### Metal seal

**Single/Double (Latching)**

<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>Zinc die-casted</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Spool/Sleeve</td>
<td>Stainless steel</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4</th>
<th>Pilot valve assembly</th>
<th>Note</th>
<th>Single/3 position</th>
<th>VQ1150</th>
<th>Voltage</th>
<th>G type: DC only</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Double (Latching)</td>
<td>VQ1160</td>
<td>Voltage</td>
<td>G type: DC only</td>
</tr>
</tbody>
</table>

#### Rubber seal

**Single/Double (Latching)**

<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>Zinc die-casted</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Spool valve</td>
<td>Aluminum/HNBR</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4</th>
<th>Pilot valve assembly</th>
<th>Note</th>
<th>Single/3 position</th>
<th>VQ1250</th>
<th>Voltage</th>
<th>G type: DC only</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Double (Latching)</td>
<td>VQ1260</td>
<td>Voltage</td>
<td>G type: DC only</td>
</tr>
</tbody>
</table>

**Note** 1) (H): 1.5 W, (Y): 0.5 W, G type: DC only

---

### Component Parts

#### VQ1000/Single Unit

- **Body**: Zinc die-casted
- **Spool/Sleeve**: Stainless steel
- **Piston**: Resin
- **Pilot valve assembly**
  - Single/3 position: VQ1150 (Voltage 1 to 6)
  - Double (Latching): VQ1160 (Voltage 1 to 6)

**Note** 1) (H): 1.5 W, (Y): 0.5 W, G type: DC only
E X P L O D E D  V I E W  o f  M A N I F O L D

VQ1000 (VV5Q13)/Plug-in Unit, Flip Type

(F, P, J, L, S kit)  

For how to increase the stations, refer to the instruction manual.

<table>
<thead>
<tr>
<th>Housing assembly and SI unit</th>
<th>U side end plate assembly</th>
<th>Valve and junction box assembly</th>
<th>D side end plate assembly</th>
<th>Station increase parts</th>
</tr>
</thead>
</table>

**S kit**

- Note 1) S kit is composed of a flat ribbon cable housing assembly (AXT100-1-PU20) of ① SI unit and ② P kit (20 pins).

**P/J kit**

- PS (Side entry)

**F kit**

- PS (Side entry)

**L kit**

- PS (Side entry)

Note 1) S kit is composed of a flat ribbon cable housing assembly (AXT100-1-PU20) of ① SI unit and ② P kit (20 pins).
### Housing Assembly and SI Unit

<table>
<thead>
<tr>
<th>No.</th>
<th>Manifold</th>
<th>Part no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(SA kit)</td>
<td>EX330-5001</td>
<td>General type SI unit (Series EX300)</td>
</tr>
<tr>
<td></td>
<td>(SB kit)</td>
<td>EX130-SMB1</td>
<td>SI unit for MELSECNET/Mini-S3 Data Link System (Mitsubishi Electric Corporation)</td>
</tr>
<tr>
<td></td>
<td>(SC kit)</td>
<td>EX130-STA1</td>
<td>SI unit for SYSSBUS Wire System (OMRON Corporation)</td>
</tr>
<tr>
<td></td>
<td>(SD kit)</td>
<td>EX130-SSH1</td>
<td>SI unit for Satellite I/O Link System (SHARP Corporation)</td>
</tr>
<tr>
<td></td>
<td>(SF1 kit)</td>
<td>EX130-SUW1</td>
<td>SI unit for 16 point Uni-wire System (NKE Corporation)</td>
</tr>
<tr>
<td></td>
<td>(SH kit)</td>
<td>EX130-SUH1</td>
<td>SI unit for 16 point Uni-wire H System (NKE Corporation)</td>
</tr>
</tbody>
</table>

Note 1: S kit is composed of a flat ribbon cable housing assembly (AXT100-1-PU20) of 1 SI unit and P kit (20 pins).
Place an order for AXT-100-1-PS20 separately.
Note 2: Top/vertical entry connector for FU and PU while side (horizontal) entry connector for FS and PS.

### D Side End Plate Assembly

**VVQ1000-3A-3**

- **Option**
  - Nil: Common exhaust
  - S: Built-in silencer, direct exhaust

- **Electrical entry**
  - P: For F kit
  - P: For P kit
  - J: For J kit
  - L: For L kit
  - S: For S kit

**Note**
- The kit's fitting assembly is included.

### U Side End Plate Assembly No.

**VVQ1000-2A-3**

- **Option**
  - Nil: Common exhaust
  - S: Built-in silencer, direct exhaust

### Junction Box Assembly

**VVQ1000-1A-3**

- **Electrical entry**
  - P: For F kit
  - P: For G, T, S kit for 1 to 12 stations/Double wiring
  - P: For G, S kit for 13 to 16 stations/Double wiring
  - P: For G, S kit for 1 to 16 stations/Single wiring
  - L0: L0 kit
  - L1: L1 kit
  - L2: L2 kit
  - Stations (1 to 16)

**Note**
- Lead wire assembly for extensions is attached.

### Replacement Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>VVQ1000-80A-3-2</td>
<td>Seal</td>
<td>HNBR</td>
<td>12</td>
</tr>
<tr>
<td>9</td>
<td>VVQ1000-80A-4</td>
<td>Clip</td>
<td>Stainless steel</td>
<td>12</td>
</tr>
</tbody>
</table>

**Note**
- A set of parts containing 12 pcs. each is enclosed.

### Fittings Assembly

**VVQ1000-50A**

- **Port size**
  - C3: Applicable tubing ø3.2
  - C4: Applicable tubing ø4
  - C6: Applicable tubing ø6 (1)

### Station Increase Parts

*The station can be increased up to 2 stations.*

<table>
<thead>
<tr>
<th>No.</th>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VVQ1000-105A-3</td>
<td>Tie-rod bolt</td>
<td>Carbon steel</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>VVQ1000-105A-3</td>
<td>Junction cover</td>
<td>Stainless steel</td>
<td>1</td>
</tr>
</tbody>
</table>

**Note**
- Each number of replacement parts are included in one set.
- Number of stations (01 to 16)
## Series VQ

### VQ0000 (VV5Q04)/Plug Lead Unit, Flip Type

**(F, P, T, S kit)**

<table>
<thead>
<tr>
<th>Housing assembly and SI unit (2)</th>
<th>U side end plate assembly</th>
<th>Valve</th>
<th>D side end plate assembly</th>
<th>Station increase parts</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Diagram" /></td>
<td><img src="image" alt="Diagram" /></td>
<td><img src="image" alt="Diagram" /></td>
<td><img src="image" alt="Diagram" /></td>
<td><img src="image" alt="Diagram" /></td>
</tr>
</tbody>
</table>

* For how to increase the stations, refer to the instruction manual.

Note 1) S kit is composed of a flat ribbon cable housing assembly (AXT100-2-PU20) of ① SI unit and ⑦ P kit (20 pins).

Note 2) Since no connector assembly is included, order it separately. (Refer to page 2-4-69.)

Note 3) A housing assembly is not used for a C kit.

Note 4) A DIN rail clamping bracket is attached to each.

---

2-4-104
### Housing Assembly and SI Unit

**Housing assembly and SI unit no.**

<table>
<thead>
<tr>
<th>No.</th>
<th>Manifold</th>
<th>Part no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>(SA kit)</td>
<td>EX330-S001</td>
<td>General type SI unit (Series EX300)</td>
</tr>
<tr>
<td>1.</td>
<td>(SB kit)</td>
<td>EX130-SMB1</td>
<td>SI unit for MELSECNET/Mini-S3 Data Link System (Mitsubishi Electric Corporation)</td>
</tr>
<tr>
<td>1.</td>
<td>(SC kit)</td>
<td>EX130-STA1</td>
<td>SI unit for SYSBUS Wire System (OMRON Corporation)</td>
</tr>
<tr>
<td>1.</td>
<td>(SD kit)</td>
<td>EX130-SSH1</td>
<td>SI unit for Satellite I/O Link System (SHARP Corporation)</td>
</tr>
<tr>
<td>2.</td>
<td>SF1 kit</td>
<td>EX130-SUW1</td>
<td>SI unit for 16 point Uni-wire System (NKE Corporation)</td>
</tr>
<tr>
<td>2.</td>
<td>SH kit</td>
<td>EX130-SUH1</td>
<td>SI unit for 16 point Uni-wire H System (NKE Corporation)</td>
</tr>
<tr>
<td>3.</td>
<td>P kit</td>
<td>AXT100-2-P(l)</td>
<td>Flat ribbon cable housing assembly (2) = Number of pins: 26, 20, 16, 10</td>
</tr>
<tr>
<td>3.</td>
<td>F kit</td>
<td>AXT100-2-F(l)</td>
<td>D-sub connector housing assembly (2) = Number of pins: 25, 15</td>
</tr>
<tr>
<td>4.</td>
<td>T kit</td>
<td>AXT100-2-TB1</td>
<td>Terminal block assembly (8 terminals)</td>
</tr>
<tr>
<td>5.</td>
<td>T kit</td>
<td>AXT100-2-TB2</td>
<td>Terminal block assembly (8 terminals)</td>
</tr>
</tbody>
</table>

**Note 1)** S kit is composed of a flat ribbon cable housing assembly (AXT100-2-PS20) of SI unit and P kit (20 pins). Place an order for AXT100-2-P520 separately.

**Note 2)** Top/vertical entry connector for FU and PU while side (horizontal) entry connector for FS and PS.

**Note 3)** In the case of standard specifications and double wiring, 4 is for 1 to 4 stations and 5 is for 5 to 8 stations.

Since no connector assembly is included, order it separately. (Refer to page 2-4-69.)

### D Side End Plate Assembly

**D side end plate assembly no.**

**VVQ0000-3A-4-□**

- **Option**
  - S: Built-in silencer, direct exhaust
  - P: Exclusively for SUP

The end plate style is subject to the kit. The combination as standard is as follows.

<table>
<thead>
<tr>
<th>Kit</th>
<th>Part no.</th>
<th>U side end plate assembly</th>
<th>D side end plate assembly</th>
</tr>
</thead>
<tbody>
<tr>
<td>F, P, S kit</td>
<td>Common exhaust type</td>
<td>VVQ0000-3A-4-P</td>
<td>VVQ0000-2A-4-R</td>
</tr>
<tr>
<td>C kit</td>
<td>Built-in silencer, direct exhaust</td>
<td>VVQ0000-3A-4-P</td>
<td>VVQ0000-2A-4-S</td>
</tr>
</tbody>
</table>

### U Side End Plate Assembly No.

**U side end plate assembly no.**

**VVQ0000-2A-4-□**

- **Option**
  - S: Built-in silencer, direct exhaust
  - R: Exclusively for EXH (Common exhaust type)

### Replacement Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.</td>
<td>VVQ0000-80A-4-2</td>
<td>Seal</td>
<td>HNBR</td>
<td>12</td>
</tr>
</tbody>
</table>

**Note** A set of parts containing 12 pcs. each is enclosed.

### Station Increase Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.</td>
<td>VVQ0000-105A-4-□ (1)</td>
<td>Tie-rod bolt</td>
<td>Carbon steel</td>
<td>2</td>
</tr>
<tr>
<td>10.</td>
<td>VVQ0000-105A-4-□ (1)</td>
<td>Guide rod</td>
<td>Stainless steel</td>
<td>1</td>
</tr>
</tbody>
</table>

**Note 1)** Each number of replacement parts are included in one set.

**Note 2)** □ Number of stations (01 to 16)

**Note 3)** 8 and 9 are in one set.
# Series VQ

## VQ1000 (VVQ14)/Plug Lead Unit, Flip Type

**(F, P, T, S kit)**

*For how to increase the stations, refer to the instruction manual.*

<table>
<thead>
<tr>
<th>Housing assembly and SI unit</th>
<th>U side end plate assembly</th>
<th>Valve</th>
<th>D side end plate assembly</th>
<th>Station increase parts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>S kit</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Diagram S kit" /></td>
<td><img src="image" alt="Diagram U side end plate assembly" /></td>
<td><img src="image" alt="Diagram Valve" /></td>
<td><img src="image" alt="Diagram D side end plate assembly" /></td>
<td><img src="image" alt="Diagram Station increase parts" /></td>
</tr>
<tr>
<td><strong>P kit</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Diagram P kit" /></td>
<td><img src="image" alt="Diagram U side end plate assembly" /></td>
<td><img src="image" alt="Diagram Valve" /></td>
<td><img src="image" alt="Diagram D side end plate assembly" /></td>
<td><img src="image" alt="Diagram Station increase parts" /></td>
</tr>
<tr>
<td><strong>F kit</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Diagram F kit" /></td>
<td><img src="image" alt="Diagram U side end plate assembly" /></td>
<td><img src="image" alt="Diagram Valve" /></td>
<td><img src="image" alt="Diagram D side end plate assembly" /></td>
<td><img src="image" alt="Diagram Station increase parts" /></td>
</tr>
<tr>
<td><strong>T kit</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Diagram T kit" /></td>
<td><img src="image" alt="Diagram U side end plate assembly" /></td>
<td><img src="image" alt="Diagram Valve" /></td>
<td><img src="image" alt="Diagram D side end plate assembly" /></td>
<td><img src="image" alt="Diagram Station increase parts" /></td>
</tr>
</tbody>
</table>

**Note 1)** S kit is composed of a flat ribbon cable housing assembly (AXT100-2-PU20) of SI unit and P kit (20 pins).

**Note 2)** Since no connector assembly is included, order it separately. (Refer to page 2-4-69.)

**Note 3)** A housing assembly is not used for C kit.

**Note 4)** A DIN rail clamping bracket is attached to each.
<Housing Assembly and SI Unit>

Housing assembly and SI unit no.

<table>
<thead>
<tr>
<th>No.</th>
<th>Manifold</th>
<th>Part no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>①</td>
<td>(SA kit)</td>
<td>EX330-S001</td>
<td>General type SI unit (Series EX300)</td>
</tr>
<tr>
<td></td>
<td>(SB kit)</td>
<td>EX130-SMB1</td>
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</tr>
<tr>
<td></td>
<td>(SC kit)</td>
<td>EX130-STA1</td>
<td>SI unit for SYSBUS Wire System (OMRON Corporation)</td>
</tr>
<tr>
<td></td>
<td>(SD kit)</td>
<td>EX130-SSH1</td>
<td>SI unit for Satellite I/O Link System (SHARP Corporation)</td>
</tr>
<tr>
<td></td>
<td>(SF1 kit)</td>
<td>EX130-SUW1</td>
<td>SI unit for 16 point Uni-wire System (NKE Corporation)</td>
</tr>
<tr>
<td></td>
<td>(SH kit)</td>
<td>EX130-SUH1</td>
<td>SI unit for 16 point Uni-wire H System (NKE Corporation)</td>
</tr>
<tr>
<td>②</td>
<td>P kit</td>
<td>AXT100-2-P 20</td>
<td>Flat ribbon cable housing assembly = Number of pins: 26, 20, 16, 10</td>
</tr>
<tr>
<td>③</td>
<td>F kit</td>
<td>AXT100-2-F 20</td>
<td>D-sub connector housing assembly = Number of pins: 25, 15</td>
</tr>
<tr>
<td>④</td>
<td>T kit</td>
<td>AXT100-2-TB1</td>
<td>Terminal block assembly (8 terminals)</td>
</tr>
<tr>
<td>⑤</td>
<td>T kit</td>
<td>AXT100-2-TB2</td>
<td>Terminal block assembly (8 terminals)</td>
</tr>
</tbody>
</table>

Note 1) S kit is composed of a flat ribbon cable housing assembly (AXT100-2-PS20) of ① SI unit and ② P kit (20 pins). Place an order for AXT100-2-PS20 separately.

Note 2) Top/vertical entry connector for FU and PU while side (horizontal) entry connector for FS and PS.

Note 3) Since no connector assembly is included, order it separately. (Refer to page 2-4-69.)

Note 4) In the case of standard specifications and double wiring, ④ is for 1 to 4 stations and ⑤ is for 5 to 8 stations.

<D Side End Plate Assembly>

D side end plate assembly no. VVQ1000-3A-4-

Option

Nil: Common exhaust
S: Built-in silencer, direct exhaust (Applicable for C kit only)

Note) The S’s fitting assembly is included.

<U Side End Plate Assembly No.>

U side end plate assembly no. VVQ1000-2A-4-

Option

Nil: Common exhaust
S: Built-in silencer, direct exhaust

Note) The S’s fitting assembly is included.

<Replacement Parts>

<table>
<thead>
<tr>
<th>No.</th>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>⑧</td>
<td>VVQ1000-80A-3-2</td>
<td>Seal</td>
<td>HNBR</td>
<td>12</td>
</tr>
<tr>
<td>⑨</td>
<td>VVQ1000-80A-4</td>
<td>Clip</td>
<td>Stainless steel</td>
<td>12</td>
</tr>
</tbody>
</table>

Note) A set of parts containing 12 pcs. each is enclosed.

<Fittings Assembly>

Fittings assembly part no. VVQ1000-50A-

Port size

C3: Applicable tubing ø3.2
C4: Applicable tubing ø4
C6: Applicable tubing ø6

Note 1) Standard SUP/EXH port is C6.
Note 2) Purchasing order is available in units of 10 pieces.

<Station Increase Parts>

<table>
<thead>
<tr>
<th>No.</th>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>⑩</td>
<td>VVQ1000-105A-4-2</td>
<td>Tie-rod bolt</td>
<td>Carbon steel</td>
<td>2</td>
</tr>
<tr>
<td>⑪</td>
<td></td>
<td>Guide rod</td>
<td>Stainless steel</td>
<td>1</td>
</tr>
</tbody>
</table>

Note 1) Each number of replacement parts are included in one set.
Note 2) ⑩: Number of stations (01 to 16)
Note 3) ⑩ and ⑪ are in one set.
VQ2000 (VV5Q24)/Plug Lead Unit, Flip Type

(F, P, T, S kit)

* For how to increase the stations, refer to the instruction manual.

<table>
<thead>
<tr>
<th>Housing assembly and SI unit (1)</th>
<th>U side end plate assembly</th>
<th>Valve</th>
<th>D side end plate assembly</th>
<th>Station increase parts</th>
</tr>
</thead>
</table>

Note 1)  S kit is composed of a flat ribbon cable housing assembly (AXT100-2-PU20) of 1) SI unit and 2) P kit (20 pins).

Note 2)  Since no connector assembly is included, order it separately. (Refer to page 2-4-69.)

Note 3)  A housing assembly is not used for a C kit.

Note 4)  A DIN rail clamping bracket is attached to each.
<Housing Assembly and SI Unit>
Housing assembly and SI unit no.

<table>
<thead>
<tr>
<th>No.</th>
<th>Manifold</th>
<th>Part no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(1)</td>
<td>(SA kit)</td>
<td>EX330-S001</td>
<td>General type SI unit (Series EX300)</td>
</tr>
<tr>
<td></td>
<td>(SB kit)</td>
<td>EX130-SMB1</td>
<td>SI unit for MELSECNET/mini-S3 Data Link System (Mitsubishi Electric Corporation)</td>
</tr>
<tr>
<td></td>
<td>(SC kit)</td>
<td>EX130-STA1</td>
<td>SI unit for SYSBUS Wire System (OMRON Corporation)</td>
</tr>
<tr>
<td></td>
<td>(SD kit)</td>
<td>EX130-SSH1</td>
<td>SI unit for Satellite I/O Link System (SHARP Corporation)</td>
</tr>
<tr>
<td></td>
<td>SF1 kit</td>
<td>EX130-SUW1</td>
<td>SI unit for 16 point Uni-wire System (NKE Corporation)</td>
</tr>
<tr>
<td></td>
<td>SH kit</td>
<td>EX130-SUH1</td>
<td>SI unit for 16 point Uni-wire H System (NKE Corporation)</td>
</tr>
<tr>
<td>2</td>
<td>P kit</td>
<td>AXT100-2-P</td>
<td>Flat ribbon cable housing assembly = Number of pins: 26, 20, 16, 10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/L50132</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>F kit</td>
<td>AXT100-2-F</td>
<td>D-sub connector housing assembly = Number of pins: 25, 15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/L50132</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>T kit</td>
<td>AXT100-2-TB1</td>
<td>Terminal block assembly (8 terminals)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/L50132</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>T kit</td>
<td>AXT100-2-TB2</td>
<td>Terminal block assembly (8 terminals)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/L50132</td>
<td></td>
</tr>
</tbody>
</table>

Note 1) S kit is composed of a flat ribbon cable housing assembly (AXT100-2-PS20) of 1 SI unit and 2 P kit (20 pins). Place an order for AXT100-2-PS20 separately.
Note 2) Top/vertical entry connector for FU and PU while side (horizontal) entry connector for FS and PS.
Note 3) Since no connector assembly is included, order it separately. (Refer to page 2-4-93.)
Note 4) In the case of standard specifications and double wiring, 4 is for 1 to 4 stations and 5 is for 5 to 8 stations.

<D Side End Plate Assembly>
6 D side end plate assembly no.
VVQ2000-3A-4-

Option
Nil: Common exhaust
S: Built-in silencer, direct exhaust
(Applicable for C kit only)

Note) The S's fitting assembly is included.

<U Side End Plate Assembly No.>
7 U side end plate assembly no.
VVQ2000-2A-4-

Option
Nil: Common exhaust
S: Built-in silencer, direct exhaust

Note) The S's fitting assembly is included.

<Replacement Parts>

<table>
<thead>
<tr>
<th>No.</th>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>VVQ2000-80A-3-2</td>
<td>Seal</td>
<td>HNBR</td>
<td>12</td>
</tr>
<tr>
<td>9</td>
<td>VVQ2000-80A-3-4</td>
<td>Clip</td>
<td>Stainless steel</td>
<td>12</td>
</tr>
</tbody>
</table>

Note) A set of parts containing 12 pcs. each is enclosed.

<Fittings Assembly>
10 Fittings assembly part no.
VVQ1000-51A-

Port size
C4: Applicable tubing ø4
C6: Applicable tubing ø6
C8: Applicable tubing ø8 (1)

Note 1) Standard SUP/EXH port is C8.
Note 2) Purchasing order is available in units of 10 pieces.

<Station Increase Parts>

<table>
<thead>
<tr>
<th>No. (2)</th>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>VVQ2000-105A-4-2</td>
<td>Tie-rod bolt</td>
<td>Carbon steel</td>
<td>2</td>
</tr>
<tr>
<td>11</td>
<td>VVQ2000-105A-4-3</td>
<td>Guide rod</td>
<td>Stainless steel</td>
<td>1</td>
</tr>
</tbody>
</table>

Note 1) Each number of replacement parts are included in one set.
Note 2) Number of stations (01 to 16)
Note 3) 10 and 11 are in one set.
**Series VQ**

**VQ1000 (VV5Q17)/Plug Lead Unit, Cassette Type**

*(F, P, T, S kit)*

*For how to increase the stations, refer to the instruction manual.*

<table>
<thead>
<tr>
<th>S kit</th>
<th>P kit</th>
<th>F kit</th>
<th>T kit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing assembly and SI unit (3)</td>
<td>Valve</td>
<td>D side end plate assembly</td>
<td></td>
</tr>
<tr>
<td>U side end plate assembly</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Note 1)** S kit is composed of a flat ribbon cable housing assembly (AXT100-2-PU20) of SI unit and P kit (20 pins).

**Note 2)** Since no connector assembly is included, order it separately. (Refer to page 2-4-93.)

**Note 3)** A housing assembly is not used for a C kit.

**Note 4)** A DIN rail clamping bracket is attached to each.
<Housing Assembly and SI Unit>

Housing assembly and SI unit no.

<table>
<thead>
<tr>
<th>No.</th>
<th>Manifold</th>
<th>Part no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(SA kit)</td>
<td>EX321-S001(-XP)</td>
<td>General type SI unit (Series EX300)</td>
<td></td>
</tr>
<tr>
<td>(SB kit)</td>
<td>EX121-SMB1(-XP)</td>
<td>SI unit for MELSECNET/Mini-S3 Data Link System (Mitsubishi Electric Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SC kit)</td>
<td>EX121-STA1(-XP)</td>
<td>SI unit for SYSBUS Wire System (OMRON Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SD kit)</td>
<td>EX121-SSH1(-XP)</td>
<td>SI unit for Satellite I/O Link System (SHARP Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SE kit)</td>
<td>EX121-SPA1</td>
<td>SI unit for MEWNET-F System (Matsushita Electric Works Ltd.)</td>
<td></td>
</tr>
<tr>
<td>(SF1 kit)</td>
<td>EX121-SUW1(-XP)</td>
<td>SI unit for 16 point Uni-wire System (NKE Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SG kit)</td>
<td>EX121-SUW1(-XP)</td>
<td>SI unit for 16 point Uni-wire System (NKE Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SH kit)</td>
<td>EX121-SUH1(-XP)</td>
<td>SI unit for 16 point Uni-wire H System (NKE Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SJ1 kit)</td>
<td>EX121-SSL1(-XP)</td>
<td>SI unit for 16 point S-LINK System (SUNX Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SJ2 kit)</td>
<td>EX121-SSL2(-XP)</td>
<td>SI unit for 8 point S-LINK System (SUNX Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SK kit)</td>
<td>EX121-SFU1(-XP)</td>
<td>SI unit for T-LINK Mini System (Fuji Electric Co., Ltd.)</td>
<td></td>
</tr>
<tr>
<td>(SQ kit)</td>
<td>EX121-SDN1</td>
<td>SI unit for DeviceNet, CompoBus/D (OMRON Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SR1 kit)</td>
<td>EX121-SCS1(-XP)</td>
<td>SI unit for 16 point CompoBus/S System (OMRON Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SR2 kit)</td>
<td>EX121-SCS2(-XP)</td>
<td>SI unit for 8 point CompoBus/S System (OMRON Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SV kit)</td>
<td>EX121-SMJ1(-XP)</td>
<td>Mitsubishi Electric Corporation: CC-LINK System</td>
<td></td>
</tr>
</tbody>
</table>

Note 1) A S kit is composed of a flat ribbon cable housing assembly (AXT100-2-PS20) of ① SI unit and ② P kit (20 pins). Place an order for AXT100-2-PS20 separately. Suffix -XP for dustproof type SI unit.

Note 2) Top/vertical entry connector for FU and PU while side (horizontal) entry connector for FS and PS. Since no connector assembly is included, order it separately. (Refer to page 2-4-93.)

Note 3) In the case of standard specifications and double wiring, ④ is for 1 to 4 stations and ⑤ is for 5 to 8 stations.

<D Side End Plate Assembly>

⑥ D side end plate assembly no.

VVQ1000-3A-7

Note) The ⑥'s fitting assembly is included.

<U Side End Plate Assembly No.>

⑦ U side end plate assembly no.

VVQ1000-2A-7

Note) The ⑦'s fitting assembly is included.

<Replacement Parts>

<table>
<thead>
<tr>
<th>No.</th>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>⑧</td>
<td>VVQ1000-80A-7-2</td>
<td>Bushing assembly</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>⑨</td>
<td>VVQ1000-80A-7-4</td>
<td>Clip</td>
<td>Stainless steel</td>
<td>12</td>
</tr>
</tbody>
</table>

<Fittings Assembly>

⑪ Fittings assembly part no.

VVQ1000-50A-1

Port size

C3: Applicable tubing ø3.2
C4: Applicable tubing ø4
C6: Applicable tubing ø6

Note 1) Standard SUP/EXH port is C6.
Note 2) Purchasing order is available in units of 10 pieces.
**Base Mounted**

**Metal Seal/Rubber Seal**

**Series VQ**

---

**Space-saving profile**

All pilot valves are compactly mounted on one side. The space-saving design of mounting all fittings on one side permits mounting in three directions.

- Space-saving .......... 45% less
- Capacity-saving ....... 50% less

---

**Unprecedented high speed response and long service life**

(Metal seal, single, with indicator light/surge voltage suppressor)

- VQ0000: 10 ms
- VQ1000: 10 ms
- VQ2000: 20 ms

200 million cycles

Dispersion accuracy ±2 ms

---

**Thin compact design with large flow capacity**

<table>
<thead>
<tr>
<th>Model</th>
<th>Manifold pitch (mm)</th>
<th>Flow characteristics</th>
<th>Cylinder size</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ0000</td>
<td>10.7</td>
<td>C [dm³/(s·bar)]</td>
<td>Up to ø40</td>
</tr>
<tr>
<td>VQ1000</td>
<td>10.5</td>
<td>C [dm³/(s·bar)]</td>
<td>Up to ø50</td>
</tr>
<tr>
<td>VQ2000</td>
<td>16</td>
<td></td>
<td>Up to ø80</td>
</tr>
</tbody>
</table>

* Flow characteristics: 4/2 → 5/3 (A/B → R1/R2)

---

**Innovative mounting methods**

The non-bias, one-clamp structure permits easy valve replacement. (Plug-in unit)

---

**Built-in One-touch fittings for easy piping.**

---

**A variety of options**

---

**A variety of common wiring methods are standardized.**

**F**

- (D-sub connector)
  - Number of pins: 15, 25
  - Top entry
  - Side entry

**J**

- (Flat ribbon cable connector)
  - Number of pins: 20
  - (PC Wiring System compliant)
  - Top entry
  - Side entry

**G**

- Flat ribbon cable with terminal block
  - Number of pins: 20
  - (Terminal box)
  - (Lead wire)

---

* The photo does not show an actual use example.
## Valve Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Type of actuation</th>
<th>Voltage</th>
<th>Electrical entry</th>
<th>Manual override</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>Single</td>
<td>4/2 V DC (50 Hz)</td>
<td>L plug connector</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td>100 V AC (50 Hz)</td>
<td>M plug connector</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>220 V AC (60 Hz)</td>
<td>Push type, Tool required</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Closed center</td>
<td>100 V AC (60 Hz)</td>
<td>Locking type (Manual)</td>
<td></td>
</tr>
</tbody>
</table>

### Sonic conductance (C [dm³/s·bar])

<table>
<thead>
<tr>
<th>Series</th>
<th>Value 1</th>
<th>Value 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>0.72</td>
<td>0.72</td>
</tr>
<tr>
<td>VQ2000</td>
<td>1.0</td>
<td>0.65</td>
</tr>
<tr>
<td>VQ0000</td>
<td>2.6</td>
<td>2.0</td>
</tr>
<tr>
<td>VQ1000</td>
<td>3.2</td>
<td>2.2</td>
</tr>
<tr>
<td>VQ050</td>
<td>0.44</td>
<td>0.32</td>
</tr>
<tr>
<td>VQ051</td>
<td>0.53</td>
<td>0.44</td>
</tr>
<tr>
<td>VQ110</td>
<td>0.72</td>
<td>0.72</td>
</tr>
<tr>
<td>VQ111</td>
<td>1.0</td>
<td>0.65</td>
</tr>
<tr>
<td>Option</td>
<td>P. 2-4-215</td>
<td>P. 2-4-177</td>
</tr>
<tr>
<td>-------------------------</td>
<td>------------</td>
<td>------------</td>
</tr>
<tr>
<td>External pilot</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D-sub connector 15P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flat ribbon cable 10P 16P 20P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative common specifications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>One-touch fitting Inch size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>For special wiring spec.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blanking plate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual SUP/EXH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUP/EXH passage spacer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name plate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Back pressure check valve</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIN rail mounting style</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Built-in silencer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silencer for EXH port</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elbow fitting for cylinder port</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two stations matching fittings for double flow rate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plug for cylinder port</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regulator unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ejector unit mounted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Double check block</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For S kit, please contact SMC.

For S, G kit, please contact SMC.

Except L kit

For special wiring spec.

Standard

2-4-115

VQC

SQ

VQ0

VQ4

VQ5

VQZ

VQD
## Manifold Variations

<table>
<thead>
<tr>
<th>Kit</th>
<th>Description</th>
</tr>
</thead>
</table>
| **F** | D-sub connector  
Conforming to MIL D-sub connector |
| **P** | Flat ribbon cable connector  
(26, 20, 16, 10 pins)  
Conforming to MIL flat ribbon cable connector  
PC Wiring System compatible |
| **J** | Flat ribbon cable connector  
(20 pins)  
Conforming to MIL flat ribbon cable connector  
PC Wiring System compatible  
Applicable to OMRON’s serial transmission unit |
| **G** | Flat ribbon cable with power supply terminal block  
Conforming to MIL flat ribbon cable connector  
PC Wiring System compatible |

### Series VQ1000

- **Plug-In**  
  - P. 2-4-130  
  - P/J kit

- **Plug Lead**  
  - P. 2-4-188  
  - P kit only

### Series VQ2000

- **Plug-In**  
  - P. 2-4-130  
  - P/J kit

- **Plug Lead**  
  - P. 2-4-188  
  - P kit only

### Series VQ0000

- **Plug-In**  
  - P. 2-4-130  
  - P/J kit

### Series VQ1000

- **Plug-In**  
  - P. 2-4-130  
  - P/J kit

- **Plug Lead**  
  - P. 2-4-188  
  - P kit only
## Manifold Variations

<table>
<thead>
<tr>
<th>Kit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>Terminal block box (Terminal block) Terminal blocks are compactly arranged on one side.</td>
</tr>
<tr>
<td>L</td>
<td>Lead wire Direct electrical entry type</td>
</tr>
<tr>
<td>S</td>
<td>Serial transmission unit Enables single-wire solenoid valve-PLC operation</td>
</tr>
<tr>
<td>M</td>
<td>Circular connector IP65 (Dusttight/Low jetproof type)</td>
</tr>
</tbody>
</table>

### Terminal block box (Terminal block)

- Terminal block box: P. 2-4-146
- Enclosure IP65 compliant: P. 2-4-146

### Lead wire

- P. 2-4-150

### Serial transmission unit

- P. 2-4-154

### Circular connector

- IP65 compliant W type only: P. 2-4-158

### Enclosure

- IP65 compliant: P. 2-4-150

### Terminal block

- P. 2-4-196

### Enclosure

- IP65 compliant: P. 2-4-196

### Terminal block box

- P. 2-4-154

### Enclosure

- IP65 compliant: P. 2-4-200

### Circular connector

- IP65 compliant: P. 2-4-204

---

2-4-117
# Cylinder Speed Chart

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

## Conditions

<table>
<thead>
<tr>
<th>Series</th>
<th>Conditions</th>
<th>Series CJ2</th>
<th>Series CM2</th>
<th>Series MB, CA1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>VQ0151</strong></td>
<td>Tube bore x Length</td>
<td>T0425 x 1 m</td>
<td>AS2001F-04</td>
<td>AN103-X233</td>
</tr>
<tr>
<td></td>
<td>Speed controller</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Silencer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>VQ1101</strong></td>
<td>Tube bore x Length</td>
<td>T0604 x 1 m</td>
<td>AS3001F-06</td>
<td>AN103-X233</td>
</tr>
<tr>
<td></td>
<td>Speed controller</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Silencer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>VQ2101</strong></td>
<td>Tube bore x Length</td>
<td>T0806 x 1 m</td>
<td>AS3001F-08</td>
<td>AN200-KM8</td>
</tr>
<tr>
<td></td>
<td>Speed controller</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Silencer</td>
<td></td>
<td></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%

---

### Bore size

<table>
<thead>
<tr>
<th>Series</th>
<th>Average speed (mm/s)</th>
<th>Bore size</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ0151</td>
<td>Port size: One-touch fitting for ø6</td>
<td>800 700 600 500 400 300 200 100 0</td>
</tr>
<tr>
<td>VQ1101</td>
<td>Port size: One-touch fitting for ø8</td>
<td>800 700 600 500 400 300 200 100 0</td>
</tr>
<tr>
<td>VQ2101</td>
<td>Port size: One-touch fitting for ø10</td>
<td>800 700 600 500 400 300 200 100 0</td>
</tr>
</tbody>
</table>

---

### Notes

- Series CJ2, Pressure 0.5 MPa, Load factor 50%, Stroke 60 mm
- Series CM2, Pressure 0.5 MPa, Load factor 50%, Stroke 300 mm
- Series MB, CA1, Pressure 0.5 MPa, Load factor 50%, Stroke 500 mm

---

**Perpendicular, upward actuation**

**Horizontal actuation**

---

© SMC
Series VQ1000
Base Mounted Plug-in Unit

How to Order Manifold

Option

**Series**

**Manifold**

**Stations**

- The maximum and minimum number of stations are varied depending on kit.
  (Refer to the table below.)

**Cylinder port**

**Symbol**

- C3: With One-touch fitting ø3.2
- C4: With One-touch fitting ø4
- C6: With One-touch fitting ø6
- M5: M5 thread
- CM: With mixed size/port plug
- L3: With elbow One-touch fitting ø3.2 for top piping
- L4: With elbow One-touch fitting ø4 for top piping

**Port size**

- L6: W/ elbow One-touch fitting ø6 for top piping
- L5: Elbow M5 thread for top piping
- B3: W/ elbow One-touch fitting ø3.2 for bottom piping
- B4: W/ elbow One-touch fitting ø4 for bottom piping
- B6: W/ elbow One-touch fitting ø6 for bottom piping
- B5: Elbow M5 thread for bottom piping
- LM: Mixed size for elbow piping

**Symbol**

- Nil
- 2: 200/220 VAC models (Applicable to F and L kits)
- B: With back pressure check valve
- D: DIN rail mounting
- G1: 1 set of regulator unit
- G2: 2 sets of regulator unit
- G3: 3 sets of regulator unit
- K: Special wiring specifications (Not double wiring)
- N: With name plate
- R: External pilot
- S: Built-in silencer, direct exhaust

**Note 1)** When two or more symbols are specified, indicate them alphabetically. Example) BRS

**Note 2)** Models with a suffix “-B” have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by using the manifold specification sheet.

**Note 3)** Specify the mounting position in the manifold specification sheet.

**Note 4)** Refer to page 2-4-170 for the details of ejector mounted styles. A combination of “J” and “N” is unavailable.

**Note 5)** Specify the wiring by means of the manifold specification sheet. (Except L kit)

**Note 6)** Indicate “R” for the valve with external pilot.

**Simple specials are available with SMC Simple Specials System.**

For details about applicable models, please contact SMC.

**Kit/Electrical entry/Cable length**

- **F kit** (D-sub connector)
  - Top entry
  - Side entry

- **P kit** (Flat ribbon cable connector)
  - Top entry
  - Side entry

- **J kit** (Flat ribbon cable connector (20P))
  - Top entry
  - Side entry

- **G Kit** (Flat ribbon cable connector with power supply terminal block)
  - Top entry
  - Side entry

**Note 1)** Besides the above, F and P kits with different number of pins are available. Refer to page 2-4-177 for details.

**Note 2)** For details, refer to page 2-4-178.

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How to Order Valves

**VQ11000**

**Series**

1. **1**
   - VQ1100
   - Type of actuation
     - 2 position single
     - 2 position double
     - 3 position closed center
     - 3 position exhaust center
     - 3 position pressure center
     - 4 position dual 3 port valve

**Function**

- Symbol
- Specifications
- DC
- AC
- Nil
- Standard type
- (1.0 W)
- High pressure type
- (1.5 W)
- Low wattage type
- (0.5 W)

**Coil 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

**Note**

- Power consumption for AC type: Refer to page 2-4-129.
- For external pilot and negative COM specifications, refer to "Option" on pages 2-4-178 to 2-4-179.

**Manual override**

- Nil: Non-locking push type (Tool required)
- B: Push-locking slotted type

**Light/Surge voltage suppressor**

- Nil: Yes
- None

**Seal**

- 0: Metal seal
- 1: Rubber seal

**Note**

- Rubber seal type only.

How to Order Manifold Assembly

**Example**

- Single solenoid (24 VDC)
  - VQ1100-5 (4 sets)
- Double solenoid (24 VDC)
  - VQ1200-5 (4 sets)

**Blanking plate**

- VQ1100-10A-1 (1 set)
- Cylinder ports: With One-touch fitting  

**Kit**

- **T** kit (Terminal box)
- **L** kit (Lead wire cable)
- **S** kit (Serial transmission unit)

**Series VQ1000**

**Plug-in Unit**

**Type of actuation**

1. **1**
   - VQ1100
   - 2 position single
   - 2 position double
   - 3 position closed center
   - 3 position exhaust center
   - 3 position pressure center
   - 4 position dual 3 port valve

**Function**

- Symbol
- Specifications
- DC
- AC
- Nil
- Standard type
- (1.0 W)
- High pressure type
- (1.5 W)
- Low wattage type
- (0.5 W)

**Coil 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

**Note**

- Power consumption for AC type: Refer to page 2-4-129.
- For external pilot and negative COM specifications, refer to "Option" on pages 2-4-178 to 2-4-179.

**Manual override**

- Nil: Non-locking push type (Tool required)
- B: Push-locking slotted type

**Light/Surge voltage suppressor**

- Nil: Yes
- None

**Seal**

- 0: Metal seal
- 1: Rubber seal

**Note**

- Rubber seal type only.

**Kit**

- **T** kit (Terminal box)
- **L** kit (Lead wire cable)
- **S** kit (Serial transmission unit)

The valve is equipped with an indicator light and surge voltage suppressor, and the voltage is 24 VDC. The dust-proof SI unit is also available. Refer to page 2-4-154 for details.
Manifold Option

Blanking plate assembly
VVQ1000-10A-1

SUP block plate
VVQ1000-16A

Double check block
VVQ1000-FPG-C6

2 stations matching fitting assembly
VVQ1000-52A-C6

Blanking plug
KQ2P-□

Individual SUP spacer
VVQ1000-P-1-C6

EXH block base assembly
VVQ1000-19A-□

Elbow fitting assembly
VVQ1000-F-L

Silencer (For EXH port)
AN200-KM8/AN203-KM8

Blanking plate with connector
VVQ1000-1C

Individual EXH spacer
VVQ1000-R-1-C6

Back pressure check valve assembly [-B]
VVQ1000-18A

DIN rail mounting bracket [-D]
VVQ1000-57A

Regulator unit
VVQ1000-AR-1

With vacuum ejector unit
[-J]

Name plate [-N]
VVQ1000-□-Station (1 to Max. stations)

Built-in silencer, direct exhaust [-S]

Port plug
VVQ0000-58A

• For cylinder port fittings part no., refer to page 2-4-175.

• For replacement parts, refer to page 2-4-227.
**Series VQ2000**

**Base Mounted Plug-in Unit**

**How to Order Manifold**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>None</td>
</tr>
<tr>
<td>B</td>
<td>Back pressure check valve</td>
</tr>
<tr>
<td>D</td>
<td>DIN rail mounting style</td>
</tr>
<tr>
<td>K</td>
<td>Special wiring specifications (Except double wiring)</td>
</tr>
<tr>
<td>N</td>
<td>With name plate</td>
</tr>
<tr>
<td>R</td>
<td>External pilot</td>
</tr>
<tr>
<td>S</td>
<td>Built-in silencer, direct exhaust</td>
</tr>
<tr>
<td>W</td>
<td>Enclosure: Dust tight/splashproof type (IP65) [T, L, S and M kits only]</td>
</tr>
</tbody>
</table>

**Note 1)** Specify “Mixed size/with port plug” on the manifold specification sheet.

**Note 2)** Inch-size One-touch fittings are available. For details, refer to page 2-4-179.

Simple specials are available with SMC Simple Specials System. For details about applicable models, Contact SMC.

**Kit/Electrical entry/Cable length**

- **F** kit (D-sub connector)
  - Top entry
  - Side entry
  - Connector entry direction: Top entry | Side entry
  - Kit: U0, U1, U2, U3
  - 2 to 24 stations
  - Without cable
  - With cable (1.5 m)
  - With cable (3 m)
  - With cable (5 m)

- **P** kit (Flat ribbon cable connector)
  - Top entry
  - Side entry
  - Connector entry direction: Top entry | Side entry
  - Kit: U0, U1, U2, U3
  - 2 to 24 stations
  - Without cable
  - With cable (1.5 m)
  - With cable (3 m)

- **J** kit (Flat ribbon cable connector (20P))
  - Top entry
  - Side entry
  - Connector entry direction: Top entry | Side entry
  - Kit: U0, U1, U2, U3
  - 2 to 16 stations
  - Without cable
  - With cable (1.5 m)
  - With cable (3 m)

- **G** kit (Flat ribbon cable connector with power supply terminal block)
  - Top entry
  - Side entry
  - Connector entry direction: Top entry | Side entry
  - Kit: U0, U1, U2, U3
  - 2 to 16 stations
  - Without cable
  - With cable (1.5 m)
  - With cable (3 m)

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*For details about models with a suffix “-G” have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by manifold specification sheet.

*For details about models with a suffix “-E” have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by manifold specification sheet.

*For details about models with a suffix “-B” have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by manifold specification sheet.

*For details about models with a suffix “-B” have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by manifold specification sheet.

*For details about models with a suffix “-B” have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by manifold specification sheet.
How to Order Valves

**VQ 2100 Y5**

**Series**

2 VQ2000

**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

**Function**

Symbol Specifications DC AC

| 1 | 0 | 0 | 5 |

| Nil | Standard type (1.0 W) | Nil |
| Nil | High pressure type (1.5 W) | Nil |
| Nil | Low wattage type (0.5 W) | Nil |

**Coil 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 |

**Manual override**

Nil

**Light/Surge voltage suppressor**

Nil: Non-locking push type (tool required)

B: Push-locking slotted type

C: Locking type (Manual)

**Enclosure**

Nil: Dust-protected

W: Dust/tight/Low jetproof type (IP65)

**Note**

For power consumption of AC type, refer to page 2-129.

For external pilot and negative COM specifications, refer to “Option” on page 2-178.

Specify the part numbers for valves and options together beneath the manifold base part number. Besides, when the arrangement will be complicated, specify them by means of the manifold specification sheet.

**Notes**

1) For sub-plate single unit type, refer to page 2-165.

2) Parts are available with different number of pins. Refer to page 2-177 for details.

3) Different number of pins are available. Refer to page 2-178 for details.

4) Kits with IP65 enclosure applicable to input/output are also available. Refer to page 2-162 for details.
### Base Mounted

#### Series VQ2000

#### Manifold Option

<table>
<thead>
<tr>
<th>Component</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blanking plate assembly</td>
<td>VVQ2000-10A-1</td>
</tr>
<tr>
<td>SUP block plate</td>
<td>VVQ2000-16A</td>
</tr>
<tr>
<td>DIN rail mounting bracket [-D]</td>
<td>VVQ2000-57A</td>
</tr>
<tr>
<td>Port plug</td>
<td>VVQ1000-58A</td>
</tr>
<tr>
<td>Individual SUP spacer</td>
<td>VVQ2000-P-1-C8</td>
</tr>
<tr>
<td>EXH block plate</td>
<td>VVQ2000-19A</td>
</tr>
<tr>
<td>Built-in silencer, direct exhaust [-S]</td>
<td>VVQ2000-19A</td>
</tr>
<tr>
<td>Blanking plug</td>
<td>VQ2000-19A</td>
</tr>
<tr>
<td>Individual EXH spacer</td>
<td>VVQ2000-R-1-C8</td>
</tr>
<tr>
<td>Name plate [-N]</td>
<td>VVQ2000-N-Station</td>
</tr>
<tr>
<td>Silencer (For EXH port)</td>
<td>AN200-KM10</td>
</tr>
<tr>
<td>Back pressure check valve assembly [-B]</td>
<td>VVQ2000-19A</td>
</tr>
<tr>
<td>Elbow fitting assembly</td>
<td>VVQ2000-F-PG-C10</td>
</tr>
<tr>
<td>2 stations matching fitting assembly</td>
<td>VVQ2000-52A-C10</td>
</tr>
<tr>
<td>Double check block</td>
<td>VQ2000-FPG-C10</td>
</tr>
</tbody>
</table>

- For cylinder port fittings part no., refer to page 2-4-175.
- For replacement parts, refer to page 2-4-227.

Exhaust port

To CYL port

C8 (EXH port)

C8 (SUP port)

One-touch fitting for ø8

Silencer (For EXH port)

AN200-KM10

C8 (EXH port)

One-touch fitting for ø8

Elbow fitting assembly

VVQ2000-F-PG-C10

2 stations matching fitting assembly

VVQ2000-52A-C10

Double check block

VQ2000-FPG-C10

*For cylinder port fittings part no., refer to page 2-4-175.
For replacement parts, refer to page 2-4-227.*
### Series VQ1000/2000

**Base Mounted Plug-in Unit**

<table>
<thead>
<tr>
<th>Model</th>
<th>Number of solenoids</th>
<th>Flow characteristics</th>
<th>Response time (ms)</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1 → 2/4 (P → A/B)</td>
<td>2/4 → 3/5 (A/B → R1/R2)</td>
<td>Low wattage: 0.5 W</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C [dm³/(s·bar)] b</td>
<td>b C [dm³/(s·bar)]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.70 0.15 0.16</td>
<td>0.72 0.25 0.18</td>
<td>12 or less</td>
</tr>
<tr>
<td></td>
<td>Single</td>
<td>Metal seal</td>
<td>VQ1100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td>Metal seal</td>
<td>VQ1200</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Metal seal</td>
<td>VQ1300</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td>VQ1400</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td>VQ1500</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Closed center</td>
<td>Metal seal</td>
<td>VQ1600</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exhaust center</td>
<td>Metal seal</td>
<td>VQ1700</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pressure center</td>
<td>Metal seal</td>
<td>VQ1800</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td>VQ1900</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dual 3 port valve</td>
<td>Rubber seal</td>
<td>VQ2000</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.70 0.20 0.16</td>
<td>0.70 0.20 0.16</td>
<td>25 or less</td>
</tr>
</tbody>
</table>

**Note 1:** Cylinder port size C6: (VQ1000), C8: (VQ2000) without check valve option for prevention of back pressure.

**Note 2:** As per JIS B 8375-1981 (Supply pressure: 0.5 MPa; with indicator light/surge voltage suppressor; clean air)

The response time is subject to the pressure and quality of the air. The values at the time of ON are given for double types.
Standard Specifications

<table>
<thead>
<tr>
<th>Valve specifications</th>
<th>Fluid</th>
<th>Metal seal</th>
<th>Rubber seal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Air/Inert gas</td>
<td>Air/Inert gas</td>
</tr>
<tr>
<td>Maximum operating pressure</td>
<td>Single</td>
<td>0.1 MPa</td>
<td>0.15 MPa</td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td>0.1 MPa</td>
<td>0.1 MPa</td>
</tr>
<tr>
<td></td>
<td>3 station</td>
<td>0.1 MPa</td>
<td>0.2 MPa</td>
</tr>
</tbody>
</table>

| Ambient and fluid temperature | –10 to 50°C (1) |
| Lubrication | Not required |
| Manual override | Push type/locking type (Tool required, Manual type) Option |
| Impact/Vibration resistance | 150/30 m/s² |
| Enclosure | Dust-protected, Dust tight/Low jetproof type (IP65) (5) |
| Power consumption (Current) | 24 VDC 1 W DC (42 mA), 1.5 W DC (83 mA) (5), 0.5 W DC (21 mA) (5) |
|                  | 12 VDC 1 W DC (83 mA), 1.5 W DC (125 mA) (5), 0.5 W DC (42 mA) (5) |
|                  | 100 VAC Inrush 1.2 VA (12 mA), Holding 1.2 VA (12 mA) |
|                  | 110 VAC Inrush 1.3 VA (12 mA), Holding 1.3 VA (12 mA) |
|                  | 200 VAC Inrush 2.4 VA (12 mA), Holding 2.4 VA (12 mA) |
|                  | 220 VAC Inrush 2.6 VA (12 mA), Holding 2.6 VA (12 mA) |

Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Base model</th>
<th>Type of connection</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
<th>Applicable solenoid valve</th>
<th>5 station weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>VV5Q11</td>
<td>F kit–D-sub connector</td>
<td>C8 (ø8)</td>
<td>J, G, S kit</td>
<td>VQ11:00</td>
<td>628 (Single) 759 (Double, 3 position)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P kit–Flat ribbon cable connector</td>
<td>C3 (ø3.2)</td>
<td>F, P, T kits</td>
<td>VQ11:01</td>
<td>1051 (Single) 1144 (Double, 3 position)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>J kit–Flat ribbon cable connector (20P)</td>
<td>C4 (ø4)</td>
<td>J, G, S kit</td>
<td>VQ21:00</td>
<td>632 (Single) 759 (Double, 3 position)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G kit–Flat ribbon cable connector with terminal block</td>
<td>C6 (ø6)</td>
<td>L kit</td>
<td>VQ21:01</td>
<td>1051 (Single) 1144 (Double, 3 position)</td>
</tr>
<tr>
<td>VQ2000</td>
<td>VV5Q21</td>
<td>F kit–D-sub connector</td>
<td>C10 (ø10)</td>
<td>J, G, S kit</td>
<td>VQ22:00</td>
<td>632 (Single) 759 (Double, 3 position)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P kit–Flat ribbon cable connector</td>
<td>C4 (ø4)</td>
<td>J, G, S kit</td>
<td>VQ22:01</td>
<td>1051 (Single) 1144 (Double, 3 position)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>J kit–Flat ribbon cable connector (20P)</td>
<td>C6 (ø6)</td>
<td>L kit</td>
<td>VQ22:01</td>
<td>1051 (Single) 1144 (Double, 3 position)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G kit–Flat ribbon cable connector with terminal block</td>
<td>C8 (ø8)</td>
<td>T kit</td>
<td>VQ22:01</td>
<td>1051 (Single) 1144 (Double, 3 position)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>T kit–Terminal box</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>L kit–Lead wire cable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>S kit–Serial transmission unit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>M kit–Multi-connector</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1) Use dry air to prevent condensation when operating at low temperatures.
Note 2) 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)
Note 3) Value for high voltage type (1.5 W)
Note 4) Value for low voltage type (0.5 W)
Note 5) Dusttight/Low jetproof type (IP65) is available on T, L, S and M kits of VQ2000.
The D-sub connector reduces installation labor for electrical connections.

Using the D-sub connector (25P), (15P as an option) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.

Top or side receptacle position can be selected in accordance with the available mounting space.

Maximum stations are 24.

### D-sub Connector (25 pins)

#### Cable Assembly

<table>
<thead>
<tr>
<th>Cable length (L)</th>
<th>Assembly part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>AXT100-DS25-015</td>
<td>Cable 25 core x 24AWG</td>
</tr>
<tr>
<td>3 m</td>
<td>AXT100-DS25-030</td>
<td></td>
</tr>
<tr>
<td>5 m</td>
<td>AXT100-DS25-050</td>
<td></td>
</tr>
</tbody>
</table>

- For other commercial connectors, use a 25 pins type with female connector conforming to MIL-C-24308.

### Connector manufacturers’ example
- Fujitsu Limited
- Japan Aviation Electronics Industry, Ltd.
- JST Mfg. Co., Ltd.
- Hirose Electric Co., Ltd.

### Electric Characteristics

<table>
<thead>
<tr>
<th>Item</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conductor resistance (2 km, 20°C)</td>
<td>&lt; 65 Ω/km</td>
</tr>
<tr>
<td>Voltage limit V, ≤ 1 m, AC</td>
<td>≤ 1000 V</td>
</tr>
<tr>
<td>Insulation resistance (5 kV, 20°C)</td>
<td>≥ 5 MΩ</td>
</tr>
</tbody>
</table>

Note) The min. bending radius of D-sub cable assembly is 20 mm.

### Porting specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Port location</th>
<th>Port size</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>Side</td>
<td>C8, C3, C4, C6, M5</td>
<td>Max. 24 stations</td>
</tr>
<tr>
<td>VQ2000</td>
<td>Side</td>
<td>C10, C4, C6, C8</td>
<td>Max. 24 stations</td>
</tr>
</tbody>
</table>

### How to Order Manifold

**Series**
- 1: VQ1000
- 2: VQ2000

**Manifold**
- Plug-in unit

**Stations**
- 02: 2 stations
- 24: 24 stations

Note) For details, refer to page 2-4-177.
**How to Order Valves**

**VQ 1 1 0 0 Y 5**

<table>
<thead>
<tr>
<th>Series</th>
<th>Type of actuation</th>
<th>Seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 2 position single</td>
<td>0 1 Metal seal, Rubber seal</td>
</tr>
<tr>
<td>2</td>
<td>2 position double</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3 position closed center</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>3 position exhaust center</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>3 position pressure center</td>
<td></td>
</tr>
</tbody>
</table>

**Manual override**
- Nil (Non-locking push type (Tool required))
- B (Locking type (Tool required))
- C (Locking type (Manual))

**Light/ Surge voltage suppressor**
- Nil
- E (Yes)

**Coil 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

**How to Order Manifold Assembly**

Specify the part numbers for valves and options together beneath the manifold base part number.

*Example*
D-sub connector kit with cable (3 m)
VQ1000-09CFU2 — 1 set — Base mounted manifold base no.
- *VQ1000-09CFU2* — 1 set — Base mounted manifold base no.
- *VQ1000-09CFU2* — 1 set — Base mounted manifold base no.
- *VQ1000-09CFU2* — 1 set — Base mounted manifold base no.

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Write sequentially from the 1st station on the D side.

When part nos. written collectively are complicated, specified by using the manifold specification sheet.
Dimensions

|   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| L1| 65.5| 76  | 86.5| 97  | 107.5| 118| 128.5| 139| 149.5| 160 | 170.5| 181 | 191.5| 202 | 212.5| 223 | 233.5| 244 | 254.9 | 265 | 275.5| 286 | 296.5|
| L2| 83.5| 94  | 104.5| 115 | 125.5| 136| 146.5| 157| 167.5| 178 | 188.5| 199 | 209.5| 220 | 230.5| 241 | 251.5| 262 | 272.5| 283 | 293.5| 304 | 314.5|
| (L3)| 112.5| 125 | 137.5| 150 | 162.5| 175| 187.5| 198 | 200 | 225 | 237.5| 250 | 262.5| 275 | 287.5| 300 | 312.5| 325 | 325 | 325 | 325 | 325 | 325 | 325 | 325 | 325 | 325 | 325 | 335.5| 335.5| 335.5| 335.5| 348|
| (L4)| 123 | 135.5| 135.5| 148 | 160.5| 173| 185.5| 198 | 201 | 223 | 235.5| 248 | 260.5| 260.5| 273 | 285.5| 298 | 310.5| 323 | 335.5| 348 |

Vacuum ejector unit style: Formula $L_1 = 10.5n + 28.7 \pm \text{Number of ejector units} \times 26.7$

$L_2 = 10.5n + 46.3 \pm \text{Number of ejector units} \times 26.7$

$L_4$ is $L_2$ plus about 30.
The broken lines indicate the DIN rail mounting style [-D] and the side entry connection [-FS].

### Dimensions

<table>
<thead>
<tr>
<th>L</th>
<th>n</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>
<th>21</th>
<th>22</th>
<th>23</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>85</td>
<td>101</td>
<td>117</td>
<td>133</td>
<td>149</td>
<td>165</td>
<td>181</td>
<td>197</td>
<td>213</td>
<td>229</td>
<td>245</td>
<td>261</td>
<td>277</td>
<td>293</td>
<td>309</td>
<td>325</td>
<td>341</td>
<td>357</td>
<td>373</td>
<td>389</td>
<td>405</td>
<td>421</td>
<td>437</td>
<td></td>
</tr>
<tr>
<td>L2</td>
<td>105</td>
<td>121</td>
<td>137</td>
<td>153</td>
<td>169</td>
<td>185</td>
<td>201</td>
<td>217</td>
<td>233</td>
<td>249</td>
<td>265</td>
<td>281</td>
<td>297</td>
<td>313</td>
<td>329</td>
<td>345</td>
<td>361</td>
<td>377</td>
<td>393</td>
<td>409</td>
<td>425</td>
<td>441</td>
<td>457</td>
<td></td>
</tr>
<tr>
<td>L3</td>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>187.5</td>
<td>200</td>
<td>212.5</td>
<td>225</td>
<td>250</td>
<td>262.5</td>
<td>275</td>
<td>300</td>
<td>312.5</td>
<td>325</td>
<td>337.5</td>
<td>350</td>
<td>375</td>
<td>387.5</td>
<td>400</td>
<td>412.5</td>
<td>437.6</td>
<td>450</td>
<td>462.5</td>
<td>487.5</td>
<td></td>
</tr>
<tr>
<td>L4</td>
<td>148</td>
<td>160.5</td>
<td>173</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>260.5</td>
<td>273</td>
<td>285.5</td>
<td>310.5</td>
<td>323</td>
<td>335.5</td>
<td>348</td>
<td>360.5</td>
<td>385.5</td>
<td>398</td>
<td>410.5</td>
<td>423</td>
<td>448</td>
<td>460.5</td>
<td>473</td>
<td>498</td>
<td></td>
</tr>
</tbody>
</table>

Formula: \( L_1 = 16n + 53, L_2 = 16n + 73 \)  
\( n \): Station (Maximum 24 stations)  

### Applicable Connector

D-sub connector (25P)  
Conforming to MIL-C-24308
MIL flat ribbon cable connector reduces installation labor for electrical connection.
Using the connector for flat ribbon cable (26P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
Top or side receptacle position can be selected in accordance with the available mounting space.
Maximum stations are 24.

Flat Ribbon Cable (26 pins)

Flat Ribbon Cable Connector Assembly (Option)

Note) For details, refer to page 2-4-178.

Note 1) Insert "L" (top piping) or "B" (bottom piping) for elbow type.
Example) B6 (Elbow One-touch fittings for ø6, bottom piping.)
Note 2) Indicate "LM" for models with elbow fittings and mixed cylinder port sizes.
Note 3) Specify "Mixed size/with port plug" in the manifold specification sheet.
Note 4) Inch-size One-touch fittings are available. For details, refer to page 2-4-179.

Flat Ribbon Cable Connector Assembly can be ordered individually or included in a specific manifold model no. Refer to How to Order Manifold.

Connector manufacturers’ example
- Hirose Electric Co., Ltd.
- Japan Aviation Electronics Industry, Ltd.
- Sumitomo 3M Limited
- J.S.T. Mfg. Co., Ltd.
- Fujitsu Limited
- Oki Electric Cable Co., Ltd.

Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Port location</th>
<th>Port size</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>Side</td>
<td>C8, C3, C4, C6, M5</td>
<td>Max. 24 stations</td>
</tr>
<tr>
<td>VQ2000</td>
<td>Side</td>
<td>C10, C4, C6, C8</td>
<td>Max. 24 stations</td>
</tr>
</tbody>
</table>

The total number of stations is tabulated starting from one on the D side.

How to Order Manifold

VV5Q1 1 08 C6 P U 1 N

Series
1 VQ1000
2 VQ2000

Manifold
1 Plug-in unit
2 2 stations
24 24 stations

Note) For details, refer to page 2-4-178.

Cable (Length)

<table>
<thead>
<tr>
<th>Connector entry direction</th>
<th>Cylinder port</th>
</tr>
</thead>
<tbody>
<tr>
<td>U</td>
<td>Top entry</td>
</tr>
<tr>
<td>S</td>
<td>Side entry</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Port size</th>
<th>VQ1000</th>
<th>VQ2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3</td>
<td>With one-touch fitting for ø3.2</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>C4</td>
<td>With one-touch fitting for ø4</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>C5</td>
<td>With one-touch fitting for ø5</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>C6</td>
<td>With one-touch fitting for ø6</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>M5</td>
<td>M5 thread</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>CM</td>
<td>With mixed size/with port plug</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

Note 1) When two or more symbols are specified, indicate them alphabetically. Example) BRS
Note 2) Models with a suffix "B" have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed using the manifold specification sheet.
Note 3) Specify the mounting position in the manifold specification sheet.
Note 4) Refer to page 2-4-170 for the details of ejector mounted styles. A combination of "J" and "N" is unavailable.
Note 5) Specify the wiring specifications in the manifold specification sheet.
Note 6) Indicate "R" for the valve with external pilot.
## How to Order Valves

<table>
<thead>
<tr>
<th>VQ</th>
<th>Series</th>
<th>Type of actuation</th>
<th>Seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VQ1000</td>
<td>1 2 position single</td>
<td>0 Metal seal</td>
</tr>
<tr>
<td>2</td>
<td>VQ2000</td>
<td>2 2 position double</td>
<td>1 Rubber seal</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>3 3 position closed center</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>4 3 position exhaust center</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>5 3 position pressure center</td>
<td></td>
</tr>
</tbody>
</table>

### Series VQ1000/2000

**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

**Seal**
- 0: Metal seal
- 1: Rubber seal

**Note** For external pilot and negative COM specifications, refer to “Option” on pages 2-4-178 to 2-4-179.

## How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

**<Example>**

Flat ribbon cable kit with 3 m cable

- VQG11-09C6P2: 1 set-Manifold base no.
- VQ1100-5: 2 sets-Valve part no. (Stations 1 to 2)
- VQ1200-5: 4 sets-Valve part no. (Stations 3 to 6)
- VQ1300-5: 2 sets-Valve part no. (Stations 7 to 8)
- VQV100010A1: 1 set-Blanking plate no. (Station 9)

**Coil voltage**

<table>
<thead>
<tr>
<th></th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>100 VAC (50/60 Hz)</td>
<td>1.0 W</td>
</tr>
<tr>
<td>2</td>
<td>110 VAC (50/60 Hz)</td>
<td>1.5 W</td>
</tr>
<tr>
<td>3</td>
<td>24 VDC</td>
<td>0.5 W</td>
</tr>
</tbody>
</table>

**Manual override**

- A: Non-locking push type (Tool required)
- B: Locking type (Tool required)
- C: Locking type (Manual)

**Light/ Surge voltage suppressor**

- D: Yes
- E: None

**Note** For power consumption of AC type, refer to page 2-4-129.

As the standard electrical wiring specifications, double wiring (connected to SOL A and SOL B) is adopted for the internal wiring of each station for 12 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option.

For details, refer to page 2-4-178.

**Note**
- When using the negative common specifications, use valves for negative common. (Refer to page 2-4-178.)
- For details, refer to “Option” on page 2-4-178.
- For negative COM specifications, refer to “Option” on pages 2-4-178 to 2-4-179.

**Note**
- For power consumption of AC type, refer to page 2-4-129.

### Specifications

- Standard type
- High pressure type
- Low wattage type

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specifications</th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Non-locking push type (Tool required)</td>
<td>A</td>
<td>S</td>
</tr>
<tr>
<td>H</td>
<td>Locking type (Tool required)</td>
<td>B</td>
<td>S</td>
</tr>
<tr>
<td>Y</td>
<td>Locking type (Manual)</td>
<td>C</td>
<td>S</td>
</tr>
</tbody>
</table>
The broken lines indicate the DIN rail mounting style [-D] and the side entry connection [-PS].

Dimensions

<table>
<thead>
<tr>
<th>L</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>
<th>21</th>
<th>22</th>
<th>23</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>65.5</td>
<td>76</td>
<td>86.5</td>
<td>97</td>
<td>107.5</td>
<td>118</td>
<td>128.5</td>
<td>139</td>
<td>149.5</td>
<td>160</td>
<td>170.5</td>
<td>181</td>
<td>191.5</td>
<td>202</td>
<td>212.5</td>
<td>223</td>
<td>233.5</td>
<td>244</td>
<td>254.5</td>
<td>265</td>
<td>275.5</td>
<td>286</td>
<td>296.5</td>
</tr>
<tr>
<td>L2</td>
<td>78.5</td>
<td>89</td>
<td>99.5</td>
<td>110</td>
<td>120.5</td>
<td>131</td>
<td>141.5</td>
<td>152</td>
<td>162.5</td>
<td>173</td>
<td>183.5</td>
<td>194</td>
<td>204.5</td>
<td>215</td>
<td>225.5</td>
<td>236</td>
<td>246.5</td>
<td>257</td>
<td>267.5</td>
<td>278</td>
<td>288.5</td>
<td>299</td>
<td>309.5</td>
</tr>
<tr>
<td>L3</td>
<td>112.5</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>250</td>
<td>262.5</td>
<td>275</td>
<td>287.5</td>
<td>300</td>
<td>312.5</td>
<td>325</td>
<td>337.5</td>
<td>350</td>
<td>362.5</td>
<td>375</td>
<td>387.5</td>
</tr>
<tr>
<td>L4</td>
<td>123</td>
<td>135.5</td>
<td>135.5</td>
<td>148</td>
<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
<td>323</td>
<td>335.5</td>
<td>348</td>
<td>360.5</td>
<td>373</td>
<td>385.5</td>
</tr>
</tbody>
</table>

Vacuum ejector unit style: Formula L1 = 10.5n + 44.5, L2 = 10.5n + 57.5   n: Station (Maximum 24 stations)

2n-C3, C4, C6, M5
C3: One-touch fitting for ø3.2
C4: One-touch fitting for ø4
C6: One-touch fitting for ø6
M5: M5 thread

Applicable connector: Flat ribbon cable connector (26P)
(Conforming to MIL-C-83503)

Indicator light
P = 10.5
Manual
override
Mounting hole for M4
DIN rail clamp screw

< >: AC
The broken lines indicate the DIN rail mounting style [-D] and the side entry connection [-PS].

The table provides dimensions for various stations:

<table>
<thead>
<tr>
<th>Station</th>
<th>L1 (mm)</th>
<th>L2 (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>101</td>
<td>132</td>
</tr>
<tr>
<td>3</td>
<td>114</td>
<td>144</td>
</tr>
<tr>
<td>4</td>
<td>127</td>
<td>175</td>
</tr>
<tr>
<td>5</td>
<td>140</td>
<td>185</td>
</tr>
<tr>
<td>6</td>
<td>153</td>
<td>225</td>
</tr>
<tr>
<td>7</td>
<td>166</td>
<td>255</td>
</tr>
<tr>
<td>8</td>
<td>179</td>
<td>285</td>
</tr>
<tr>
<td>9</td>
<td>192</td>
<td>315</td>
</tr>
<tr>
<td>10</td>
<td>205</td>
<td>345</td>
</tr>
<tr>
<td>11</td>
<td>218</td>
<td>375</td>
</tr>
<tr>
<td>12</td>
<td>231</td>
<td>405</td>
</tr>
</tbody>
</table>

Formulas:

- \( L_1 = 16n + 53 \)
- \( L_2 = 16n + 68 \)

Where:
- \( n \): Station (Maximum 24 stations)
Flat Ribbon Cable (26 pins)

- MIL flat ribbon cable connector reduces installation labor for electrical connection.
- The use of flat ribbon cable connectors (20P) conforming to MIL standards provides a wide range of compatibility with conventional connectors.
- Top or side receptacle position can be selected in accordance with the available mounting space.
- Maximum stations are 16.

Flat Ribbon Cable Connector Assembly (Option)

<table>
<thead>
<tr>
<th>Cable length (L)</th>
<th>Assembly part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>AXT100-FC20-1</td>
<td>Cable 20 core</td>
</tr>
<tr>
<td></td>
<td></td>
<td>x 28AWG</td>
</tr>
<tr>
<td>3 m</td>
<td>AXT100-FC20-2</td>
<td></td>
</tr>
<tr>
<td>5 m</td>
<td>AXT100-FC20-3</td>
<td></td>
</tr>
</tbody>
</table>

* For other commercial connectors, use a 20 pins with strain relief conforming to MIL-C-83503.

Connector manufacturers’ example
- Hirose Electric Co., Ltd.
- Japan Aviation Electronics Industry, Ltd.
- Sumitomo 3M Limited
- J.S.T. Mfg. Co., Ltd.
- Fujitsu Limited
- Oki Electric Cable Co., Ltd.

Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Port location</th>
<th>Port size</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>Side</td>
<td>C8</td>
<td>C3, C4, C6, M5</td>
<td>Max. 16 stations</td>
</tr>
<tr>
<td>VQ2000</td>
<td>Side</td>
<td>C10</td>
<td>C4, C6, C8</td>
<td>Max. 16 stations</td>
</tr>
</tbody>
</table>

How to Order Manifold

- **Series**
  - VQ1000
  - VQ2000

- **Manifold**
  - Plug-in unit

- **Stations**
  - 2 stations
  - 16 stations

- **Cylinder port**
  - Symbol
  - Port size
  - VQ1000
  - VQ2000
  - C3: With One-touch fitting for ø3.2
  - C4: With One-touch fitting for ø4
  - C6: With One-touch fitting for ø6
  - C8: With One-touch fitting for ø8
  - M5: M5 thread
  - CM: With mixed size/with port plug

- **Cable (Length)**
  - 0: Without cable
  - 1: With cable (1.5 m)
  - 2: With cable (3 m)
  - 3: With cable (5 m)

- **Terminal no.**
  - 1 through 30

- **Option**
  - Symbol
  - Option
  - VQ1000
  - VQ2000
  - Nil
  - B: Back pressure check valve
  - D: DIN rail mounting style
  - G1: 1 set of regulator unit
  - G2: 2 sets of regulator unit
  - G3: 3 sets of regulator unit
  - J: With vacuum ejector unit
  - K: Special Wiring Specifications (Not double wiring)
  - N: With name plate
  - R: External pilot
  - S: Built-in silencer, direct exhaust

Note 1) When two or more symbols are specified, indicate them alphabetically. Example) - BRS

Note 2) Models with a suffix “-B” have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by using the manifold specification sheet.

Note 3) Specify the mounting position in the manifold specification sheet.

Note 4) Refer to page 2-4-170 for the details of ejector mounted styles. A combination of “J” and “N” is unavailable.

Note 5) Specify the wiring specifications in the manifold specification sheet.

Note 6) Indicate “R” for the valve with external pilot.
How to Order Valves

**VQ1000**
- 1 1 0 0 Y 5

**VQ2000**
- 2

**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

**Seal**
- 0 Metal seal
- 1 Rubber seal

**Seal**

- Note) For external pilot and negative COM specifications, refer to “Option” on pages 2-4-178 to 2-4-179.

**Electrical wiring specifications**

As the standard electrical wiring specifications, double wiring (connected to SOL A and SOL B) is adopted for the internal wiring of each station for 12 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-4-178.

**How to Order Manifold Assembly**

Specify the part numbers for valves and options together beneath the manifold base part number.

Example>
Flat ribbon cable kit with 3 m cable
VQ1000-09C6PU2... 1 set-Manifold base no.
VQ1000-5... 2 sets-Valve part no. (Stations 1 to 2)
VQ1000-5... 4 sets-Valve part no. (Stations 3 to 6)
VQ1000-5... 2 sets-Valve part no. (Stations 7 to 8)
VQ1000-5... 1 set-Blanking plate part no. (Station 9)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

When ordering, specify the part nos. in order from the 1st station in the D side. When part nos. written collectively are complicated, specify by using the manifold specification sheet.
VQ1000/2000
Kit (Flat ribbon cable connector)

The broken lines indicate the DIN rail mounting style [-D] and the side entry connection [-PS].

Dimensions

<table>
<thead>
<tr>
<th>n</th>
<th>L1</th>
<th>L2</th>
<th>(L3)</th>
<th>(L4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>65.5</td>
<td>76</td>
<td>86.5</td>
<td>97</td>
</tr>
<tr>
<td>3</td>
<td>97</td>
<td>107.5</td>
<td>118</td>
<td>128.5</td>
</tr>
<tr>
<td>4</td>
<td>118</td>
<td>128.5</td>
<td>139</td>
<td>149.5</td>
</tr>
<tr>
<td>5</td>
<td>128.5</td>
<td>139</td>
<td>149.5</td>
<td>160</td>
</tr>
<tr>
<td>6</td>
<td>139</td>
<td>149.5</td>
<td>160</td>
<td>170.5</td>
</tr>
<tr>
<td>7</td>
<td>149.5</td>
<td>160</td>
<td>170.5</td>
<td>181</td>
</tr>
<tr>
<td>8</td>
<td>160</td>
<td>170.5</td>
<td>181</td>
<td>191.5</td>
</tr>
<tr>
<td>9</td>
<td>170.5</td>
<td>181</td>
<td>191.5</td>
<td>202</td>
</tr>
<tr>
<td>10</td>
<td>181</td>
<td>191.5</td>
<td>202</td>
<td>212.5</td>
</tr>
<tr>
<td>11</td>
<td>191.5</td>
<td>202</td>
<td>212.5</td>
<td>225.5</td>
</tr>
<tr>
<td>12</td>
<td>202</td>
<td>212.5</td>
<td>225.5</td>
<td>235.5</td>
</tr>
<tr>
<td>13</td>
<td>212.5</td>
<td>225.5</td>
<td>235.5</td>
<td>248</td>
</tr>
<tr>
<td>14</td>
<td>225.5</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
</tr>
<tr>
<td>15</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>273.5</td>
</tr>
<tr>
<td>16</td>
<td>248</td>
<td>260.5</td>
<td>273.5</td>
<td>286.5</td>
</tr>
</tbody>
</table>

Formula L1 = 10.5n + 44.5, L2 = 10.5n + 57.5  n: Station (Maximum 16 stations)
The broken lines indicate the DIN rail mounting style [-D] and the side entry connection [-PS].

**Dimensions**

<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>
<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>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>85</td>
<td>101</td>
<td>117</td>
<td>133</td>
<td>149</td>
<td>165</td>
<td>181</td>
<td>197</td>
<td>213</td>
<td>229</td>
<td>245</td>
<td>261</td>
<td>277</td>
<td>293</td>
<td>309</td>
<td></td>
</tr>
<tr>
<td>L2</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></td>
</tr>
<tr>
<td>(L3)</td>
<td>125</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>262.5</td>
<td>275</td>
<td>287.5</td>
<td>300</td>
<td>312.5</td>
<td>337.5</td>
<td>350</td>
<td></td>
</tr>
<tr>
<td>(L4)</td>
<td>135.5</td>
<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>273</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
<td>323</td>
<td>348</td>
<td>360.5</td>
<td></td>
</tr>
</tbody>
</table>

Formula: \(L1 = 16n + 53, \ L2 = 16n + 68\)  \(n:\) Station (Maximum 16 stations)
Flat Ribbon Cable (20 pins)

AXT100-FC20-1
Flat ribbon cable connector assembly can be ordered individually or included in a specific manifold model no. Refer to How to Order Manifold.

Flat Ribbon Cable Connector Assembly (Option)

<table>
<thead>
<tr>
<th>Cable length (L)</th>
<th>Assembly part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>AXT100-FC20-1</td>
<td></td>
</tr>
<tr>
<td>3 m</td>
<td>AXT100-FC20-2</td>
<td></td>
</tr>
<tr>
<td>5 m</td>
<td>AXT100-FC20-3</td>
<td></td>
</tr>
</tbody>
</table>

For other commercial connectors, use a 20 pins with strain relief conforming to MIL-C-83503.

Connector manufacturers' example
- Hirose Electric Co., Ltd.
- OW Electric Cable Co. Ltd.
- Sumitomo 3M Limited
- J.S.T. Mfg. Co., Ltd.
- Fujitsu Limited

How to Order Manifold

VQ1000/2000 Kit (Flat ribbon cable connector with terminal block)

- Terminal block for power supply equipped with a 20 pins flat cable connection for rationalized connection of valves.
- Solenoid valves and power supply can be connected by the same cable to a specific output unit that requires power supply from the output section to the internal circuit. (SI unit)
- Maximum stations are 16.

The total number of stations is tabulated starting from station one on the D side.

Note 1) When two or more symbols are specified, indicate them alphabetically. Example) -BRS
Models with a suffix "-B" have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by using the manifold specification sheet.
Specify the mounting position in the manifold specification sheet.
Refer to page 2-4-170 for the details of ejector mounted styles. A combination of "J" and "N" is unavailable.
Specify the wiring specifications in the manifold specification sheet.
Indicate "R" for the valve with external pilot.

Insert "L" (top piping) or "B" (bottom piping) for elbow type.
Indicate "LM" for models with elbow fittings and mixed cylinder port sizes.
Specify "Mixed size/with port plug" in the manifold specification sheet.
Inch-size One-touch fittings are available. For details, refer to page 2-4-179.

For details, refer to page 2-4-178.
How to Order Valves

**Series**

<table>
<thead>
<tr>
<th>1</th>
<th>VQ1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>VQ2000</td>
</tr>
</tbody>
</table>

**Type of actuation**

<table>
<thead>
<tr>
<th>1</th>
<th>2 position single</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2 position double</td>
</tr>
<tr>
<td>3</td>
<td>3 position closed center</td>
</tr>
<tr>
<td>4</td>
<td>3 position exhaust center</td>
</tr>
<tr>
<td>5</td>
<td>3 position pressure center</td>
</tr>
</tbody>
</table>

**Seal**

<table>
<thead>
<tr>
<th>0</th>
<th>Metal seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rubber seal</td>
</tr>
</tbody>
</table>

- **Symbol**
  - Nil
  - H: High pressure type
  - Y: Low wattage type

- **Specifications**
  - Standard type (1.0 W)
  - High pressure type (1.5 W)
  - Low wattage type (0.5 W)

**Coil voltage**

5 24 VDC

**Manual override**

- Nil: Non-locking push type (Tool required)
- B: Locking type (Tool required)
- C: Locking type (Manual)

**Light/Surge voltage suppressor**

- Nil
- E: Yes
- None

**Function**

- DC

How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

**Example**

- Flat ribbon cable with power supply terminal block and 3 m cable
  - VQ1100-5-08C6G2 ... 1 set-Manifold base no.
  - VQ1100-5-08C6G2 ... 4 sets-Valve part no. (Stations 1 to 4)
  - VQ1200-5-08C6G2 ... 1 set-Valve part no. (Station 5)
  - VQ1300-5-08C6G2 ... 3 sets-Valve part no. (Stations 6 to 8)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Write sequentially from the 1st station on the D side. When part nos. written collectively are complicated, specify by using the manifold specification sheet.

Note: For external pilot specifications, refer to “Option” on page 2-4-179.
The broken lines and dimensions in parentheses indicate DIN rail mounting style [-D].

Dimensions

<table>
<thead>
<tr>
<th>n</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>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>66.5</td>
<td>77</td>
<td>87.5</td>
<td>98</td>
<td>108.5</td>
<td>119</td>
<td>129.5</td>
<td>140</td>
<td>150.5</td>
<td>161</td>
<td>171.5</td>
<td>182</td>
<td>192.5</td>
<td>203</td>
<td>213.5</td>
</tr>
<tr>
<td>L2</td>
<td>84</td>
<td>94.5</td>
<td>105</td>
<td>115.5</td>
<td>126</td>
<td>136.5</td>
<td>147</td>
<td>157.5</td>
<td>168</td>
<td>178.5</td>
<td>189</td>
<td>199.5</td>
<td>210</td>
<td>220.5</td>
<td>231</td>
</tr>
<tr>
<td>(L3)</td>
<td>112.5</td>
<td>125</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>198</td>
<td>200</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>250</td>
<td>262.5</td>
</tr>
<tr>
<td>(L4)</td>
<td>123</td>
<td>135.5</td>
<td>135.5</td>
<td>148</td>
<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
</tr>
</tbody>
</table>

Vacuum ejector unit style: Formula $L_1 = 10.5n + 29.7 + (\text{Number of ejector units} \times 26.7)$
$L_2 = 10.5n + 46.8 + (\text{Number of ejector units} \times 26.7)$
$L_4$ is $L_2$ plus about 30.
The broken lines indicate the DIN rail mounting style [-D].

**VQ2000**

\[
\begin{align*}
L_1 &= 16n + 53, \\
L_2 &= 16n + 87
\end{align*}
\]

\[n: \text{Station (Maximum 16 stations)}\]

Vacuum ejector unit style:

\[
\begin{align*}
L_1 &= 10.5n + 29.7 + (\text{Number of ejector units} \times 26.7) \\
L_2 &= 10.5n + 46.8 + (\text{Number of ejector units} \times 26.7)
\end{align*}
\]

\[L_4 = L_2 + \text{about 30} \]

Dimensions:

<table>
<thead>
<tr>
<th>L</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>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>85</td>
<td>101</td>
<td>117</td>
<td>133</td>
<td>149</td>
<td>165</td>
<td>181</td>
<td>197</td>
<td>213</td>
<td>229</td>
<td>245</td>
<td>261</td>
<td>277</td>
<td>293</td>
<td>309</td>
</tr>
<tr>
<td>L2</td>
<td>119</td>
<td>135</td>
<td>151</td>
<td>167</td>
<td>183</td>
<td>199</td>
<td>215</td>
<td>231</td>
<td>247</td>
<td>263</td>
<td>279</td>
<td>295</td>
<td>311</td>
<td>327</td>
<td>343</td>
</tr>
<tr>
<td>(L3)</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>262.5</td>
<td>275</td>
<td>287.5</td>
<td>300</td>
<td>325</td>
<td>337.5</td>
<td>350</td>
<td>362.5</td>
</tr>
</tbody>
</table>

Vacuum ejector unit style:

\[
\begin{align*}
L_1 &= 10.5n + 29.7 + (\text{Number of ejector units} \times 26.7) \\
L_2 &= 10.5n + 46.8 + (\text{Number of ejector units} \times 26.7)
\end{align*}
\]

L4 is L2 plus about 30.
**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>Side: C6, C1, C4, C6, M5</td>
<td>Max. 24 stations</td>
</tr>
<tr>
<td>VQ2000</td>
<td>Side: C10, C4, C6, C8</td>
<td>Max. 20 stations</td>
</tr>
</tbody>
</table>

**Terminal block connection**

Open the terminal block cover to connect the wires to the terminal block.

**Step 1. How to remove terminal block cover**

Loosen the screws on the terminal block cover and open it in the direction shown by the arrow. The cover can then be removed from the terminal block.

**Step 2. Wire connection**

The diagram on the left shows the terminal block wiring schematic. All stations are provided with double solenoid wiring. Insert each lead wire into the terminal opening and tighten the screw directly above. How to connect is inserting the lead wire into the terminal window, then tighten the screw on the top.

**Step 3. How to replace terminal block cover**

Hook groove (a) on shaft (b) and close the cover. Then tighten the screws.

---

**How to Order Manifold**

**VV5Q11**

<table>
<thead>
<tr>
<th>Series</th>
<th>1</th>
<th>VQ1000</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>VQ2000</td>
</tr>
</tbody>
</table>

**Manifold**

<table>
<thead>
<tr>
<th>Stations</th>
<th>24 stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>2 stations</td>
</tr>
</tbody>
</table>

---

**Cylinder port**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Port size</th>
<th>VQ1000</th>
<th>VQ2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3</td>
<td>With One-touch fitting for ø2.2</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>C4</td>
<td>With One-touch fitting for ø4</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>C6</td>
<td>With One-touch fitting for ø6</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>C8</td>
<td>With One-touch fitting for ø8</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>M5</td>
<td>M5 thread</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>CM</td>
<td>With mixed size/with port plug</td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

**Option**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Option</th>
<th>VQ1000</th>
<th>VQ2000</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>None</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>With back pressure check valve</td>
<td>•</td>
<td>•</td>
<td>(D)</td>
</tr>
<tr>
<td>D</td>
<td>DIN rail mounting style</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>G1</td>
<td>1 set of regulator unit</td>
<td>•</td>
<td>•</td>
<td>(S)</td>
</tr>
<tr>
<td>G2</td>
<td>2 sets of regulator unit</td>
<td>•</td>
<td>•</td>
<td>(S)</td>
</tr>
<tr>
<td>G3</td>
<td>3 sets of regulator unit</td>
<td>•</td>
<td>•</td>
<td>(S)</td>
</tr>
<tr>
<td>J</td>
<td>With vacuum ejector unit</td>
<td>•</td>
<td>•</td>
<td>(H)</td>
</tr>
<tr>
<td>K</td>
<td>Special wiring specifications (Not double wiring)</td>
<td>•</td>
<td>•</td>
<td>(S)</td>
</tr>
<tr>
<td>N</td>
<td>With name plate</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>External pilot</td>
<td>•</td>
<td>•</td>
<td>(R)</td>
</tr>
<tr>
<td>S</td>
<td>Built-in silencer, direct exhaust</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>W</td>
<td>Enclosure: Dusttight/Low jetproof type (IP65)</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
</tbody>
</table>

- VQ1000: Max. 20 stations
- VQ2000: Max. 20 stations

Note 1) Apply to two or more symbols are specified, indicate them alphabetically. Example: BRS

Note 2) Models with a suffix "B" have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by using the manifold specification sheet.

Note 3) Specify the mounting position in the manifold specification sheet.

Note 4) Refer to page 2-4-170 for the details of ejector mounted styles. A combination of "J" and "R" is unavailable.

Note 5) Specify the wiring specifications in the manifold specification sheet.

Note 6) Indicate "R" for the valve with external pilot.
How to Order Valves

**Series**

1  VQ1000
2  VQ2000

**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

**Seal**

0  Metal seal
1  Rubber seal

*Note* For external pilot and negative COM specifications, refer to “Option” on pages 2-4-178 to 2-4-179.

---

**Special wiring specifications: VQ2000**

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Polarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLA, 1A</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>SOLB, 1B</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>SOLA, 2A</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>SOLB, 2B</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>SOLA, 3A</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>SOLB, 3B</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>SOLA, 4A</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>SOLB, 4B</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>SOLA, 5A</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>SOLB, 5B</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>SOLA, 6A</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>SOLB, 6B</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>SOLA, 7A</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>SOLB, 7B</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>SOLA, 8A</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>SOLB, 8B</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>SOLA, 9A</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>SOLB, 9B</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>SOLA, 10A</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>SOLB, 10B</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>COM.</td>
<td>(+) (-)</td>
</tr>
</tbody>
</table>

Irrespective of the valves or options, the internal wiring is made double (connected to SOLA and SOLB) for respective stations of the manifold. Mixed single and double wiring is available as an option. For details, refer to page 2-4-178. Note) When using the negative common specifications, use valves for negative common.

For details, refer to “Option” on page 2-4-178.

---

**How to Order Manifold Assembly**

Specify the part numbers for valves and options together beneath the manifold base part number.

<Example>

Terminal block box kit

VVSQ11-08C6T0 ... 1 set-Manifold base no.

VQ1100-5 ... 2 sets-Valve part no. (Stations 1 to 2)

VQ1200-5 ... 4 sets-Valve part no. (Stations 3 to 6)

VQ1300-5 ... 1 set-Valve part no. (Station 7)

VWQ1000-10A-1 ... 1 set-Banking plate part no. (Station 8)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Write sequentially from the 1st station on the D side. When part nos. written collectively are complicated, specify by using the manifold specification sheet.

---

**Enclosure**

Nil  Dust-protected
W  Dusttight/Low jetproof type (IP65)

*Note* VQ2000 only.

**Manual override**

Nil  Non-locking push type (Tool required)
B  Locking type (Tool required)
C  Locking type (Manual)

**Light/Surge voltage suppressor**

Nil  Yes
E  None

**Function**

**Symbol**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specifications</th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Standard type</td>
<td>1.0 W</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>High pressure type</td>
<td>1.5 W</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Low wattage type</td>
<td>0.5 W</td>
<td></td>
</tr>
</tbody>
</table>

*Note* For power consumption of AC type, refer to page 2-4-179.
The broken lines and dimensions in parentheses indicate DIN rail mounting style [-D].

Dimensions

<table>
<thead>
<tr>
<th>L</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>
<th>21</th>
<th>22</th>
<th>23</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>66.5</td>
<td>77</td>
<td>87.5</td>
<td>98</td>
<td>108.5</td>
<td>119</td>
<td>129.5</td>
<td>140</td>
<td>150.5</td>
<td>161</td>
<td>171.5</td>
<td>182</td>
<td>192.5</td>
<td>203</td>
<td>213.5</td>
<td>224</td>
<td>234.5</td>
<td>245</td>
<td>255.5</td>
<td>266</td>
<td>276.5</td>
<td>287</td>
<td>297.5</td>
</tr>
<tr>
<td>L2</td>
<td>126</td>
<td>136.5</td>
<td>147</td>
<td>157.5</td>
<td>168</td>
<td>178.5</td>
<td>189</td>
<td>199.5</td>
<td>210</td>
<td>220.5</td>
<td>231</td>
<td>241.5</td>
<td>252</td>
<td>262.5</td>
<td>273</td>
<td>283.5</td>
<td>294</td>
<td>304.5</td>
<td>315</td>
<td>325.5</td>
<td>336</td>
<td>346.5</td>
<td>357</td>
</tr>
<tr>
<td>(L3)</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>197.5</td>
<td>200</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>250</td>
<td>262.5</td>
<td>275</td>
<td>287.5</td>
<td>300</td>
<td>312.5</td>
<td>325</td>
<td>337.5</td>
<td>350</td>
<td>362.5</td>
<td>375</td>
<td>387.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(L4)</td>
<td>160.5</td>
<td>173</td>
<td>180.5</td>
<td>198</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
<td>323</td>
<td>335.5</td>
<td>348</td>
<td>360.5</td>
<td>373</td>
<td>385.5</td>
<td>398</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Vacuum ejector unit style: Formula L1 = 10.5n + 29.7 + (Number of ejector units x 26.7)  
L2 = 10.5n + 88.8 + (Number of ejector units x 26.7)  
L4 is L2 plus about 30.
VQ2000

The broken lines and dimensions in parentheses indicate DIN rail mounting style [-D].

Dimensions

<table>
<thead>
<tr>
<th>L</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>150.5</td>
<td>166.5</td>
<td>182.5</td>
<td>198.5</td>
<td>214.5</td>
<td>230.5</td>
<td>246.5</td>
<td>262.5</td>
<td>278.5</td>
<td>294.5</td>
<td>310.5</td>
<td>326.5</td>
<td>342.5</td>
<td>358.5</td>
<td>374.5</td>
<td>390.5</td>
<td>406.5</td>
<td>422.5</td>
<td>438.5</td>
</tr>
<tr>
<td>(L3)</td>
<td>187.5</td>
<td>200</td>
<td>225</td>
<td>237.5</td>
<td>250</td>
<td>262.5</td>
<td>267.5</td>
<td>280</td>
<td>300</td>
<td>312.5</td>
<td>337.5</td>
<td>350</td>
<td>362.5</td>
<td>375</td>
<td>400</td>
<td>412.5</td>
<td>425</td>
<td>450</td>
<td>462.5</td>
</tr>
<tr>
<td>(L4)</td>
<td>198</td>
<td>210.5</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
<td>298</td>
<td>310.5</td>
<td>323</td>
<td>348</td>
<td>360.5</td>
<td>373</td>
<td>385.5</td>
<td>410.5</td>
<td>423</td>
<td>435.5</td>
<td>460.5</td>
<td>473</td>
<td>485.5</td>
</tr>
</tbody>
</table>

Formula L1 = 16n + 118.5, L2 = 16n + 131  n: Station (Maximum 10 stations)
**IP65 compliant**
- Direct electrical entry. Models with one or more stations are available.
- (SUP) and R (EXH) ports are provided on one side for further space savings.
- Maximum stations are 8.
- Enclosure: Dusttight/Low jetproof type (IP65) compliant (Series VQ2000)

**Wiring specifications: Positive COM**
Three lead wires are attached to each station regardless of the type of valve which is mounted.

- The red wire is for COM connection.

**Lead Wire Assembly with Connector**

<table>
<thead>
<tr>
<th>Lead wire length</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.6 m</td>
<td>VVQ1000-84A-6-</td>
</tr>
<tr>
<td>1.5 m</td>
<td>VVQ1000-84A-15-</td>
</tr>
<tr>
<td>3 m</td>
<td>VVQ1000-84A-30-</td>
</tr>
</tbody>
</table>

(*) No. of stations 1 to 8

Use any of the following cable lead wire assembly to change the lead wire length:

**How to Order Manifold**

**Series**

<table>
<thead>
<tr>
<th>VV5Q</th>
<th>1 1 06 C6 L 1 N</th>
</tr>
</thead>
</table>

**Cylinder port**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Port size</th>
<th>VQ1000</th>
<th>VQ2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3</td>
<td>With One-touch fitting for ø3.2</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>C4</td>
<td>With One-touch fitting for ø4</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>C5</td>
<td>With One-touch fitting for ø5</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>C8</td>
<td>With One-touch fitting for ø8</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>M5</td>
<td>M5 thread</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>CM</td>
<td>With mixed size/with port plug</td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

Note 1) Insert "L" (top piping) or "B" (bottom piping) for elbow type. (VQ1000 only)
Note 2) Indicate "LM" for models with elbow fittings and mixed cylinder port sizes.
Note 3) Specify "Mixed size/with port plug" in the manifold specification sheet.
Note 4) Inch-size One-touch fittings are available. For details, refer to page 2-4-179.

**Option**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Option</th>
<th>VQ1000</th>
<th>VQ2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>None</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>B</td>
<td>With back pressure check valve</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>D</td>
<td>DIN rail mounting style</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>G1</td>
<td>1 set of regulator unit</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>G2</td>
<td>2 sets of regulator units</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>G3</td>
<td>3 sets of regulator units</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>J</td>
<td>With vacuum ejector unit</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>N</td>
<td>With name plate</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>R</td>
<td>External pilot</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>S</td>
<td>Built-in silencer, direct exhaust</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>W</td>
<td>Enclosure: Dusttight/Low jetproof type (IP65)</td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

Note 1) When two or more symbols are specified, indicate them alphabetically. Example) -BR
Note 2) Models with a suffix "-B" have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by the manifold specification sheet.
Note 3) Specify the mounting position in the manifold specification sheet.
Note 4) Refer to page 2-4-170 for the details of ejector mounted styles. A combination of "J" and "N" is unavailable.
Note 5) Indicate "R" for the valve with external pilot.
How to Order Valves

<table>
<thead>
<tr>
<th>Series</th>
<th>VQ1000</th>
<th>VQ2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of actuation</td>
<td>2 position single</td>
<td>2 position double</td>
</tr>
<tr>
<td>1</td>
<td>3 position closed center</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>3 position exhaust center</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3 position pressure center</td>
<td></td>
</tr>
</tbody>
</table>

Seal

- 0: Metal seal
- 1: Rubber seal

Function

- Symbol: nil
- Specifications: standard type (1.0 W)
- DC: yes
- AC: no

Symbol: H
- Specifications: high pressure type (1.5 W)
- DC: yes
- AC: no

Symbol: Y
- Specifications: low wattage type (0.5 W)
- DC: yes
- AC: no

Note) For power consumption of AC type, refer to page 2-4-129.

Note) For external pilot and negative COM specifications, refer to "Option" on page 2-4-178.

Three lead wires are attached to each station regardless of the type of valve which is mounted. The black wire is for COM connection.

- Single solenoid
- Double solenoid

Wiring specifications: Negative COM (Option)

<table>
<thead>
<tr>
<th>Number of stations</th>
<th>Lead wire color</th>
<th>Lead wire color</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM (–)</td>
<td>SOL A (+)</td>
<td>SOL A (+)</td>
</tr>
<tr>
<td>COM (–)</td>
<td>SOL B (+)</td>
<td>SOL B (+)</td>
</tr>
</tbody>
</table>

Red: A side solenoid (+)

Black: COM (–)

Light/Surge voltage suppressor

- Nil
- Yes
- None

Coil 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

Note) For power consumption of AC type, refer to page 2-4-129.

How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

- Example
  - Lead wire kit with cable (3 m)
  - VQ2000-10A-10

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Write sequentially from the 1st station on the D side.

When part nos. written collectively are complicated, specify by using the manifold specification sheet.

Note) VQ2000 only.

Note) When using the negative common specifications, use valves for negative common. For negative common specifications, refer to "Option" on page 2-4-178.
The broken lines indicate DIN rail mounting style [-D].

Dimensions

<table>
<thead>
<tr>
<th>L</th>
<th>n</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
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<tbody>
<tr>
<td>L1</td>
<td>39</td>
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<td>60</td>
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<td>81</td>
<td>91.5</td>
<td>102</td>
<td>112.5</td>
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</tr>
<tr>
<td>L2</td>
<td>48.5</td>
<td>59</td>
<td>69.5</td>
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<td>90.5</td>
<td>101</td>
<td>111.5</td>
<td>122</td>
<td></td>
</tr>
<tr>
<td>L3</td>
<td>75</td>
<td>87.5</td>
<td>100</td>
<td>112.5</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L4</td>
<td>85.5</td>
<td>98</td>
<td>98</td>
<td>110.5</td>
<td>123</td>
<td>135.5</td>
<td>148</td>
<td>160.5</td>
<td></td>
</tr>
</tbody>
</table>

Vacuum ejector unit style: Formula $L_1 = 10.5n + 28.5 + (\text{Number of ejector units} \times 26.7)$

$L_2 = 10.5n + 38 + (\text{Number of ejector units} \times 26.7)$

$L_4$ is $L_2$ plus about 30.
The broken lines indicate the DIN rail mounting style [-D].

Dimensions

<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>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>51</td>
<td>67</td>
<td>83</td>
<td>99</td>
<td>115</td>
<td>131</td>
<td>147</td>
<td>163</td>
</tr>
<tr>
<td>L2</td>
<td>63</td>
<td>79</td>
<td>95</td>
<td>111</td>
<td>127</td>
<td>143</td>
<td>159</td>
<td>175</td>
</tr>
<tr>
<td>(L3)</td>
<td>87.5</td>
<td>100</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>184.5</td>
<td>200</td>
</tr>
<tr>
<td>(L4)</td>
<td>98</td>
<td>110.5</td>
<td>135.5</td>
<td>148</td>
<td>160.5</td>
<td>173</td>
<td>198</td>
<td>210.5</td>
</tr>
</tbody>
</table>

Formula: \( L1 = 16n + 35, \ L2 = 16n + 47 \)  
\( n \): Station (Maximum 8 stations)
**IP65 compliant**

- The serial transmission system reduces wiring work, while minimizing wiring and saving space.
- The system comes in type SA (generic for small scale systems) for equipment with a small number of I/O points, or 32 points max., type SB (applicable to Mitsubishi Electric models) for controlling 512 I/O points max., type SD (applicable to SHARP models: 504 points max.), type SF (applicable to NKE models: 128 points max.), type SJ (applicable to SUNX models), type SK (applicable to Fujitsu Electric models), type SQ (applicable to OMRON’s Compo Bus/D), and type SR (applicable to OMRON’s Compo Bus S).
- Max. 16 stations. (Specify a model with 9 to 16 stations by using the manifold specification sheet.)
- Enclosure: Dusttight, Low jetproof type (IP65) compliant (Series VQ2000)

**How to Order Manifold**

<table>
<thead>
<tr>
<th>Series</th>
<th>VVSO11</th>
<th>C6</th>
<th>S</th>
<th>A</th>
<th>N</th>
<th>XP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VQ1000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>VQ2000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Stations
  - 2 stations
  - 16 stations

**Cylinder port**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Port size</th>
<th>VQ1000</th>
<th>VQ2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3</td>
<td>With one-touch fitting for ø3.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C4</td>
<td>With one-touch fitting for ø4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C6</td>
<td>With one-touch fitting for ø6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C8</td>
<td>With one-touch fitting for ø8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M5</td>
<td>M5 thread</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CM</td>
<td>With mixed size/with port plug</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Name of terminal block (LED)**

- No. of output points, 16 points. No. of stations max. 512 points.
- Up to 32 points per unit
- No. of output points, 16 points
- No. of stations, 32 points

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Port location</th>
<th>Port size</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>Side</td>
<td>C6, C3, C4, C6, M5</td>
<td>Max. 16 stations</td>
</tr>
<tr>
<td>VQ2000</td>
<td>Side</td>
<td>C10, C4, C6, C8</td>
<td>Max. 16 stations</td>
</tr>
</tbody>
</table>

**Type SA** With general type SI unit (Series EX300)

- Can be connected with PLC I/O card for serial transmission
- EX300-TMB11: For models of Mitsubishi Electric Corporation
- EX300-TTA1: For models of OMRON Corporation
- EX300-TF11: For models of Fujitsu Electric Co., Ltd.
- EX300-TOO11: For general models

**Type SB** Mitsubishi Electric Corporation microbial SINET/MINI-S Data Link System

- Can be connected with PLC I/O card for serial transmission
- EX300-TMB11: For models of Mitsubishi Electric Corporation
- EX300-TTA1: For models of OMRON Corporation
- EX300-TF11: For models of Fujitsu Electric Co., Ltd.
- EX300-TOO11: For general models

**Note**

- For details on specifications and handling, refer to the separate technical instruction manual.
- For details of specifications and handling, refer to the separate technical instruction manual.
- For details of specifications and handling, refer to the separate technical instruction manual.

**Option**

- N: None
- B: With back pressure check valve
- D: DIN rail mounting style
- G: 1 set of regulator unit
- G2: 2 sets of regulator unit
- G3: 3 sets of regulator unit
- K: With vacuum ejector
- N: With name plate
- R: With external pilot
- S: Built-in silencer, direct exhaust
- W: Dusttight/low jetproof type (IP66) (Except SE)

**Note**

- Models with a suffix “-B” have check valves for prevention of back pressure at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by manifold specification sheet.
- Specify the mounting position in the manifold specification sheet.
- Refer to page 2-4-170 for the details of other models. A combination of “I” and “N” is unavailable.
- Specify the wiring specifications in the manifold specification sheet.
- Indicate “F” for the valve with external pilot. A combination of “N” and “XP” is unavailable.
- “Dimensions” on page 2-4-157 for SI unit and valve, in case of W (dusttight/low jetproof type).
## How to Order Valves

### Series

- **VQ1000**
- **VQ2000**

### 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

### Seal

- **0** Metal seal
- **1** Rubber seal

### Enclosure

- **Nil** Dust-protected
- **W** Dust tight/Low jetproof type (IP65)

### Manual override

- **Nil** Non-locking push type (Tool required)
- **B** Locking type (Tool required)
- **C** Locking type (Manual)

### Coil voltage

- 24 VDC; With indicator light/surge voltage suppressor

### Function

- Symbol Specifications: DC
  - **Nil** Standard type (1.0 W)
  - **H** High pressure type (1.5 W)
  - **Y** Low wattage type (0.5 W)

## How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

### Example

Serial transmission kit

- VV5Q11-98069A — 1 set-Manifold base part no.
- VV1100-5 — 2 sets-Valve part no. (Stations 1 to 2)
- VVQ1200-5 — 4 sets-Valve part no. (Stations 3 to 6)
- VVQ1300-5 — 1 set-Valve part no. (Station 7)
- VQ2000-10A-1 — 1 set-Blanking plate part no. (Station 8)

Prefix the asterisk to the part nos. of the solenoid valve, etc. Write sequentially from the 1st station on the D side. When part nos. written collectively are complicated, specify by using the manifold specification sheet.
Vacuum ejector unit style: Formula
L1 = 10.5n + 28.7 + (Number of ejector units x 26.7)
L2 = 10.5n + 56.3 + (Number of ejector units x 26.7)
L4 is L2 plus about 30.

The DWG shows a SB type
(Applicable to Mitsubishi Electric models)

Dust tight SI unit

The DWG shows the SA type
(Applicable to Mitsubishi Electric models)

Dimensions

<table>
<thead>
<tr>
<th></th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>65.5</td>
<td>76</td>
<td>86.5</td>
<td>97</td>
<td>107.5</td>
<td>118</td>
<td>128.5</td>
<td>139</td>
<td>149.5</td>
<td>160</td>
<td>170.5</td>
<td>181</td>
<td>191.5</td>
<td>202</td>
<td>212.5</td>
</tr>
<tr>
<td>L2</td>
<td>93.5</td>
<td>104</td>
<td>114.5</td>
<td>125</td>
<td>135.5</td>
<td>146</td>
<td>156.5</td>
<td>167</td>
<td>177.5</td>
<td>188</td>
<td>198.5</td>
<td>209</td>
<td>219.5</td>
<td>230</td>
<td>240.5</td>
</tr>
<tr>
<td>(L3)</td>
<td>125</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>187.5</td>
<td>200</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>250</td>
<td>250</td>
<td>262.5</td>
</tr>
<tr>
<td>(L4)</td>
<td>135.5</td>
<td>135.5</td>
<td>148</td>
<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>260.5</td>
<td>273</td>
</tr>
</tbody>
</table>

Dust-protected type SI unit: L5 = 10.5n + 97, L6 = L3 + 25, L7 = L4 + 25

Note) Manifolds with SI unit for Matsushita Electric Works’ MEWNET FP and Rockwell Automation’s model are the same with L5, L6 and L7 dimensions of dustproof SI unit.
**VQ2000**

Dust tight SI unit

Dust tight/Low jetproof type (IP65) SI unit

Dimensions

<table>
<thead>
<tr>
<th>L</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>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>85</td>
<td>101</td>
<td>117</td>
<td>133</td>
<td>148</td>
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<tr>
<td>L2</td>
<td>115</td>
<td>131</td>
<td>147</td>
<td>163</td>
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<td>307</td>
<td>323</td>
<td>339</td>
</tr>
<tr>
<td>(L3)</td>
<td>137.5</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>225</td>
<td>237.5</td>
<td>250</td>
<td>262.5</td>
<td>287.5</td>
<td>300</td>
<td>312.5</td>
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<tr>
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<td>198</td>
<td>210.5</td>
<td>235.5</td>
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<td>273</td>
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<td>310.5</td>
<td>323</td>
<td>348</td>
<td>360.5</td>
<td>373</td>
</tr>
</tbody>
</table>

Note: Manifolds with SI unit for Matsushita Electric Works' MEWNET FP and Rockwell Automation's model are the same with L5, L6 and L7 dimensions of dustproof SI unit.

**Base Mounted**

**Plug-in Unit Series VQ1000/2000**
**Circular Connector (26 pins)**

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Lead wire color</th>
<th>Dot marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>None</td>
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<tr>
<td>3</td>
<td>None</td>
<td></td>
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<tr>
<td>6</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>White</td>
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</tr>
<tr>
<td>8</td>
<td>Black</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Black</td>
<td></td>
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<tr>
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<td>Black</td>
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<td>16</td>
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<tr>
<td>17</td>
<td>Black</td>
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<td>18</td>
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<td>Gray</td>
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</tr>
<tr>
<td>26</td>
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</tbody>
</table>

**Cable assembly**

**Circular Connector (26 pins)**

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Port size</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ2000</td>
<td>Side C10, C4, C6, M8</td>
<td>Max. 24 stations</td>
<td></td>
</tr>
</tbody>
</table>

**How to Order Manifold**

**Option**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Option</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>With back pressure check valve</td>
<td>[2]</td>
</tr>
<tr>
<td>D</td>
<td>DIN rail mounting</td>
<td>[2]</td>
</tr>
<tr>
<td>K</td>
<td>Special wiring specifications (Not double wiring)</td>
<td>[2]</td>
</tr>
<tr>
<td>N</td>
<td>With name plate</td>
<td>[2]</td>
</tr>
<tr>
<td>R</td>
<td>External pilot</td>
<td>[2]</td>
</tr>
</tbody>
</table>

**Note:**
- Note 1) When two or more symbols are specified, indicate them alphabetically. Example) -BKR
- Note 2) Models with a suffix “B” have check valves for prevention of back pressure at all manifold stations.
- Note 3) If not all stations need this check valve, specify the stations where check valves are installed by using the manifold specification sheet.
- Note 4) Specify the wiring by using of the manifold specification sheet.

**Enclosure**

IP65 (Dust tight/Low jetproof type)

**MIL flat cable connector reduces installation labor for electrical connection.**
**Manifold and connectors, both compliant with the IP65 rating (dusttight, low jetproof), provide a high degree of protection for the electrical parts.**
**Maximum stations are 24.**
Plug-in Unit Series VQ1000/2000

How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

<Example>
Flat ribbon cable kit with 3 m cable
VVQ2001-09CM5-W--1 set-Manifold base no.
+VQ2100-2W--------2 sets-Valve part no. (Stations 1 to 2)
+VQ2200-5W--------4 sets-Valve part no. (Stations 3 to 6)
+VQ2300-5W--------2 sets-Valve part no. (Stations 7 to 8)
+VQ2400-10-1A-1-----1 set-Blanking plate part no. (Station 9)
Prefix the asterisk to the part nos. of the solenoid valve, etc. When ordering, specify the part nos. in order from the 1st station in the D side. When part nos. written collectively are complicated, specify by using the manifold specification sheet.

How to Order Valves

<table>
<thead>
<tr>
<th>Series</th>
<th>VQ 2</th>
<th>1 0 0 Y 5 W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of actuation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2 position single</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2 position double</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3 position closed center</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>3 position exhaust center</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>3 position pressure center</td>
<td></td>
</tr>
</tbody>
</table>

Seal

0 Metal seal
1 Rubber seal

Function

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specification</th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Standard type</td>
<td>100 VAC (50/60 Hz)</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>High pressure type</td>
<td>24 VDC</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Low wattage type</td>
<td>12 VDC</td>
<td></td>
</tr>
</tbody>
</table>

How to Order Electrical Wiring

As the standard electrical wiring specifications, double wiring (connected to SOL A and SOL B) is adopted for the internal wiring of each station for 12 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-7-178.

Note) When using the negative common specifications, double wiring is used to ensure common. (Refer to page 2-4-178.) For details, refer to “Option” on page 2-4-178.

Electrical wiring specifications

<table>
<thead>
<tr>
<th>Station</th>
<th>NII</th>
<th>B</th>
<th>C</th>
<th>Manual override</th>
<th>Light/Surge voltage suppressor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NIL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>NIL</td>
<td></td>
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<td>12</td>
<td>NIL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Terminal no. Polarity Lead wire color/Dot marking

SOL-A 1 (-) (+) Black None
SOL-B 2 (+) Brown None
SOL-A 3 (+) Red None
SOL-B 4 (+) Orange None
SOL-A 5 (+) Yellow None
SOL-B 6 (+) Pink None
SOL-A 7 (+) Blue None
SOL-B 8 (+) Blue None
SOL-A 9 (+) Yellow Black
SOL-B 10 (+) White Black
SOL-A 11 (+) White Red
SOL-B 12 (+) Yellow Red
SOL-A 13 (+) Orange Red
SOL-B 14 (+) Yellow Black
SOL-A 15 (+) Pink Black
SOL-B 16 (+) Blue White
SOL-A 17 (+) Purple None
SOL-B 18 (+) Gray None
SOL-A 19 (+) Orange Black
SOL-B 20 (+) Red White
SOL-A 21 (+) Brown White
SOL-B 22 (+) Pink Red
SOL-A 23 (+) Gray Red
SOL-B 24 (+) Black White
COM-C 25 (+) White None
COM-D 26 (+) White None

Note) For external pilot and negative COM specifications, refer to "Option" on 2-4-178 to 2-4-179.

Note) For power consumption of AC type, refer to page 2-4-129.
The broken lines indicate the DIN rail mounting style [-D] and the side entry connection [-FS].

**Dimensions**

Formula: \( L1 = 16n + 77.5 \), \( L2 = 16n + 100.5 \)  
\( n \): Station (Maximum 12 stations)

<table>
<thead>
<tr>
<th>Station</th>
<th>L1 (mm)</th>
<th>L2 (mm)</th>
<th>( L3 ) (mm)</th>
<th>( L4 ) (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>109.5</td>
<td>132.5</td>
<td>162.5</td>
<td>173</td>
</tr>
<tr>
<td>3</td>
<td>125.5</td>
<td>148.5</td>
<td>175</td>
<td>185.5</td>
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<tr>
<td>4</td>
<td>141.5</td>
<td>164.5</td>
<td>187.5</td>
<td>198</td>
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<td>5</td>
<td>157.5</td>
<td>180.5</td>
<td>200</td>
<td>210.5</td>
</tr>
<tr>
<td>6</td>
<td>173.5</td>
<td>196.5</td>
<td>225</td>
<td>235.5</td>
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<tr>
<td>7</td>
<td>189.5</td>
<td>212.5</td>
<td>237.5</td>
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<td>8</td>
<td>205.5</td>
<td>228.5</td>
<td>260</td>
<td>260.5</td>
</tr>
<tr>
<td>9</td>
<td>221.5</td>
<td>244.5</td>
<td>275</td>
<td>285.5</td>
</tr>
<tr>
<td>10</td>
<td>237.5</td>
<td>268.5</td>
<td>287.5</td>
<td>298</td>
</tr>
<tr>
<td>11</td>
<td>253.5</td>
<td>276.5</td>
<td>300</td>
<td>310.5</td>
</tr>
<tr>
<td>12</td>
<td>269.5</td>
<td>292.5</td>
<td>312.5</td>
<td>323</td>
</tr>
</tbody>
</table>
VQ2000
Kit (Serial transmission kit) for I/O
IP65 compliant

VQ2000 only

Applicable network **DeviceNet/PROFIBUS-DP**

- The serial transmission system reduces wiring work, while minimizing wiring and saving space.

**SI unit for DeviceNet/PROFIBUS**

As a slave for DeviceNet/PROFIBUS, it is possible to control ON/OFF of a solenoid valve with the maximum of 32 points. Furthermore, by connecting a discrete input block, it is possible to input the sensor signal for 32 points at the maximum.

**Input block**

Meaning of an expansion block, connecting with SI unit, for sensor-inputting for auto switches, etc. Sensor-input is available up to 8 per one input block. By the NPN/PNP switch, it is able to adjust COM to sensor.

---

**How to Order Manifold**

**VV5Q21**

**VQ2000 Plug-in series**

**Stations**

- **C4**: With One-touch fitting for ø4
- **C6**: With One-touch fitting for ø6
- **C8**: With One-touch fitting for ø8
- **CM**: With mixed size/with port plug

**Cylinder port**

- **D**: D side mounting

**Model**

- **GW**: Without SI unit
- **GW**: DeviceNet +COM
- **NWN**: PROFIBUS-DP +COM

**Note:** Only +COM is available for DeviceNet. Order a mounting valve with +COM. Since PROFIBUS is +COM only, order +COM for valves to be mounted.

**Enclosure**

- IP65 (Dust tight/Low jetproof type)

**Option**

- **Symbol**
- **Option**
  - Nil: None
  - B: With back pressure check valve
  - D: DIN rail mounting style
  - K: Special wiring specifications (Not double wiring)
  - N: With name plate
  - R: External pilot

**Input block COM**

- **Nil**: PNP(+) or SI/Input block: None
- **N**: NPN(–)

**Input block**

- **Nil**: SI unit/Input block: None
  - 0: Input block: None
  - 1: Input block 1 pc.
  - 2: Input block 2 pcs.
  - 3: Input block 3 pcs.
  - 4: Input block 4 pcs.
Details in Connector

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SW+</td>
<td>Sensor power supply +</td>
</tr>
<tr>
<td>2</td>
<td>N.C.</td>
<td>Open *</td>
</tr>
<tr>
<td>3</td>
<td>SW–</td>
<td>Sensor power supply –</td>
</tr>
<tr>
<td>4</td>
<td>SIGNAL</td>
<td>Sensor input signal</td>
</tr>
<tr>
<td>5</td>
<td>PE</td>
<td>Protective sensor ground</td>
</tr>
</tbody>
</table>

* No. 2 pin of the input no. 0, 2, 4, 6 connector (connectors aligned in the right side on the input block) is connected internally with no. 4 pin (sensor input no.) of the input no. 1, 3, 5, 7 respectively. Thereby, it is possible to directly input 2 points which is bundled into 1 cable by the cluster connector, etc.

Input connector: M12 5 pins (XS2F compatible made by OMRON Corp.) x 8 pcs.
Cable side connector example: XS2G made by OMRON Corp.

**Caution**
When an enclosure equivalent to IP65 is required, place a waterproof cover on the unused input connector. As for waterproof cover, order it separately. Example: OMRON Corp. XS2Z-12

Indicator Unit (LED) Descriptions and Functions

**SI Unit (DeviceNet)**

<table>
<thead>
<tr>
<th>Description</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>PWR(V)</td>
<td>ON when solenoid valve power supply is turned ON</td>
</tr>
<tr>
<td>PWR</td>
<td>ON when DeviceNet circuit power supply input is turned ON</td>
</tr>
<tr>
<td>MOD/NET</td>
<td>OFF: Power supply off, off line, or when checking duplication of MAC_ID. Green blinking: Waiting for connection (On line). Red blinking: Connection time out (Minor communication abnormality occurs). Red ON: MAC_ID duplication error, or BUSOFF error (Major communication abnormality occurs)</td>
</tr>
</tbody>
</table>

**SI Unit (PROFIBUS-DP)**

<table>
<thead>
<tr>
<th>Description</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>PWR</td>
<td>ON when solenoid valve power supply is turned ON. OFF when the power supply voltage is less than 19 V</td>
</tr>
<tr>
<td>MOD/NET</td>
<td>OFF when short circuit protection is working</td>
</tr>
</tbody>
</table>

**Input block**

<table>
<thead>
<tr>
<th>Description</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUN</td>
<td>ON when operating (SI unit power supply is ON)</td>
</tr>
<tr>
<td>DIA</td>
<td>ON when self-diagnosis device detects abnormality</td>
</tr>
<tr>
<td>BF</td>
<td>ON for BUS abnormality</td>
</tr>
</tbody>
</table>

**Communication connector (PROFIBUS-DP):** Made by CONINVERS GmbH RC-2RS1N12 12 pins
Cable side connector example: Made by Siemens AG 6ES5 760-2CB11

**Power source connector:** Series 723 (made by Franz Binder GmbH) 5 pins (72309-0115-80-05)
Cable side connector example: Franz Binder GmbH 72309-0114-70-15, etc. > On type 5 pins.

**Communication connector (DeviceNet):** M12 5 pins (for DeviceNet compliant)
Example of corresponding cable assemblies with connector: OMRON Corporation: DCA1-5CN05F1 Karl Lumberg GmbH & Co. KG: RKT5-56

Power unit connector: Series 723 (made by Franz Binder GmbH) 5 pins (72309-0115-80-05)
Cable side connector example: Franz Binder GmbH 72309-0114-70-15, etc.

* Connector’s shape and pin assignment is interchangeable with ET200C made by Siemens AG.

Input connector, SI Unit (DeviceNet) SI Unit (PROFIBUS-DP)

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>M5V</td>
<td>GND Terminal</td>
</tr>
<tr>
<td>2</td>
<td>A</td>
<td>Signal-N</td>
</tr>
<tr>
<td>4</td>
<td>B</td>
<td>Signal-P</td>
</tr>
<tr>
<td>6</td>
<td>+5V</td>
<td>Terminal +5 V</td>
</tr>
<tr>
<td>9</td>
<td>SIELD</td>
<td>Shield ground</td>
</tr>
<tr>
<td>12</td>
<td>RTS</td>
<td>Optical fiber (Reserve)</td>
</tr>
</tbody>
</table>

Pin no. 3, 5, 7, 8, 10 and 11 marked with ● are open.
### Dimensions

<table>
<thead>
<tr>
<th>n</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>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>68.5</td>
<td>84.5</td>
<td>100.5</td>
<td>116.5</td>
<td>132.5</td>
<td>148.5</td>
<td>164.5</td>
<td>180.5</td>
<td>196.5</td>
<td>212.5</td>
<td>228.5</td>
<td>244.5</td>
<td>260.5</td>
<td>276.5</td>
<td>292.5</td>
</tr>
<tr>
<td>L2</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>
<td>362</td>
<td>378</td>
<td>394</td>
<td>410</td>
<td>426</td>
<td>442</td>
</tr>
</tbody>
</table>

If there is an input block, it comes with bracket.

**Formula**: \( L1 = 16n + 36.5 \), \( L2 = 16n + 186 \) (in the case of 1 pc. DI unit, 54 mm will be added for increasing every 1 pcs.)

**Dimensions**

- VQ2000 Kit (Serial transmission kit) for I/O
- IP65 compliant
- VV5Q21S kit
- (Serial transmission kit: EX240)

**Dimensions**

- **L1**: 16n + 36.5
- **L2**: 16n + 186 (in the case of 1 pc. DI unit, 54 mm will be added for increasing every 1 pcs.)

**Note**: If there is an input block, it comes with bracket.

**Formula**: \( L1 = 16n + 36.5 \), \( L2 = 16n + 186 \) (in the case of 1 pc. DI unit, 54 mm will be added for increasing every 1 pcs.)

**n**: Station
Series VQ2000
VQ2000 Only
Sub-plate Single Unit

Conforming to IP65 in standard specifications

Easy-to-use terminal block

How to Order

Valve + Sub-plate

VQ2 1 0 0 - 5 W - 02

Entry is the same as standard products.

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

Enclosure
- Nil
- Dust tight
- W
- IP65 (Dust tight/Low jetproof type)

With and without sub-plate
- Nil
- Without sub-plate
- 02
- With sub-plate (Port size: 1/4)

In the case of sub-plate alone
VQ2000 – PW – 02

Dimensions

[Diagram showing dimensions and parts of the valve]
**Blanking plate assembly**

**JIS Symbol**

**VQ1000-10A-1**

It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.

**Individual SUP spacer**

**VQ1000-P-1-C6**

When the same manifold is to be used for different pressures, individual SUP spacers are used as SUP ports for different pressures. (One station space is occupied.)

Block both sides of the station, for which the supply pressure from the individual SUP spacer is used, with SUP block plates. (Refer to the application ex.)

* Specify the mounting position and SUP block plate position on the manifold specification sheet.

* Electric wiring is connected to the position of the manifold station where the individual SUP spacer is mounted.

**Supplemental**

- Electric current should be 1A or less. (Including the electricity to drive a single valve or equipment that are not prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.

- Blanking plate with connector for individually outputting electric wiring to a single valve or equipment that are not on the manifold base.

- When “N” is suffixed to the nameplate, the plate will be different from a standard shape.

Note) Electric current should be 1A or less. (Including the mounted valves.)
EXH block base assembly
VVQ1000-19A [C3, C4, C6, M5]

Manifold block assembly

Electrical entry

| F1 | For F kit (2 to 12 stations)/Double wiring |
| F2 | For F kit (13 to 24 stations)/Double wiring |
| F3 | For F kit (2 to 24 stations)/Single wiring |
| P1 | For P, G, T, 5 kit (2 to 12 stations)/Double wiring |
| P2 | For P, G, T, 5 kit (13 to 24 stations)/Double wiring |
| P3 | For P, G, T, 5 kit (2 to 24 stations)/Single wiring |
| L0 | L0 kit |
| L1 | L1 kit |
| L2 | L2 kit |

The manifold block assembly is used between stations for which exhaust is desired to be divided when valve exhaust affects other stations due to the circuit configuration. The EXH passage on the D-side is blocked in the EXH block base assembly. It is also used in combination with an individual EXH spacer for individual exhaust.

<Blocking indication label>
When blocking the EXH passage with an EXH block base assembly, indication label for confirmation of the blocking position from outside is attached. (One label for each)
* When ordering a EXH block base incorporated with the manifold no., a block indication label is attached to the manifold.

Back pressure check valve assembly [-B]
VVQ1000-18A

It prevents cylinder malfunction caused by other valve exhaust. Insert it into R (EXH) port on the manifold side of a valve which is affected. It is effective when a single action cylinder is used or an exhaust center type solenoid valve is used.

Note) When a check valve for back pressure prevention is desired, and is to be installed only in certain manifold stations, write clearly the part no. and specify the number of stations by using the manifold specification sheet.

Name plate [-N]
VVQ1000-NC- N-Station (1 to Max. stations)

It is a transparent resin plate for placing a label that indicates solenoid valve function, etc. Insert it into the groove on the side of the end plate and bend it as shown in the figure.
* When the blanking plate with connector is mounted, it automatically will be "VVQ1000-NC-n" with an option symbol [-N].

Blanking plug (For One-touch fittings)
KQ2P-

It is inserted into an unused cylinder port and SUP/EXH ports. Purchasing order is available in units of 10 pieces.

Port plug
VVQ0000-58A

The plug is used to block the cylinder port when using a 4 port valve as a 3 port valve.

Elbow fitting assembly
VVQ1000-F-L [C3, C4, C6, M5]

It is used for piping that extends upward or downward from the manifold. When installing it in part of the manifold stations, specify the assembly no. and the mounting position and number of stations by means of the manifold specification sheet.
* When mounting elbow fittings assembly on the edge of manifold station and a silencer on EXH port, select a silencer, AN203-KM8. Silencer (AN200-KB8) is interfered with fittings.
Manifold Option Parts for VQ1000

DIN rail mounting bracket
VVG1000-57A
It is used for mounting a manifold on a DIN rail. The DIN rail mounted bracket is fixed to the manifold end plate. (The specification is the same as that for the option “D”.)
1 set of DIN rail mounting bracket is used for 1 manifold (2 DIN rail mounting brackets).

Built-in silencer, Direct exhaust [-S]
This is a type with an exhaust port at the top manifold end plate. The built-in silencer exhibits an excellent noise suppression effect. (Silencing effect: 30 dB)
Note) A large quantity of drainage generated in the air source results in exhaust of air together with drainage. For maintenance, refer to page 2-4-176.

2 stations matching fitting assembly
VVG1000-52A-C8
For driving a cylinder with a large bore, valves for two stations are operated to double the flow rate. This assembly for the cylinder port is used in that case. The assembly is equipped with One-touch fittings for ø8 bore.
+ The bore for the manifold no. is “CM”.
Clearly indicate the 2 station matching fitting assembly no., and specify the number of stations and positions by means of the manifold specifications.
+ In 2 station matching fitting assembly, a special clip which is combined in one-piece of 2 stations is attached as a holding clip.

Silencer (For EXH port)
This silencer is to be inserted into the EXH port (One-touch fittings) of the common exhaust type
+ When mounting elbow fittings assembly (VVG1000-F-L/L50132) on the edge of manifold station, select a silencer, AN200-KM8. Silencer (AN200-KM8) is interfered with fittings.

Regulator unit
VVG1000-AR-1
The regulator controls the SUP air pressure in a manifold. Supply air from D side SUP port is regulated. SUP port on U side is plugged.

Specifications
Maximum operating pressure 0.8 MPa
Set pressure range 0.05 to 0.7 MPa
Ambient and fluid temp. 5 to 50°C
Fluid Air
Cracking pressure 0.02 MPa

Structure Relieving type

How to Order
Indicate an option symbol “-G” for the manifold no. and be sure to specify the mounting position and number of stations by means of the manifold specification form. One unit is counted as one station and occupies a space for three stations, therefore, pay attention to the manifold size.

Other, option symbols; to be indicated alphabetically.

Flow Characteristics
Conditions (Initial setting) Inlet pressure 0.7 MPa
Outlet pressure 0.2 MPa

Pressure characteristics
Conditions (Initial setting) Inlet pressure 0.7 MPa
Outlet pressure 0.2 MPa

Caution
+ Pressure setting
Check the supply pressure and then turn the pressure control screw to set the secondary pressure. Turning the screw clockwise will increase the secondary pressure while turning it counterclockwise decrease the pressure. (Set the pressure by turning the screw in the increase direction.)
+ Installation
Since some level of the actuator’s operational frequency may lead to a sharp pressure change, pay attention to the pressure gauge durability.
Double check block (Separated type): For VQ1000
VQ1000-FPG-

It is used on the outlet side piping to keep the cylinder in the intermediate position for a long time. Combining the double check block with a built-in pilot type double check valve and a 3 position exhaust center solenoid valve will enable the cylinder to stop in the middle or maintain its position for a long time.

The combination with a 2 position single/double solenoid valve will permit this block to be used for preventing the dropping at the cylinder stroke end when the SUP residual pressure is released.

Specifications
- Max. operating pressure: 0.8 MPa
- Min. operating pressure: 0.15 MPa
- Ambient and fluid temp.: -5 to 50°C
- Flow characteristics: C = 0.60 dm³/(s·bar)
- Max. operating frequency: 180 CPM

Dimensions
- Single unit
- Manifold

How to Order
- VQ1000-FPG- [C4 M5 F]

Option
- Nil
- F With bracket
- D DIN rail mounting style (For manifold)
- N Name plate

Bracket Assembly
- stations
  - 01 1 station
  - 16 16 stations

Caution
- Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for a long time. Check the leakage using neutral household detergent, such as dish washing soap. Also check the cylinder’s tube gasket, piston packing and rod packing for air leakage.
- Since One-touch fittings allow slight air leakage, screw piping (with M5 thread) is recommended when stopping the cylinder or from the fittings will prevent the cylinder from stopping for a long time. Check the cylinder in the middle for a long time.
- Combining double check block with 3 position closed center or pressure center solenoid valve will not work.
- Since One-touch fittings allow slight air leakage, screw piping (with M5 thread) is recommended when stopping the cylinder or from the fittings will prevent the cylinder from stopping for a long time. Check the cylinder in the middle for a long time.
- M5 fitting assembly is attached, not incorporated into the double check block. After screwing in the M5 fittings, mount the assembly on the double check block. (Tightening torque: 0.8 to 1.2 N·m)
- If the exhaust of the double check block is throttled too much, the cylinder may not operate properly and may not stop immediately.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.
Base Mounted
Series VQ1000/2000

Manifold Option/Vacuum Ejector Unit: VQ1000

A vacuum ejector unit can be mounted on the manifold base for a solenoid valve. Instead of mounting the valve and vacuum ejector unit separately, this option reduces piping, wiring and creates additional space savings.

### Specifications

<table>
<thead>
<tr>
<th>Unit no.</th>
<th>VQ1000-J-L50132-A</th>
<th>VQ1000-J-L50132-B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nozzle diameter (mm)</td>
<td>0.7</td>
<td>1.0</td>
</tr>
<tr>
<td>Max. suction flow rate N (l/min)</td>
<td>11</td>
<td>20</td>
</tr>
<tr>
<td>Max. vacuum pressure</td>
<td>–630 mmHg</td>
<td></td>
</tr>
<tr>
<td>Max. operating pressure</td>
<td>0.8 MPa</td>
<td>0.5 MPa</td>
</tr>
<tr>
<td>Standard supply pressure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating temperature</td>
<td>5 to 50°C</td>
<td></td>
</tr>
</tbody>
</table>

### Maximum Number of Ejector Units

(Max. number of ejector units is subject to the number of valve stations.)

<table>
<thead>
<tr>
<th>Max. number of mounted valves</th>
<th>F, P, T kit</th>
<th>S, G, J kit</th>
<th>L kit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>11(20)</td>
<td>7(14)</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>10(16)</td>
<td>6(12)</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>9(12)</td>
<td>5(10)</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>8(8)</td>
<td>4(8)</td>
<td>–</td>
</tr>
<tr>
<td>5</td>
<td>4(4)</td>
<td>3(4)</td>
<td>–</td>
</tr>
</tbody>
</table>

Note) The max. number of mounted valves applies to double wiring. Parenthesized numbers apply to single wiring. Please contact SMC for conditions other than the above or mixed wiring.

### Dimensions

![Dimensions Diagram]

### How to Order

**Example:** VV5Q11-05C6FUO-JP1-1 set-Manifold part no.
- VQ1100-5 ………… 2 sets–Valve part no. (Stations 1 to 2)
- VQ2000-5 ………… 2 sets–Valve part no. (Stations 3 to 4)
- VQ1000-J1-5-A … 1 set–Ejector valve part no.
- ZSE1-00-15-CL … 1 set–Vacuum switch part no.

Note 1) Count one ejector unit as one manifold station.
Note 2) The ejector unit is mounted next to the U-side end plate.
Note 3) The U-side end plate is used exclusively for ejector units. (Without P and R port)
Note 4) The dimension of manifold with an ejector unit is different from the standard dimension. See the formula for calculating the dimensions for each kit.
How to Order Vacuum Ejector Valves

**VVQ1000 — J 1 5 H C A**

- **Manifold**
  - 1 Plug-in unit

**Coil voltage**

<table>
<thead>
<tr>
<th>Manifold</th>
<th>100 VAC (50/60 Hz)</th>
<th>200 VAC (50/60 Hz)</th>
<th>110 VAC (50/60 Hz)</th>
<th>220 VAC (50/60 Hz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>100 VAC (50/60 Hz)</td>
<td>200 VAC (50/60 Hz)</td>
<td>110 VAC (50/60 Hz)</td>
<td>220 VAC (50/60 Hz)</td>
</tr>
<tr>
<td>2</td>
<td>24 VDC</td>
<td>12 VDC</td>
<td>9 Others</td>
<td></td>
</tr>
</tbody>
</table>

**Function**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specification</th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Standard type</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>High pressure type</td>
<td>1.5 W</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Low voltage type</td>
<td>0.5W</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>Negative COM</td>
<td>○</td>
<td></td>
</tr>
</tbody>
</table>

**Specifications**

- **Plug-in unit**
- **Vacuum release valve**
  - A ø0.7
  - B ø1.0
- **Manual override**
  - A Non-locking push type
  - B Locking type (Tool required)
  - C Locking type (Manual)

---

How to Order Vacuum Pressure Switches

**ZSE1 — 00 15 CL**

- **Switch/Voltage (Solid state: 12 to 24 VDC)**
  - 14 NPN1 setting, 3 revolution adjustment
  - 15 NPN1 setting, 200° adjustment
  - 16 NPN2 setting, 3 revolution adjustment
  - 17 NPN2 setting, 200° adjustment
  - 18 NPN1 setting, 3 revolution adjustment, analog
  - 19 NPN1 setting, 200° adjustment, analog

**Wiring specifications**

- **Nil** Grommet type, Lead wire length 0.6 m
- **L** Grommet type, Lead wire length 3 m
- **C** Connector type, Lead wire length 0.6 m
- **CL** Connector type, Lead wire length 3 m
- **CN** Without connector

**Note** When ordering the switch with 5 m lead wire length, order separately the switch without connector and the connector. (Refer to below.) Besides, as for details, refer to the Vacuum Equipment catalog.

**Flow/Exhaust Characteristics of Ejector Unit**

**Nozzle Diameter ø0.7**

Exhaust Characteristics

- **Vacuum pressure (mmHg)**
- **Air consumption (l/min)**
- **Suction flow rate (l/min)**

**Nozzle Diameter ø1.0**

Exhaust Characteristics

- **Vacuum pressure (mmHg)**
- **Air consumption (l/min)**
- **Suction flow rate (l/min)**

**Flow Characteristics**

- **Supply pressure (MPa)**
- **Suction flow rate (l/min)**
- **Vacuum pressure (mmHg)**

---

Note 1) For power consumption of AC type, refer to page 2-4-129.
Note 2) When two or more symbols are specified, indicate them alphabetically.
Manifold Option Parts for VQ2000

Blanking plate assembly

**VVQ2000-10A-1**

It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.

**Individual SUP spacer**

**VVQ2000-P-1-C8**

When the same manifold is to be used for different pressures, individual SUP spacers are used as SUP ports for different pressures. (One station space is occupied.) Block both sides of the station, for which the supply pressure from the individual SUP spacer is used, with SUP block plates. (Refer to the application ex.)

- Specify the spacer mounting position and SUP block plate position on the manifold specification sheet.
- Electric wiring is connected to the position of the manifold station where the individual SUP spacer is mounted.

**Individual EXH spacer**

**VVQ2000-R-1-C8**

When valve exhaust affects other stations due to the circuit configuration, this spacer is used for individual valve exhaust. (One station space is occupied.) Block both sides of the individual valve EXH station. (See example)

- Specify the mounting position, as well as the EXH block base or EXH block plate position on the manifold specification sheet.
- Electric wiring is connected to the position of the manifold station where the individual EXH spacer is mounted.

**SUP block plate**

**VVQ2000-16A**

When different pressures, high and low, are supplied to one manifold, a SUP block plate is inserted between the stations under different pressures.

- Specify the number of stations on the manifold specification sheet.

*When ordering a block plate incorporated with the manifold no., a block indication label is attached to the manifold.*

**EXH block plate**

**VVQ2000-19A**

The EXH block plate is used between stations for which exhaust is desired to be divided when valve exhaust affects other stations due to the circuit configuration. It is also used in combination with an individual EXH spacer for individual exhaust.

- Specify the number of stations on the manifold specification sheet.

*When ordering a block plate incorporated with the manifold no., a block indication label is attached to the manifold.*
Back pressure check valve assembly [-B]  
VVQ2000-18A

It prevents cylinder malfunction caused by other valve exhaust. Insert it into R (EXH) port on the manifold side of a valve which is affected. It is effective when a single action cylinder is used or an exhaust center type solenoid valve is used.

Note: When a check valve for back pressure prevention is desired, and is to be installed only in certain manifold stations, write clearly the part no. and specify the number of stations by using the manifold specification sheet.

Name plate [-N]  
VVQ2000-N-Station (1 to Max. stations)

It is a transparent resin plate for placing a label that indicates solenoid valve function, etc. Insert it into the groove on the side of the end plate and bend it as shown in the figure.

• Suffix “N” to the manifold part no.

Blanking plug (For One-touch fittings)  
KQ2P-

It is inserted into an unused cylinder port and SUP/EXH ports. Purchasing order is available in units of 10 pieces.

Port plug  
VVQ1000-58A

The plug is used to block the cylinder port when using a 4 port valve as a 3 port valve.

DIN rail mounting bracket  
VVQ2000-57A

It is used for mounting a manifold on a DIN rail. The DIN rail mounted bracket is fixed to the manifold end plate. (The specification is the same as that for the option “-D”.) 1 set of DIN rail mounting bracket is used for 1 manifold (2 DIN rail mounting brackets).

Built-in silencer, Direct exhaust [-S]

This is a type with an exhaust port atop the manifold end plate. The built-in silencer exhibits an excellent noise suppression effect. (Silencing effect: 30 dB)

Note: A large quantity of drainage generated in the air source results in exhaust of air together with drainage. For maintenance, refer to page 2-4-176.

Silencer (For EXH port)

This silencer is to be inserted into the EXH port (One-touch fittings) of the common exhaust type.

Elbow fitting assembly  
VVQ2000-F-L (C4, C6, C8)

It is used for piping that extends upward or downward from the manifold. When installing it in part of the manifold stations, specify the assembly no. and the mounting position and number of stations by using the manifold specification sheet.

2 stations matching fitting assembly  
VVQ2000-52A-C10

For driving a cylinder with a large bore, valves for two stations are operated to double the flow rate. This assembly for the cylinder port is used in that case.
**Manifold Option**

### Double check block (Separated type)

**VQ2000-FPG-□□□□**

It is used on the outlet side piping to keep the cylinder in the intermediate position for a long time. Combining the double check block with a built-in pilot type double check valve and a 3 position exhaust center solenoid valve will enable the cylinder to stop in the middle or maintain its position for a long time.

The combination with a 2 position single/double solenoid valve will prevent the dropping at the cylinder stroke end when the SUP residual pressure is released.

**Specifications**

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. operating pressure</td>
<td>0.8 MPa</td>
</tr>
<tr>
<td>Min. operating pressure</td>
<td>0.15 MPa</td>
</tr>
<tr>
<td>Ambient and fluid temp.</td>
<td>-5 to 50°C</td>
</tr>
<tr>
<td>Flow characteristics: C</td>
<td>~3.0 dm³/(re-bar)</td>
</tr>
<tr>
<td>Max. operating frequency</td>
<td>180 c.p.m</td>
</tr>
</tbody>
</table>

**Dimensions**

### Single unit

<table>
<thead>
<tr>
<th>IN side port size</th>
<th>OUT side port size</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 Rc 1/8</td>
<td>01 Rc 1/8</td>
</tr>
<tr>
<td>02 Rc 1/4</td>
<td>02 Rc 1/4</td>
</tr>
<tr>
<td>C6 One-touch fitting for ø6</td>
<td>C6 One-touch fitting for ø6</td>
</tr>
<tr>
<td>C8 One-touch fitting for ø8</td>
<td>C8 One-touch fitting for ø8</td>
</tr>
</tbody>
</table>

**Part no.**

| Lightening torque | 0.8 to 1.0 N·m |

**Option**

- Nil
- DIN rail mounting style
- F With bracket
- N Name plate

When two or more symbols are specified, indicate them alphabetically.

**Note**

1. Based on JIS B 8375-1981 (Supply pressure: 0.5 MPa)

**<Example>**

- Drop prevention<br>- Intermediate stops

**<Ordering Example>**

- VQ2000-FPG-06-6 stations manifold<br>- VQ2000-FPG-C6C6-D-3 sets Double check block

**Bracket Assembly**

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Lightening torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ2000-FPG-FB</td>
<td>0.8 to 1.0 N·m</td>
</tr>
</tbody>
</table>

**<Check valve operation principle>**

1. Since One-touch fittings allow slight air leakage, screw piping (with M5 thread) is recommended when stopping the cylinder in the middle or for a long time.
2. Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for a long time. Check the leakage using neutral household detergent, such as dish washing soap.
3. Also check the cylinder’s tube gasket, piston packing and rod packing for air leakage.
4. Since One-touch fittings allow slight air leakage, screw piping (with M5 thread) is recommended when stopping the cylinder in the middle or for a long time.
5. Combining double check block with 3 position closed center or pressure center solenoid valve will not work.

**Caution**

- Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for a long time. Check the leakage using neutral household detergent, such as dish washing soap.
- Also check the cylinder’s tube gasket, piston packing and rod packing for air leakage.
- Since One-touch fittings allow slight air leakage, screw piping (with M5 thread) is recommended when stopping the cylinder in the middle or for a long time.
- Combining double check block with 3 position closed center or pressure center solenoid valve will not work.

**Connection threads**

- Proper lightening torque (Nm)
  - Rc 1/8: 0.8 to 1.2 N·m
  - Rc 1/4: 7 to 9

- If the exhaust of the double check block is throttled too much, the cylinder may not operate properly and may not stop immediately.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.
**Precautions 1**

**Light/Surge Voltage Suppressor**

**Caution**

The lighting positions are concentrated on one side for both single solenoid type and double solenoid type. In the double solenoid type, A side and B side energization are indicated by two colors which match the colors of the manual overrides.

(DWG shows a VQ1000 case.)

**DC circuit diagram**

**Single solenoid**

<table>
<thead>
<tr>
<th>(+) Stop diode</th>
<th>(−) Light</th>
<th>Surge absorption diode</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOL A</td>
<td>CCM(+−)</td>
<td>SOL A</td>
</tr>
</tbody>
</table>

**Double solenoid**

<table>
<thead>
<tr>
<th>(+) Stop diode</th>
<th>(−) Light</th>
<th>Surge absorption diode</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOL A</td>
<td>CCM(+−)</td>
<td>SOL B</td>
</tr>
</tbody>
</table>

**Note**

A side energization: A light (orange) illuminates.
B side energization: B light (green) illuminates.

With wrong wiring preventing ability (stop diode), equipped with a surge absorption (surge absorption diode) mechanism.

**Manual Override**

**Warning**

Without an electric signal for the solenoid valve the manual override is used for switching the main valve.

Push type is standard. (Tool required)

Option: Locking type (Tool required/Manual)

**Push type (Tool required)**

- **Bore ø3.2**
  - VQ1000
  - VQ2000

- **Bore ø4.2**
  - VQ1000
  - VQ2000

**Locking type (Tool required) <Option>**

- **Bore ø3.2**
  - VQ1000
  - VQ2000

- **Bore ø4.2**
  - VQ1000
  - VQ2000

**Locking type (Manual) <Option>**

- **10 mm**
  - VQ1000
  - VQ2000

**Caution**

Do not apply excessive torque when turning the locking type manual override.

(0.1 N·m or less)

**How to Mount/Remove Solenoid Valve**

**Caution**

Removing

1. Loosen the clamp screw until it turns freely. (The screw is captive.)
2. Lift the coil side of the valve body while pressing down slightly on the screw head and remove it from the clamp bracket B. When the screw head cannot be pressed easily, gently press the area near the manual override of the valve.

Mounting

1. Press down on the clamp screw. → Clamp bracket A opens. Diagonally insert the hook on the valve end plate side into clamp B.
2. Press the valve body downward. (When the screw is released, it will be locked by clamp bracket A.)
3. Tighten the clamp screw. (Proper tightening torque: VQ1000, 0.25 to 0.35 N·m; VQ2000, 0.5 to 0.7 N·m.)

**Caution**

Dust on the sealing surface of the gasket or solenoid valve can cause air leakage.

**Replacement of Cylinder Port Fittings**

**Caution**

The cylinder port fittings are a cassette for easy replacement.

The fittings are blocked by a clip inserted from the top of manifold. Remove the clip with a screwdriver to remove fittings.

For replacement, insert the fitting assembly until it strikes against the inside wall and then reinsert the clip to the specified position.

**Table:**

<table>
<thead>
<tr>
<th>Applicable tubing O.D.</th>
<th>VQ1000</th>
<th>VQ2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>VQ1000-50A-C3</td>
<td>VQ1000-50A-C4</td>
</tr>
<tr>
<td>VQ1000</td>
<td>VQ1000-50A-C6</td>
<td>VQ1000-50A-C8</td>
</tr>
<tr>
<td>VQ2000</td>
<td>VQ1000-51A-C3</td>
<td>VQ1000-51A-C4</td>
</tr>
<tr>
<td>VQ2000</td>
<td>VQ1000-51A-C6</td>
<td>VQ1000-51A-C8</td>
</tr>
</tbody>
</table>

* Refer to “Option” on pages 2-4-175 to 2-4-176 for other types of fittings.

**Caution**

1. Use caution that O-rings must be free from scratches and dust. Otherwise, air leakage may result.
2. After screwing in the fittings, mount the M5 fitting assembly on the manifold base. (Tightening torque: 0.8 to 1.2 N·m)
3. Purchasing order is available in units of 10 pieces.
**Caution**

**Removing**
1. Loosen the clamp screw on side (a) of the end plate on both sides.
2. Lift side (a) of the manifold base and slide the end plate in the direction of (2) shown in the figure to remove.

**Mounting**
1. Hook side (b) of the manifold base on the DIN rail.
2. Press down side (a) and mount the end plate on the DIN rail.

Tighten the clamp screw on side (a) of the end plate.

The proper tightening torque for screws is 0.4 to 0.6 N·m.

**Built-in Silencer Replacement Element**

A silencer element is incorporated in the end plate on both sides of the A dirty and choked element may reduce cylinder speed or cause malfunction. Clean or replace the dirty element.

### Element Part No.

<table>
<thead>
<tr>
<th>Type</th>
<th>Element part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Built-in silencer, direct exhaust</td>
<td>VVQ1000-82A-1</td>
</tr>
<tr>
<td></td>
<td>VVQ2000-82A-1</td>
</tr>
</tbody>
</table>

* The minimum order quantity is 10 pcs.

Remove the cover from the top of the end plate and remove the old element with a screwdriver, etc.

**Enclosure IP65**

Wires, cables, connectors, etc. used for models conforming to IP65 should also have enclosures equivalent to or of stricter than IP65.

**How to Calculate the Flow Rate**

For obtaining the flow rate, refer to pages 2-1-8 to 2-1-11.
Option

Different Number of Connector Pins

F and P kits with the following number of pins are available besides the standard number (F = 25; P = 26). Select the desired number of pins and cable length from the cable assembly list. Place an order for the cable assembly separately.

**F**

kit (D-sub connector) 15 pins

**P**

kit (Flat ribbon cable connector) 10 pins, 16 pins, 20 pins

How to order manifold

**VV5Q11-06 C6 F SA N**

Stations

Cylinder port

Option

How to order manifold

**VV5Q11-06 C6 P SC N**

Stations

Cylinder port

Option

Kit/Electrical entry

<table>
<thead>
<tr>
<th>Pins</th>
<th>Location</th>
<th>Top entry</th>
<th>Side entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>15P</td>
<td>Kit F</td>
<td>UA</td>
<td>Kit F</td>
</tr>
<tr>
<td>10P</td>
<td>Kit P</td>
<td>SC</td>
<td>Kit P</td>
</tr>
<tr>
<td>16P</td>
<td>Kit P</td>
<td>SA</td>
<td>Kit P</td>
</tr>
<tr>
<td>20P</td>
<td>Kit P</td>
<td>SB</td>
<td>Kit SC</td>
</tr>
</tbody>
</table>

Wiring Specifications

* In the same way as the 25-pin models (standard), the terminal no. 1 is for SOLA at the 1st station, the terminal no. 9 for SOLB at the 1st station, and the terminal no. 8 for COM.

* In the same way as the 26-pin models (standard), the terminal no. 1 is for SOLA at the 1st station, the terminal no. 2 for SOLB at the 1st station, and two pins from the max. terminal numbers are for COM.

Wire Color Table by Terminal No. of D-sub Connector Cable Assembly

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Lead wire color</th>
<th>Std wiring</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Black</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>Brown</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>Red</td>
<td>None</td>
</tr>
<tr>
<td>4</td>
<td>Orange</td>
<td>None</td>
</tr>
<tr>
<td>5</td>
<td>Yellow</td>
<td>None</td>
</tr>
<tr>
<td>6</td>
<td>Pink</td>
<td>None</td>
</tr>
<tr>
<td>7</td>
<td>Blue</td>
<td>None</td>
</tr>
<tr>
<td>8</td>
<td>Purple</td>
<td>White</td>
</tr>
<tr>
<td>9</td>
<td>Gray</td>
<td>Black</td>
</tr>
<tr>
<td>10</td>
<td>White</td>
<td>Black</td>
</tr>
<tr>
<td>11</td>
<td>White</td>
<td>Red</td>
</tr>
<tr>
<td>12</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>13</td>
<td>Orange</td>
<td>Red</td>
</tr>
<tr>
<td>14</td>
<td>Yellow</td>
<td>Black</td>
</tr>
<tr>
<td>15</td>
<td>Pink</td>
<td>Black</td>
</tr>
</tbody>
</table>

* For other commercial connectors, use a type conforming to MIL-C-24308.

Flat Ribbon Cable Assembly

<table>
<thead>
<tr>
<th>Cable length (L)</th>
<th>Pins</th>
<th>10P</th>
<th>16P</th>
<th>20P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>AXT100-FC10-1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 m</td>
<td>AXT100-FC10-2</td>
<td>AXT100-FC16-1</td>
<td>AXT100-FC20-1</td>
<td></td>
</tr>
<tr>
<td>5 m</td>
<td>AXT100-FC10-3</td>
<td>AXT100-FC16-2</td>
<td>AXT100-FC20-2</td>
<td></td>
</tr>
</tbody>
</table>

* For other commercial connectors, use a type with strain relief conforming to MIL-C-83503.
Special Wiring Specifications

In the internal wiring of F kit, P kit, J kit, G kit, T kit and S kit, double wiring (connected to SOL. A and SOL. B) is adopted for each station regardless of the valve and option types. Mixed single and double wiring is available as an option.

1. How to Order
   Indicate an option symbol “-K”, for the manifold no. and be sure to specify the mounting position and number of stations of the single and double wiring by means of the manifold specification sheet.

Example) VV5Q11-08C6FU1-DK S

Others, option symbols: to be indicated alphabetically.

2. Wiring specifications
   With the A side solenoid of the 1st station as no.1 (meaning, to be connected to no.1 terminal), without making any terminals vacant.

3. Max. number of stations
   The maximum number of stations depends upon the number of solenoids. Assuming one for a single and two for a double, determine the number of stations so that the total number is not more than the max. number given in the following table.

<table>
<thead>
<tr>
<th>Kit</th>
<th>F kit (D-sub connector)</th>
<th>P kit (Flat ribbon cable connector)</th>
<th>J kit (Flat ribbon cable connector)</th>
<th>G kit (Flat ribbon cable with terminal block)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>F $\frac{3}{4}$ P $\frac{3}{4}$ 25P</td>
<td>P $\frac{3}{4}$ A 15P 26P</td>
<td>P $\frac{3}{4}$ B 20P 16P</td>
<td>J $\frac{3}{4}$ C 20P</td>
</tr>
<tr>
<td>Max. points</td>
<td>24</td>
<td>14</td>
<td>24</td>
<td>18</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Kit</th>
<th>T kit (Terminal block)</th>
<th>S kit (Serial transmission)</th>
<th>M kit (Circular connector)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>2 rows of terminal blocks</td>
<td>3 rows of terminal blocks</td>
<td></td>
</tr>
<tr>
<td>Max. points</td>
<td>20</td>
<td>16</td>
<td>24</td>
</tr>
</tbody>
</table>

Negative Common Specifications

Specify the valve model no. as shown below for negative COM specification. The manifold no. shown below is for the T and L kits. For other kits the standard manifold can be used. For negative COM S or G kit, please contact SMC.

VQ1100 N — 5

Negative common specifications

How to order negative COM manifold

T kit:
VV5Q11 06 C6 T N N

Opton
Cylinder port
Stations

L kit:
VV5Q11 06 C6 L N 1 N

Stations
Cylinder port
Negative common specifications

Electrical entry
Cable length

| 0 | With cable (0.6 m) |
| 1 | With cable (1.5 m) |
| 2 | With cable (3 m) |
External Pilot Specifications

When the supply air pressure is lower than the required minimum operating pressure (0.1 to 0.2 MPa) for the solenoid valve (or when the valve is used for vacuum), specify an external pilot model. Order a manifold or valve by suffixing the external pilot specification, “R”.

The X-port of the manifold base is equipped with One-touch fittings for external pilot.

VQ1000: C4 (One-touch fitting for ø4)
VQ2000: C6 (One-touch fitting for ø6)

How to order manifold

VV5Q11-08C6FU1-R S

Others, option symbols:
to be indicated alphabetically.

How to order valves

VQ1100 R – 5

External pilot specifications

Note 1) When low wattage type is also desired, specify as "RY".
Note 2) In this valve pilot exhaust is connected to the EA passage of the manifold. Therefore, it is not possible to supply air from EXH port, nor vacuum from ports other than SUP port.

Inch-size One-touch Fittings

The valve with inch-size One-touch fittings is shown below.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>N1</th>
<th>N3</th>
<th>N7</th>
<th>N9</th>
<th>MST</th>
<th>NM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable tubing O.D. (Inch)</td>
<td>ø1/8&quot;</td>
<td>ø5/32&quot;</td>
<td>ø1/4&quot;</td>
<td>ø5/16&quot;</td>
<td>10-32UNF (M5 thread)</td>
<td>Mixed</td>
</tr>
<tr>
<td>4(A), 2(B) port</td>
<td>VQ1000</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>—</td>
<td>●</td>
</tr>
<tr>
<td>VQ2000</td>
<td>—</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>—</td>
<td>●</td>
</tr>
</tbody>
</table>

Note) When inch-size fittings are selected for the cylinder port, use inch size fittings for both P and R port.

1(P), 3(R) port size
VQ1000 —— ø5/16" (N9)
VQ2000 —— ø3/8" (N11)
### Option

#### DIN Rail Mounting

Each manifold can be mounted on a DIN rail. Order it by indicating a DIN rail mounting option symbol, “-D”. In this case, a DIN rail which is approx. 30 mm longer than the manifold with the specified number of stations is attached.

- **When DIN rail is unnecessary**
  
  (DIN rail mounting brackets only are attached.)

  Indicate the option symbol, -D0, for the manifold no.

  **Example**

  VV5Q11-08C6FU1-D0S

  Others, option symbols: to be indicated alphabetically.

- **When using DIN rail longer than the manifold with specified number of stations**

  Clearly indicate the necessary number of stations next to the option symbol “-D” for the manifold no.

  **Example**

  VV5Q11-08C6FU1-D09S

  DIN rail for 9 stations

  Others, option symbols: to be indicated alphabetically.

- **When changing the manifold style into a DIN rail mounting style.**

  Order brackets for mounting a DIN rail. (Refer to “Option” on pages 2-4-168 and 2-4-173.)

  No. VVQ1000-57A (For VQ1000)
  VVQ2000-57A (For VQ2000)

  2 pcs. per one set.

- **When ordering DIN rail only**

  DIN rail no.: AXT100-DR-

  As for , specify the number from the DIN rail table.

  For L dimension, refer to the dimensions of each kit.

### L Dimension

\[ L = 12.5 \times n + 10.5 \]

<table>
<thead>
<tr>
<th>No.</th>
<th>1</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>
</tr>
</thead>
<tbody>
<tr>
<td>L dim.</td>
<td>23</td>
<td>35.5</td>
<td>48</td>
<td>60.5</td>
<td>73</td>
<td>85.5</td>
<td>98</td>
<td>110.5</td>
<td>123</td>
<td>135.5</td>
</tr>
<tr>
<td>No.</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>L dim.</td>
<td>148</td>
<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
</tr>
<tr>
<td>No.</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
</tr>
<tr>
<td>L dim.</td>
<td>273</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
<td>323</td>
<td>335.5</td>
<td>348</td>
<td>360.5</td>
<td>373</td>
<td>385.5</td>
</tr>
<tr>
<td>No.</td>
<td>31</td>
<td>32</td>
<td>33</td>
<td>34</td>
<td>35</td>
<td>36</td>
<td>37</td>
<td>38</td>
<td>39</td>
<td>40</td>
</tr>
<tr>
<td>L dim.</td>
<td>398</td>
<td>410.5</td>
<td>423</td>
<td>435.5</td>
<td>448</td>
<td>460.5</td>
<td>473</td>
<td>485.5</td>
<td>498</td>
<td>510.5</td>
</tr>
</tbody>
</table>
**Series VQ0000**

**Base Mounted Plug Lead Unit**

### How to Order Manifold

#### VV5Q 05 - 08 C4 F U1 D

**Stations**

<table>
<thead>
<tr>
<th>Stations</th>
<th>01</th>
<th>1 station</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The number of max. stations differs from kit to kit. (Refer to the table below.)

#### Kit/Electrical entry: Cable length

- **F** kit (D-sub connector)
  - Top entry: Side entry
  - Connector entry direction: U0, U1, U2, U3
  - Kit: F
  - Symbol: Nil
  - Port size: C3, C4, M5
  - Option: None
- **P** kit (Flat ribbon cable connector)
  - Top entry: Side entry
  - Connector entry direction: U0, U1, U2, U3
  - Kit: F
  - Symbol: Nil
  - Port size: C3, C4, M5
  - Option: None
- **T** kit (Terminal block)
  - Top entry: Side entry
  - Connector entry direction: U0, U1, U2, U3
  - Kit: F
  - Symbol: Nil
  - Port size: C3, C4, M5
  - Option: None
- **C** kit (Connector)
  - Top entry: Side entry
  - Connector entry direction: U0, U1, U2, U3
  - Kit: F
  - Symbol: Nil
  - Port size: C3, C4, M5
  - Option: None
- **S** kit (Serial transmission unit)
  - Top entry: Side entry
  - Connector entry direction: U0, U1, U2, U3
  - Kit: F
  - Symbol: Nil
  - Port size: C3, C4, M5
  - Option: None

#### Simple specials are available with SMC Simple Specials System.
For details about applicable models, please contact SMC.

#### Notes:
1) Besides the above, F and P kits with different number of pins are available. Refer to page 2-4-215 for details.
2) For details, refer to page 2-4-216.
3) Please consult with SMC for the following serial transmission kits: Matsushita Electric Works, Ltd.; Rockwell Automation, Inc.; SUNX Corporation; Fuji Electric Co., Ltd.; OMRON Corporation.

---

For details about certified products conforming to international standards, visit us at www.smcworld.com.
**How to Order Valves**

| VQ 0 | 1 | 5 | 0 | Y | 5 | LO |

- **Series**
  - 0: VQ0000

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

- **Body type**
  - 5: VQ0000

- **Seal**
  - 0: Metal seal
  - 1: Rubber seal

### Note
1. For negative common specifications, refer to “Option” on page 2-4-216.
2. F, P, T, and S kits requires connector assembly when increasing valve stations. Refer to “Option” on page 2-4-216 for parts nos.

### Function

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specification</th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Standard type</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>H</td>
<td>High pressure type</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Y</td>
<td>Low wattage type</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

- **Coil 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

- **Note**
  - For power consumption of AC type, refer to page 2-4-186.

### Manual override
- Nil: Non-locking push type (Tool required)
- B: Locking type (Tool required)

### Electrical entry
- **Q**: Grommet (C Kit only) (Except AC)
- **L**: L plug connector With lead wire
- **LO**: L plug connector Without connector
- **M**: M plug connector With lead wire
- **MO**: M plug connector Without connector

### Body type

| 5 | VQ0000 |

### Seal

| 0 | Metal seal |
| 1 | Rubber seal |

### Note
1. LO or MO type valve is used for F, P, T, and S kits. The plug connector and lead wire are attached to the manifold.
2. In cases of L and M type the connector direction is based on the pilot valve.

### How to Order Valve Manifold Assembly

**Example**

- Closed center (24 VDC)
  - VQ0350-SMO
  - VQ0250-SMO

- Single solenoid (24 VDC)
  - VQ0150-SMO

**Specifications**

- Standard type
- High pressure type
- Low wattage type

### Coils

- 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

### Note

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

### Manifold Option

- **Blanking plate assembly**
  - VVQ0000-10A-5

- **Name plate [-N]**
  - VVQ0000-NS-Station (1 to Max. stations)
  - VVQ0000-57A-5

- **DIN rail mounting bracket [-D]**
  - VVQ0000-S7A-5

- **Silencer**
  - AN103-X233

- **Blanking plug**
  - KQ2P-

- **SUP/EXH block plate**
  - VVQ0000-16A-5

- **Double check block**
  - VQ1000-FPG

- **Built-in silencer, direct exhaust [-S]**
  - Individual SUP spacer
  - VVQ0000-P-S-C4

- **Exhaust port**
  - Individual EXH spacer
  - VVQ0000-R-S-C4

- **Seal**
  - Body type
  - 0: Metal seal
  - 1: Rubber seal

- **Note**
  - For cylinder port fittings part no., refer to page 2-4-213.
  - For replacement parts, refer to page 2-4-231.
**Series VQ1000**

**Base Mounted**

**Plug Lead Unit**

---

**How to Order Manifold**

**VV5Q**

<table>
<thead>
<tr>
<th>12</th>
<th>08</th>
<th>C6</th>
<th>F</th>
<th>U1</th>
<th>D</th>
</tr>
</thead>
</table>

**Cylinder port**

**Kit type**

**Option**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Port size</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3</td>
<td>With One-touch fitting for ø3.2</td>
<td>None</td>
</tr>
<tr>
<td>C4</td>
<td>With One-touch fitting for ø4</td>
<td>B</td>
</tr>
<tr>
<td>C6</td>
<td>With One-touch fitting for ø6</td>
<td>D</td>
</tr>
<tr>
<td>M5</td>
<td>M5 thread</td>
<td>K</td>
</tr>
<tr>
<td>CM</td>
<td>With mixed size/with port plug</td>
<td>N</td>
</tr>
<tr>
<td>L3</td>
<td>With elbow One-touch fitting ø3.2 for top piping</td>
<td>S</td>
</tr>
<tr>
<td>L4</td>
<td>With elbow One-touch fitting ø4 for top piping</td>
<td></td>
</tr>
<tr>
<td>L5</td>
<td>With elbow One-touch fitting ø6 for top piping</td>
<td></td>
</tr>
<tr>
<td>B3</td>
<td>With elbow One-touch fitting ø3.2 for bottom piping</td>
<td></td>
</tr>
<tr>
<td>B4</td>
<td>With elbow One-touch fitting ø4 for bottom piping</td>
<td></td>
</tr>
<tr>
<td>B5</td>
<td>Elbow M5 thread for bottom piping</td>
<td></td>
</tr>
<tr>
<td>L5</td>
<td>Elbow M5 thread for top piping</td>
<td></td>
</tr>
<tr>
<td>LM</td>
<td>Mixed size for elbow piping</td>
<td></td>
</tr>
</tbody>
</table>

**Kit/Electrical entry/Cable length**

**F**

(D-sub connector)

**P**

(Flat ribbon cable connector)

**T**

(Terminal block)

**C**

(Connector)

**S**

(Serial transmission unit)

---

**Note 1)** Besides the above, F and P kits with different number of pins are available. Refer to page 2-4-215 for details.  

**Note 2)** For details, refer to page 2-4-216.

---

**For details about applicable models, please contact SMC.**
How to Order Valves

**Series**
- **VQ0000**

**Type of actuation**
- **2 position single**
- **2 position double**
- **3 position closed center**
- **3 position pressure center**

**Body type**
- **1** VQ1000

**Seal**
- **0** Metal seal
- **1** Rubber seal

**Manual override**
- Nil: Non-locking push type (Tool required)
- B: Locking type (Manual)

**Electrical entry**
- L: L plug connector
- LO: L plug connector

**Function**
- Symbol: Specifications
- Nil: Standard type (1.0 W)
- H: High pressure type (1.5 W)
- Y: Low wattage type (0.5 W)

**Coil voltage**
- 5 24 VDC
- 6 12 VDC

**Example**
- Single solenoid (24 VDC) VQ1110-5LO
- Double solenoid (24 VDC) VQ1210-5LO

**How to Order Valve Manifold Assembly**

**Blanking plate assembly**
- VVQ1000-10A-1

**SUP/EXH block plate**
- VVQ1000-16A-2

**Double check block**
- VVQ1000-FPG[

**2 stations matching fitting assembly**
- VVQ1000-52A-C8

**SUP block plate**
- EXH block plate

**Silencer**
- AN200-KM8

**Elbow fitting assembly**
- VVQ1000-F-L

**Port plug**
- VVQ1000-58A

**Blanking plug**
- KQ2P-

**Supplementary notes**
- For cylinder port fittings part no., refer to page 2-4-213.
- For replacement parts, refer to page 2-4-231.

**Option**
- For negative common specifications, refer to "Option" on page 2-4-216.
- For part nos., refer to "Option" on page 2-4-218.
- For power consumption of AC type, refer to page 2-4-186.

**Specifications**
- Standard type
- High pressure type
- Low wattage type

**Example**
- VQ1110-5LO: 1 set (F kit 8 station manifold base no.)
- VQ1110-5LO: 4 sets (Double solenoid part no.)
- The asterisk denotes the symbol for assembly.

Specify the part numbers for valves and options together beneath the manifold base part number. Besides, when the arrangement will be complicated, specify them by means of the manifold specification sheet.

For negative common specifications, refer to "Option" on page 2-4-216.

For replacement parts, refer to page 2-4-231.

For power consumption of AC type, refer to page 2-4-186.

For cylinder port fittings part no., refer to page 2-4-213.

For replacement parts, refer to page 2-4-231.
**Table: Standard Specifications**

<table>
<thead>
<tr>
<th>JIS Symbol</th>
<th>2 position single</th>
<th>2 position double</th>
<th>3 position closed center</th>
<th>3 position exhaust center</th>
<th>3 position pressure center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metal</td>
<td>![Metal Symbol]</td>
<td>![Metal Symbol]</td>
<td>![Metal Symbol]</td>
<td>![Metal Symbol]</td>
<td>![Metal Symbol]</td>
</tr>
</tbody>
</table>

**Series VQ0000/1000**

**Base Mounted Plug Lead Unit**

**Model**

<table>
<thead>
<tr>
<th>Series</th>
<th>Number of solenoids</th>
<th>Model</th>
<th>Flow characteristic</th>
<th>Response time (ms)</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ0000</td>
<td>2 position</td>
<td>Single</td>
<td>(1)</td>
<td>(2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Metal seal</td>
<td>VQ0150</td>
<td>b</td>
<td>Cv</td>
</tr>
<tr>
<td></td>
<td>2 position</td>
<td>Double</td>
<td>Metal seal</td>
<td>VQ0250</td>
<td>b</td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Closed center</td>
<td>Metal seal</td>
<td>VQ0350</td>
<td>b</td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Exhaust center</td>
<td>Metal seal</td>
<td>VQ0450</td>
<td>b</td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Pressure center</td>
<td>Rubber seal</td>
<td>VQ0451</td>
<td>b</td>
</tr>
<tr>
<td>VQ1000</td>
<td>2 position</td>
<td>Single</td>
<td>Metal seal</td>
<td>VQ1110</td>
<td>b</td>
</tr>
<tr>
<td></td>
<td>2 position</td>
<td>Double</td>
<td>Metal seal</td>
<td>VQ1210</td>
<td>b</td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Closed center</td>
<td>Metal seal</td>
<td>VQ1310</td>
<td>b</td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Exhaust center</td>
<td>Metal seal</td>
<td>VQ1410</td>
<td>b</td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Pressure center</td>
<td>Rubber seal</td>
<td>VQ1510</td>
<td>b</td>
</tr>
</tbody>
</table>

**Standard Specifications**

- **Valve construction**
  - Metal seal
  - Rubber seal

- **Fluid**
  - Air/inert gas

- **Maximum operating pressure**
  - 0.7 MPa (High pressure type: 0.8 MPa)

- **Min. operating pressure**
  - Single: 0.1 MPa, 0.15 MPa
  - Double: 0.1 MPa, 0.2 MPa
  - 3 position: 0.1 MPa, 0.2 MPa

- **Ambient and fluid temperature**
  - –10 to 50°C

- **Lubrication**
  - Not required

- **Manual override**
  - Non-locking push type/Locking type (Tool required, Manually operated) Option

- **Impact/Vibration resistance**
  - 150/30 m/s²

- **Enclosure**
  - Dust tight

- **Coil rated voltage**
  - 12, 24 VDC, 100, 110, 200, 220 VAC (50/60 Hz)

- **Allowable voltage fluctuation**
  - ±10% of rated voltage

- **Coil insulation type**
  - Equivalent to class B

- **Power consumption**
  - 24 VDC: 1 W (42 mA), 1.5 W (93 mA), 0.5 W (21 mA)
  - 12 VDC: 1.5 W (124 mA), 0.5 W (42 mA)
  - 100 VAC: Inrush 0.5 VA (5 mA), Holding 0.5 VA (5 mA)
  - 110 VAC: Inrush 0.55 VA (5 mA), Holding 0.55 VA (5 mA)
  - 200 VAC: Inrush 1.0 VA (5 mA), Holding 1.0 VA (5 mA)
  - 220 VAC: Inrush 1.1 VA (5 mA), Holding 1.1 VA (5 mA)

**Notes**

1. Cylinder port size C4: (VQ0000), C6: (VQ1000) without check valve option for prevention of back pressure.
2. The response time is subject to the pressure and quality of the air. The values at the time of ON are given for AC type is only for VQ0000.
3. AC type is only for VQ0000.
4. Value for low pressure type (0.5 W)
5. AC type is available only on VQ0000.
<table>
<thead>
<tr>
<th>Series</th>
<th>Base model</th>
<th>Type of connection</th>
<th>Porting specifications</th>
<th>2) Applicable solenoid valve</th>
<th>5) Station weight (g)</th>
</tr>
</thead>
</table>
| VQ0000 | VV5Q05     | ■ F kit–D-sub connector  
                  ■ P kit–Flat ribbon cable connector  
                  ■ T kit–Terminal block  
                  ■ C kit–Individual connector  
                  ■ S kit–Serial transmission | Side  
              Option  
              Built-in silencer,  
              direct exhaust | VQ0□50  
              VQ0□51 | 330  
              (Single)  
              400  
              (Double, 3 position) |
| VQ1000 | VV5Q12     | ■ F kit–D-sub connector  
                  ■ P kit–Flat ribbon cable connector  
                  ■ T kit–Terminal block  
                  ■ C kit–Individual connector  
                  ■ S kit–Serial transmission | Side  
              Option  
              Built-in silencer,  
              direct exhaust | VQ1□10  
              VQ1□11 | 818  
              (Single)  
              885  
              (Double, 3 position) |

Note 1) Inch-size One-touch fittings are also available. For details, refer to page 2-4-216.
Note 2) For details, refer to page 2-4-216.
D-sub Connector (25 pins)

The D-sub connector reduces installation labor for electrical connections.

Using the D-sub connector (25P), (15P as an option) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability. Top or side connector receptacle position can be selected in accordance with the available mounting space.

Maximum stations are 16.

**D-sub Connector Cable Assembly (Option)**

- Cable 25-core x 24AWG
- Assembly part no.: AXT100-DS25-015
- For other commercial connectors, use a 25 pins type with female connector conforming to MIL-C-24308.

**Connector manufacturers’ example**

- Fujitsu Limited
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Hirose Electric Co., Ltd.

**Electric Characteristics**

- Conductor resistance $\Omega/km, 20^\circ C$: 65 or less
- Insulation resistance V, 1 min, AC: 1000
- Insulation resistance MΩ, 20°C: 5 or more

*Note) The minimum bending radius of D-sub cable assembly is 20 mm.

**Porting specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Port location</th>
<th>Port size</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ0000</td>
<td>Side</td>
<td>C6, C3, C4, M5</td>
<td>Max. 16 stations</td>
</tr>
<tr>
<td>VQ1000</td>
<td>Side</td>
<td>C8, C3, C4, M5</td>
<td>Max. 16 stations</td>
</tr>
</tbody>
</table>

**Cable assembly**

- Black: None
- Brown: None
- Red: None
- Orange: None
- Yellow: None
- Blue: White
- Purple: White
- Gray: Black
- White: Red
- Red: Yellow
- Yellow: Orange
- Black: None
- Orange: None
- Blue: None
- Purple: None
- Gray: None
- White: None
- Red: Black
- Yellow: Black
- Orange: Black
- Blue: White
- Purple: None
- Gray: None
- White: None
- Red: Black
- Yellow: Black
- Orange: Black
- Blue: White
- Purple: None
- Gray: None
- White: None
- Red: Black
- Yellow: Black
- Orange: Black
- Blue: White
- Purple: None
- Gray: None
- White: None

**How to Order Manifold**

- **Series/Manifold**
  - VV5Q 12-08 C6 F U1 D

- **Cylinder port**
  - Symbol: VQ0000, VQ1000
  - Port size:
    - C3: With One-touch fitting for ø3.2
    - C4: With One-touch fitting for ø4
    - C6: With One-touch fitting for ø6
    - M5: M5 thread
    - CM: With mixed size/with port plug

- **Cable (Length)**
  - Without cable
  - With cable (1.5 m)
  - With cable (3 m)
  - With cable (5 m)

- **Option**
  - B: With back pressure check valve
  - D: DIN rail mounting style
  - K: Special wiring specifications (Not double wiring)
  - N: With name plate
  - S: Built-in silencer, direct exhaust

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Port location</th>
<th>Port size</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ0000</td>
<td>Side</td>
<td>C6, C3, C4, M5</td>
<td>Max. 16 stations</td>
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</tr>
<tr>
<td>VQ1000</td>
<td>Side</td>
<td>C8, C3, C4, M5</td>
<td>Max. 16 stations</td>
<td></td>
</tr>
</tbody>
</table>

**Note)** Types with 15 pin are also available. Refer to page 2-4-215 for details.

**Note 1)** Specify “Mixed size/with port plug” on the manifold specification sheet.

**Note 2)** For inch-size One-touch fittings, refer to “Option” on page 2-4-216.
Page 2-4-189

How to Order Valves

<table>
<thead>
<tr>
<th>VQ</th>
<th>1</th>
<th>1</th>
<th>1</th>
<th>0</th>
<th>Y</th>
<th>5</th>
<th>LO</th>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td></td>
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<tr>
<td>1</td>
<td>VQ1000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></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 (VQ1000 only)

Body type

5  VQ0000  Plug lead unit
1  VQ1000

Seal

0  Metal seal
1  Rubber seal

Note 1) For negative common specifications, refer to “Option” on page 2-4-216.
Note 2) Connector assembly will be required when the F kits add a valve.
For part nos., refer to “Option” on page 2-4-216.

How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

<Example>
D-sub connector kit with cable (3 m)
W5Q12-08C02-0 - 1 set-Manifold base no.
VQ1105-10L10-0 - 4 sets-Valve part no. (Stations 1 to 4)
VQ1205-10L10-0 - 4 sets-Valve part no. (Stations 5 to 8)
VQ1305-10L10-0 - 2 sets-Valve part no. (Stations 7 to 8)
VQ2101-0A1-1 - 1 set-Blanking plate part no. (Station 9)

Prefix the asterisk to the part nos. of the solenoid valve, etc.
Write sequentially from the 1st station on the D side. When part nos. written collectively are complicated, specified by using the manifold specification sheet.
Dimensions: Top Entry Connector [-FU]

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
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</thead>
<tbody>
<tr>
<td>L1</td>
<td>46.5</td>
<td>57.4</td>
<td>68.1</td>
<td>78.8</td>
<td>89.5</td>
<td>100.2</td>
<td>110.9</td>
<td>121.6</td>
<td>132.3</td>
<td>143</td>
<td>153.7</td>
<td>164.4</td>
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<td>87.8</td>
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<td>130.6</td>
<td>141.3</td>
<td>152</td>
<td>162.7</td>
<td>173.4</td>
<td>184.1</td>
<td>194.8</td>
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<tr>
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<td>125</td>
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<td>150</td>
<td>162.5</td>
<td>175</td>
<td>175</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
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<td>262.5</td>
</tr>
<tr>
<td>L4</td>
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<td>135.5</td>
<td>148</td>
<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
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<td>260.5</td>
<td>260.5</td>
<td>273</td>
<td>285.5</td>
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</table>

Dimensions: Side Entry Connector [-FS]

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<tbody>
<tr>
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<td>150</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
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<td>225</td>
<td>237.5</td>
<td>250</td>
<td>250</td>
<td>262.5</td>
<td>275</td>
<td>300</td>
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<td>148</td>
<td>160.5</td>
<td>160.5</td>
<td>173</td>
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<td>198</td>
<td>210.5</td>
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<td>235.5</td>
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<td>260.5</td>
<td>273</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
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</tr>
</tbody>
</table>

Formula: L1 = 10.7n + 36, L2 = 10.7n + 45

n: Station (Maximum 16 stations)
**Dimensions: Top Entry Connector [-FU]**

Formulas:
- \( L1 = 10.5n + 72 \)
- \( n: \) Station (Maximum 16 stations)

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<thead>
<tr>
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<th>16</th>
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<tbody>
<tr>
<td>( L1 )</td>
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<td>240</td>
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<td>( L2 )</td>
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<td>187.5</td>
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<td>287.5</td>
<td>300</td>
<td></td>
<td></td>
</tr>
<tr>
<td>( L3 )</td>
<td>148</td>
<td>160.5</td>
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<td>198</td>
<td>210.5</td>
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<td>235.5</td>
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<td>260.5</td>
<td>273</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
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<td></td>
</tr>
</tbody>
</table>

**Dimensions: Side Entry Connector [-FS]**

<table>
<thead>
<tr>
<th>( n )</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<th>15</th>
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<tbody>
<tr>
<td>( L2 )</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>187.5</td>
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</tr>
<tr>
<td>( L3 )</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
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<td>260.5</td>
<td>273</td>
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<td>298</td>
<td>310.5</td>
<td>323</td>
<td>323</td>
<td></td>
</tr>
</tbody>
</table>
MIL flat ribbon cable connector reduces installation labor savings for electrical connection.

Using the connector for flat ribbon cable (26P), (10P, 16P, 20P as an option) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability. Top or side receptacle position can be selected in accordance with the available mounting space.

Maximum stations are 16.

Flat Ribbon Cable (26 pins)

**Flat Ribbon Cable Connector Assembly (Option)**

<table>
<thead>
<tr>
<th>Cable length (L)</th>
<th>Assembly part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>AXT100-FC26-1</td>
<td></td>
</tr>
<tr>
<td>3.0 m</td>
<td>AXT100-FC26-2</td>
<td></td>
</tr>
<tr>
<td>5.0 m</td>
<td>AXT100-FC26-3</td>
<td></td>
</tr>
</tbody>
</table>

- For other commercial connectors, use a 26 pins type with strain relief conforming to MIL-C-83503.

Connector manufacturers’ example
- Hirose Electric Co., Ltd.
- Japan Aviation Electronics Industry, Ltd.
- Sumitomo 3M Limited
- J.S.T. Mfg. Co., Ltd.
- Fujitsu Limited
- Oki Electric Cable Co., Ltd.

Note) Types with 10, 16, or 20 pin are also available. Refer to page 2-4-215 for details.

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ0000</td>
<td>Side C6, C3, C4, M5</td>
<td>Max.16 stations</td>
</tr>
<tr>
<td>VQ1000</td>
<td>Side C8, C3, C4, C6, M5</td>
<td>Max.16 stations</td>
</tr>
</tbody>
</table>

**How to Order Manifold**

**VV5Q**

- **Series/Manifold:** 05 VQ0000, 12 VQ1000
- **Stations:** 01 1 station, 16 16 stations
- **Cylinder port:**
  - **Symbol:** C3, C4, C6, M5, CM
  - **Port size:** Without cable, With cable (1.5 m), With cable (3 m), With cable (5 m)
- **Cable (Length):**
  - **Symbol:** 0 Without cable, 1 With cable (1.5 m), 2 With cable (3 m), 3 With cable (5 m)
  - **Port size:** VQ0000, VQ1000

**Option**

- **Symbol:** B (With back pressure check valve), D (DIN rail mounting style), K (Special wiring specification), N (With name plate), S (Built-in silencer)
- **Option:**
  - 01 When two or more symbols are specified, indicate them alphabetically. (Example) -BNS
  - 02 Models with a suffix “-B” have the back pressure check valve at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by using the manifold specification sheet.
  - 03 P kit of VQ0000 and all VQ1000 are equipped with a DIN rail, so indicate suffix “D”.
  - 04 Specify the wiring specifications on the manifold specification sheet.

**Note:**
- As an option, the maximum number of stations can be increased by special wiring specifications. For details, refer to page 2-4-216.

**Connector entry direction:**
- **U** Top (Vertical)
- **S** Side (Horizontal)

**Cable assembly**

Flat ribbon cable connector assembly can be ordered individually or included in a specific manifold model no. Refer to “How to Order Manifold”.

Red 

Terminal no. 1

Length (L)

Flat ribbon cable connector assembly is used in electrical connections. It is available in various models to meet different needs. The connector is designed to be compatible with MIL-DTL-83503 and offers a strain relief feature to ensure reliable connections.

1. **Series/Manifold:**
   - 05 VQ0000
   - 12 VQ1000

2. **Stations:**
   - 01 1 station
   - 16 16 stations

3. **Porting specifications:**
   - Side C6, C3, C4, M5 for VQ0000
   - Side C8, C3, C4, C6, M5 for VQ1000

4. **Cable (Length):**
   - Without cable
   - With cable (1.5 m)
   - With cable (3 m)
   - With cable (5 m)

5. **Option:**
   - B (With back pressure check valve)
   - D (DIN rail mounting style)
   - K (Special wiring specification)
   - N (With name plate)
   - S (Built-in silencer)

6. **Connector entry direction:**
   - Top (Vertical)
   - Side (Horizontal)

7. **Cylinder port:**
   - Symbol: C3, C4, C6, M5, CM
   - Port size: Without cable, With cable (1.5 m), With cable (3 m), With cable (5 m)

8. **Note:**
   - For other commercial connectors, use a 26 pins type with strain relief conforming to MIL-C-83503.
   - Types with 10, 16, or 20 pin are also available. Refer to page 2-4-215 for details.
How to Order Valves

**Example**

Flat ribbon cable kit with 3 m cable

- VQ1110-5LO VQ1210-5LO

Specify the part numbers for valves and options together beneath the manifold base part number.

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Write sequentially from the 1st station on the D side. When part nos. written collectively are complicated, specify by using the manifold specification sheet.

---

**Flat ribbon cable connector**

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Polarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOL_A 1</td>
<td>(+)</td>
</tr>
<tr>
<td>SOL_B 2</td>
<td>(+)</td>
</tr>
<tr>
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<td>(+)</td>
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<td>SOL_A 5</td>
<td>(+)</td>
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<td>(+)</td>
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<td>SOL_B 16</td>
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<td>CCM...26</td>
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<td>LO</td>
<td>(--)</td>
</tr>
<tr>
<td>MO</td>
<td>(--)</td>
</tr>
</tbody>
</table>

**Electrical wiring specifications**

As the standard electrical wiring specifications, double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station for 8 stations or less, regardless of valve and option types.

Mixed single and double wiring is available as an option.

For details, refer to page 2-4-216.

**Note** When using the negative commons specifications, use valves for negative common. (Refer to page 2-4-216.)

---

**How to Order Manifold Assembly**

Specify the part numbers for valves and options together beneath the manifold base part number.

<Example>

Flat ribbon cable kit with 3 m cable
VQ0110-5LO VQ1210-5LO

Specify the part numbers for valves and options together beneath the manifold base part number.

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Write sequentially from the 1st station on the D side. When part nos. written collectively are complicated, specify by using the manifold specification sheet.

---

**Electrical entry**

- VQ1000 only.
- Plugs connector without connector
- M plug terminal without connector

**Note** Plug connector and lead wire are attached to the manifold.

**Function**

- Symbol Specifications

  - **N** Standard type
    - DC (1.0 W)
    - AC (0.5 W)
  - **H** High pressure type
    - DC (1.5 W)
    - AC (0.5 W)
  - **L** Low wattage type

**Coil voltage**

- 100 VAC (50/60 Hz)
- 24 VDC
- 12 VDC

**Manual override**

- Nil Non-locking push type (Tool required)
- B Locking type (Tool required)
- C Locking type (Manual) (Note)

**Connector terminal no.**

- Triangle mark indicator position
- Connector terminal no.

**Connector terminal no.**

- Terminal no.
- Polarity
- Electrical wiring specifications
- Positive common specifications
- Negative common specifications

**Terminal no.**

- 1 station
- 2 stations
- 3 stations
- 4 stations
- 5 stations
- 6 stations
- 7 stations
- 8 stations

**Series**

- VQ0000
- VQ1000

**Type of actuation**

- 1: 2 position single
- 2: 2 position double
- 3: 3 position closed center
- 4: 3 position exhaust center
- 5: 4 position pressure center (VQ1000 only)

**Body type**

- 5: VQ0000 Plug lead unit
- 1: VQ1000

**Seal**

- 0: Metal seal
- 1: Rubber seal

**Note 1** For negative common specifications, refer to "Option" on page 2-4-126.

**Note 2** For part nos., refer to "Option" on page 2-4-126.
### Dimensions: Top Entry Connector [-PU]

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<td>275</td>
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<td>298</td>
</tr>
<tr>
<td>L3</td>
<td>148</td>
<td>160.5</td>
<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
<td>285.5</td>
<td>298</td>
<td>298</td>
</tr>
</tbody>
</table>

**Formula**: \( L_1 = 10.5n + 72 \)  \( n \): Station (Maximum 16 stations)

### Dimensions: Side Entry Connector [-PS]

<table>
<thead>
<tr>
<th>L</th>
<th>1</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>
</tr>
</thead>
<tbody>
<tr>
<td>L2</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>187.5</td>
<td>200</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>250</td>
<td>250</td>
<td>262.5</td>
<td>275</td>
<td>287.5</td>
<td>300</td>
<td>312.5</td>
<td>312.5</td>
</tr>
<tr>
<td>L3</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>260.5</td>
<td>273</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
<td>323</td>
<td>323</td>
</tr>
</tbody>
</table>

**Applicable connector**: Flat ribbon cable connector (26P) (Conforming to MIL-C-83503)
VQ0000/1000
Kit (Terminal block)

- It is a standard terminal block type.
- Two quantities of terminals can be selected in accordance with the number of stations. (8 terminals/16 terminals)
- Maximum stations are 8. (16 stations as an option)

**Electrical wiring specifications**

<table>
<thead>
<tr>
<th>Port size</th>
<th>Symbol</th>
<th>Side</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3</td>
<td>B</td>
<td>U</td>
<td>C3, C4, M5</td>
</tr>
<tr>
<td>C4</td>
<td>B</td>
<td>D</td>
<td>C3, C4, C6, M5</td>
</tr>
<tr>
<td>C6</td>
<td>B</td>
<td>D</td>
<td>C6</td>
</tr>
<tr>
<td>M5</td>
<td>B</td>
<td>D</td>
<td>M5</td>
</tr>
</tbody>
</table>

**VQ5Q05**

A kit of VQ0000 and all of VQ1000 are equipped with a DIN rail, so indicate suffix "-D".

**How to Order Manifold**

**VV5Q**

- **Series/Manifold**: VQ0000/1000
- **Stations**: 1 station
- **Cylinder ports**
  - Symbol: C3, C4, C6, CM
  - Port size: With One-touch fitting for ø3.2, ø4, ø6

**Note)**
- When two or more symbols are specified, indicate them alphabetically.
- Example) -BNS
- Models with a suffix "-B" have the back pressure check valve at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by using the manifold specification sheet.
- T kit of VQ0000 and all of VQ1000 are equipped with a DIN rail, so indicate suffix "-D".
- Specify the wiring specifications on the manifold specification sheet.
### How to Order Valves

**Series**
- **0**: VQ0000
- **1**: VQ1000

**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 (VQ1000 only)

**Body type**
- **5**: VQ0000
- **1**: VQ1000

**Seal**
- **0**: Metal seal
- **1**: Rubber seal

#### Manual override
- **Nil**: Non-locking push type (Tool required)
- **B**: Locking type (Tool required)
- **C**: Locking type (Manual)  
  Note: Available only for VQ1000

#### Electrical entry
- **LO**: Plug connector without connector
- **MO**: Plug connector without connector

**Note**: Plug connector and lead wire layers are attached to the manifold.

#### Function

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specifications</th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Standard type</td>
<td>1.0 W</td>
<td>yes</td>
</tr>
<tr>
<td>H</td>
<td>High pressure type</td>
<td>1.5 W</td>
<td>—</td>
</tr>
<tr>
<td>Y</td>
<td>Low wattage type</td>
<td>0.5 W</td>
<td>—</td>
</tr>
</tbody>
</table>

**Note**: For power consumption of AC type, refer to page 2-4-186.

### How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

**<Example>**
Flat ribbon cable kit with 3 m cable
- **VQ012-OTC12-0**: 1 set-Manifold base no.
- **VQ1110-SLO**: 4 sets-Valve part no. (Stations 1 to 4)
- **VQ1210-SLO**: 3 sets-Valve part no. (Stations 5 to 8)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

**Write sequentially from the 1st station on the D side. When part nos. written collectively are complicated, specify by using the manifold specification sheet.**
This drawing shows the case of VV5Q05-□□□□/□□□□□T2-D□.

< >: AC

Dimensions

<table>
<thead>
<tr>
<th>n</th>
<th>L1 (mm)</th>
<th>L2 (mm)</th>
<th>L3 (mm)</th>
<th>L4 (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>46.7</td>
<td>55.7</td>
<td>125</td>
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<td>2</td>
<td>57.4</td>
<td>66.4</td>
<td>137.5</td>
<td>148</td>
</tr>
<tr>
<td>3</td>
<td>68.1</td>
<td>77.1</td>
<td>150</td>
<td>160.5</td>
</tr>
<tr>
<td>4</td>
<td>78.8</td>
<td>87.8</td>
<td>150</td>
<td>160.5</td>
</tr>
<tr>
<td>5</td>
<td>89.5</td>
<td>98.5</td>
<td>162.5</td>
<td>173</td>
</tr>
<tr>
<td>6</td>
<td>100.2</td>
<td>109.2</td>
<td>175</td>
<td>185.5</td>
</tr>
<tr>
<td>7</td>
<td>110.9</td>
<td>119.9</td>
<td>187.5</td>
<td>198</td>
</tr>
<tr>
<td>8</td>
<td>121.6</td>
<td>130.6</td>
<td>200</td>
<td>210.5</td>
</tr>
<tr>
<td>9</td>
<td>132.3</td>
<td>141.3</td>
<td>212.5</td>
<td>223</td>
</tr>
<tr>
<td>10</td>
<td>143</td>
<td>152</td>
<td>225</td>
<td>235.5</td>
</tr>
<tr>
<td>11</td>
<td>153.7</td>
<td>162.7</td>
<td>237.5</td>
<td>248</td>
</tr>
<tr>
<td>12</td>
<td>164.4</td>
<td>173.4</td>
<td>248</td>
<td>260.5</td>
</tr>
<tr>
<td>13</td>
<td>175.1</td>
<td>184.1</td>
<td>262.5</td>
<td>273</td>
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<tr>
<td>14</td>
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<tr>
<td>15</td>
<td>196.5</td>
<td>205.5</td>
<td>287.5</td>
<td>298</td>
</tr>
<tr>
<td>16</td>
<td>207.2</td>
<td>216.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Formula L1 = 10.7n + 36, L2 = 10.7n + 45  n: Station (Maximum 16 stations)
This drawing shows the case of VV5Q12-D2-T2-D2.

Dimensions

<table>
<thead>
<tr>
<th>n</th>
<th>1</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>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>82.5</td>
<td>93</td>
<td>103.5</td>
<td>114</td>
<td>124.5</td>
<td>135</td>
<td>145.5</td>
<td>156</td>
<td>166.5</td>
<td>177</td>
<td>187.5</td>
<td>198</td>
<td>208.5</td>
<td>219</td>
<td>229.5</td>
<td>240</td>
</tr>
<tr>
<td>L2</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>197.5</td>
<td>200</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>250</td>
<td>262.5</td>
<td>275</td>
<td>287.5</td>
<td>300</td>
<td>312.5</td>
<td></td>
</tr>
<tr>
<td>L3</td>
<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>260.5</td>
<td>273</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
<td>323</td>
</tr>
</tbody>
</table>

Formula: \( L_1 = 10.5n + 72 \)

n: Station (Maximum 16 stations)
**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Port size</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ0000</td>
<td>Side</td>
<td>C6</td>
<td>C3, C4, M5</td>
</tr>
<tr>
<td>VQ1000</td>
<td>Side</td>
<td>C8</td>
<td>C3, C4, C6, M5</td>
</tr>
</tbody>
</table>

**Wiring specifications: Positive COM**

- **The lead wires are connected to the valve as shown below. Connect each to the power supply side.**

- **Plug connector lead wire length**
  - The length of the lead wire provided is 300 mm. When ordering a valve with a lead wire of 600 mm or longer, be sure to indicate the model number of the valve without connector and connector assembly.

**Connector Assembly (For DC)**

<table>
<thead>
<tr>
<th>Lead wire length</th>
<th>Part no. for single &amp; VQ0000 double</th>
<th>Part no. for VQ1000 double</th>
</tr>
</thead>
<tbody>
<tr>
<td>300 mm</td>
<td>AXT661-14A</td>
<td>AXT661-13A</td>
</tr>
<tr>
<td>600 mm</td>
<td>AXT661-14A-6</td>
<td>AXT661-13A-6</td>
</tr>
<tr>
<td>1000 mm</td>
<td>AXT661-14A-10</td>
<td>AXT661-13A-10</td>
</tr>
<tr>
<td>2000 mm</td>
<td>AXT661-14A-20</td>
<td>AXT661-13A-20</td>
</tr>
<tr>
<td>3000 mm</td>
<td>AXT661-14A-30</td>
<td>AXT661-13A-30</td>
</tr>
</tbody>
</table>

**How to Order Manifold**

**Series/Manifold**

<table>
<thead>
<tr>
<th>Stations</th>
<th>01</th>
<th>08</th>
<th>C6</th>
<th>C</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>05 VQ0000</td>
<td>Plug lead unit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 VQ1000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Cylinder port**

- **Symbol**: C6
- **Port size**: M5
- **Option**: With mixed size/with port plug

**Option**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Option</th>
<th>VQ0000</th>
<th>VQ1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>With back pressure check valve</td>
<td>··</td>
<td>···</td>
</tr>
<tr>
<td>D</td>
<td>DIN rail mounting style</td>
<td>··</td>
<td>···</td>
</tr>
<tr>
<td>N</td>
<td>With name plate</td>
<td>··</td>
<td>···</td>
</tr>
<tr>
<td>S</td>
<td>Built-in silencer, direct exhaust</td>
<td>··</td>
<td>···</td>
</tr>
</tbody>
</table>

**Note 1)** When two or more symbols are specified, indicate them alphabetically. Example) -BNS

**Note 2)** Models with a suffix "-B" have the back pressure check valve at all manifold stations. If not all stations need this check valve, specify the stations where check valves are installed by using the manifold specification sheet.

**Note 3)** VQ1000 are all equipped with a DIN rail, so indicate suffix "-D".
### Wiring specifications: Negative COM (Option) for VQ1000

- The lead wires are connected to the valve as shown below. Connect each to the power supply side.
- The lead wires are connected to the valve as shown below.

**Diagram:**
- SOLA (+) → Red
- COM (−) → Black
- SOLB (+) → White
- Black: COM (−)
- Red: A side solenoid (+)
- White: B side solenoid (+)

**Plug connector lead wire length**
- Note: The length of the lead wire provided is 300 mm. When ordering a valve with a lead wire of 600 mm or longer, be sure to indicate the model number of the valve without connector and connector assembly.

**Connector Assembly Part No.**

<table>
<thead>
<tr>
<th>Lead wire length</th>
<th>Single</th>
<th>Double solenoid part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socket (3 pcs.)</td>
<td>AXT661-12A</td>
<td>AXT661-13A</td>
</tr>
<tr>
<td>300 mm</td>
<td>AXT661-14AN</td>
<td>AXT661-13AN-6</td>
</tr>
<tr>
<td>600 mm</td>
<td>AXT661-14AN-6</td>
<td>AXT661-13AN-6</td>
</tr>
<tr>
<td>1000 mm</td>
<td>AXT661-14AN-10</td>
<td>AXT661-13AN-10</td>
</tr>
<tr>
<td>2000 mm</td>
<td>AXT661-14AN-20</td>
<td>AXT661-13AN-20</td>
</tr>
<tr>
<td>3000 mm</td>
<td>AXT661-14AN-30</td>
<td>AXT661-13AN-30</td>
</tr>
</tbody>
</table>

**Note:** When using the negative common specifications, use valves for negative common.

### How to Order Valves

**VQ Series**

<table>
<thead>
<tr>
<th>0</th>
<th>VQ0000</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VQ1000</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 (VQ1000 only)

**Body type**

- 5: VQ0000 Plug lead unit
- 1: VQ1000

**Seal**

- 0: Metal seal
- 1: Rubber seal

**Note 1:** For negative common specifications, refer to "Option" on page 2-4-216.

**Manual override**

- Nil: Non-locking push type (Tool required)
- B: Locking type (Tool required)
- C: Locking type (Manual) Note)

**Electrical entry**

- G: Grommet (Except AC)
- L: L plug connector with lead wire
- LO: L plug connector without connector
- M: M plug connector with lead wire
- MO: M plug connector without connector

**Function**

- Symbol: Specifications
- VQ0000: DC (1.0 W)
- VQ1000: DC (1.5 W), AC (0.5 W)

**Coil 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

**Note:** For power consumption of AC type, refer to page 2-4-186.

### How to Order Manifold Assembly

**Example:** Lead wire length 1000 mm

- VQ1110N-SLO: 3 pcs.
- AXT661-14AN-10: 3 pcs.

**Note:** Available only for VQ1000.

**Series VQ0000/1000 Plug Lead Unit**

- Base Mounted

**Prefix the asterisk to the part nos. of the solenoid valve, etc.**

**Write sequentially from the 1st station on the D side.**

When part nos. written collectively are complicated, specify by using the manifold specification sheet.

**Example:**

- Connector kit
- VQ1110-6: 3 sets-Valve part no. (Stations 1 to 3)
- VQ1210-5: 4 sets-Valve part no. (Stations 4 to 7)
- VQ1000-10A-1: 1 set-Blanking plate part no. (stations 8)
The broken lines indicate DIN rail mounting style [-D].

The dimensions are given in millimeters. The formula for calculating the dimensions is:

\[ L = 10.7n + 36, \quad L = 10.7n + 45 \quad \text{for} \quad n: \text{Station (Maximum 16 stations)} \]

<table>
<thead>
<tr>
<th>L</th>
<th>1</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>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>46.7</td>
<td>57.4</td>
<td>68.1</td>
<td>78.8</td>
<td>89.5</td>
<td>100.2</td>
<td>110.9</td>
<td>121.6</td>
<td>132.3</td>
<td>143</td>
<td>153.7</td>
<td>164.4</td>
<td>175.1</td>
<td>185.8</td>
<td>196.5</td>
<td>207.2</td>
</tr>
<tr>
<td>L2</td>
<td>55.7</td>
<td>66.4</td>
<td>77.1</td>
<td>87.8</td>
<td>98.5</td>
<td>109.2</td>
<td>119.9</td>
<td>130.6</td>
<td>141.3</td>
<td>152</td>
<td>162.7</td>
<td>173.4</td>
<td>184.1</td>
<td>194.8</td>
<td>205.5</td>
<td>216.2</td>
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<tr>
<td>(L3)</td>
<td>87.5</td>
<td>87.5</td>
<td>100</td>
<td>112.5</td>
<td>125</td>
<td>137.5</td>
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<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
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<td>225</td>
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<tr>
<td>(L4)</td>
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<td>173</td>
<td>173</td>
<td>185.5</td>
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<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>235.5</td>
<td>248</td>
</tr>
</tbody>
</table>

< >: AC
VQ1000

Formulas:
- $L_1 = 10.5n + 72$  
- $n$: Station (Maximum 16 stations)

Dimensions:

<table>
<thead>
<tr>
<th>Station</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>82.5</td>
<td>112.5</td>
<td>123</td>
</tr>
<tr>
<td>2</td>
<td>93</td>
<td>125</td>
<td>123</td>
</tr>
<tr>
<td>3</td>
<td>103.5</td>
<td>137.5</td>
<td>135.5</td>
</tr>
<tr>
<td>4</td>
<td>114</td>
<td>150</td>
<td>148</td>
</tr>
<tr>
<td>5</td>
<td>124.5</td>
<td>162.5</td>
<td>160.5</td>
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<tr>
<td>6</td>
<td>135</td>
<td>175</td>
<td>173</td>
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<tr>
<td>7</td>
<td>145.5</td>
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<td>200</td>
<td>198</td>
</tr>
<tr>
<td></td>
<td>166.5</td>
<td>212.5</td>
<td>210.5</td>
</tr>
<tr>
<td></td>
<td>177</td>
<td>225</td>
<td>223</td>
</tr>
<tr>
<td></td>
<td>187.5</td>
<td>237.5</td>
<td>235.5</td>
</tr>
<tr>
<td></td>
<td>198</td>
<td>250</td>
<td>248</td>
</tr>
<tr>
<td></td>
<td>208.5</td>
<td>260.5</td>
<td>260.5</td>
</tr>
<tr>
<td></td>
<td>219</td>
<td>262.5</td>
<td>273</td>
</tr>
</tbody>
</table>

Notes:
- $C3$: One-touch fitting for ø3.2
- $C4$: One-touch fitting for ø4
- $C6$: One-touch fitting for ø6
- $M5$: M5 thread

Components:
- Indicator light
- Manual override
- 2-C8 3(R) EXH port
- 2-C8 1(P) SUP port
- Manual override for serial connection

Series:
- VQ0000/1000 Plug Lead Unit Base Mounted
External power supply

How to Order Manifold

Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Port location</th>
<th>Port size</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ0000</td>
<td>Side</td>
<td>C6</td>
<td>C3, C4, M5</td>
</tr>
<tr>
<td>VQ1000</td>
<td>Side</td>
<td>C8</td>
<td>C3, C4, C6, M5</td>
</tr>
</tbody>
</table>

- Stations are counted from station 1 on the D side.
- Double wiring (connected to SOL A and SOL B) is adopted for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-4-216.

- The system comes in type SA (generic for small scale systems) for equipment with a small number of I/O points, or 32 points max., type SB (applicable to Mitsubishi Electric models) for controlling 512 I/O points max., type SC (applicable to OMRON models), type SD (applicable to SHARP models: 504 points max.), type SF (applicable to SUNX models), type SJ (applicable to SUNX models), type SK (applicable to Fuji Electric models), type SQ (applicable to OMRON’s Compo Bus/D), and type SR (applicable to OMRON’s Compo Bus/S).
- Max. 8 stations. (Specify a option model with 9 to 16 stations by using the manifold specification sheet.)

For details on specifications and handling, refer to the separate technical instruction manual.

How to Order Manifold

VQ0000/1000 Kit (Serial transmission unit)

- The serial transmission system reduces wiring work, while minimizing wiring and saving space.

Current consumption

- 24 VDC, +10%, –5% for use within the manifold specification sheet.

- For models of Fuji Electric: EX300-TFU1···· For models of OMRON: EX300-TTA1···· For models of Mitsubishi: EX300-TMB1····

- Dust-protected type (-XP) (VQ1000 only) Suffix “-XP” for the dust-protected type SI unit.

- For details on specifications and handling, refer to the separate technical instruction manual.
Si unit output and coil numbering

How to Order Valves

<Example>
Serial transmission kit
V5Q1208G0A-D ----- 1 set-Manifold base no.
• VQ1110-SLO ----- 4 sets-Valve part no. (Stations 1 to 4)
• VQ1210-SLO ----- 3 sets-Valve part no. (Stations 5 to 6)

Prefix the asterisk to the part nos. of the solenoid valve, etc.
Write sequentially from the 1st station on the D side. When part nos. written collectively are complicated, specify by using the manifold specification sheet.

How to Order Manifold Assembly

Please indicate manifold base type, corresponding valve, and option parts.

Prefix the asterisk to the part nos. of the solenoid valve, etc.
The DWG shows the SA type (General type)
Dimensions

<table>
<thead>
<tr>
<th>L1</th>
<th>1</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>
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<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
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</thead>
<tbody>
<tr>
<td>L1</td>
<td>82.5</td>
<td>93</td>
<td>103.5</td>
<td>114</td>
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<td>198</td>
<td>208.5</td>
<td>219</td>
<td>229.5</td>
<td>240</td>
</tr>
<tr>
<td>L2</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>200</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>250</td>
<td>262.5</td>
<td>275</td>
<td>287.5</td>
<td>300</td>
<td>312.5</td>
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</tr>
<tr>
<td>L3</td>
<td>173</td>
<td>185.5</td>
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<td>210.5</td>
<td>210.5</td>
<td>223</td>
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<td>248</td>
<td>260.5</td>
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<td>285.5</td>
<td>298</td>
<td>310.5</td>
<td>323</td>
<td>335.5</td>
<td></td>
</tr>
</tbody>
</table>

Dust-protected type SI unit: L4 = L3 + 25, L5 = L4 + 25

*Manifolds with SI unit for Matsushita Electric Works' MEWNET FP and Rockwell Automation's model are the same with L4 and L5 dimensions of dustproof SI unit.
**Blanking plate assembly**

**VVQ0000-10A-5**

It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.

**Individual SUP spacer**

**VVQ0000-P-5-C4**

When the same manifold is to be used for different pressures, this spacer is mounted under the valve to equip each valve with an individual supply port.

**Individual EXH spacer**

**VVQ0000-R-5-C4**

When a valve exhaust affects other stations due to the circuit configuration, this spacer is mounted under the valve to equip each valve with an individual valve exhaust.

**SUP/EXH block plate**

**VVQ0000-16A-5-**

1(P) (For SUP)

When different pressures, high and low, are supplied to one manifold, block a plate is inserted between the stations under different pressures.

3(R) (For EXH)

When a valve exhaust affects other stations due to the circuit configuration, this plate is used between the stations where exhaust should be separated.

1(P), 3(R) (For SUP/EXH)

When blocking SUP and EXH simultaneously, SUP/EXH block plate (PR) is used.

* Specify the number of stations on the manifold specification sheet.

**<Blocking indication label>**

When blocking the SUP, EXH passage with a SUP, EXH block plate, indication label for confirmation of the blocking position from outside is attached. (One label for each)

* When ordering a block plate incorporated with the manifold no., a block indication label is attached to the manifold.

**Name plate [-N]**

**VVQ0000-N5-Station (1 to Max. stations)**

It is a transparent resin plate for placing a label that indicates solenoid valve function, etc. Insert it into the groove on the side of the end plate and bend it as shown in the figure.
Blanking plug (For One-touch fittings)
KQ2P-23  26
It is inserted into an unused cylinder port and SUP/EXH ports.
Purchasing order is available in units of 10 pieces.

DIN rail mounting bracket [-D]
VVQ0000-57A-5 (VQ0000)
It is used for mounting a VV5Q5 type manifold on a DIN rail. The DIN rail mounting bracket is fixed to the manifold end plate. (The specification is the same as that for the option "-D").
1 set of DIN rail mounting bracket is used for 1 set of manifold (2 DIN rail mounting brackets).

Built-in silencer, Direct exhaust [-S]
This is an exhaust port on the manifold end plate. The built-in silencer exhibits an excellent noise suppression effect. (Silencing effect: 20 dB)
Note) A large quantity of drainage generated in the air source results in exhaust of air together with drainage.
For maintenance, refer to page 2-4-214.

Silencer (For EXH port)
This is inserted into the centralized type EXH port (One-touch fitting).

### Dimensions

<table>
<thead>
<tr>
<th>Applicable fitting size</th>
<th>Model</th>
<th>A</th>
<th>L</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2</td>
<td>KQ2P-23</td>
<td>16</td>
<td>31.5</td>
<td>3.2</td>
</tr>
<tr>
<td>4</td>
<td>KQP-04</td>
<td>16</td>
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<td>6</td>
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<tr>
<td>6</td>
<td>KQP-06</td>
<td>18</td>
<td>35</td>
<td>8</td>
</tr>
</tbody>
</table>

### Noise reduction (dB)

<table>
<thead>
<tr>
<th>Series</th>
<th>Model</th>
<th>A</th>
<th>L</th>
<th>D</th>
<th>Effective area (mm²)</th>
<th>Noise reduction (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ0000</td>
<td>AN103-X233</td>
<td>20</td>
<td>37</td>
<td>11</td>
<td>7</td>
<td>25</td>
</tr>
</tbody>
</table>
Blanking plate assembly
VVQ1000-10A-1

It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.

**Individual SUP spacer**
VVQ1000-P-2-C6

When the same manifold is to be used for different pressures, individual SUP spacers are used as SUP ports for different pressures. (One station space is occupied.) Block both sides of the station, for which the supply pressure from the individual SUP spacer is used, with SUP block plates. (Refer to the application ex.)

+ Specify the spacer mounting position and SUP block plate position on the manifold specification sheet. The block plates are used in two places for one set. (Two SUP block plates for blocking SUP station are attached to the individual SUP spacer.)

**Individual EXH spacer**
VVQ1000-R-2-C6

When valve exhaust affects other stations due to the circuit configuration, this spacer is used for individual valve exhaust. (One station space is occupied.) Block both sides of the individual valve EXH station. (See example.)

+ Specify the mounting position, as well as EXH block base or EXH block plate position on the manifold specification sheet. The block plates are used in two places for one set.

**SUP/EXH block plate**
VVQ1000-16A-2

When different pressures, high and low, are supplied to one manifold, a SUP block plate is inserted between the stations under different pressures. When a valve exhaust affects other stations due to the circuit configuration, this plate is also used between the stations where exhaust should be separated. It is also used for individual exhaust by combining an EXH block plate with an individual EXH spacer. (2 EXH plates are necessary for 1 station.)

Note) The SUP/EXH block plate is common.

+ Specify the number of stations on the manifold specification sheet.

**<Blocking indication label>**

When using block plates for SUP/EXH passage, the indication label for confirmation of the blocking position from outside is attached. (One label for each)

+ When ordering a block plate incorporated with the manifold no., a block indication label is attached to the manifold.

**Back pressure check valve assembly [-B]**
VVQ1000-18A

It prevents cylinder malfunction caused by other valve exhaust. Insert it into R (EXH) port on the manifold side of a valve which is affected. It is effective when a single acting cylinder is used or an exhaust center type solenoid valve is used.

Note) When a check valve for back pressure prevention is desired to be installed only in certain manifold stations, write clearly the part no. and specify the station numbers by using the manifold specification sheet.

**<Precautions>**

1. Back pressure check valve assembly is assembled with a check valve structure. However, as slight air leakage is allowed for the back pressure, take note the exhaust air will not be throttled at the exhaust port.

2. When a back pressure check valve is mounted, the effective orifice of the valve will decrease by about 20%.
Name plate [-N-]  
VQ1000-N2-Station (1 to Max. stations)

It is a transparent resin plate for placing a label that indicates solenoid valve function, etc.
Insert it into the groove on the side of the end plate and bend it as shown in the figure.

Blanking plug (For One-touch fittings)  
KQ2P-□□□

It is inserted into an unused cylinder port and SUP/EXH ports.
Purchasing order is available in units of 10 pieces.

Port plug VVQ0000-58A

The plug is used to block the cylinder port when using a 4 port valve as a 3 port valve.

Elbow fittings assembly  
VVQ1000-F-L

It is used for piping that extends upward or downward from the manifold.
When not mounting it to all manifold stations, clearly write the elbow type fitting assembly no. and specify the station’s qty and position by manifold specifications.
* When mounting elbow fittings assembly on the edge of manifold station and a silencer on EXH port, select a silencer, AN203-KM8.
Silencer (AN200-KM8) is interfered with fittings.

Built-in silencer, Direct exhaust [-S]

This is an exhaust port on the manifold end plate.
The built-in silencer exhibits an excellent noise suppression effect. (Silencing effect: 30 dB)
Note) A large quantity of drainage generated in the air source results in exhaust of air together with drainage.

2 stations matching fitting assembly  
VVQ1000-52A-C8

For driving a cylinder with a large bore, valves for two stations are operated to double the flow rate. This assembly for the cylinder port is used in that case. The assembly is equipped with One-touch fittings for ø8 bore.
* The bore for the manifold no. is “CM”.
Clearly indicate the 2 station matching fitting assembly no., and specify the number of stations and positions on the manifold specification sheet.

Silencer (For EXH port)

This is inserted into the centralized type EXH port (One-touch fitting).
* When mounting elbow fittings assembly (VVQ1000-F-L□□□) on the edge of manifold station, select a silencer, AN203-KM8.
Silencer (AN200-KM8) is interfered with fittings.
**Manifold Option Parts for VQ0000/VQ1000**

Double check block (Separated type)  
VQ1000-FPG-

It is used on the outlet side piping to keep the cylinder in the intermediate position for a long time. Combining the double check block with a built-in pilot type double check valve and a 3 position exhaust center solenoid valve will enable the cylinder to stop in the middle or maintain its position for a long time.

The combination with a 2 position single/double solenoid valve will permit this block to be used for preventing the dropping at the cylinder stroke end when the SUP residual pressure is released.

**Specifications**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. operating pressure</td>
<td>0.8 MPa</td>
</tr>
<tr>
<td>Min. operating pressure</td>
<td>0.15 MPa</td>
</tr>
<tr>
<td>Flow characteristics:</td>
<td>C</td>
</tr>
<tr>
<td>Flow characteristics:</td>
<td>0.60 dm³/(s·bar)</td>
</tr>
<tr>
<td>Max. operating frequency</td>
<td>180 CPM</td>
</tr>
</tbody>
</table>

**Dimensions**

The dimensions are shown in the figure.

**How to Order**

**Double check block**

VQ1000-FPG-[C4 M5 F]

**Manifold**

VVQ1000-FPG-06

**Bracket Assembly**

Part no. Tightening torque  
VQ1000-FPG-FB 0.22 to 0.25 N·m

**Caution**

- Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for a long time. Check the leakage using neutral household detergent, such as dish washing soap.
- Also check the cylinder’s tube gasket, piston packing and rod packing for air leakage.
- Since One-touch fittings allow slight air leakage, screw piping (with M5 thread) is recommended when stopping the cylinder in the middle for a long time.
- Combining double check block with 3 position closed center or pressure center solenoid valve will not work.
- M5 fitting assembly is attached, not incorporated into the double check block. After screwing in the M5 fittings, mount the assembly on the double check block.
- If the exhaust of the double check block is throttled too much, the cylinder may not operate properly and may not stop immediately.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.

---

*Note: Based on JIS B 8375-1981 (Supply pressure: 0.5 MPa)*
**Precautions 1**

Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to page 2-9-2.

### Light/ Surge Voltage Suppressor

**Caution**

In the case of VQ1000, the standard model is equipped with an indicator light and surge voltage suppressor. The lighting positions are concentrated on one side for both single solenoid type and double solenoid type.

For the double solenoid type, A side and B side energization are indicated by two colors which match the colors of the manual overrides.

![DC Circuit Diagram](image)

- In the case of VQ0000, solenoid and manual override on both sides.
- Note) A side energization: A light (orange) illuminates. With wrong wiring preventing ability (stop diode)
- B side energization: B light (green) illuminates. Equipped with a surge absorption diode mechanism.

### Manual Override

**Warning**

Without an electric signal for the solenoid valve the manual override is used for switching the main valve.

Push type is standard. (Tool required)

**Option:** Locking type (Tool required/Manual)

- **Push type (Tool required)**
  - **Bore ø3.2**
  - Push down on the manual override button with a small screwdriver until it stops. Release the screwdriver and the manual override will return.

- **Locking type (Tool required) <Option>**
  - If the manual override is turned by 180° clockwise and the mark is adjusted to 1, it will be locked in the ON state.
  - If the manual override is turned by 180° counterclockwise and the mark is adjusted to 0, locking will be released and the manual override will return.

- **Locking type (Manual) <Option>**
  - Push down on the manual override button with a small screwdriver or with your fingers until it stops. Turn clockwise by 90° to lock it. Turn it counterclockwise to release it.

**Caution**

Do not apply excessive torque when turning the locking type manual override. (0.1 N·m or less)

### How to Mount/ Remove Solenoid Valve

**Caution**

2. Diagonally insert the hook on the valve end plate side into clamp B.
3. Tighten the clamp screw. (Proper tightening torque: 0.25 to 0.35 N·m)

**Mounting**

1. Dust on the sealing surface of the gasket or solenoid valve can cause air leakage.
2. In the case of VQ0000, valve mounting screw clamping torque is 0.18 to 0.25 N·m.

### Replacement of Cylinder Port Fittings

**Caution**

The cylinder port fittings are a cassette for easy replacement. The fittings are blocked by a clip inserted from the top of manifold. Remove the clip with a screwdriver to remove fittings.

For replacement, insert the fitting assembly until it strikes against the inside wall and then re-insert the clip to specified position.

![Fitting Assembly](image)

- Take off the valve and remove the clip.
- Remove the clip after taking off the manifold.

<table>
<thead>
<tr>
<th>Applicable tubing O.D.</th>
<th>VQ0000</th>
<th>VQ1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQ1000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applicable tubing ø3.2</td>
<td>VVQ1000-51A-C3</td>
<td>VVQ1000-50A-C3</td>
</tr>
<tr>
<td>Applicable tubing ø4</td>
<td>VVQ1000-51A-C4</td>
<td>VVQ1000-50A-C4</td>
</tr>
<tr>
<td>Applicable tubing ø6</td>
<td>—</td>
<td>VVQ1000-50A-C6</td>
</tr>
<tr>
<td>M5</td>
<td>—</td>
<td>VVQ1000-50A-M5</td>
</tr>
</tbody>
</table>

* Refer to "Option" on pages 2-4-208 to 2-4-211 for other types of fittings.

**Caution**

1. Use caution that O-rings must be free from scratches and dust. Otherwise, air leakage may result.
2. After screwing in the fittings, mount the M5 fitting assembly on the manifold base. (Tightening torque 0.8 to 1.2 N·m)
3. Purchasing order is available in units of 10 pieces.

---

**Warning**

- Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to page 2-9-2.
- Without an electric signal for the solenoid valve the manual override is used for switching the main valve.
- Push type is standard. (Tool required)
- **Option:** Locking type (Tool required/Manual)
  - **Push type (Tool required)**
    - **Bore ø3.2**
    - Push down on the manual override button with a small screwdriver until it stops. Release the screwdriver and the manual override will return.
  - **Locking type (Tool required) <Option>**
    - If the manual override is turned by 180° clockwise and the mark is adjusted to 1, it will be locked in the ON state.
    - If the manual override is turned by 180° counterclockwise and the mark is adjusted to 0, locking will be released and the manual override will return.
  - **Locking type (Manual) <Option>**
    - Push down on the manual override button with a small screwdriver or with your fingers until it stops. Turn clockwise by 90° to lock it. Turn it counterclockwise to release it.

**Caution**

- Do not apply excessive torque when turning the locking type manual override. (0.1 N·m or less)

---

**Note**

- A side energization: A light (orange) illuminates. With wrong wiring preventing ability (stop diode)
- B side energization: B light (green) illuminates. Equipped with a surge absorption diode mechanism.

**Replacement of Cylinder Port Fittings**

- Take off the valve and remove the clip.
- Remove the clip after taking off the manifold.

<table>
<thead>
<tr>
<th>Applicable tubing O.D.</th>
<th>VQ0000</th>
<th>VQ1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQ1000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applicable tubing ø3.2</td>
<td>VVQ1000-51A-C3</td>
<td>VVQ1000-50A-C3</td>
</tr>
<tr>
<td>Applicable tubing ø4</td>
<td>VVQ1000-51A-C4</td>
<td>VVQ1000-50A-C4</td>
</tr>
<tr>
<td>Applicable tubing ø6</td>
<td>—</td>
<td>VVQ1000-50A-C6</td>
</tr>
<tr>
<td>M5</td>
<td>—</td>
<td>VVQ1000-50A-M5</td>
</tr>
</tbody>
</table>

* Refer to "Option" on pages 2-4-208 to 2-4-211 for other types of fittings.

**Caution**

- Use caution that O-rings must be free from scratches and dust. Otherwise, air leakage may result.
- After screwing in the fittings, mount the M5 fitting assembly on the manifold base. (Tightening torque 0.8 to 1.2 N·m)
- Purchasing order is available in units of 10 pieces.
**Wires, cables, connectors, etc. used for models conforming to IP65 should also have enclosures equivalent to or of stricter than IP65.**

**Attaching and detaching connectors**

To attach a connector, hold the lever and connector unit between your fingers and insert straight onto the pins of the solenoid valve so that the lever’s pawl is pushed into the groove and locks.

To detach a connector, remove the pawl from the groove by pushing the lever downward with your thumb, and pull the connector straight out.

**Crimping the lead wire and socket**

Peel 3.2 to 3.7 mm of the tip of lead wire, neatly into a socket and press contact it by a press tool.

Be careful so that the cover of lead wire does not enter into the core press contacting part.

**Attaching and detaching lead wires with sockets**

Insert a socket in the square hole (Indicated as [ ], [ ) of connector, push in the lead wire and lock by hanging the hook of socket to the seat of connector. (Pushing-in can open the hook and lock it automatically.) Then confirm the lock by lightly pulling on the lead wire.

**Mounting/Removing from the DIN Rail (VQ1000)**

**Removal**

1. Loosen the clamp screw on side (a) of the end plate on both sides.
2. Lift side (a) of the manifold base and slide the end plate in the direction of (2) shown in the figure to remove.

**Mounting**

1. Hook side (b) of the manifold base on the DIN rail.
2. Press side (a) and mount the end plate on the DIN rail.
3. Tighten the clamp screw on side (a) of the end plate. The proper tightening torque for screws is 1.2 to 1.6 N·m.

**Enclosure IP65**

Wires, cables, connectors, etc. used for models conforming to IP65 should also have enclosures equivalent to or of stricter than IP65.

**How to Calculate the Flow Rate**

For obtaining the flow rate, refer to pages 2-1-8 to 2-1-11.

---

**Built-in Silencer Replacement**

**Caution**

A silencer element is incorporated in the end plate on both sides of the manifold base. A dirty and choked element may reduce cylinder speed and cause malfunction. Clean or replace the dirty element.

1. Loosen the clamp screw on side (a) of the end plate.
2. Turn the manual override between the manifold blocks with a regular screwdriver, etc. in a counterclockwise direction.

**Manifold Base Station Increasing Procedure (VQ1000)**

**Caution**

3. Slide the manifold base to the side where the screw is loosened. Make a clearance of 15 mm or more.
4. Mount the station increasing manifold block assembly and solenoid valve on the DIN rail. Install it to the DIN rail by applying the hook on the (b) side of the manifold block and pushing down the (a) side.
5. Slide the manifold bases with a slight clearance in-between and lock them by turning the manual override between the manifold blocks clockwise.
6. Tighten the screw on the top surface of the end plate, and the station has been added. (Proper tightening torque 1.2 to 1.6 N·m)
Option

Different Number of Connector Pins

F and P kits with the following number of pins are available besides the standard number (F = 25; P = 26). Select the desired number of pins and cable length from the cable assembly list. Place an order for the cable assembly separately.

**F**

kit (D-sub connector) 15 pins

![Image of D-sub connector]

**P**

kit (Flat ribbon cable connector)

10 pins, 16 pins, 20 pins

![Image of Flat ribbon cable connector]

**How to order manifold**

**VV5Q12-06 F SA D**

- Stations

**How to Order**

- D-sub connector, 15 pins
- Connector location – Side (horizontal)
- Without cable

**Kit/Electrical entry**

<table>
<thead>
<tr>
<th>Pins</th>
<th>Location</th>
<th>Top entry</th>
<th>Side entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>15P (Max. 7 stations)</td>
<td>Kit F</td>
<td>UA</td>
<td>Kit F</td>
</tr>
</tbody>
</table>

**Wiring Specifications**

- In the same way as the 25-pin models (standard), terminal no. 1 for SOL.A at the 1st station, terminal no. 9 for SOL.B at the 1st station, and terminal no. 8 for COM.

**Flat Ribbon Cable Assembly**

<table>
<thead>
<tr>
<th>Pins</th>
<th>10P</th>
<th>16P</th>
<th>20P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>AXT100-FC10-1</td>
<td>AXT100-FC16-1</td>
<td>AXT100-FC20-1</td>
</tr>
<tr>
<td>3 m</td>
<td>AXT100-FC10-2</td>
<td>AXT100-FC16-2</td>
<td>AXT100-FC20-2</td>
</tr>
<tr>
<td>5 m</td>
<td>AXT100-FC10-3</td>
<td>AXT100-FC16-3</td>
<td>AXT100-FC20-3</td>
</tr>
</tbody>
</table>

- Connector width (W)
- AXT100-DS15-1 (15P)
- AXT100-DS15-2 (15P)
- AXT100-DS15-3 (15P)

- Wire Color by Terminal No. of Flat Ribbon Cable Assembly

- For other commercial connectors, use a type conforming to MIL-C-83503.

**P**

![Image of Flat ribbon cable connector]

**How to order manifold**

**VV5Q12-06 P SC D**

- Stations

**How to Order**

- Flat ribbon cable, 20 pins
- Connector location – Side (horizontal)
- Without cable

**Kit/Electrical entry**

<table>
<thead>
<tr>
<th>Pins</th>
<th>Location</th>
<th>Top entry</th>
<th>Side entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>10P (Max. 4 stations)</td>
<td>Kit</td>
<td>UA</td>
<td>Kit</td>
</tr>
<tr>
<td>16P (Max. 7 stations)</td>
<td>P</td>
<td>SA</td>
<td>Kit</td>
</tr>
<tr>
<td>20P (Max. 9 stations)</td>
<td>P</td>
<td>SB</td>
<td>SC</td>
</tr>
</tbody>
</table>

**Wiring Specifications**

- In the same way as the 26-pin models (standard), terminal no. 1 is SOL.A at the 1st station, terminal no. 2 for SOL.B at the 1st station, and two pins from the max.

**For other commercial connectors, use a type with strain relief conforming to MIL-C-83503.**
Option

Special Wiring Specifications

In the internal wiring of F kit, P kit, T kit and S kit, double wiring (connected to SOL A and SOL B) is adopted for each station regardless of the valve and option types. Mixed single and double wiring is available as an option.

1. How to Order

Indicate an option symbol “-K”, for the manifold no. and be sure to specify the mounting position and number of stations of the single and double wiring by means of the manifold specification sheet.

Example) VV5Q05-08C4FU1-D K S

Others, option symbols: to be indicated alphabetically.

2. Wiring specifications

With the A side solenoid of the 1st station as no. 1 (meaning, to be connected to no. 1 terminal), without making any terminals vacant.

3. Max. number of stations

The maximum number of stations depends upon the number of solenoids. Assuming one for a single and two for a double, determine the number of stations so that the total number is not more than the max. number given in the following table.

<table>
<thead>
<tr>
<th>Kit</th>
<th>F kit (D-sub connector)</th>
<th>P kit (Flat ribbon cable connector)</th>
<th>T kit (Terminal block)</th>
<th>S kit (Serial transmission)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>25P</td>
<td>15P</td>
<td>26P</td>
<td>16P</td>
</tr>
<tr>
<td>Max.</td>
<td>16</td>
<td>16</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td>points</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note) Due to the limitation of internal wiring.

Inch-size One-touch Fittings

Valve with inch-size One-touch fittings is shown below.

VV5Q12-06 N7 PSO D

Plug Connector Assembly Model

Connector assembly will be required when the F, P, S kits add a valve. Specify the style of valve and connector assembly.

Plug Connector Assembly Part No.

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single VQ0000 (2-wire)</td>
<td>Positive common</td>
</tr>
<tr>
<td></td>
<td>Negative common</td>
</tr>
<tr>
<td>Double (latching) (3-wire)</td>
<td>Positive common</td>
</tr>
<tr>
<td></td>
<td>Negative common</td>
</tr>
</tbody>
</table>

Note) Lead wire length: 300 mm

The part numbers above are applicable to 2 to 10 stations. 11 to 16 stations:
“AXT661-□□□□□□□□□□F-□□5”.

2-4-216
DIN Rail Mounting

Each manifold can be mounted on a DIN rail. Order it by indicating a DIN rail mounting option symbol, “-D”. In this case, a DIN rail which is approx. 30 mm longer than the manifold with the specified number of stations is attached. Other than this, it is applicable for the following cases.

- **When DIN rail is unnecessary (C kit VQ0000 only)**
  
  Indicate the option symbol, -DO, for the manifold no.

  Example)
  
  **VV5Q05-08C4C-DOS**

  Others, option symbols:
  to be indicated alphabetically.

- **When using DIN rail longer than the manifold with specified number of stations (VQ0000/VQ1000)**
  
  Clearly indicate the necessary number of stations next to the option symbol, “D” for the manifold no.

  Example)
  
  **VV5Q05-08C4FU1-D09S**

  DIN rail for 9 stations

  Others, option symbols:
  to be indicated alphabetically.

- **When changing the manifold style into a DIN rail mounting style (VQ0000 only)**
  
  Order brackets for mounting a DIN rail. (Refer to “Option” on page 2-4-209.)

  No. VV0000-57A-5 2 pcs. per one set.

- **When ordering DIN rail only (VQ0000 only)**

  DIN rail no.: AXT100-DR-

  As for □, specify the number from the DIN rail table.

  For L dimension, refer to the dimensions of each kit.

---

**L Dimension**

\[ L = 12.5 \times n + 10.5 \]

<table>
<thead>
<tr>
<th>No.</th>
<th>1</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>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>23</td>
<td>35.5</td>
<td>48</td>
<td>60.5</td>
<td>73</td>
<td>85.5</td>
<td>98</td>
<td>110.5</td>
<td>123</td>
<td>135.5</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>148</td>
<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>273</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
<td>323</td>
<td>335.5</td>
<td>348</td>
<td>360.5</td>
<td>373</td>
<td>385.5</td>
</tr>
<tr>
<td></td>
<td>31</td>
<td>32</td>
<td>33</td>
<td>34</td>
<td>35</td>
<td>36</td>
<td>37</td>
<td>38</td>
<td>39</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>398</td>
<td>410.5</td>
<td>423</td>
<td>435.5</td>
<td>448</td>
<td>460.5</td>
<td>473</td>
<td>485.5</td>
<td>498</td>
<td>510.5</td>
</tr>
</tbody>
</table>
### Series VQ Single Unit

#### Model

<table>
<thead>
<tr>
<th>Series</th>
<th>Number of solenoid</th>
<th>Model</th>
<th>Flow characteristic</th>
<th>Response time (ms)</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ0000 Plug lead</td>
<td>Single</td>
<td>Metal seal</td>
<td>VQ0150</td>
<td>0.41</td>
<td>0.20</td>
</tr>
<tr>
<td></td>
<td>Rubber seal</td>
<td>VQ0151</td>
<td>0.53</td>
<td>0.20</td>
<td>0.12</td>
</tr>
<tr>
<td>Double</td>
<td>Meta seal</td>
<td>VQ0250</td>
<td>0.41</td>
<td>0.20</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>Rubber seal</td>
<td>VQ0251</td>
<td>0.53</td>
<td>0.20</td>
<td>0.12</td>
</tr>
<tr>
<td>Closed center</td>
<td>Metal seal</td>
<td>VQ0350</td>
<td>0.32</td>
<td>0.10</td>
<td>0.07</td>
</tr>
<tr>
<td></td>
<td>Rubber seal</td>
<td>VQ0351</td>
<td>0.43</td>
<td>0.21</td>
<td>0.10</td>
</tr>
<tr>
<td>Exhaust center</td>
<td>Metal seal</td>
<td>VQ0450</td>
<td>0.32</td>
<td>0.10</td>
<td>0.07</td>
</tr>
<tr>
<td></td>
<td>Rubber seal</td>
<td>VQ0451</td>
<td>0.43</td>
<td>0.21</td>
<td>0.10</td>
</tr>
</tbody>
</table>

Note 1) Cylinder port size C4: (VQ0000)
Note 2) Based on JIS B 6375-1981 (Supply pressure: 0.5 MPa; with indicator light and surge voltage suppressor; clean air) The response time is subject to the pressure and quality of the air. The valves at the time of ON are given for double types.
Note 3) Weight including sub-plate.

For individual use of a single valve.

![Image of a single valve](image-url)

#### Standard Specifications

<table>
<thead>
<tr>
<th>Fluid construction</th>
<th>Metal seal</th>
<th>Rubber seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid</td>
<td>Air/Inert gas</td>
<td>Air/Inert gas</td>
</tr>
<tr>
<td>Maximum operating pressure</td>
<td>0.7 MPa (High pressure type: 0.8 MPa)</td>
<td></td>
</tr>
<tr>
<td>Min. operating pressure</td>
<td>Single: 0.1 MPa, Double: 0.1 MPa, 3 position: 0.1 MPa</td>
<td></td>
</tr>
<tr>
<td>Ambient and fluid temperature</td>
<td>–10 to 50°C(1)</td>
<td></td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not required</td>
<td></td>
</tr>
<tr>
<td>Manual override</td>
<td>Push type/Locking type (Tool required, Manual type) Option</td>
<td></td>
</tr>
<tr>
<td>Impact/Vibration resistance [2]</td>
<td>150/30 m/s²</td>
<td></td>
</tr>
<tr>
<td>Enclosure</td>
<td>Dust tight</td>
<td></td>
</tr>
<tr>
<td>Coil rated voltage</td>
<td>12, 24 VDC, 100, 110, 200, 220 VAC (50/60 Hz)</td>
<td></td>
</tr>
<tr>
<td>Allowable voltage fluctuation</td>
<td>±10% of rated voltage</td>
<td></td>
</tr>
<tr>
<td>Coil insulation type</td>
<td>Class B or equivalent</td>
<td></td>
</tr>
<tr>
<td>Solenoid Power consumption (Current)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24 VDC</td>
<td>1 W DC (42 mA), 1.5 W DC (63 mA) [3], 0.5 W DC (21 mA) [4]</td>
<td></td>
</tr>
<tr>
<td>12 VDC</td>
<td>1 W DC (83 mA), 1.5 W DC (125 mA) [3], 0.5 W DC (42 mA) [4]</td>
<td></td>
</tr>
<tr>
<td>100 VAC</td>
<td>Inrush 0.5 VA (5 mA), Holding 0.5 VA (5 mA)</td>
<td></td>
</tr>
<tr>
<td>110 VAC</td>
<td>Inrush 0.55 VA (5 mA), Holding 0.55 VA (5 mA)</td>
<td></td>
</tr>
<tr>
<td>200 VAC</td>
<td>Inrush 1.0 VA (5 mA), Holding 1.0 VA (5 mA)</td>
<td></td>
</tr>
<tr>
<td>220 VAC</td>
<td>Inrush 1.1 VA (5 mA), Holding 1.1 VA (5 mA)</td>
<td></td>
</tr>
</tbody>
</table>

Note 1) Use dry air to prevent condensation when operating at low temperatures.
Note 2) 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)
Note 3) Values for high pressure type (1.5 W)
Note 4) Values for low wattage type (0.5 W)
# How to Order Valves

**VQ0 1 5 0 Y 5 L C4**

## Wiring Specifications

**The lead wires are connected to the valve as shown below. Connect each to the power supply side.**

<table>
<thead>
<tr>
<th>Lead wire color</th>
<th>24 VDC</th>
<th>100 VAC</th>
<th>200 VAC</th>
<th>110 VAC</th>
<th>220 VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black (Blue)</td>
<td>[Red]</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
</tr>
<tr>
<td>Red (Blue)</td>
<td>[]</td>
<td>[Red]</td>
<td>[]</td>
<td>[]</td>
<td>[]</td>
</tr>
</tbody>
</table>

**Plug connector lead wire length**

Note: The length of the lead wire provided is 300 mm. When ordering a valve with a lead wire of 600 mm or longer, be sure to indicate the model number of the valve without connector and connector assembly.

Example: Lead wire length 1000 mm

<table>
<thead>
<tr>
<th>Connector Assembly Part No. (For DC)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire length</td>
<td>Part no.</td>
</tr>
<tr>
<td>Socket (3 pcs.)</td>
<td>AXT661-12A</td>
</tr>
<tr>
<td>300 mm</td>
<td>AXT661-14A</td>
</tr>
<tr>
<td>600 mm</td>
<td>AXT661-14A-6</td>
</tr>
<tr>
<td>1000 mm</td>
<td>AXT661-14A-10</td>
</tr>
<tr>
<td>2000 mm</td>
<td>AXT661-14A-20</td>
</tr>
<tr>
<td>3000 mm</td>
<td>AXT661-14A-30</td>
</tr>
</tbody>
</table>

Note: AXT661-34A□, for 200/220 VAC.

---

**Electrical entry**

- **G**: Grommet (Except AC)
- **L**: L plug connector with lead wire
- **LO**: L plug connector without connector
- **M**: M plug connector with lead wire
- **MO**: M plug connector without connector

## Specifications

<table>
<thead>
<tr>
<th>Function symbol</th>
<th>Specifications</th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nill</td>
<td>Standard type</td>
<td>1.0 W</td>
<td>(1.5 W)</td>
</tr>
<tr>
<td>H</td>
<td>High pressure type</td>
<td>1.5 W</td>
<td>—</td>
</tr>
<tr>
<td>Y</td>
<td>Low voltage type</td>
<td>0.5 W</td>
<td>—</td>
</tr>
</tbody>
</table>

Note: For power consumption of AC type, refer to page 2-4-218.

---

**Sub-plates**

- **SUP, Cylinder port**
  - Nil: Without sub-plate
  - C3: With one-touch fitting for ø3.2
  - C4: With one-touch fitting for ø4
  - M5: M5 thread

Note: EXH port: M5 thread

---

**Manual override**

- Nil: Non-locking push type (Tool required)
- B: Locking type (Tool required)

* Option

---

**Coil 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
Series VQ

Dimensions

2 position single: VQ015°

2-ø3.4 mounting holes

Manual override

Lead wire length = 300

M plug connector

L plug connector

3-C4, M5(1(P), 4(A), 2(B) port)

M5: M5 thread

< >: AC

2 position double: VQ025°

2-ø3.4 mounting holes

Manual override

Lead wire length = 300

M plug connector

L plug connector

3-C4, M5(1(P), 4(A), 2(B) port)

M5: M5 thread

< >: AC

3 position exhaust center: VQ015°

2-ø3.4 mounting holes

Manual override

Lead wire length = 300

M plug connector

L plug connector

3-C4, M5(1(P), 4(A), 2(B) port)

M5: M5 thread

< >: AC
Series VQ
Construction
Main Parts, Replacement Parts

Construction: VQ1000/Plug-in Unit

Metal seal

![Diagram of VQ1000 Metal seal]

<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>Zinc die-casted</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Spool/Sleeve</td>
<td>Stainless steel</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

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>Zinc die-casted</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Spool valve</td>
<td>Aluminum/HNBR</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

Replacement Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Pilot valve assembly</td>
<td>VQ111</td>
<td>Single</td>
</tr>
<tr>
<td>5</td>
<td>Pilot valve assembly</td>
<td>VQ131</td>
<td>Double/3 position</td>
</tr>
</tbody>
</table>

Note) (H): 1.5 W, (Y): 0.5 W

Rubber seal type

![Diagram of VQ1000 Rubber seal type]

<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>Zinc die-casted</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Spool valve</td>
<td>Aluminum/HNBR</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

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>Zinc die-casted</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Spool valve</td>
<td>Aluminum/HNBR</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

Replacement Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Pilot valve assembly</td>
<td>VQ111</td>
<td>Single</td>
</tr>
<tr>
<td>5</td>
<td>Pilot valve assembly</td>
<td>VQ131</td>
<td>Double/3 position</td>
</tr>
</tbody>
</table>

Note) (H): 1.5 W, (Y): 0.5 W

Series VQ
Construction
Main Parts, Replacement Parts
Construction: VQ2000/Plug-in Unit

Metal seal

![Diagram of Metal seal]

<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-cast</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Spool/Sleeve</td>
<td>Stainless steel</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

Replacement Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Pilot valve assembly</td>
<td>VQ111①①①-1 (H)</td>
<td>Voltage 1 to 6</td>
</tr>
<tr>
<td>5</td>
<td>Pilot valve assembly</td>
<td>VQ131①①①-1 (Y)</td>
<td>Voltage 1 to 6</td>
</tr>
</tbody>
</table>

Note) (H): 1.5 W, (Y): 0.5 W

Rubber seal type

![Diagram of Rubber seal type]

<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-cast</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Spool valve</td>
<td>Aluminum/HNBR</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

Replacement Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Pilot valve assembly</td>
<td>VQ111①①①-1 (H)</td>
<td>Voltage 1 to 6</td>
</tr>
<tr>
<td>5</td>
<td>Pilot valve assembly</td>
<td>VQ131①①①-1 (Y)</td>
<td>Voltage 1 to 6</td>
</tr>
</tbody>
</table>

Note) (H): 1.5 W, (Y): 0.5 W
**Construction: VQ0000/Plug Lead Unit**

**Metal seal**

**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></td>
</tr>
<tr>
<td>2</td>
<td>Spool/Sleeve</td>
<td>Stainless steel</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

**Replacement Parts**

- 4 Pilot valve assembly VQ110

**Note:**

(Y): 0.5 W, (H): 1.5 W, (G): DC

**Rubber seal 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></td>
</tr>
<tr>
<td>2</td>
<td>Spool valve</td>
<td>Aluminum/HNBR</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

**Replacement Parts**

- 4 Pilot valve assembly VQ110

**Note:**

(Y): 0.5 W, (H): 1.5 W, (G): DC
## Construction: VQ1000/Plug Lead Unit

### Metal seal

<table>
<thead>
<tr>
<th>Component Parts</th>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Zinc die-casted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Spool/Sleeve</td>
<td>Stainless steel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Replacement Parts

- 4: Pilot valve assembly VQ111
- 5: Pilot valve assembly VQ131

**Note:** (H): 1.5 W, (Y): 0.5 W

## Rubber seal type

### Component Parts

<table>
<thead>
<tr>
<th>Component Parts</th>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Zinc die-casted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Spool valve</td>
<td>Aluminum/HNBR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Replacement Parts

- 4: Pilot valve assembly VQ111
- 5: Pilot valve assembly VQ131

**Note:** (H): 1.5 W, (Y): 0.5 W
Exploded View of Manifold

Exploded view: VQ1000/Plug-in Unit
(F, P, J, L, Skit)

<table>
<thead>
<tr>
<th>Housing assembly and SI unit</th>
<th>D side end plate assembly</th>
<th>Manifold block assembly</th>
<th>U side end plate assembly</th>
</tr>
</thead>
</table>

1. S kit
2. P/J kit
3. F kit
4. L kit
### <Housing Assembly and SI Unit>
#### Housing assembly and SI unit no.

<table>
<thead>
<tr>
<th>No.</th>
<th>Manifold</th>
<th>Part no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(SA kit)</td>
<td>EX320-5001(-XP) [2]</td>
<td>General type SI unit (Series EX300)</td>
</tr>
<tr>
<td></td>
<td>(SB kit)</td>
<td>EX120-SMB1(-XP) [2]</td>
<td>SI unit for MELSECNET/mini-S3 Data Link System (Mitsubishi Electric Corporation)</td>
</tr>
<tr>
<td></td>
<td>(SC kit)</td>
<td>EX120-STA1(-XP) [2]</td>
<td>SI unit for SYSBUS Wire System (OMRON Corporation)</td>
</tr>
<tr>
<td></td>
<td>(SD kit)</td>
<td>EX120-SSH1(-XP) [2]</td>
<td>SI unit for Satellite I/O Link System (SHARP Corporation)</td>
</tr>
<tr>
<td></td>
<td>(SE kit)</td>
<td>EX120-SPA1</td>
<td>SI unit for MEWNET-F System (Matsushita Electric Works, Ltd.)</td>
</tr>
<tr>
<td></td>
<td>(SF kit)</td>
<td>EX120-SUW1(-XP) [2]</td>
<td>SI unit for 16 point Uni-wire System (NKE Corporation)</td>
</tr>
<tr>
<td></td>
<td>(SH kit)</td>
<td>EX120-SUH1(-XP) [2]</td>
<td>SI unit for 16 point Uni-wire H System (NKE Corporation)</td>
</tr>
<tr>
<td></td>
<td>(SJ1 kit)</td>
<td>EX120-SH11(-XP) [2]</td>
<td>16 point S-LINK System (SUNX Corporation)</td>
</tr>
<tr>
<td></td>
<td>(SJ2 kit)</td>
<td>EX120-SSL2(-XP) [2]</td>
<td>8 point S-LINK System (SUNX Corporation)</td>
</tr>
<tr>
<td></td>
<td>(SK kit)</td>
<td>EX120-SFU1(-XP) [2]</td>
<td>T-LINK Mini System (Fuji Electric Co., Ltd.)</td>
</tr>
<tr>
<td></td>
<td>(SQ kit)</td>
<td>EX120-SDN1</td>
<td>DeviceNet, CompoBus/D (OMRON Corporation)</td>
</tr>
<tr>
<td></td>
<td>(SR1 kit)</td>
<td>EX120-SCS1(-XP) [2]</td>
<td>OMRON Corporation: CompoBus/S (16 output points)</td>
</tr>
<tr>
<td></td>
<td>(SR2 kit)</td>
<td>EX120-SCS2(-XP) [2]</td>
<td>OMRON Corporation: CompoBus/S (8 output points)</td>
</tr>
<tr>
<td></td>
<td>(SV kit)</td>
<td>EX120-SMJ1(-XP) [2]</td>
<td>Mitsubishi Electric Corporation: CC-LINK System</td>
</tr>
</tbody>
</table>

1. Note 1) Top (vertical) entry connector for FU, PU and JU while side (horizontal) entry connector for FS, JS and PS.
2. Enter suffix "-XP" at the end of the part number for dust-proof type SI unit.

### D Side End Plate Assembly
#### 4. D side end plate assembly no.

**VVQ1000-3A-1-□**

- **Electrical entry**
  - **F** for F kit
  - **P** for P kit
  - **J** for J kit
  - **L** for L kit
  - **S** for S kit

**Option**
- **Nil**
- **R** External pilot
- **S** Built-in silencer, direct exhaust

#### Note
1. When both options are specified, indicate as RS.
2. The housing assembly and SI unit of F/P/S kit are not included.
3. Separately place an order for 1, 2, and 3.

### <U Side End Plate Assembly>
#### 6. U side end plate assembly no. (For F, P, J, S kit)

**VVQ1000-2A-1-□**

- **Option**
  - **Nil**
  - **S** Built-in silencer, direct exhaust

#### Note
1. The 1/4" fitting assembly is included.

### <Fitting Assembly>
#### 13. Fitting assembly part no. (For cylinder port)

**VVQ1000-50A-□**

- **Port size**
  - **C3** Applicable tubing ø3.2
  - **C4** Applicable tubing ø4
  - **C6** Applicable tubing ø6
  - **C8** Applicable tubing ø8

- **Note** Purchasing order is available in units of 10 pieces.

- **Port size**
  - **C3** MS thread
  - **C4** MS thread
  - **C6** MS thread
  - **C8** MS thread

### <Replacement Parts for Manifold Block>
#### Replacement Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>VVQ1000-80A-1</td>
<td>Gasket</td>
<td>NBR</td>
<td>12</td>
</tr>
<tr>
<td>10</td>
<td>VVQ1000-80A-2</td>
<td>Packing</td>
<td>NBR</td>
<td>12</td>
</tr>
<tr>
<td>11</td>
<td>VVQ1000-80A-3</td>
<td>Clamp screw</td>
<td>Carbon steel</td>
<td>12</td>
</tr>
<tr>
<td>12</td>
<td>VVQ1000-80A-4</td>
<td>Clip</td>
<td>Stainless steel</td>
<td>12</td>
</tr>
</tbody>
</table>

- **Note** A set of parts containing 12 pcs. each is enclosed.
Series VQ

Exploded View: VQ2000/Plug-in Unit

(F, P, J, L, G, S kit)

<table>
<thead>
<tr>
<th>Housing assembly and SI unit</th>
<th>D side end plate assembly</th>
<th>Manifold block assembly</th>
<th>U side end plate assembly</th>
</tr>
</thead>
<tbody>
<tr>
<td>S kit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P/J kit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F kit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G kit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L kit</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
<Housing Assembly and SI Unit>
Housing assembly and SI unit no.

<table>
<thead>
<tr>
<th>No.</th>
<th>Manifold</th>
<th>Part no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(SA kit)</td>
<td>EX320-S001-(X1)</td>
<td>General type SI unit (Series EX300)</td>
<td></td>
</tr>
<tr>
<td>(SB kit)</td>
<td>EX120-SMB1-(X1)</td>
<td>SI unit for MELSENET/MINI-S3 Data Link System (Mitsubishi Electric)</td>
<td></td>
</tr>
<tr>
<td>(SBB kit)</td>
<td>[EX124-SSMB1]</td>
<td>SI unit for MELSENET/MINI-S3 Data Link System (2 power supply lines) (Mitsubishi Electric Corp.)</td>
<td></td>
</tr>
<tr>
<td>(SC kit)</td>
<td>EX120-STA1-(X1)</td>
<td>SI unit for SYSBUS Wire System (OMRON Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SD kit)</td>
<td>EX120-SSH1-[EX123-SSH1]</td>
<td>SI unit for Satellite I/O Link System (SHARP Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SE kit)</td>
<td>EX120-SPA1</td>
<td>SI unit for MEWIN-F System (Matsushita Electric Works, Ltd.)</td>
<td></td>
</tr>
<tr>
<td>(SF kit)</td>
<td>EX120-SUW1-[EX123-SUW1]</td>
<td>SI unit for 16 point Uni-wire System (NKE Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SG kit)</td>
<td>EX120-SAB1</td>
<td>SI unit for Allen Bradley Remote I/O (RIO) System (Rockwell Automation, Inc.)</td>
<td></td>
</tr>
<tr>
<td>(SH kit)</td>
<td>EX120-SUH1-[EX123-SUH1]</td>
<td>SI unit for 16 point Uni-wire H System (NKE Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SJ kit)</td>
<td>EX120-SSL1-[EX123-SSL1]</td>
<td>16 point S-LINK System (SUNX Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SJ2 kit)</td>
<td>EX120-SSL2-[EX123-SSL2]</td>
<td>8 point S-LINK System (SUNX Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SK kit)</td>
<td>EX120-SFU1-[EX123-SFU1]</td>
<td>F-LINK Mini System (Fuji Electric Co., Ltd.)</td>
<td></td>
</tr>
<tr>
<td>(SK2 kit)</td>
<td>EX120-SDN1 [EX124-SDN1]</td>
<td>SI unit for DeviceNet, CompoBus/D (OMRON Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SR kit)</td>
<td>EX120-SCS1-[EX124-SCS1]</td>
<td>SI unit for 16 point CompoBus/S System (OMRON)</td>
<td></td>
</tr>
<tr>
<td>(SR2 kit)</td>
<td>EX120-SCS2-[EX124-SCS2]</td>
<td>SI unit for 8 point CompoBus/S System (OMRON)</td>
<td></td>
</tr>
<tr>
<td>(SV kit)</td>
<td>EX120-SMJ1-[EX124-SMJ1]</td>
<td>SI unit for CC-LINK System (2 power supply systems) (Mitsubishi Electric Corporation)</td>
<td></td>
</tr>
</tbody>
</table>

Note 1) Suffix -"XP" for dust-protected type SI unit.
Note 2) Dusttight/Low jetproof type (IP65).
Note 3) SBB kit is usable only for dust tight/low jetproof type (IP65).
Note 4) Top entry connector for FU and PU while side entry connector for FS and PS.

<D Side End Plate Assembly>
D side end plate assembly no.

<table>
<thead>
<tr>
<th>Electrical entry</th>
<th>Option</th>
<th>Nil</th>
<th>Common EXH</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>For P kit</td>
<td></td>
<td>Common EXH</td>
</tr>
<tr>
<td>J</td>
<td>For J kit</td>
<td>R</td>
<td>External pilot</td>
</tr>
<tr>
<td>L</td>
<td>For L kit</td>
<td>S</td>
<td>Built-in silencer, direct exhaust</td>
</tr>
<tr>
<td>G</td>
<td>For G kit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>For S kit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1) When both options are specified, indicate as RS.
Note 2) The housing assembly and SI unit of F/P/J/G/S kit are not included.
Note 3) Separately place an order for P, J, G, S kit for 2 to 12 stations/Double wiring.
For Dusttight/Low jetproof type (IP65), please consult with SMC.

<U Side End Plate Assembly>
U side end plate assembly no. (For F/P/J/G/S kits)

<table>
<thead>
<tr>
<th>Electrical entry</th>
<th>Option</th>
<th>Nil</th>
<th>Common EXH</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>For P kit</td>
<td></td>
<td>Common EXH</td>
</tr>
<tr>
<td>J</td>
<td>For J kit</td>
<td>R</td>
<td>External pilot</td>
</tr>
<tr>
<td>S</td>
<td>For S kit</td>
<td>S</td>
<td>Built-in silencer, direct exhaust</td>
</tr>
</tbody>
</table>

Note 1) The S’s fitting assembly is included.
Note 2) The housing assembly and SI unit of F/P/J/G/S kit are not included.
Note 3) Separately place an order for P, J, G, S kit for 2 to 12 stations/Double wiring.
For Dusttight/Low jetproof type (IP65), please consult with SMC.

<Manifold Block Assembly>
Tie-rod (2 pcs.) and lead wire assembly for extensions are attached

<Replacement Parts for Manifold Block>
Replacement Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>VQQ2000-80A-1</td>
<td>Gasket</td>
<td>HNBR</td>
<td>12</td>
</tr>
<tr>
<td>11</td>
<td>VQQ2000-80A-2</td>
<td>Packing</td>
<td>HNBR</td>
<td>12</td>
</tr>
<tr>
<td>12</td>
<td>VQQ2000-80A-3</td>
<td>Clamp screw</td>
<td>Carbon steel</td>
<td>12</td>
</tr>
<tr>
<td>13</td>
<td>VQQ2000-80A-4</td>
<td>Clip</td>
<td>Stainless steel</td>
<td>12</td>
</tr>
</tbody>
</table>

Note) Purchasing order is available in units of 10 pieces.

<Fitting Assembly>
Fitting assembly part no. (For cylinder port)

<table>
<thead>
<tr>
<th>Electrical entry</th>
<th>Port size</th>
<th>Nil</th>
<th>Dusttight</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>For 2 to 12 stations/Double wiring</td>
<td>C4</td>
<td>One-touch fitting for ø4</td>
</tr>
<tr>
<td>P</td>
<td>For 13 to 24 stations/Double wiring</td>
<td>C6</td>
<td>One-touch fitting for ø6</td>
</tr>
<tr>
<td>F</td>
<td>For 2 to 24 stations/Single wiring</td>
<td>C8</td>
<td>One-touch fitting for ø8</td>
</tr>
</tbody>
</table>

Note) Applicable tubing ø4/ø6/ø8
Note) Purchasing order is available in units of 10 pieces.
Exploded View: VQ0000/Plug Lead Unit

(F, P, C, S kit)

For how to increase the stations, refer to the instruction manual.

- Note 1: S kit is composed of a flat ribbon cable housing assembly (AXT100-2-PS20) of SI unit and P kit (20 pins).
- Note 2: Since no connector assembly is included, order it separately. (Refer to page 2-4-216.)
- Note 3: A housing assembly is not used for a C kit.
- Note 4: A DIN rail clamping bracket is attached to each.

<table>
<thead>
<tr>
<th>Tie-rod</th>
<th>U side end block assembly</th>
<th>Manifold block assembly</th>
<th>D side end block assembly</th>
<th>Housing assembly and SI unit (Note 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S kit</td>
<td></td>
<td></td>
<td></td>
<td>Connector assembly</td>
</tr>
<tr>
<td>P kit</td>
<td></td>
<td></td>
<td></td>
<td>The drawing shows PU. (Top entry connector)</td>
</tr>
<tr>
<td>F kit</td>
<td></td>
<td></td>
<td></td>
<td>Connector assembly</td>
</tr>
<tr>
<td>T kit</td>
<td></td>
<td></td>
<td></td>
<td>The drawing shows FU. (Top entry connector)</td>
</tr>
</tbody>
</table>

Note 1: S kit is composed of a flat ribbon cable housing assembly (AXT100-2-PS20) of SI unit and P kit (20 pins).
Note 2: Since no connector assembly is included, order it separately. (Refer to page 2-4-216.)
Note 3: A housing assembly is not used for a C kit.
Note 4: A DIN rail clamping bracket is attached to each.
## Housing Assembly and SI Unit

<table>
<thead>
<tr>
<th>No.</th>
<th>Manifold</th>
<th>Part no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(SA kit)</td>
<td>EX330-S001</td>
<td>General type SI unit (Series EX300)</td>
</tr>
<tr>
<td>2</td>
<td>(SB kit)</td>
<td>EX130-SMB1</td>
<td>SI unit for MELSECNET/ MINI-S3 Data Link System (Mitsubishi Electric Corp.)</td>
</tr>
<tr>
<td>3</td>
<td>(SC kit)</td>
<td>EX130-STA1</td>
<td>SI unit for SYSBUS Wire System (OMRON Corporation)</td>
</tr>
<tr>
<td>4</td>
<td>(SD kit)</td>
<td>EX130-SSH1</td>
<td>SI unit for Satellite I/O Link System (SHARP Corporation)</td>
</tr>
<tr>
<td>5</td>
<td>(SF1 kit)</td>
<td>EX130-SUW1</td>
<td>16 point Uni-wire System (NKE Corporation)</td>
</tr>
<tr>
<td>6</td>
<td>(SH kit)</td>
<td>EX130-SUH1</td>
<td>SI unit for 16 point Uni-wire H System (NKE Corporation)</td>
</tr>
<tr>
<td>7</td>
<td>P kit</td>
<td>AXT100-2-P_2(6)</td>
<td>Flat ribbon cable housing assembly l = Number of pins: 26, 20, 16, 10</td>
</tr>
<tr>
<td>8</td>
<td>F kit</td>
<td>AXT100-2-F_2(6)</td>
<td>D-sub connector housing assembly l = Number of pins: 25, 15</td>
</tr>
<tr>
<td>9</td>
<td>T kit</td>
<td>AXT100-2-TB1(6)</td>
<td>Terminal block assembly (8 terminals)</td>
</tr>
<tr>
<td>10</td>
<td>T kit</td>
<td>AXT100-2-TB2(6)</td>
<td>Terminal block assembly (8 terminals)</td>
</tr>
</tbody>
</table>

Note 1) S kit is composed of a flat ribbon cable housing assembly (AXT100-2-PS20) of ① SI unit and ② P kit (20 pins). Place an order for AXT100-2-PS20 separately.

Note 2) Top/vertical entry connector for FU and PU while side (horizontal) entry connector for FS and PS.

Note 3) Since no connector assembly is included, order it separately. (Refer to page 2-4-216.)

Note 4) In the case of standard specifications and double wiring, ④ is for 1 to ⑤ stations and ⑤ is for 5 to 8 stations.

### D Side End Plate Assembly

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Common exhaust type</td>
<td>HNBR</td>
</tr>
<tr>
<td>S</td>
<td>Built-in silencer, direct exhaust</td>
<td>HNBR</td>
</tr>
</tbody>
</table>

Note) The ③'s fitting assembly is included.

### U Side End Plate Assembly

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Common exhaust type</td>
<td>HNBR</td>
</tr>
<tr>
<td>S</td>
<td>Built-in silencer, direct exhaust</td>
<td>HNBR</td>
</tr>
</tbody>
</table>

### Manifold Block Assembly

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3</td>
<td>With One-touch fitting for ø3.2</td>
<td>HNBR</td>
</tr>
<tr>
<td>C4</td>
<td>With One-touch fitting for ø4</td>
<td>HNBR</td>
</tr>
<tr>
<td>M5</td>
<td>M5 thread</td>
<td>HNBR</td>
</tr>
</tbody>
</table>

### Replacement Parts for Manifold Block

<table>
<thead>
<tr>
<th>No.</th>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>VVQ0000-80A-5-2</td>
<td>Seal</td>
<td>HNBR</td>
<td>12</td>
</tr>
<tr>
<td>10</td>
<td>VVQ0000-80A-5-4</td>
<td>Clip</td>
<td>HNBR</td>
<td>12</td>
</tr>
</tbody>
</table>

Note) A set of parts containing 12 pcs. each is enclosed.

### Fitting Assembly

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3</td>
<td>With One-touch fitting for ø3.2</td>
<td>HNBR</td>
</tr>
<tr>
<td>C4</td>
<td>With One-touch fitting for ø4</td>
<td>HNBR</td>
</tr>
</tbody>
</table>

Note) Purchasing order is available in units of 10 pieces.

### Tie-rod Bolt

<table>
<thead>
<tr>
<th>Stations</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>For 1 station</td>
</tr>
<tr>
<td>2</td>
<td>For 2 station</td>
</tr>
<tr>
<td>16</td>
<td>For 16 station</td>
</tr>
</tbody>
</table>

Note) 2 bolts per one set.
### Exploded View: VQ1000/Plug Lead Unit

**(F, P, T, S kit)**

For how to increase the stations, refer to the instruction manual.

<table>
<thead>
<tr>
<th>Note 2)</th>
<th>Note 3)</th>
<th>Note 4)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Housing assembly and SI unit</th>
<th>D side end block assembly</th>
<th>SUP/EXH block assembly</th>
<th>Manifold block assembly</th>
<th>SUP/EXH block assembly</th>
<th>U side end block assembly</th>
</tr>
</thead>
</table>

#### S kit

Connector assembly

The drawing shows F. (Top entry connector)

#### P kit

Connector assembly

The drawing shows P. (Top entry connector)

#### F kit

Connector assembly

The drawing shows F. (Top entry connector)

#### T kit

Connector assembly

The drawing shows T. (Top entry connector)

---

Note 1) S kit is composed of a flat ribbon cable housing assembly (AXT100-2-PU20) of ① SI unit and ② P kit (20 pins).

Note 2) Since no connector assembly is included, order it separately. (Refer to page 2-4-216.)

Note 3) A housing assembly is not used for a C kit.

Note 4) A DIN rail clamping bracket is attached to each.
**<Housing Assembly and SI Unit>**

**Housing assembly and SI unit no.**

<table>
<thead>
<tr>
<th>No.</th>
<th>Manifold</th>
<th>Part no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(SA kit)</td>
<td>EX321-SD01(-XP)</td>
<td>General type SI unit (Series EX300)</td>
<td></td>
</tr>
<tr>
<td>(SB kit)</td>
<td>EX121-SMB1(-XP)</td>
<td>SI unit for MELSECNET/Mini-S3 Data Link System (Mitsubishi Electric Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SC kit)</td>
<td>EX121-SMA1(-XP)</td>
<td>SI unit for SYSBUS Wire System (OMRON Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SD kit)</td>
<td>EX121-SSH1(-XP)</td>
<td>SI unit for Satellite I/O Link System (SHARP Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SE kit)</td>
<td>EX121-SPA1</td>
<td>SI unit for MEWNET-F* System (Matsushita Electric Works, Ltd.)</td>
<td></td>
</tr>
<tr>
<td>(SF kit)</td>
<td>EX121-SUW1(-XP)</td>
<td>SI unit for 16 point Uniwire System (NKE Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SG kit)</td>
<td>EX121-SAB1(-XP)</td>
<td>SI unit for Allen Bradley Remote I/O (RIO) System (Rockwell Automation, Inc.)</td>
<td></td>
</tr>
<tr>
<td>(SH kit)</td>
<td>EX120-SUH1(-XP)</td>
<td>SI unit for 16 point Uniwire H System (NKE Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SJ1 kit)</td>
<td>EX121-SSL1(-XP)</td>
<td>16 point S-LINK System (SUNX Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SJ2 kit)</td>
<td>EX121-SSL2(-XP)</td>
<td>8 point S-LINK System (SUNX Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SK kit)</td>
<td>EX121-SFU1(-XP)</td>
<td>T-LINK Mini System (Fuji Electric Co., Ltd.)</td>
<td></td>
</tr>
<tr>
<td>(SQ kit)</td>
<td>EX121-SDNT</td>
<td>DeviceNet, CompoBus/D (OMRON Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SR1 kit)</td>
<td>EX121-SCS1(-XP)</td>
<td>OMRON Corporation: CompoBus/S System (16 output points)</td>
<td></td>
</tr>
<tr>
<td>(SR2 kit)</td>
<td>EX121-SCS2(-XP)</td>
<td>OMRON Corporation: CompoBus/S System (8 output points)</td>
<td></td>
</tr>
<tr>
<td>(SV kit)</td>
<td>EX121-SMJ1(-XP)</td>
<td>Mitsubishi Electric Corporation: CC-LINK System</td>
<td></td>
</tr>
</tbody>
</table>

**<Replacement Parts for Manifold Block>**

**Replaceable Parts**

<table>
<thead>
<tr>
<th>No.</th>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>VVQ1000-80A-1</td>
<td>Gasket</td>
<td>HNBR</td>
<td>12</td>
</tr>
<tr>
<td>11</td>
<td>VVQ1000-80A-2-2</td>
<td>O-ring</td>
<td>HNBR</td>
<td>12</td>
</tr>
<tr>
<td>12</td>
<td>VVQ1000-80A-3</td>
<td>Clamp screw</td>
<td>Carbon steel</td>
<td>12</td>
</tr>
<tr>
<td>13</td>
<td>VVQ1000-80A-2-4</td>
<td>Clip</td>
<td>Stainless steel</td>
<td>12</td>
</tr>
</tbody>
</table>

**<Fitting Assembly>**

**Fitting assembly part no. (For cylinder port)**

<table>
<thead>
<tr>
<th>Size</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3</td>
<td>Applicable tubing ø3.2</td>
</tr>
<tr>
<td>C4</td>
<td>Applicable tubing ø4</td>
</tr>
<tr>
<td>C6</td>
<td>Applicable tubing ø6</td>
</tr>
<tr>
<td>M5</td>
<td>With M5 thread</td>
</tr>
</tbody>
</table>

**Fitting assembly part no. (For P, R port)**

<table>
<thead>
<tr>
<th>Size</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C8</td>
<td>Applicable tubing ø8</td>
</tr>
</tbody>
</table>

Note) Purchasing order is available in units of 10 pieces.
Space-saving profile
Clean space-saving design with all pilot valves concentrated to one side with no protrusions in any direction
Space-saving — 40% less
Capacity-saving — 50% less
(In-house comparison)

Compact with large flow capacity
(Ideal for driving cylinders up to ø140)

Outstanding response times and long service life
(Metal seal with indicator light/surge suppressor)
VQ4100 17 mS (Single) 100 million cycles
VQ4200 12 mS (Double)
Accuracy ±3 mS

Built-in
One-touch fittings for easier piping

Enclosure IP65 compliant
Dusttight/Low jetproof type

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

Individual wiring type
<Plug-in type>

<Plug lead type>

System Components
Speed controller: AS420-03, Silencer: AN300-03, SPG (Steel pipe) dia. x Length: 10A x 1 m

∗ 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%
After confirming the gasket is correctly placed under the valve, securely tighten the bolts with the proper torque shown in the table below.

| Proper tightening torque | 0.8 to 1.2 |

---

**Mounting of Valves**

**Caution**

After confirming the gasket is correctly placed under the valve, securely tighten the bolts with the proper torque shown in the table below.

---

**Changing the One-touch Fittings**

**Caution**

The built-in One-touch fittings on the cylinder port side are easily replaceable because of the cassette type. Clip prevents the fittings to come off. After removing the corresponding valve and take out the clip with a screwdriver, etc., then replace the fittings. About mounting the fittings, after inserting the fitting until it stops, then put the clip into the prescribed position.

---

**Lead Wire Connection**

**Plug-in sub-plate (With terminal block)**

- If the junction cover (1) of the sub-plate is removed, you can see the plug-in type terminal block (2) mounted inside the sub-plate.

---

**Caution**

The terminal block is marked as follows. Connect wiring to each of the power supply terminals.

---

**Precautions 1**

Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to page 2-9-2.

---

**Manual Override Operation**

**Warning**

Since connected equipment will be actuated when the manual override is operated, first confirm that conditions are safe.

Non-locking push type (tool required) is standard. As an option, slotted locking type (tool required) is available.

- **Push type (Tool required)**
  - Push down on the manual override button with a small screwdriver until it stops. Release the screwdriver and the manual override will return.

- **Locking type (Tool required)**
  - Push down completely on the manual override button with a small screwdriver. While down, turn clockwise 90° to lock it. Turn it counterclockwise to release it.
Installation/Removal of Light Cover

**Caution**

Installation/Removal of light cover

**Removal**
Open the cover by inserting a small flat head screwdriver into the slot on the side of the pilot assembly (see drawing below), lift the cover out about 1 mm and then pull off. If it is pulled off at an angle, the pilot valve may be damaged or the protective O-ring may be scratched.

**Installation**
Place the cover straight over the pilot assembly so that the pilot valve is not touched, and push it until the cover hook locks without twisting the protective O-ring. (When pushed in, the hook opens and locks automatically.)

![Diagram of light cover installation](image)

Replacement of Pilot Valve

**Caution**

**Removal**
1. Remove the mounting screw that holds the pilot valve using a small screwdriver.
2. When equipped with light, remove the light circuit board which is installed on the pilot valve by pulling it straight off the connector pins.

**Installation**
1. Insert the light circuit board straight onto the connector pins following the guide. If it is pushed in forcibly without following the guide, there is a danger of possibly bending the board contacts.
2. After confirming the gasket is correctly placed under the valve, securely tighten the bolts with the proper torque shown in the table below.

| Proper tightening torque (N·m) | 0.1 to 0.13 |

Note: The mounting of pilot valves is not directional with respect to the A and B sides. However, the light circuit boards’ A side is orange and the B side is green. It must be mounted on the pilot valve in accordance with the mounting indicators. The light will not go on if the mounting is reversed.

![Diagram of pilot valve replacement](image)

Light Circuit Board Part No.

| SOLA | VQZ100-47-A |
| SOLB | VQZ100-47-B |

Note: It can be used with all voltages.

For Plug Lead Type

**Attaching and detaching connectors**

- To attach a connector, hold the lever and connector unit between your fingers and insert straight onto the pins of the solenoid valve so that the lever's pawl is pushed into the groove and locks.
- To detach a connector, remove the pawl from the groove by pushing the lever downward with your thumb, and pull the connector straight out.

Note: Do not pull on the lead wires with excessive force. This can cause faulty and/or broken contacts.

![Diagram of connector attachment and detachment](image)

Internal Wiring Specifications

**Caution**

**Enclosure IP65**

Wires, cables, connectors, etc. used for models conforming to IP65 should also have enclosures equivalent to or stricter rating than IP65.

**How to Calculate the Flow Rate**

For obtaining the flow rate, refer to pages 2-1-8 to 2-1-11.
## Series VQ4000
### Base Mounted
#### Plug-in/Plug Lead Single Unit

### Model

<table>
<thead>
<tr>
<th>Series</th>
<th>Configuration</th>
<th>Model</th>
<th>Port size</th>
<th>Flow characteristics</th>
<th>Response time (ms)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>VQ4000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Single 2 position</td>
<td>Metal seal VQ4110</td>
<td>3/8</td>
<td>$C_{1} = 6.2$, $b = 0.19$</td>
<td>20 or less</td>
<td>0.23 (0.29)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal VQ415L</td>
<td></td>
<td>$C_{2} = 7.2$, $b = 0.43$</td>
<td>25 or less</td>
<td>0.26 (0.32)</td>
</tr>
<tr>
<td></td>
<td>Double 2 position</td>
<td>Metal seal VQ4220</td>
<td></td>
<td>$C_{1} = 6.2$, $b = 0.19$</td>
<td>12 or less</td>
<td>0.28 (0.34)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal VQ425L</td>
<td></td>
<td>$C_{2} = 7.2$, $b = 0.43$</td>
<td>15 or less</td>
<td>0.30 (0.56)</td>
</tr>
<tr>
<td></td>
<td>Closed center 3 position</td>
<td>Metal seal VQ4350</td>
<td></td>
<td>$C_{1} = 5.9$, $b = 0.23$</td>
<td>45 or less</td>
<td>0.30 (0.56)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal VQ4355</td>
<td></td>
<td>$C_{2} = 7.0$, $b = 0.34$</td>
<td>50 or less</td>
<td>0.30 (0.56)</td>
</tr>
<tr>
<td></td>
<td>Exhaust center 3 position</td>
<td>Metal seal VQ4410</td>
<td></td>
<td>$C_{1} = 6.2$, $b = 0.18$</td>
<td>45 or less</td>
<td>0.30 (0.56)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal VQ4415</td>
<td></td>
<td>$C_{2} = 7.0$, $b = 0.38$</td>
<td>50 or less</td>
<td>0.30 (0.56)</td>
</tr>
<tr>
<td></td>
<td>Pressure center 3 position</td>
<td>Metal seal VQ4550</td>
<td></td>
<td>$C_{1} = 6.2$, $b = 0.18$</td>
<td>45 or less</td>
<td>0.30 (0.56)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal VQ4555</td>
<td></td>
<td>$C_{2} = 7.0$, $b = 0.38$</td>
<td>50 or less</td>
<td>0.30 (0.56)</td>
</tr>
<tr>
<td></td>
<td>Double check 3 position</td>
<td>Metal seal VQ4610</td>
<td></td>
<td>$C_{1} = 2.7$, $b = —$</td>
<td>55 or less</td>
<td>0.30 (0.56)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal VQ4615</td>
<td></td>
<td>$C_{2} = 2.8$, $b = —$</td>
<td>62 or less</td>
<td>0.30 (0.56)</td>
</tr>
</tbody>
</table>

Note 1) Value for valve on sub-plate and cylinder port Rc 3/8
Note 2) Based on JIS B 8375-1981 Supply pressure: 0.5 MPa, with indicator light and surge voltage suppressor, clean air. This will change depending on pressure and air quality.

### Standard Specifications

#### Valve construction

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Metal seal</th>
<th>Rubber seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air/Inert gas</td>
<td>Air/Inert gas</td>
<td></td>
</tr>
</tbody>
</table>

#### Valve specifications

| Maximum operating pressure | 1.0 MPa (0.7 MPa) |
| Min. operating pressure   | Single 0.15 MPa, Double 0.15 MPa |
| Ambient and fluid temperature | $-10$ to $50\, ^\circ C$ |

#### Lubrication

- Not required

#### Manual override

- Push type/Locking type (Tool required) Option

#### Shock/Vibration resistance

- Class B or equivalent
- 150/30 m/s²

#### Enclosure

- Dust tight (IP65 compatible)

#### Solenoid specifications

<table>
<thead>
<tr>
<th>Power consumption (Current)</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 VDC</td>
</tr>
<tr>
<td>0.5 W DC (0.5 W DC (21 mA))</td>
</tr>
</tbody>
</table>

#### Note

- 1) Use dry air to prevent condensation when operating at low temperatures.
- 2) 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)
- 3) Values inside ( ) denote the low wattage (0.5 W) specifications.
How to Order Valves

**How to Order Sub-plates**

**VQ4000**

- **Electrical entry**
  - P: Plug-in conduit terminal
  - S: Plug lead

- **Enclosure**
  - Nil: Dust-protected
  - W: Dusttight/Low jetproof type (IP65)

- **Seal**
  - 0: Metal seal
  - 1: Rubber seal

- **Porting specifications**
  - Nil: Side ported
  - B: Bottom ported

- **Coil 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

- **Grommet**
  - G: Lead wire length 0.6 m
  - H: Lead wire length 1.5 m

- **Function**
  - Nil: Standard type (1 W)
  - Y: Low wattage type (0.5 W)
  - R: External pilot

- **Body**
  - 0: Plug-in sub-plate
  - 1: Plug-in
  - 2: Plug lead

- **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
  - 6: 3 position double check

- **Port size**
  - Nil: Without sub-plate (For manifold)
  - 02: Rc 1/4
  - 03: Rc 3/8

Note: For thread standard, refer to page 2-5-39.

Note 1: For bottom ported port size is RC 1/4 only.

Replacement of pilot valve assembly (Voltage)
- Refer to pages 2-5-44 and 2-5-45 for pilot valve assembly part numbers.
- For “How to Replace”, refer to page 2-5-3.

Note)
- 1) Applicable to DC specifications.
- 2) For external pilot specifications, refer to page 2-5-3.
- 3) When two or more symbols are specified, indicate them alphabetically.
Series VQ4000

Plug-in Type

Conduit terminal

2 position single: VQ410

3 position closed center: VQ430

3 position exhaust center: VQ440

3 position pressure center: VQ450

2 position double: VQ420

3 position double check: VQ460

Base Mounted
Plug Lead Type

Grommet

2 position single: VQ415

3 position closed center: VQ435

3 position exhaust center: VQ445

3 position pressure center: VQ455

2 position double: VQ425

3 position double check: VQ465

Plug-in/Plug Lead: Single Unit Series VQ4000

Base Mounted

VQC

SQ

VQ0

VQ4

VQ5

VQZ

VQD

SMC
Series VQ4000
Base Mounted Plug-in Unit

How to Order Manifold

VV5Q 4 1 08 C8 F U1 K

Option
Symbol Option
Nil None
CD (5) Exhaust cleaner: For D side mounting
CU (5) Exhaust cleaner: For U side mounting
K (5) Special wiring specifications (Except double wiring)
N Name plate (T kit only)
SB Direct exhaust with silencer box: Exhaust from both sides (FL kit only)
SD (5) Direct exhaust with silencer box: D side exhaust
SU (5) Direct exhaust with silencer box: U side exhaust
W Enclosure IP65 (Except F kit)

Note 1) When two or more symbols are specified, indicate them alphabetically. Example) -CDK
Note 2) Combination of [C ] and [S ] is not possible.
Note 3) Specify the wiring specifications on the manifold specification sheet. (Except L kit)

Kit type
Control unit Refer to pages 2-5-40 to 2-5-43.

Kit/Electrical entry/Cable length

Cylinder port

C5 With One-touch fitting for ø8
C10 With One-touch fitting for ø10
C12 With One-touch fitting for ø12
02 Rc 1/4
03 Rc 3/8
B Bottom ported Rc 1/4
CM Mixed

(Note) Shown VV5Q41-05C12FD0

Simple specials are available with SMC Simple Special System.
For details about applicable models, please contact SMC.
Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Base model</th>
<th>Type of connection</th>
<th>Porting specifications</th>
<th>Maximum applicable stations</th>
<th>Applicable solenoid valve</th>
<th>5 station weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ4000</td>
<td>V5Q41</td>
<td>2 position metal seal</td>
<td>F kit–D-sub connector, T kit–Terminal block box, L kit–Lead wire, S kit–Serial transmission</td>
<td>F, T kit 12 stations, L kit 16 stations, S kit 10 stations</td>
<td>VQ4300, VQ4301</td>
<td>2.24</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note) For details about inch-size One-touch fittings and other thread standards, refer to page 2-5-39.

Flow Characteristics at the Number of Manifold Stations (Operated individually)

<table>
<thead>
<tr>
<th>Model</th>
<th>Passage/Stations</th>
<th>Station 1</th>
<th>Station 5</th>
<th>Station 10</th>
<th>Station 15</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 position metal seal VQ4400</td>
<td>1 → 4/2 (P → A/B)</td>
<td>C (dm³/(s·bar))</td>
<td>5.9</td>
<td>5.9</td>
<td>5.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b</td>
<td>0.23</td>
<td>0.23</td>
<td>0.23</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cv</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td>4/2 → 5/3 (A/B → EA/EB)</td>
<td>C (dm³/(s·bar))</td>
<td>6.2</td>
<td>6.2</td>
<td>6.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b</td>
<td>0.19</td>
<td>0.19</td>
<td>0.19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cv</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>2 position rubber seal VQ4401</td>
<td>1 → 4/2 (P → A/B)</td>
<td>C (dm³/(s·bar))</td>
<td>6.8</td>
<td>6.8</td>
<td>6.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b</td>
<td>0.31</td>
<td>0.31</td>
<td>0.31</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cv</td>
<td>1.8</td>
<td>1.8</td>
<td>1.8</td>
</tr>
<tr>
<td></td>
<td>4/2 → 5/3 (A/B → EA/EB)</td>
<td>C (dm³/(s·bar))</td>
<td>7.0</td>
<td>7.0</td>
<td>7.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b</td>
<td>0.38</td>
<td>0.38</td>
<td>0.38</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cv</td>
<td>1.9</td>
<td>1.9</td>
<td>1.9</td>
</tr>
</tbody>
</table>

Note) Port size: Rc 3/8

Manifold Option

- Blanking plate assembly VVQ4000-10A-1
- Individual SUP spacer VVQ4000-P-1-02
- Individual EXH spacer VVQ4000-R-1-02
- Interface regulator ARBQ4000-00-P-1
- Throttle valve spacer VVQ4000-20A-1
- SUP stop valve spacer VVQ4000-37A-1
- SUP/EXH block plate VVQ4000-16A
- Release valve spacer VVQ4000-24A-1D
- Double check spacer with residual pressure exhaust VVQ4000-25A-1
- Direct exhaust with silencer box VVQ4000-37A-1
- For exhaust cleaner mounting VVQ4000-40A-1

Note 1) Release valve spacer, built-in silencer (direct exhaust), exhaust cleaner mounting and double check spacer for residual pressure exhaust cannot be combined with external pilot.

Note 2) Can be mounted on L kit only. For other kits, order E type control unit.

(Refer to pages 2-5-40 to 2-5-43.)
Simplification and labor savings for wiring work can be achieved by using a D-sub connector for the electrical connection. Using connector for flat ribbon cable (25P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability. Connector entry can be selected on either the U side or the D side according to the mounting orientation. Maximum stations are 18.

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Port size</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ4000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Side</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>C 8, 10, 12</td>
<td>Max. 18 stations</td>
<td></td>
</tr>
<tr>
<td>Bottom</td>
<td>Rc 1/2</td>
<td>Rc 1/4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rc 1/4, 3/8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**D-Sub Connector Kit (25 pins)**

AXT100-DS25-015
AXT100-DS25-030
AXT100-DS25-050

D-sub connector cable assemblies can be ordered by with manifolds. (Refer to How to Order Manifold.)

**D-Sub Connector Cable Assembly**

- Cable length (L) Assembly part no. Note
- 1.5 m AXT100-DS25-015 Cable 25 cores 24AWG
- 3 m AXT100-DS25-030
- 5 m AXT100-DS25-050

* For other commercial connectors, use a 25 pins type with female connector conforming to MIL-C-24308.

**Connector manufacturers’ example**
- Fujitsu, Ltd.
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Hirose Electric Co., Ltd.

**Electric Characteristics**

<table>
<thead>
<tr>
<th>Item</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Conductor resistance Ω/km, 20°C 65 or less</td>
</tr>
<tr>
<td></td>
<td>Voltage limit VAC, 1 min. 1000</td>
</tr>
<tr>
<td></td>
<td>Insulation resistance MΩ/km, 20°C 5 or less</td>
</tr>
</tbody>
</table>

* Note) The minimum bending radius for D-sub connector cables is 20 mm.

**How to Order Manifold**

**Series**

| VV5Q | 4 | 08 | C8 | F | U | 1 |

- **Manifold**
  - Base Mounted Series VQ4000
  - Plug-in unit

- **Stations**
  - 1 station
  - 18 stations

- **Cylinder port**
  - C8 With One-touch fitting for ø8
  - C10 With One-touch fitting for ø10
  - C12 With One-touch fitting for ø12
  - Rc 1/4
  - Rc 3/8
  - B Bottom ported Rc 1/4
  - CM Mixed

- **Connector entry direction**
  - D D side entry
  - U U side entry

- **Option**
  - Symbol Option
  - Nil None
  - CD Exhaust cleaner: For D side mounting
  - CU Exhaust cleaner: For U side mounting
  - K Special wiring specifications (Except double wiring)
  - SB Direct exhaust with silencer box: Exhaust from both sides
  - SD Direct exhaust with silencer box: D side exhaust
  - SU Direct exhaust with silencer box: U side exhaust

* Note 1) When two or more symbols are specified, indicate them alphabetically.
  - Example) -CDK

* Note 2) Combination of [C ½ ] and [S ½ ] is not possible.
  - Note 3) Specify the wiring specifications on the manifold specification sheet.
  - Note 4) Refer to pages 2-5-40 to 2-5-43 for with control unit.
1. How to order
Indicate option symbol "-K" in the manifold part number and be sure to specify station positions for single or double wiring on the manifold specification sheet.

Special Wiring Specifications
Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station regardless of valve and option types. Mixed single and double wiring is available as an option.

2. Wiring specifications
Connections begin with the A side solenoid of the first station being connected to terminal no. 1, and continue in the order indicated by the arrows in the drawing without skipping any terminals. Maximum stations are 18.

How to Order Valves
Specify the part numbers for valves and options together beneath the manifold base part number.

<Example>
D-sub connector kit with cable (3 m)
V9QC41-3C8F0F2-1 set — Manifold base part no. +VQ4000-5 — Valve part no. (Stations 1 and 2) +VQ4200-5 — 2 sets — Valve part no. (Stations 3 and 4) +VQ4300-5 — 1 set — Valve part no. (Station 5)

Prefix the asterisk to the part nos. of the solenoid valve, etc.
Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.

Note 1) Applicable to DC specifications.
Note 2) Refer to page 2-5-39 for external pilot specification. Combination of external pilot and perfect interface is not possible.
Note 3) When two or more symbols are specified, indicate them alphabetically.
Applicable connector: D-sub connector (25P)
Conforming to MIL-C-24308

2-Rc 1/8
(Pilot EXH port)

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

2n-Rc 1/4, 3/8, C8, C10, C12, 4(A), 2(B) port
Rc 1/4: Rc 1/4 thread
Rc 3/8: Rc 3/8 thread
C8: One-touch fitting for ø8
C10: One-touch fitting for ø10
C12: One-touch fitting for ø1

Connector location on U side (FU)

Connector location on D side (FD)

Stations

Kit (D-sub connector kit)
Bottom ported drawing

Connector location on U side (FU)
Connector location on D side (FD)

2-Rc 1/8
(External pilot port)

L1 = 25n + 63, L2 = 25n + 76
n: Station (Maximum standard 18 stations)

<table>
<thead>
<tr>
<th>n</th>
<th>L1</th>
<th>L2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>88</td>
<td>101</td>
</tr>
<tr>
<td>2</td>
<td>113</td>
<td>128</td>
</tr>
<tr>
<td>3</td>
<td>138</td>
<td>151</td>
</tr>
<tr>
<td>4</td>
<td>163</td>
<td>176</td>
</tr>
<tr>
<td>5</td>
<td>188</td>
<td>201</td>
</tr>
<tr>
<td>6</td>
<td>213</td>
<td>226</td>
</tr>
<tr>
<td>7</td>
<td>238</td>
<td>251</td>
</tr>
<tr>
<td>8</td>
<td>263</td>
<td>276</td>
</tr>
<tr>
<td>9</td>
<td>288</td>
<td>301</td>
</tr>
<tr>
<td>10</td>
<td>313</td>
<td>326</td>
</tr>
<tr>
<td>11</td>
<td>338</td>
<td>351</td>
</tr>
<tr>
<td>12</td>
<td>351</td>
<td>376</td>
</tr>
<tr>
<td>13</td>
<td>376</td>
<td>401</td>
</tr>
<tr>
<td>14</td>
<td>401</td>
<td>426</td>
</tr>
<tr>
<td>15</td>
<td>426</td>
<td>451</td>
</tr>
<tr>
<td>16</td>
<td>451</td>
<td>476</td>
</tr>
<tr>
<td>17</td>
<td>476</td>
<td>501</td>
</tr>
<tr>
<td>18</td>
<td>501</td>
<td>526</td>
</tr>
</tbody>
</table>
**Base Mounted**

**Series VQ4000**

**Kit (Terminal block box kit)**

- Enclosure IP65 compliant
- This type has a small terminal block inside a junction box. The provision of a G 3/4 electrical entry allows connection of conduit fittings.
- Maximum stations are 18.
- 2 stations are used for terminal box mounting.

### Terminal Block Connections

**Step 1. How to remove terminal block cover**
Loosen the 4 mounting screws (M4) and open the terminal block cover.

**Step 2. The diagram on the right shows the terminal block wiring. All stations are provided with double wiring regardless of the valves which are mounted.**
Connect each wire to the power supply side, according to the markings provided inside the terminal block.

**Step 3. How to attach the terminal block cover**
Securely tighten the screws with the torque shown in the table below, after confirming that the gasket is installed correctly.

| Proper tightening torque (N·m) | 0.7 to 1.2 |

**How to Order Manifold**

**VV5Q**

<table>
<thead>
<tr>
<th>Series</th>
<th>VQ4000</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>08</td>
</tr>
<tr>
<td>C8</td>
<td>T</td>
</tr>
<tr>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**Stations**

- O: U side mounting
- D: D side mounting

<table>
<thead>
<tr>
<th>Cylinder port</th>
<th>Symbol</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>C8</td>
<td></td>
<td>Nil</td>
</tr>
<tr>
<td>C10</td>
<td></td>
<td>CD</td>
</tr>
<tr>
<td>C12</td>
<td></td>
<td>CU</td>
</tr>
</tbody>
</table>

**Option**

- Exhaust cleaner: For D side mounting
- Exhaust cleaner: For U side mounting
- Special wiring specifications (Except double wiring)
- Name plate
- Direct exhaust with silencer box: D side exhaust
- Direct exhaust with silencer box: U side exhaust
- IP65 enclosure

**Note 1)** When two or more symbols are specified, indicate them alphabetically. Example: CDK

**Note 2)** Combination of [CD] and [SD] is not possible.

**Note 3)** Specify the wiring specifications on the manifold specification sheet.

**Note 4)** Name plate is inlaid in the terminal block cover.

**Note 5)** Refer to pages 2-5-40 to 2-5-43 for with control unit.
**How to Order Manifold Assembly**

Specify the part numbers for valves and options together beneath the manifold base part number.

**Example**

Terminal block box kit

V5Q41-07C8T0—1 set —Manifold base part no.  1VQ4000-5—2 sets—Valve part no. (Stations 1 and 2)

VQ4200-5—2 sets—Valve part no. (Stations 3 and 4)

VQ4300-5—1 set—Valve part no. (Station 5)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.

---

**Special Wiring Specifications**

Double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station, regardless of valve and option types. The optional specification permits mixture of single and double wiring. However, the maximum number of stations is 16.

1. **How to Order**
   
   Indicate option symbol “K” in the manifold part number and be sure to specify station positions for single or double wiring on the manifold specification sheet.

2. **Wiring specifications**
   
   Connections begin with the A side solenoid of the first station being connected to terminal no. 1, and continue in the order indicated by the arrows in the drawing without skipping any terminals.

---

**Electrical wiring specifications**

- **Note** There is no polarity. It can also be used as a negative common.

---

**How to Order Valves**

**Series**

- **VQ**
  - 4
  - 0
  - 0
  - 0
  - 5

<table>
<thead>
<tr>
<th>Type of actuation</th>
<th>Seal</th>
<th>Function</th>
<th>Enclosure</th>
<th>Manual override</th>
<th>Ligh/Surge voltage suppressor</th>
<th>Coil voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 position single</td>
<td>0</td>
<td>Standard (1 W)</td>
<td>Dust tight</td>
<td>Non-locking push type (Tool required)</td>
<td>Yes</td>
<td>100 VAC (50/60 Hz)</td>
</tr>
<tr>
<td>2 position double</td>
<td>1</td>
<td>Low wattage (0.5 W)</td>
<td>Dust tight/Low jetproof type (IP65)</td>
<td>Locking type (Tool required)</td>
<td>Without light, with surge voltage suppressor</td>
<td>200 VAC (50/60 Hz)</td>
</tr>
<tr>
<td>3 position closed center</td>
<td>0</td>
<td>External pilot</td>
<td></td>
<td></td>
<td></td>
<td>110 VAC (50/60 Hz)</td>
</tr>
<tr>
<td>4 position exhaust center</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>220 VAC (50/60 Hz)</td>
</tr>
<tr>
<td>5 position pressure center</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>24 VDC</td>
</tr>
<tr>
<td>6 position double check</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12 VDC</td>
</tr>
</tbody>
</table>

**Note**

1) Applicable to DC specifications.

2) Refer to page 2-5-39 for external pilot specification. Combination of external pilot and perfect interface is not possible.

3) When two or more symbols are specified, indicate them alphabetically.
Kit (Terminal block box kit)

2n-Rc 1/4, 3/8, C8, C10, C12

- 2n-Rc 1/4: Rc 1/4 thread
- 2n-Rc 3/8: Rc 3/8 thread
- C8: One-touch fitting for ø8
- C10: One-touch fitting for ø10
- C12: One-touch fitting for ø12

Stations

Manual override

Indicator light

U side
When U side mounting (TD)

D side
When D side mounting (TD)

2-Rc 1/8
(Pilot EXH port)

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

2-G 3/4
(Conduit port)

Note) Shown VV5Q41-08C12TO-W
**Bottom ported drawing**

**Dimensions**

Formula $L_1 = 25n + 63$, $L_2 = 25n + 76$

$n$: Station (Maximum standard 18 stations)

* Including 2 stations for terminal box.

<table>
<thead>
<tr>
<th>$n$</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>
</tr>
</thead>
<tbody>
<tr>
<td>$L_1$</td>
<td>138</td>
<td>163</td>
<td>188</td>
<td>213</td>
<td>238</td>
<td>263</td>
<td>288</td>
<td>313</td>
<td>338</td>
<td>363</td>
<td>388</td>
<td>413</td>
<td>438</td>
<td>463</td>
<td>488</td>
<td>513</td>
</tr>
<tr>
<td>$L_2$</td>
<td>151</td>
<td>176</td>
<td>201</td>
<td>226</td>
<td>251</td>
<td>276</td>
<td>301</td>
<td>326</td>
<td>351</td>
<td>376</td>
<td>401</td>
<td>426</td>
<td>451</td>
<td>476</td>
<td>501</td>
<td>526</td>
</tr>
</tbody>
</table>
Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Port size</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ4000</td>
<td>4(A), 2(B) port location</td>
<td>(P), (R1), (R2)</td>
<td>4(A), 2(B)</td>
</tr>
<tr>
<td>Side</td>
<td>C 8, 10, 12</td>
<td>Rc 1/2, 1/4, 3/8</td>
<td>Max. 16 stations</td>
</tr>
<tr>
<td>Bottom</td>
<td>Rc 1/4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Wiring Specifications

Three lead wires are attached to each station regardless of the type of valve which is mounted. The red wire is for COM connection.

Lead Wire Assembly with Connector

<table>
<thead>
<tr>
<th>Lead wire length</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.6 m</td>
<td>VVQ4000-44A-8-</td>
</tr>
<tr>
<td>1.5 m</td>
<td>VVQ4000-44A-15-</td>
</tr>
<tr>
<td>3 m</td>
<td>VVQ4000-44A-30-</td>
</tr>
</tbody>
</table>

Note) Number of stations 1 to 16.

How to Order Manifold

VV5Q 4 1 - 08 - C8 - L - U -

Series

4 VX4000

Manifold

1 Plug-in unit

Station number

01 1 station

16 16 stations

Option

Symbol | Option
-------|---------|
N/T | None |
CD | Exhaust cleaner: For D side mounting |
CU | Exhaust cleaner: For U side mounting |
SB | Direct exhaust with silencer box: Exhaust from both sides |
SD | Direct exhaust with silencer box: D side exhaust |
SU | Direct exhaust with silencer box: U side exhaust |
W | IP65 enclosure |

Note) When two or more symbols are specified, indicate them alphabetically. Example) -CDW
How to Order Valves

**VQ 4**

**Series**

1 2 3 4

1 2 3 4 5 6

0 1

**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
- 6: 3 position double check

**Seal**

- 0: Metal seal
- 1: Rubber seal

**Enclosure**

- Nil: Dust tight
- W: Dust tight/Low jetproof type (IP65)

**Manual override**

- Nil: Non-locking push type (Tool required)
- B: Locking type (Tool required)

**Light/Surge voltage suppressor**

- Nil: Without light, with surge voltage suppressor
- E: Yes

**Function**

- Nil: Standard type (1 W)
- Y: Low wattage type (0.5 W)
- R: External pilot

Note 1: Applicable to DC specification.
Note 2: Refer to page 2-5-39 for external pilot specification.
Combination of external pilot and perfect interface is not possible.
Note 3: When two or more symbols are specified, indicate them alphabetically.

**Coil 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

---

**How to Order Manifold Assembly**

Specify the part numbers for valves and options together beneath the manifold base part number.

**Example**

Lead wire kit with cable (3 m)

<table>
<thead>
<tr>
<th>Valve part no.</th>
<th>Cable length (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ4100-5</td>
<td>3</td>
</tr>
<tr>
<td>VQ4200-5</td>
<td>3</td>
</tr>
<tr>
<td>VQ4300-5</td>
<td>3</td>
</tr>
</tbody>
</table>

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.

---

**Base Mounted**

**Plug-in Unit Series VQ4000**

---

*The drawing shows the electrical entry on the D side.*
*Cable length is measured from the solenoid valve body.*
**Bottom ported drawing**

**Lead wire length**
- $L_u$: 600 mm
- $L_1$: 1500 mm
- $L_2$: 3000 mm

**2n-Rc 1/4 4(A), 2(B) port**

**Electrical entry on U side (LU)**

**Electrical entry on D side (LD)**

**Dimensions**

<table>
<thead>
<tr>
<th>n</th>
<th>Station (Maximum 16 stations)</th>
<th>L1</th>
<th>L2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>68</td>
<td>88</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>113</td>
<td>101</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>138</td>
<td>126</td>
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</tr>
<tr>
<td>4</td>
<td>163</td>
<td>151</td>
<td></td>
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<tr>
<td>5</td>
<td>188</td>
<td>176</td>
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</tr>
<tr>
<td>6</td>
<td>213</td>
<td>201</td>
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<td>7</td>
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<td>9</td>
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<td>10</td>
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<td>12</td>
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<td>13</td>
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<td>14</td>
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<td>15</td>
<td>438</td>
<td>426</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>463</td>
<td>451</td>
<td></td>
</tr>
</tbody>
</table>
**Series VQ4000**

**Kit (Serial transmission unit)**

- The serial transmission system reduces wiring work, while minimizing wiring and saving space.
- The system comes in an type SA (generic for small scale systems) for equipment with a small number of I/O points, or 32 points max., type SB (applicable to Mitsubishi Electric models) for controlling 512 I/O points max., type SC (applicable to OMRON models), type SD (applicable to SHARP models; 504 points max.), type SE (applicable to Fuji Electric models), type SF (applicable to SUNX models), type SG (applicable to OMRON models; 504 points max.), and type SH (applicable to Mitsubishi Electric models) for controlling 512 I/O points max., type SJ (applicable to SUNX models) for small scale systems) for equipment with a small number of I/O points, or 32 points max.
- The system comes in an type SA (generic for small scale systems) for equipment with a small number of I/O points, or 32 points max., type SB (applicable to Mitsubishi Electric models) for controlling 512 I/O points max., type SC (applicable to OMRON models), type SD (applicable to SHARP models; 504 points max.), type SE (applicable to Fuji Electric models), type SF (applicable to SUNX models), type SG (applicable to OMRON models; 504 points max.), and type SH (applicable to Mitsubishi Electric models) for controlling 512 I/O points max., type SJ (applicable to SUNX models) for small scale systems) for equipment with a small number of I/O points, or 32 points max.
- Maximum stations are 18.
- 2 stations are used for serial unit mounting.

- Stations are counted from station 1 on the D side.
- Double wiring (connected to SOL, A and SOL, B) is adopted for the internal wiring of each station, regardless of valve and option types.

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>External power supply</td>
<td>24 VDC +10%,-5%</td>
</tr>
<tr>
<td>Current consumption</td>
<td>SA, SB, SBB, SD, SF, SH, SJ, SK, SQ, SR; 0.1A SC, 0.3A</td>
</tr>
</tbody>
</table>

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ4000</td>
<td>4(A), 2(B) port</td>
<td>C, 8, 10, 12</td>
</tr>
<tr>
<td></td>
<td>port location</td>
<td>Rc 1/2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Max. 18 stations</td>
</tr>
</tbody>
</table>

**Type SA**

With general type SI unit (Series EX300)

**Type SB**

Mitsubishi Electric Corporation MELSECNET/MINI-S3 Data Link System

**Note**

- T unit can be connected with PLC I/O card for serial transmission.
- EX300-TMB5: For models of Mitsubishi Electric Corporation
- EX300-TTA1: For OMRON
- EX300-T001: For Fuji Electric
- EX300-T001: General purpose
- T units have 32 control points per unit
- No. of output points, 16 points

- Master station
- PLC made by Mitsubishi Electric Corporation Series MELSEC-A
- A12S01/T3-S3
- A15S01/T3-S3
- Max. 64 stations, connected to remote I/O stations (Max. 512 points).
- No. of output points, 16 points. No. of stations occupied, 2 stations

*For details on specifications and handling, refer to the separate technical instruction manual.

**How to Order Manifold**

**VV5Q 4 1 08 C8**

**Series**

- 4: VQ4000

**Manifold**

- 1: Plug-in unit

**Cylinder ports**

- C8: With One-touch fitting for ø8
- C10: With One-touch fitting for ø10
- C12: With One-touch fitting for ø12
- 02: Rc 1/4
- 03: Rc 3/8
- B: Bottom ported Rc 1/4
- CM: Mixed

**Option**

- Symbol: Option
- Nil: None
- CD: [ ] Exhaust cleaner: D side mounting
- CU: [ ] Exhaust cleaner for Rc 1: U side exhaust
- K: [ ] Special wiring specifications (Except double wiring)
- SD: [ ] Direct exhaust with silencer box: D side exhaust
- SU: [ ] Direct exhaust with silencer box: U side exhaust
- W: [ ] IP65 enclosure

*Note 1: When two or more symbols are specified, indicate them alphabetically.
*Note 2: Combination of [CD] and [SD] is not possible.
*Note 3: Specify the wiring specifications in the manifold specification sheet.
*Note 4: Refer to pages 2-5-40 to 2-5-43 for with control unit consumption of AC type.
*Note 5: The release valve and the pressure switch on the manifold with control unit are connected to another power supply. Cable length is 0.6 m for L kit.
**Correspondence of SI unit output numbers and solenoid valve coils**

### Wiring example 1
- **Double wiring (Standard)**

### Wiring example 2
- **Single/Double mixed wiring (Option)**

#### Name of terminal block (LED)

| Type SC | OMRON Corporation
| Type SD | SHARP Corporation

#### Description

- **LED**
  - **RUN**: Lights when transmission is normal and PLC is in operation mode
  - **T/R**: Blinks during data transmission/reception
  - **ERR**: ON when transmission is abnormal

#### Note

- **Master station unit**
  - OMRON PLC
  - SYSMAC C(CV) series
    - Types C500-RM201 and C200H-RM201
    - 32 units max., transmission terminal connection (512 points max.)
  - No. of output points, 16 points
- **SHARP Corporation PLC**
  - New Satellite Series W
    - ZW-31LM
    - JW-23LM, JW-31LM
    - Max. 31 units, I/O slave stations connected (504 points max.)
  - No. of output points, 16 points

### How to Order Valves

| VQ 4 | 1 | 0 | 0 | — | 5 |

#### 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
- 6: 3 position double check

#### Seal

- 0: Metal seal
- 1: Rubber seal

#### Enclosure

- **Nil**: Dusttight
- **W**: Dustlight/Low jetproof type (IP65)

#### Manual override

- **Nil**: Non-locking push type (Tool required)
- **B**: Locking type (Tool required)

#### Function

- **Nil**: Standard type (1 W)
- **Y**: Low wattage type (0.5 W)
- **R**: External pilot

#### Coil voltage

- **5**: 24 VDC

### How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

#### Example

- **Serial transmission unit**
  - VQ5041-57C8SA...1 set — Manifold base part no.
  - VQ4100-5...2 sets — Valve part no. (Stations 1 and 2)
  - VQ4200-5...2 sets — Valve part no. (Stations 3 and 4)
  - VQ4300-5...1 set — Valve part no. (Station 5)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Enter in order starting from the first station on the D side.
When entry of part numbers becomes complicated, indicate in the manifold specification sheet.

![Manifold Base](image)
**Base Mounted**

**Series VQ4000**

**Kit (Serial transmission unit)**

**Dimensions**

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>138</td>
<td>163</td>
<td>188</td>
<td>213</td>
<td>238</td>
<td>263</td>
<td>288</td>
<td>313</td>
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<td>413</td>
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<td>463</td>
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<td></td>
</tr>
<tr>
<td>L2</td>
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<td>451</td>
<td>476</td>
<td>501</td>
<td>526</td>
<td></td>
</tr>
</tbody>
</table>

Formula L1 = 25n + 63, L2 = 25n + 76

n: Station (Maximum standard 18 stations)

* Including 2 stations for mounting SI unit box.

**Note:** In the case of EX124 for SI unit, conduit port (G 1/2) will be 4 locations.

**Note:** Shown VV5Q41-08C12SQ-W
Formula $L_1 = 25n + 63$, $L_2 = 25n + 76$

**Dimensions**

<table>
<thead>
<tr>
<th>Station (Maximum standard 18 stations)</th>
<th>Including 2 stations for mounting SI unit box.</th>
</tr>
</thead>
<tbody>
<tr>
<td>$n$</td>
<td>$L_1$</td>
</tr>
<tr>
<td>1</td>
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<td>2</td>
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<td>15</td>
<td>486</td>
</tr>
<tr>
<td>16</td>
<td>513</td>
</tr>
<tr>
<td>17</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td></td>
</tr>
</tbody>
</table>
**Applicable network:** DeviceNet/PROFIBUS-DP

- The serial transmission system reduces wiring work, while minimizing wiring and saving-space.

**SI unit for DeviceNet/PROFIBUS**
As a slave for DeviceNet/PROFIBUS, it is possible to control ON/OFF of a solenoid valve with the maximum of 32 points. Furthermore, by connecting a discrete input block, it is possible to input the sensor signal for 32 points at the maximum.

**Input block**
Meaning of an expansion block, connecting with SI unit, for sensor-inputting for auto switches, etc. Sensor-input is available up to 8 per one input block. By the NPN/PNP switch, it is able to adjust COM to sensor.

**Details in Connector**

- **Input block**
- **SI unit (DeviceNet)**
- **SI unit (PROFIBUS-DP)**

**Communication connector (PROFIBUS-DP):**
Made by CONINVERS GmbH RC-2RS1N12 12 pins
Cable side connector example:
Made by Siemens AG 6ES5 760-2CB11

- **Pin no. 3, 5, 7, 8, 10 and 11 marked with are open.**
- **Connector’s shape and pin assignment is interchangeable with ET200C made by Siemens AG.**

**How to Order Manifold**

**VV5Q 4 1 – 08 C8 S D QW 1 W**

- **Series VQ4000**
- **Manifold**
- **Stations**
  - 01 1 station
  - 16 16 stations
- **Cylinder ports**
  - Symbol
  - Port size
    - C8 With One-touch fitting for ø8
    - C10 With One-touch fitting for ø10
    - C12 With One-touch fitting for ø12
    - O2 Rc 1/4
    - O3 Rc 3/8
    - B Bottom ported Rc 1/4
    - CM Mixed

**Kit**
Serial transmission kit

**SI unit COM**
- Nil With no SI unit, or input unit (In the case of SDOW)
- 0 Without input unit
- 1 With 1 input unit
- 2 With 2 input units
- 3 With 2 input units
- 4 With 4 input units

- Nil +COM DeviceNet (SDQW)
- N –COM Profinbus DP (SDNWN)

**Note:** Only +COM is available for DeviceNet. Order a mounting valve with +COM. Since PROFIBUS is –COM only, order –COM for valves to be mounted.
### Details in Connector

- **Input connector:** M12 5 pins (XS2F compatible made by OMRON Corp.) x 8 pcs.
  
  Cable side connector example: XS2G made by OMRON Corp.

- **Power source connector:** Series 723 (made by Franz Binder GmbH & Co. KG) 5 pins (72309-0115-00-05)
  
  Cable side connector example: Franz Binder GmbH & Co. KG 72309-0114-70-15, etc.

  + DIN type 5 pins

- **Communication connector (DeviceNet):** M12 5 pins (for DeviceNet compliant)
  
  Example of corresponding cable assemblies with connector: OMRON Corporation: DCA1-5CN05F1
  Karl Lumberg GmbH & Co. KG: RKT5-56

### How to Order Valves

**Series:** VQ4000

<table>
<thead>
<tr>
<th>Type of actuation</th>
<th>VQC</th>
<th>SQ</th>
<th>VQ0</th>
<th>VQ4</th>
<th>VQ5</th>
<th>VQZ</th>
<th>VQD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2 position single</td>
<td>SW+</td>
<td>SV24V</td>
<td>W</td>
<td>Drained/Shield</td>
<td>1</td>
<td>24 VDC</td>
</tr>
<tr>
<td>2</td>
<td>2 position double</td>
<td>SW-</td>
<td>SV0V</td>
<td>W</td>
<td>Circuit power supply +</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3 position closed center</td>
<td>SIGNAL-n</td>
<td>V-</td>
<td>W</td>
<td>Circuit power supply –</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>3 position exhaust center</td>
<td>SIGNAL+n</td>
<td>CAN_H</td>
<td>N</td>
<td>Signal H</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>3 position pressure center</td>
<td>PE</td>
<td>CAN_L</td>
<td>N</td>
<td>Signal L</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>3 position double check</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Seal:**

- 0: Metal seal
- 1: Rubber seal

**Number of pins:** 5

### How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

**Example:**

#### Serial transmission unit

- **VQ401-06DS:01W**
  - Manifold base part no.
  - VQ4100-5W**
    - Valve part no. (Stations 1 and 2)
  - VQ4200-5W**
    - Valve part no. (Stations 3 and 4)
  - VQ4300-5W**
    - Valve part no. (Station 5)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.

---

**Notes:**

1. Applicable to DC specifications.
2. For external pilot specifications, refer to page 2-5-39. Combination of the external pilot and perfect interface is not possible.
3. When two or more symbols are specified, indicate them alphabetically.

---

**Table:**

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SV24V</td>
<td>Dusttight/ Low jetproof type (IP65)</td>
</tr>
<tr>
<td>2</td>
<td>SV0V</td>
<td>Dusttight/ Low jetproof type (IP65)</td>
</tr>
<tr>
<td>3</td>
<td>PE</td>
<td>Dusttight/ Low jetproof type (IP65)</td>
</tr>
<tr>
<td>4</td>
<td>SW24V</td>
<td>Dusttight/ Low jetproof type (IP65)</td>
</tr>
<tr>
<td>5</td>
<td>SW0V</td>
<td>Dusttight/ Low jetproof type (IP65)</td>
</tr>
</tbody>
</table>

**Input connector:** M12 5 pins (XS2F compatible made by OMRON Corp.) x 8 pcs.

Cable side connector example: XS2G made by OMRON Corp.

**Communication connector (DeviceNet):** M12 5 pins (for DeviceNet compliant)

Example of corresponding cable assemblies with connector: OMRON Corporation: DCA1-5CN05F1
Karl Lumberg GmbH & Co. KG: RKT5-56

**Description Function**

<table>
<thead>
<tr>
<th>Description</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW+</td>
<td>Sensor power supply +</td>
</tr>
<tr>
<td>SW-</td>
<td>Sensor power supply –</td>
</tr>
<tr>
<td>SIGNAL+n</td>
<td>Sensor input signal</td>
</tr>
<tr>
<td>SIGNAL-n</td>
<td>Sensor input signal</td>
</tr>
<tr>
<td>PE</td>
<td>Protective sensor ground</td>
</tr>
</tbody>
</table>

---

**Caution:**

When an enclosure equivalent to IP65 is required, place a waterproof cover on the unused input connector. For waterproof cover, order it separately.

Example: OMRON Corp. XS2Z-12
**Kit (Serial transmission unit) for I/O**

**Base Mounted**

**Series VQ4000**

---

### Indicator Unit (LED) Descriptions and Functions

#### SI Unit (DeviceNet)

**Description**  
- PWR(V): ON when solenoid valve power supply is turned ON  
- PWR: ON when DeviceNet circuit power supply input is turned ON  
- MOD/NET: OFF: Power supply off, off line, or when checking duplication of MAC_ID  
- Green blinking: Waiting for connection (On line)  
- Green ON: Connection established (On line)  
- Red blinking: Connection time out (Minor communication abnormality occurs)  
- Red ON: MAC_Di duplication error, or BUSOFF error (Major communication abnormality occurs)

#### SI Unit (PROFIBUS-DP)

**Description**  
- PWR: ON when solenoid valve power supply is turned ON OFF: When the power supply voltage is less than 19 V  
- RUN: ON when operating (SI unit power supply is ON)  
- DIA: ON when self-diagnosis device detects abnormality  
- BF: ON for BUS abnormality

#### Input block

**Description**  
- PWR: ON when sensor power is turned ON OFF: When short circuit protection is working  
- 0 to 7: ON when each sensor input goes ON

---

**Dimensions**  
Formula L1 = 25n + 63, L2 = 25n + 198  

<table>
<thead>
<tr>
<th>n</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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</thead>
<tbody>
<tr>
<td>L1</td>
<td>113</td>
<td>138</td>
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<td>413</td>
<td>438</td>
<td>463</td>
<td></td>
</tr>
<tr>
<td>L2</td>
<td>248</td>
<td>273</td>
<td>298</td>
<td>323</td>
<td>348</td>
<td>373</td>
<td>398</td>
<td>423</td>
<td>448</td>
<td>473</td>
<td>498</td>
<td>523</td>
<td>548</td>
<td>573</td>
<td>598</td>
<td></td>
</tr>
</tbody>
</table>

---

**Table of SI Unit (DeviceNet) Descriptions and Functions**

<table>
<thead>
<tr>
<th>Description</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>PWR(V)</td>
<td>ON when solenoid valve power supply is turned ON</td>
</tr>
<tr>
<td>PWR</td>
<td>ON when DeviceNet circuit power supply input is turned ON</td>
</tr>
</tbody>
</table>
| MOD/NET     | OFF: Power supply off, off line, or when checking duplication of MAC_ID  
- Green blinking: Waiting for connection (On line)  
- Green ON: Connection established (On line)  
- Red blinking: Connection time out (Minor communication abnormality occurs)  
- Red ON: MAC_Di duplication error, or BUSOFF error (Major communication abnormality occurs) |
Mounting hole for 2-M5

Min. 0 to max 4 unit (0 to 216 mm)

Dimensions

<table>
<thead>
<tr>
<th>n</th>
<th>1</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>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>113</td>
<td>138</td>
<td>163</td>
<td>188</td>
<td>213</td>
<td>238</td>
<td>263</td>
<td>288</td>
<td>313</td>
<td>338</td>
<td>363</td>
<td>388</td>
<td>413</td>
<td>438</td>
<td>463</td>
<td></td>
</tr>
<tr>
<td>L2</td>
<td>302</td>
<td>327</td>
<td>352</td>
<td>377</td>
<td>402</td>
<td>427</td>
<td>452</td>
<td>477</td>
<td>502</td>
<td>527</td>
<td>552</td>
<td>577</td>
<td>602</td>
<td>627</td>
<td>652</td>
<td></td>
</tr>
</tbody>
</table>

* In the case of 2 pcs. DI unit, 105 mm will be added per 2 pcs.

Formula L1 = 25n + 63, L2 = 25n + 252

n: Stations
Series VQ4000
Base Mounted
Plug Lead Unit: C Kit (Connector kit)

How to Order Manifold

VV5Q 4 5 08 C8 W

Control unit
Refer to pages 2-5-40 to 2-5-43.

Kit type
Refer to page 2-6-2 (Grommet type) for wiring specifications.

How to Order Valves

VQ4 1 5 0 5 G

Enclosure
Nil
Dusttight
Jetproof type (IP65)

Manual override
Nil: Non-locking push type
B: Locking type

Light/Surge voltage suppressor
Nil
Yes

Electrical entry
G
Lead wire length 0.6 m
H
Lead wire length 1.5 m

How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

<Example>
Connector kit
WVQ45-6SC12C—2 sets —Manifold base part no.
+VQ4150-5G—2 sets —Valve part no. (Stations 1 and 2)
+VQ4250-5G—2 sets —Valve part no. (Stations 3 and 4)
+VQ4350-5G—2 sets —Valve part no. (Station 5)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Simple specials are available with SMC Simple Special System.
For details about applicable models, please contact SMC.
Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Base model</th>
<th>Type of connection</th>
<th>Porting specifications</th>
<th>Maximum applicable stations</th>
<th>Applicable solenoid valve</th>
<th>5 station weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ4000</td>
<td>VV5Q45----</td>
<td>■ C kit–Grommet</td>
<td>Port size (Note)</td>
<td>2 to 16 stations</td>
<td>VQ4□50</td>
<td>2.0</td>
</tr>
</tbody>
</table>

Note) For details about inch-size One-touch fittings and other thread standards, refer to page 2-5-39.

Flow Characteristics at the Number of Manifold Stations (Operated individually)

<table>
<thead>
<tr>
<th>Model</th>
<th>Passage/Stations</th>
<th>Station 1</th>
<th>Station 5</th>
<th>Station 10</th>
<th>Station 15</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 position metal seal VQ4□50</td>
<td>1 → 4/2 (P → A/B)</td>
<td>C [dm³/(s·bar)]</td>
<td>5.9</td>
<td>5.9</td>
<td>5.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b</td>
<td>0.23</td>
<td>0.23</td>
<td>0.23</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cv</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td>4/2 → 5/3 (A/B → EA/EB)</td>
<td>C [dm³/(s·bar)]</td>
<td>6.2</td>
<td>6.2</td>
<td>6.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b</td>
<td>0.19</td>
<td>0.19</td>
<td>0.19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cv</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>2 position rubber seal VQ4□51</td>
<td>1 → 4/2 (P → A/B)</td>
<td>C [dm³/(s·bar)]</td>
<td>6.8</td>
<td>6.8</td>
<td>6.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b</td>
<td>0.31</td>
<td>0.31</td>
<td>0.31</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cv</td>
<td>1.8</td>
<td>1.8</td>
<td>1.8</td>
</tr>
<tr>
<td></td>
<td>4/2 → 5/3 (A/B → EA/EB)</td>
<td>C [dm³/(s·bar)]</td>
<td>7.0</td>
<td>7.0</td>
<td>7.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b</td>
<td>0.38</td>
<td>0.38</td>
<td>0.38</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cv</td>
<td>1.9</td>
<td>1.9</td>
<td>1.9</td>
</tr>
</tbody>
</table>

Note) Port size: Rc 3/8

Manifold Option

Blanking plate assembly
VVQ4000-10A-5

Individual SUP spacer
VVQ4000-P-5-02 03

Individual EXH spacer
VVQ4000-R-5-02 03

• Refer to pages 2-5-34 to 2-5-38 for detail dimensions of each option. For replacement parts, refer to page 2-5-47.
• Refer to pages 2-5-40 to 2-5-43 for control unit.

Throttle valve spacer
VVQ4000-20A-5

SUP stop valve spacer
VVQ4000-37A-5

SUP/EXH block plate
VVQ4000-16A

Interface regulator
ARBQ4000-00-8-5

Release valve spacer
VVQ4000-24A-5D (Note)

Double check spacer with residual pressure exhaust
VVQ4000-25A-5

Direct exhaust with silencer box
[-S] (Note)

For exhaust cleaner mounting
[-C] (Note)

Note) Release valve spacer, built-in silencer (direct exhaust), exhaust cleaner mounting style and perfect double check spacer for residual pressure exhaust cannot be combined with external pilot.
**Bottom ported drawing**

**Dimensions**

Formula: \( L_1 = 25n + 63 \), \( L_2 = 25n + 76 \), \( n \): Station (Maximum 16 stations)

<table>
<thead>
<tr>
<th>Station</th>
<th>L1</th>
<th>L2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>88</td>
<td>101</td>
</tr>
<tr>
<td>2</td>
<td>113</td>
<td>126</td>
</tr>
<tr>
<td>3</td>
<td>138</td>
<td>151</td>
</tr>
<tr>
<td>4</td>
<td>163</td>
<td>176</td>
</tr>
<tr>
<td>5</td>
<td>188</td>
<td>201</td>
</tr>
<tr>
<td>6</td>
<td>213</td>
<td>226</td>
</tr>
<tr>
<td>7</td>
<td>238</td>
<td>251</td>
</tr>
<tr>
<td>8</td>
<td>263</td>
<td>276</td>
</tr>
<tr>
<td>9</td>
<td>288</td>
<td>301</td>
</tr>
<tr>
<td>10</td>
<td>313</td>
<td>326</td>
</tr>
<tr>
<td>11</td>
<td>338</td>
<td>351</td>
</tr>
<tr>
<td>12</td>
<td>363</td>
<td>376</td>
</tr>
<tr>
<td>13</td>
<td>388</td>
<td>401</td>
</tr>
<tr>
<td>14</td>
<td>413</td>
<td>426</td>
</tr>
<tr>
<td>15</td>
<td>438</td>
<td>451</td>
</tr>
<tr>
<td>16</td>
<td>463</td>
<td>476</td>
</tr>
</tbody>
</table>
Manifold Option Parts

Blanking plate assembly

VVQ4000-10A-1 (Plug-in type)
VVQ4000-10A-5 (Plug lead type)
It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.

Individual SUP spacer

VVQ4000-P-1-\(\frac{50}{115.5}\) (Plug-in type)
VVQ4000-P-5-\(\frac{50}{115.5}\) (Plug lead type)
By mounting individual SUP spacers on a manifold block, it is possible to provide individual supply ports for each valve.

Individual EXH spacer

VVQ4000-R-1-\(\frac{50}{115.5}\) (Plug-in type)
VVQ4000-R-5-\(\frac{50}{115.5}\) (Plug lead type)
By mounting individual EXH spacers on a manifold block, exhaust ports can be provided individually for each valve. (Common EXH type)
Throttle valve spacer

VVQ4000-20A-1 (Plug-in type)
VVQ4000-20A-5 (Plug-lead type)

A throttle valve spacer is mounted on a manifold block to control cylinder speed by throttling exhaust air flow.

SUP stop valve spacer

VVQ4000-37A-1 (Plug-in type)
VVQ4000-37A-5 (Plug-lead type)

A SUP stop valve spacer is mounted on a manifold block, making it possible to individually shut off supply air to each valve.

Release valve spacer: For D side mounting

VVQ4000-24A-1D (Plug-in type)
VVQ4000-24A-5D (Plug-lead type)

Combination of VQ41□□ (Single) and release valve spacer can be used as air release valve. Note 1) Mounting on 2 position double and 3 position valve is not possible. Note 2) Can be mounted on L kit only. For other kits, order E type control unit. (Refer to pages 2-5-40 to 2-5-43.)

SUP/EXH block plate

VVQ4000-16A

When different pressures, high and low, are supplied to manifold, a SUP block plate is inserted between the stations under different pressures.
**Base Mounted**

**Series VQ4000**

**Manifold Option Parts**

**Direct exhaust with silencer box**

- **VV5Q4 ¾--□□□--SB (Exhaust from both sides)**
- **VV5Q4 ¾--□□□--SD (D side exhaust)**
- **VV5Q4 ¾--□□□--SU (U side exhaust)**

The EXH outlet is placed on the top side of the manifold end plate. The built-in silencer provides highly effective noise reduction.

(Noise reduction of 35 dB or more)

**Note** If a lot of drainage is generated at air supply source, both of exhaust air and drainage are exhausted.

**Double check spacer with residual pressure exhaust**


Can hold an intermediate cylinder position for an extended time.

If the double check spacer with a built-in double check valve is combined, it will enable the cylinder to stop in the intermediate stroke and maintain its position for a long time without being affected by the leakage between the spools.

Besides, combination between 2 position solenoid valve (VQ4□□□□) and double check spacer can’t hold an intermediate position, but can prevent dropping at the cylinder stroke end.

**Specifications**

<table>
<thead>
<tr>
<th>Application</th>
<th>Intermediate stop</th>
<th>Drop prevention</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ4□□□□</td>
<td>1(P)</td>
<td>5(R1)</td>
</tr>
<tr>
<td></td>
<td>5(R1)</td>
<td>230</td>
</tr>
<tr>
<td></td>
<td>3(RU)</td>
<td>or less</td>
</tr>
<tr>
<td>VQ4□□□□</td>
<td>1(P)</td>
<td>5(R1)</td>
</tr>
<tr>
<td></td>
<td>5(R1)</td>
<td>230</td>
</tr>
<tr>
<td></td>
<td>3(RU)</td>
<td>or less</td>
</tr>
</tbody>
</table>

- **Leakage N cm³/min**
  - **Solenoid one side energized**
    - 4(A) 5(R1) 230 or less
  - **Both solenoids energized**
    - 2(B) 3(RU) 0

- **Supply pressure: 0.5 MPa**

**Caution**

**Handling Precautions**

- Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping in the middle for a long time. Check for leakage using a neutral household detergent, such as dish washing soap. Also, check the cylinder sealing and piston seal for leakage.
- Since One-touch fittings allow slight air leakage, screw piping is recommended when stopping the cylinder in the middle for a long time.
- If exhaust side of double check spacer is narrowed down, this causes a decrease in intermediate stop accuracy and may malfunction.
- Combining perfect interface with 3 position valves “VQ4□□□□” will not work.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.
- Combining double check spacer with external pilot will not work.
**Manifold mounted exhaust cleaner**

**VV5Q4\[1\]□□□□CD (D side mounting)**  
**VV5Q4\[2\]□□□□CU (U side mounting)**

An adapter plate for exhaust cleaner mounting is provided on the top of the manifold end plate. The exhaust cleaner collects drainage and oil mist (99.9% or more) and is highly effective for noise reduction. (Noise reduction of 35 dB or more)

### Applicable exhaust cleaners

**AMC610-10 (Port size Rc 1)**

- **Note 1**) Exhaust cleaner AMC610-10 is not attached. (Order it separately.)
- **Note 2**) Mount so that the exhaust cleaner is at the lower side.
- **Note 3**) For details about the exhaust cleaner, refer to Best Pneumatics vol.5.

### Dimensions

**Formula L1 = 25n + 63, L2 = 25n + 76**  

<table>
<thead>
<tr>
<th>L</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>88</td>
<td>113</td>
<td>138</td>
<td>163</td>
<td>188</td>
<td>213</td>
<td>238</td>
<td>263</td>
</tr>
<tr>
<td>L2</td>
<td>101</td>
<td>126</td>
<td>151</td>
<td>176</td>
<td>201</td>
<td>226</td>
<td>251</td>
<td>276</td>
</tr>
</tbody>
</table>

**Formula L1 = 25n + 63, L2 = 25n + 76**  

<table>
<thead>
<tr>
<th>L</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>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>288</td>
<td>313</td>
<td>338</td>
<td>363</td>
<td>388</td>
<td>413</td>
<td>436</td>
<td>463</td>
</tr>
<tr>
<td>L2</td>
<td>301</td>
<td>326</td>
<td>351</td>
<td>376</td>
<td>401</td>
<td>426</td>
<td>467</td>
<td>476</td>
</tr>
</tbody>
</table>

---

**Plug-in type**

**Lead wire length**
- L0: 600 mm
- L1: 1500 mm
- L2: 3000 mm

**Plug lead type**

**Station number**
- U side entry (LU)
- D side entry (LD)

**Indicator light**
- **U side**
- **D side**

**Manual override**
- **U side**
- **D side**

**AMC610-10 Exhaust cleaner**

**2-G Rc 3/4 Electrical entry**

**2-Rc 1/2 (Pilot EXH port)**
Manifold Option Parts

Interface regulator (P, A, B port regulation)
ARBQ4000-00-□-1 (Plug-in type)
ARBQ4000-00-□-5 (Plug lead type)

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

Specifications

<table>
<thead>
<tr>
<th>Specifications</th>
<th>ARBQ40000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interface regulator</td>
<td>ARBQ400000</td>
</tr>
<tr>
<td>Regulating port</td>
<td>A B P</td>
</tr>
<tr>
<td>Applicable solenoid valve</td>
<td>Plug-in</td>
</tr>
<tr>
<td>Maximum operating pressure</td>
<td>1.0 MPa</td>
</tr>
<tr>
<td>Set pressure range</td>
<td>0.05 to 0.85 MPa</td>
</tr>
<tr>
<td>Fluid</td>
<td>Air</td>
</tr>
<tr>
<td>Ambient and fluid temperature</td>
<td>–5 to 60°C (No freezing)</td>
</tr>
<tr>
<td>Port size for connection of pressure gauge</td>
<td>M5 x 0.8</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>0.33 0.30 0.33 0.30 0.33 0.30</td>
</tr>
<tr>
<td>Effective area at supply side (mm²)</td>
<td>P → A 15 31 14</td>
</tr>
<tr>
<td>Effective area at exhaust side (mm²)</td>
<td>A → EA 18 40 40</td>
</tr>
</tbody>
</table>

Note 1) Set the pressure within the operating pressure range of the solenoid valve.
Note 2) Operate an interface regulator only by applying pressure from the “P” port of the base, except when using it as a reverse pressure valve. Further, it cannot be used with reduced pressure at port P.
Note 3) When using a perfect spacer, assemble a valve, a spacer regulator and a perfect spacer in this order to use it.
Note 4) When using in A port regulation, B port regulation by closed center, since there is a problem in its operation, please contact SMC.
Note 5) Dust tight/Low jetproof enclosure (IP65) is not available with interface regulator.

How to Order

<table>
<thead>
<tr>
<th>Solenoid Valve</th>
<th>Interface regulator</th>
<th>Regulating port</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ4□□0□ (Plug-in type)</td>
<td>ARBQ4000-00-□-1</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>ARBQ4000-00-□-1</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>ARBQ4000-00-□-1</td>
<td>P</td>
</tr>
<tr>
<td>VQ4□□5□ (Plug lead type)</td>
<td>ARBQ4000-00-□-5</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>ARBQ4000-00-□-5</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>ARBQ4000-00-□-5</td>
<td>P</td>
</tr>
</tbody>
</table>

Flow Characteristics

<table>
<thead>
<tr>
<th>Conditions Inlet pressure: 0.7 MPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARBQ40000-00-A</td>
</tr>
</tbody>
</table>

Pressure Characteristics

| Conditions Inlet pressure: 0.7 MPa Outlet pressure: 0.2 MPa Flow rate: 20 l/min (ANR) |
|----------------------------------|----------------------------------|----------------------------------|
| ARBQ40000-00-P (P → A)           | ARBQ40000-00-P (P → B)           | ARBQ40000-00-P (P → B)           |

Note 1) Set the pressure within the operating pressure range of the solenoid valve.
Note 2) Operate an interface regulator only by applying pressure from the “P” port of the base, except when using it as a reverse pressure valve. Further, it cannot be used with reduced pressure at port P.
Note 3) When using a perfect spacer, assemble a valve, a spacer regulator and a perfect spacer in this order to use it.
Note 4) When using in A port regulation, B port regulation by closed center, since there is a problem in its operation, please contact SMC.
Note 5) Dust tight/Low jetproof enclosure (IP65) is not available with interface regulator.
**Option**

**External Pilot Specifications**
- When the supply air pressure is:
  - lower than the required minimum operating pressure 0.15 to 0.2 MPa,
  - opposite air supply (R port supply), cylinder supply (A and B port supply),
  - used for vacuum specifications (please contact SMC),
- it can be used for external pilot specifications.
- Order a valve by adding the external pilot specification [R] to the part number.
- External pilot is available as standard for manifolds and options.
- Internal/external pilot can be mounted in a manifold.

**Inch-size One-touch Fittings**
Valve with inch size One-touch fittings is shown below.

**How to Order Manifold**

**Series VQ4000**

**External Pilot Specifications**

<table>
<thead>
<tr>
<th>Valve construction</th>
<th>Metal seal</th>
<th>Rubber seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating pressure range</td>
<td>Vacuum to 1.0 MPa</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>0.2 to 1.0 MPa (0.2 to 0.7 MPa)</td>
<td></td>
</tr>
<tr>
<td>Double</td>
<td>0.15 to 1.0 MPa (0.15 to 0.7 MPa)</td>
<td></td>
</tr>
<tr>
<td>3 position</td>
<td>0.2 to 1.0 MPa (0.2 to 0.7 MPa)</td>
<td></td>
</tr>
</tbody>
</table>

**Release valve spacer**

**Direct exhaust with silencer box**

**For exhaust cleaner mounting**

**Manifold with control unit**

**Double check spacer with residual pressure exhaust**

**Note**
Values inside ( ) denote the low wattage (0.5 W) specifications.

**Combination of manifold options shown below and external pilot specification is not possible.**

**How to Order Manifold**

**VQ4100**

**How to Order Sub-plates and Options (Example)**

**International Thread Standards Other than Rc**
Rc specifications are standard for all ports, however, NPT, NPTF and G are available for international markets.
Add the appropriate symbol following the port size in the standard part number.

**How to Order Manifold**

**VQ5Q41**

**How to Order Single Valves (Example)**

**Note**
Possible to mix mounting of internal and external pilot.

**Pressure Specifications**

**Thread type (P, R and A, B port)**

**Thread type (P, R port)**

**Thread type**

**Port size**

**Sub-plate**

**Manifold**

**Release valve spacer**

**Direct exhaust with silencer box**

**For exhaust cleaner mounting**

**Control unit model no.**

**Double check spacer with residual pressure exhaust**

**Note**
Possible to mix mounting of internal and external pilot.

**International Thread Standards Other than Rc**
Rc specifications are standard for all ports, however, NPT, NPTF and G are available for international markets.
Add the appropriate symbol following the port size in the standard part number.

**How to Order Manifold**

**VQ5Q41**

**How to Order Single Valves (Example)**

**Note**
Possible to mix mounting of internal and external pilot.
## Manifold with Control Unit

- Mounting air filter, regulator, pressure switch for air release valve on manifold as unit is possible and permits piping labor savings.
- Maximum number of stations depends on each kit. Refer to manifold specifications.
- 2 stations are used for control unit mounting. (1 station is used for E type.)

### Caution

In the case of air filters with auto-drain or manual drain, mount so that the air filter is at the bottom.

### Manifold Specifications

<table>
<thead>
<tr>
<th>Base model</th>
<th>Type of connection</th>
<th>Porting specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>4(A), 2(B) port location</td>
</tr>
<tr>
<td>VV5Q41</td>
<td>F kit – D-sub connector T kit – Terminal block box L kit – Lead wire</td>
<td>Side</td>
</tr>
<tr>
<td>VV5Q45</td>
<td>C kit – Connector</td>
<td>Bottom</td>
</tr>
</tbody>
</table>

Note) Manifold for mounting is included. ( ): E type

### Control Unit Specifications

- **Air filter (With auto-drain/With manual drain)**
  - Filtration: 5 μm
  - Regulator
    - Set pressure (Outlet pressure): 0.05 to 0.85 MPa
  - Pressure switch (Not applicable)
    - Set pressure range: OFF
    - Differential: 0.08 MPa or less
    - Contact 1a
    - Light LED (RED)
    - Max. switch capacity: 2 VA (AC), 2 W (DC)
    - Max. operating current: 50 mA at 24 VAC, DC or less / 20 mA at 100 VAC, DC
  - Air release valve (Single only)
    - Operating pressure range: 0.15 to 1.0 MPa (0.15 to 0.7 MPa)

Note) Values inside ( ) denote the low wattage (0.5 W) specifications.

### Control Unit/Option

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

Note 1) When two or more symbols are specified, indicate them alphabetically. (Example) -KN
Note 2) Specify wiring on the manifold specification sheet. Note 3) Mounting on S and T kits is not possible.
Note 4) Combination with pressure switch (AP and MP type) is not possible.
Note 5) The release valve and the pressure switch on S kit are connected to another power supply. Cable length is 0.6 m.

### How to Order Manifold

#### VV5Q 4 1-08 C8 F U1

- **Series**: VQ4000
- **Manifold**
  - **Stations**: 2 stations
  - **Kit**: (5)
  - **Cylinder port**
    - C8: One-touch fitting for ø8
    - C10: One-touch fitting for ø10
    - C12: One-touch fitting for ø12
    - G3: Rc 3/8
    - B: Bottom ported Rc 1/4
    - CM: Mixed

- **Air release valve coil rating**
  - Nil: Without air release valve (Only F.G type)
  - 1: 100 VAC, 50/60 Hz
  - 24 VDC

- **Control unit type**
  - Control equipment
    - Air filter with auto-drain
    - Air filter with manual drain
    - Regulator
    - Air release valve
    - Pressure switch
    - Blanking plate (Air release valve)
    - Blanking plate (Filter, Regulator)
    - Blanking plate (Pressure switch)
  - Necessary number of manifold blocks from mounting required for mounting (Stations)
    - 1: Station 1
    - 1B: Station 1 with Blanking plate
    - 1P: Station 1 with Pressure switch

Note) Electrical entry: Control unit can not be removed except L and C kits.
Use of Control Unit

<Construction and piping>
1. The supply pressure (Po) passes through the filter regulator (1) and is adjusted to the prescribed pressure. Next, it goes through the release valve (2) (outlet residual pressure switching function used as normally ON) and is supplied to the manifold base side (P).
2. Supply pressure from Po port is blocked when release valve (2) is OFF. Air supplied to manifold side P port is exhausted to R1 port through release valve (2).
3. Pressure switch is piped at outlet side of release valve (2). (Release valve (2) is operated at energizing.) Also, since there is an internal voltage drop of 4 V, it may not be possible to confirm the OFF and ON states with a tester, etc.

<Wiring>
1. Electrical entry of manifold (except L and C kit) is individual wiring. For details, refer to internal wiring figure of each kit. Cable length is 0.6 m for L kit.

<Change of pressure switch piping>
1. Pressure switch (3) is changed to piping on inlet side of release valve (2). Remove the pressure switch, reverse the gasket up and down, and fix B mark.
2. When pressure switch is mounted, tightening torque of bolt is 0.8 to 1.2 N·m.
**Manifold with Control Unit**

**Plug-in type**

**Dimensions**

Formula \( L_1 = 25n + 63 \), \( L_2 = 25n + 76 \), \( L_3 = 25n + 269.5 \) (262.5)  

<p>| | | | | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>L1</td>
<td>113</td>
<td>138</td>
<td>163</td>
<td>188</td>
<td>213</td>
<td>238</td>
<td>263</td>
<td>288</td>
<td>313</td>
<td>338</td>
<td>363</td>
</tr>
<tr>
<td>L2</td>
<td>126</td>
<td>151</td>
<td>176</td>
<td>201</td>
<td>226</td>
<td>251</td>
<td>276</td>
<td>301</td>
<td>326</td>
<td>351</td>
<td>376</td>
</tr>
<tr>
<td>L3</td>
<td>332</td>
<td>357</td>
<td>382</td>
<td>407</td>
<td>432</td>
<td>457</td>
<td>482</td>
<td>507</td>
<td>532</td>
<td>557</td>
<td>582</td>
</tr>
<tr>
<td></td>
<td>(310.5)</td>
<td>(335.5)</td>
<td>(360.5)</td>
<td>(385.5)</td>
<td>(410.5)</td>
<td>(435.5)</td>
<td>(460.5)</td>
<td>(485.5)</td>
<td>(510.5)</td>
<td>(535.5)</td>
<td>(560.5)</td>
</tr>
</tbody>
</table>

* \( L_3 \): Type MP
### Component Parts

<table>
<thead>
<tr>
<th>Number</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></td>
</tr>
<tr>
<td>2</td>
<td>Spool/Sleeve</td>
<td>Stainless steel</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

**Replacement Parts**

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Pilot valve assembly</td>
<td>VQZ111P-□</td>
<td>⚠️ Coil rated voltage Example) 24 VDC: 5</td>
</tr>
</tbody>
</table>
# Series VQ4000

## Construction

### Plug Lead Unit

#### Metal seal type

![Diagram of Metal seal type Plug Lead Unit]

### Rubber seal type

![Diagram of Rubber seal type Plug Lead Unit]

<table>
<thead>
<tr>
<th>Component Parts</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></td>
</tr>
<tr>
<td>2</td>
<td>Spool/Sleeve</td>
<td>Stainless steel</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

### Replacement Parts

<table>
<thead>
<tr>
<th>Replacement Parts</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Pilot valve assembly</td>
<td>VQZ111P-□</td>
<td>Coiled rated voltage Example) 24 VDC: 5</td>
</tr>
</tbody>
</table>

### Component Parts

<table>
<thead>
<tr>
<th>Number</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></td>
</tr>
<tr>
<td>2</td>
<td>Spool valve</td>
<td>Aluminum, NBR</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

### Replacement Parts

<table>
<thead>
<tr>
<th>Replacement Parts</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Pilot valve assembly</td>
<td>VQZ111P-□</td>
<td>Coiled rated voltage Example) 24 VDC: 5</td>
</tr>
</tbody>
</table>
The drawing shows a plug-in type. Note 1) The electrical entry cannot be changed. Note 2) Manifold block used is 2-station integrated type. For odd number of stations, 1 pc. of one-station manifold block is combined at U side; for even number of stations, 2 pcs. are combined, therefore making the increase/decrease of stations possible.

Example)  

<table>
<thead>
<tr>
<th>D side</th>
<th>U side</th>
<th>Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

| Stations | 3
|----------|---
| 5 stations (Odd number) | 2 stations 2 stations 1 station |
| 6 stations (Even number) | 2 stations 2 stations 1 station 1 station |
<D Side End Plate Assembly>
1. D side end plate assembly no. (For F, L, S, T kit)

VVQ4000 — 3A — 1

Electrical entry

| L | F, L, S kit |
| F | F kit (Connector side) |
| C | C kit (Plug lead type) |

With connector on the SI unit

D side end plate assembly part no. (For input/output type for S kit)

VVQ4000 — 3A — 12
* With connector on the SI unit

<Manifold Block Assembly no.>
3. Manifold block assembly part no.

VVQ4000 — 1

Electrical entry

A | For 1 station |
| C | For 2 stations |

Port size

| F1 | F kit Double wiring |
| F2 | F kit Single wiring |
| T1 | T kit Double wiring |
| T2 | T kit Single wiring |
| S1 | S kit Double wiring |
| S2 | S kit Single wiring |
| L1 | L kit Stations (1 to 16) |
| L2 | L kit Stations (1 to 16) |
| C | C kit (Plug lead type) |

With connector on the SI unit

<SI Unit>
SI Unit Part No.

<table>
<thead>
<tr>
<th>Type</th>
<th>Model symbol</th>
<th>SI unit part no.</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>—</td>
<td>Without SI unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>EX323-S001</td>
<td>General type SI unit (Series EX300)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>EX123-SMB1</td>
<td>Mitsubishi Electric Corporation: MELSENET/MINI-S3 Data Link System</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BB</td>
<td>EX124-SMB1</td>
<td>Mitsubishi Electric Corp.: MELSENET/MINI-S3 Data Link System (2 power supply systems)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>EX123-ST1A</td>
<td>OMRON Corporation: SYSBUS Wire System</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>EX123-SSH1</td>
<td>SHARP Corporation: Satellite I/O Link System</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F1</td>
<td>EX123-SUW1</td>
<td>16 output points Uni-wire System (NKE Corporation)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>EX124-SAB1</td>
<td>Allen Bradley Remote I/O (RS-232) System (2 power supply systems) (Rockwell Automation, Inc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>EX123-SUH1</td>
<td>SI unit for 16 output points Uni-wire H System (NKE)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J1</td>
<td>EX123-SSL1</td>
<td>16 output points S-LINK System (Sunx)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J2</td>
<td>EX123-SSL2</td>
<td>8 output points S-LINK System (Sunx)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>EX123-SFU1</td>
<td>T-LINK Mini System (Fuj Electric Co.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q</td>
<td>EX124-SDN1</td>
<td>SI unit for DeviceNet and CompoBus/O (OMRON)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R1</td>
<td>EX124-SCS1</td>
<td>SI unit for 16 output points CompoBus/S (OMRON)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R2</td>
<td>EX124-SCS2</td>
<td>SI unit for 8 output points CompoBus/S (OMRON)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U</td>
<td>EX124-SJN1</td>
<td>JEMANET System (2 power supply systems)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>EX124-SMU1</td>
<td>CI unit for CI-LINK System (2 power supply systems) (Mitsubishi Electric Corp.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QW</td>
<td>EX240-SDN2</td>
<td>CC-LINK System</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NW</td>
<td>EX240-SPR1</td>
<td>PROFIBUS-DP (-COM)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EX240-IE1</td>
<td>DI unit (For input) M12 &amp; number of inputs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<U Side End Plate Assembly Part No.>
2. U side end plate assembly no. (For F, L, S, T kit)

VVQ4000 — 2A — 1

Electrical entry

| L | F, L, S kit |
| F | F kit (Connector side) |
| C | C kit (Plug lead type) |

With connector on the SI unit

U side end plate assembly part no. (For input/output type for S kit)

VVQ4000 — 2A — 12
* With connector on the SI unit

<Manifold Block Replacement Parts>
Replacement Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>VVQ4000-80A-1</td>
<td>Gasket</td>
<td>NBR</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>VVQ4000-80A-2</td>
<td>Gasket</td>
<td>NBR</td>
<td>10</td>
</tr>
<tr>
<td>6</td>
<td>VVQ4000-80A-4</td>
<td>Clip</td>
<td>Stainless steel</td>
<td>10</td>
</tr>
</tbody>
</table>

Note) Spare parts consist of sets containing 10 pcs. each.

<Fitting Assembly>
7. Fitting assembly part no. (For cylinder port)

VVQ4000 — 50B
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>VQ5100-04</td>
<td>1100</td>
<td>Ø50 Ø53 Ø60 Ø100 Ø125 Ø140 Ø160 Ø180 Ø200 Ø250</td>
</tr>
<tr>
<td>VQ5101-04</td>
<td>900</td>
<td>Perpendicular, upward actuation</td>
</tr>
<tr>
<td></td>
<td>800</td>
<td>Horizontal actuation</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%

System Components

<table>
<thead>
<tr>
<th>Speed controller</th>
<th>Silencer</th>
<th>SGP (Steel pipe) dia. x Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS420-04</td>
<td>AN400-04</td>
<td>10A x 1 m</td>
</tr>
</tbody>
</table>
### Precautions

**Warning**

Since connected equipment will be actuated when the manual override is operated, first confirm that conditions are safe.

Non-locking push type (Tool required) is standard. As an option, slotted locking type (Tool required) is available.

**Push type (Tool required)**

Push down the manual override button with a small screwdriver, etc. Release the screwdriver and the manual override will return.

**Locking type (Option)**

Push down completely on the manual override button with a small screwdriver. While down, turn clockwise 90° to lock it. Turn it counterclockwise to release it.

---

### Manual Override Operation

- **Proper tightening torque (N·m)**: 1 to 1.8

---

### Lead Wire Connection

**Caution**

Plug-in sub-plate (With terminal block)

- If the junction cover (1) of the sub-plate is removed, you can see the plug-in type terminal block (2) mounted inside the sub-plate.

- The terminal block is marked as follows. Connect wiring to each of the power supply terminals.

<table>
<thead>
<tr>
<th>Model</th>
<th>Terminal block marking</th>
<th>A</th>
<th>COM</th>
<th>B</th>
<th>†</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ5100</td>
<td>A side</td>
<td></td>
<td>COM</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>VQ5200</td>
<td>A side</td>
<td></td>
<td>COM</td>
<td>B side</td>
<td>—</td>
</tr>
<tr>
<td>VQ5300</td>
<td>A side</td>
<td></td>
<td>COM</td>
<td>B side</td>
<td>—</td>
</tr>
</tbody>
</table>

Note 1) There is no polarity. It can also be used as –COM.

Note 2) The sub-plate is double wired even for the VQ510.

- Applicable terminal 1.25-3s, 1.25Y-3, 1.25Y-3N, 1.25Y-3.5.

**Plug lead: Grommet type**

Make connections to each corresponding wire.

- **Single solenoid**
  - Lead wire color:
    - SOLA: (–) Black
    - COM: (–) Red
    - SOLB: (–) White

- **Double solenoid**
  - Lead wire color:
    - SOLA: (–) Black
    - COM: (–) Red
    - SOLB: (-) White

**Enclosure: IP65 compliant**

- Black: A side solenoid (–)
- Red: COM (+)
- White: B side solenoid (–)
- Green: (Not used for single or double.)

**Note:** There is no polarity. It can also be used as –COM.
**Installation and Removal of Light Cover**

**Caution**

**Installation/Removal of light cover**

- **Removal**
  To remove the pilot cover pull it straight off. If it is pulled off at an angle, the pilot valve may be damaged or the protective O-ring may be scratched.

- **Installation**
  Place the cover straight over the pilot assembly so that the pilot valve is not touched, and push it until the cover hook locks without twisting the protective O-ring. (When pushed in, the hook opens and locks automatically.)

**Replacement of Pilot Valve**

**Caution**

- **Removal**
  1. Remove the mounting screw that holds the pilot valve using a small screwdriver.
  2. When equipped with light, remove the light circuit board which is installed on the pilot valve by pulling it straight off the connector pins.

- **Installation**
  1. Insert the light circuit board straight onto the connector pins following the guide. If it is pushed in forcibly without following the guide, there is a danger of possibly bending the board contacts.
  2. After confirming the gasket is correctly placed under the valve, securely tighten the bolts with the proper torque shown in the table below.

**Proper tightening torque (N·m)**

<table>
<thead>
<tr>
<th></th>
<th>0.1 to 0.13</th>
</tr>
</thead>
</table>

Note) The mounting of pilot valves is not directional with respect to the A and B sides. However, the light circuit boards' A side is orange and the B side is green. It must be mounted on the pilot valve in accordance with the mounting indicators. The light will not go on if the mounting is reversed.

**Light Circuit Board Part No.**

<table>
<thead>
<tr>
<th>SOLA</th>
<th>VQZ100-47-A</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLB</td>
<td>VQZ100-47-B</td>
</tr>
</tbody>
</table>

Note) It can be used with all voltages.

**Internal Wiring Specifications**

**Caution**

**For Plug Lead Type**

**Attaching and detaching connectors**

- To attach a connector, hold the lever and connector unit between your fingers and insert straight onto the pins of the solenoid valve so that the lever's pawl is pushed into the groove and locks.

- To detach a connector, remove the pawl from the groove by pushing the lever downward with your thumb, and pull the connector straight out.

Note) Do not pull on the lead wires with excessive force. This can cause faulty and/or broken contacts.

**How to Calculate the Flow Rate**

For obtaining the flow rate, refer to pages 2-1-8 to 2-1-11.
Series VQ5000
Base Mounted
Plug-in/Plug Lead: Single Unit

Model

<table>
<thead>
<tr>
<th>Series</th>
<th>Number of solenoids</th>
<th>Model</th>
<th>Port size</th>
<th>Flow Characteristics</th>
<th>Response time (ms)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 position</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQ5000</td>
<td>Single</td>
<td>Metal seal VQ510</td>
<td>2 position double (Rubber)</td>
<td>12 0.14 2.9 14 0.18 3.4 35 or less 38 or less 38 or less 0.59 (0.67)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal VQ511</td>
<td>2 position single</td>
<td>16 0.33 4.4 17 0.31 4.7 40 or less 43 or less 43 or less 0.58 (0.66)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td>Metal seal VQ520</td>
<td>2 position double (Rubber)</td>
<td>12 0.14 2.9 14 0.18 3.4 20 or less 23 or less 23 or less 0.62 (0.70)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal VQ521</td>
<td>2 position single</td>
<td>16 0.33 4.4 17 0.31 4.7 25 or less 28 or less 28 or less 0.60 (0.68)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Closed exhaust</td>
<td>Metal seal VQ530</td>
<td>3 position double (Rubber)</td>
<td>11 0.24 2.6 11 0.23 2.8 50 or less 53 or less 53 or less 0.65 (0.73)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Center</td>
<td>Rubber seal VQ531</td>
<td>3 position single</td>
<td>12 0.33 3.4 13 0.37 3.7 60 or less 63 or less 63 or less 0.58 (0.66)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pressure</td>
<td>Metal seal VQ540</td>
<td>3 position double (Rubber)</td>
<td>12 0.13 2.9 14 0.18 3.4 50 or less 53 or less 53 or less 0.65 (0.73)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Center</td>
<td>Rubber seal VQ541</td>
<td>3 position single</td>
<td>14 0.39 3.9 16 0.35 4.5 60 or less 63 or less 63 or less 0.58 (0.66)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double check</td>
<td>Metal seal VQ550</td>
<td>3 position double (Rubber)</td>
<td>12 0.23 2.9 13 0.24 3.3 50 or less 53 or less 53 or less 0.65 (0.73)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal VQ551</td>
<td>3 position single</td>
<td>13 0.32 3.4 14 0.39 3.9 60 or less 63 or less 63 or less 0.58 (0.66)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>8.0 — — 8.5 — — 62 or less 65 or less 65 or less 1.17 (1.25)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>8.3 — — 9.0 — — 75 or less 78 or less 78 or less 1.10 (1.18)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note) Value for valve on sub-plate.

Standard Specifications

Valve construction Metal seal Rubber seal
Fluid Air/Inert gas
Maximum operating pressure (1) 1.0 MPa
Min. operating pressure
Single 0.10 MPa 0.20 MPa
Double 0.10 MPa 0.15 MPa
3 position 0.15 MPa 0.20 MPa
Proof pressure 1.5 MPa
Ambient and fluid temperature –5 to 50°C (1)
Lubrication Not required
Shock/Vibration resistance Push type/Locking type (Tool required) Option
Dust tight (IP65 compatible)
Coil rated voltage 12, 24 VDC, 100, 110, 200, 220 VAC (50/60 Hz)
Allowable voltage fluctuation ±10% of rated voltage
Coil insulation type Class B or equivalent
Power consumption (Current)

24 VDC 1 W DC (42 mA), 0.5 W DC (21 mA) (3)
12 VDC 1 W DC (83 mA), 0.5 W DC (42 mA) Note (3)
100 VAC Inrush 1.2 VA (12 mA), Holding 1.2 VA (12 mA)
110 VAC Inrush 1.3 VA (11.7 mA), Holding 1.3 VA (11.7 mA)
200 VAC Inrush 2.4 VA (12 mA), Holding 2.4 VA (12 mA)
220 VAC Inrush 2.6 VA (11.7 mA), Holding 2.6 VA (11.7 mA)

Note 1) Use dry air to prevent condensation when operating at low temperatures.
Note 2) 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)
Note 3) Values inside ( ) denote the low wattage (0.5 W) specifications.
How to Order Valves

How to Order Sub-plates

VQ5000 - P 04

Plastic conduit terminal

Enclosure

Nil Dust-protected
W Dusttight/Low jetproof type

Note) Not required for plug lead type.

Porting specifications

Nil Side ported
B Bottom ported

Note) For thread standard, refer to page 2-6-39.

Body

0: Plug-in sub-plate

2 position single
(A) (B) (R1) (P) (R2)

2 position double
(A) (B) (R1) (P) (R2)

Type of actuation

1

2

3

4

5

6

3 position closed center
(A) (B) (R1) (P) (R2)

3 position exhaust center
(A) (B) (R1) (P) (R2)

3 position pressure center
(A) (B) (R1) (P) (R2)

3 position double check
(A) (B) (R1) (P) (R2)

Port size

Nil Without sub-plate (For manifold)
04 Rc 1/2

Note1) For bottom ported, port size is Rc 1/2.
Note2) For thread standard, refer to page 2-6-39.

Note 1) Applicable to DC specifications.
Note 2) For details about external pilot specifications, refer to page 2-6-39.
Note 3) When two or more symbols are specified, indicate them alphabetically.

Replacement of pilot valve assembly (Voltage)

• Refer to pages 2-6-40 to 2-6-41 for pilot valve assembly part numbers.
• Refer to page 2-6-3 for replacement method.

Coil 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

Function

Nil Standard type (1 W)
Y Low wattage type (0.5 W)
R External pilot

Note 1) Applicable to DC specifications.
Note 2) For details about external pilot specifications, refer to page 2-6-39.

Electrical entry

G Lead wire length 0.6 m
H Lead wire length 1.5 m

Seal

0 Metal seal
1 Rubber seal

Body

5: Plug lead sub-plate

Port size

04 Rc 1/2

Note 1) For bottom ported, port size is Rc 1/2.
Note 2) For thread standard, refer to page 2-6-39.

Plug-in

VQ5 1 0 0 5

Plug lead

VQ5 2 5 1 5 G

Type of actuation

1

2

3

4

5

6

3 position closed center
(A) (B) (R1) (P) (R2)

3 position exhaust center
(A) (B) (R1) (P) (R2)

3 position pressure center
(A) (B) (R1) (P) (R2)

3 position double check
(A) (B) (R1) (P) (R2)

Porting specifications

Nil Side ported
B Bottom ported

Note) For thread standard, refer to page 2-6-39.

Light/Surge voltage suppressor

Nil Yes
E Without light, With surge voltage suppressor

Manual override

Nil: Non-locking push type (Tool required)
B: Slotted locking type (Tool required)

Bore ø 6.1

Plug-in conduit terminal

Plug lead

Plug-in/Plug Lead: Single Unit Series VQ5000

Base Mounted
### Base Mounted

**Series VQ5000**

## Plug-in Type

### Conduit terminal

2 position single: VQ510

<table>
<thead>
<tr>
<th>Feature</th>
<th>VQ510</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plug-in Type</td>
<td>2 position single</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Manual override</td>
</tr>
</tbody>
</table>

### 3 position double check: VQ560

<table>
<thead>
<tr>
<th>Feature</th>
<th>VQ560</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plug-in Type</td>
<td>3 position double check</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Manual override</td>
</tr>
</tbody>
</table>

### 2 position double: VQ520

<table>
<thead>
<tr>
<th>Feature</th>
<th>VQ520</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plug-in Type</td>
<td>2 position double</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Manual override</td>
</tr>
</tbody>
</table>

### 3 position closed center: VQ530

<table>
<thead>
<tr>
<th>Feature</th>
<th>VQ530</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plug-in Type</td>
<td>3 position closed center</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Manual override</td>
</tr>
</tbody>
</table>

### 3 position exhaust center: VQ540

<table>
<thead>
<tr>
<th>Feature</th>
<th>VQ540</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plug-in Type</td>
<td>3 position exhaust center</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Manual override</td>
</tr>
</tbody>
</table>

### 3 position pressure center: VQ550

<table>
<thead>
<tr>
<th>Feature</th>
<th>VQ550</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plug-in Type</td>
<td>3 position pressure center</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Manual override</td>
</tr>
</tbody>
</table>

### Numbers inside ( ) are for metal seal 3 position type

---

**Bottom ported drawing**

![Diagram of Base Mounted Series VQ5000](image_url)
Plug Lead Type

Grommet

2 position single: VQ5150

3 position double: VQ5250

3 position closed center: VQ5350

3 position exhaust center: VQ5450

3 position pressure center: VQ5550

Numbers inside ( ) are for metal seal 3 position type

2 position double check: VQ5650

Bottom ported drawing
Series VQ5000
Base Mounted Plug-in Unit

How to Order Manifold

**VV5Q 5 1**

**Series**

- **5**: VQ5000

**Plug-in Unit**

- **1**: Plug-in Unit

**Cylinder port**

- **03**: Rc 3/8
- **04**: Rc 1/2
- **B**: Bottom ported Rc 1/2
- **CM**: Mixed<br>

**Note**: In case of mixed specification, indicate on the manifold specification sheet.

**Indicator light**

- **Type of connection**: A, B port
- **External pilot supply port**

**R1 port**

- **P port**
- **R2 Port**

**Note**: The drawing shows a VV5Q51-0504FDO.

**Option**

- **Symbol**
  - **F**: Kit (D-sub connector)
  - **L**: Kit (Lead wire cable)
  - **T1**: Kit (Individual terminal block kit)
  - **T**: Kit (Terminal block box kit)
  - **S**: Kit (Serial transmission unit)

**Connector entry direction**

<table>
<thead>
<tr>
<th>D side</th>
<th>U side</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kit F</td>
<td>U0</td>
</tr>
<tr>
<td>Kit D1</td>
<td>U1</td>
</tr>
<tr>
<td>Kit D2</td>
<td>U2</td>
</tr>
<tr>
<td>Kit D3</td>
<td>U3</td>
</tr>
</tbody>
</table>

**Electrical entry**

- **IP65 compatible**

**Box mounting position**

- **D side**: 2 to 12 stations
- **U side**: 2 to 12 stations

**Terminal block box**

- **TD**: 2 to 12 stations
- **TU**: 2 to 12 stations

**Symbol**

- **Option**
  - **Nil**: None
  - **CD1**: Exhaust cleaner for Rc 1: D side exhaust
  - **CD2**: Exhaust cleaner for Rc 1 1/2: D side exhaust
  - **CU1**: Exhaust cleaner for Rc 1: U side exhaust
  - **CU2**: Exhaust cleaner for Rc 1 1/2: U side exhaust
  - **K**: Special wiring specifications (Except double wiring)
  - **N**: Name plate (T kit only)
  - **SB**: Direct exhaust with silencer box: Exhaust from both D and U sides
  - **SD**: Direct exhaust with silencer box: D side exhaust
  - **SU**: Direct exhaust with silencer box: U side exhaust
  - **W**: IP65 enclosure (except F and T1 kits)

**Note**: When two or more symbols are specified, indicate them alphabetically. Example) -CD1K

- **Note 2**: Combination of [CD1] and [SB] is not possible.
- **Note 3**: Available only with F, L and T1 kits.

- **Note 4**: Specify the wiring specifications on the manifold specification sheet. (Except L kit)

**Table**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD1</td>
<td>Exhaust cleaner for Rc 1: D side exhaust</td>
</tr>
<tr>
<td>CD2</td>
<td>Exhaust cleaner for Rc 1 1/2: D side exhaust</td>
</tr>
<tr>
<td>CU1</td>
<td>Exhaust cleaner for Rc 1: U side exhaust</td>
</tr>
<tr>
<td>CU2</td>
<td>Exhaust cleaner for Rc 1 1/2: U side exhaust</td>
</tr>
<tr>
<td>K</td>
<td>Special wiring specifications (Except double wiring)</td>
</tr>
<tr>
<td>N</td>
<td>Name plate (T kit only)</td>
</tr>
<tr>
<td>SB</td>
<td>Direct exhaust with silencer box: Exhaust from both D and U sides</td>
</tr>
<tr>
<td>SD</td>
<td>Direct exhaust with silencer box: D side exhaust</td>
</tr>
<tr>
<td>SU</td>
<td>Direct exhaust with silencer box: U side exhaust</td>
</tr>
<tr>
<td>W</td>
<td>IP65 enclosure (except F and T1 kits)</td>
</tr>
</tbody>
</table>

**Note 1**: When two or more symbols are specified, indicate them alphabetically. Example) -CD1K

**Note 2**: Combination of [CD1] and [SB] is not possible.

**Note 3**: Available only with F, L and T1 kits.

**Note 4**: Specify the wiring specifications on the manifold specification sheet. (Except L kit)
Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Base model</th>
<th>Type of connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ5000</td>
<td>VQ5Q51</td>
<td>F kit–D-sub connector</td>
</tr>
<tr>
<td></td>
<td></td>
<td>T kit–Terminal block box</td>
</tr>
<tr>
<td></td>
<td></td>
<td>T1 kit–Individual terminal block kit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>L kit–Lead wire</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S kit–Serial transmission</td>
</tr>
</tbody>
</table>

Porting specifications

<table>
<thead>
<tr>
<th>Port size</th>
<th>Maximum applicable stations</th>
<th>Applicable solenoid valve</th>
<th>5 station weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4(A), 2(B)</td>
<td>F, L, T1 kits 12 stations</td>
<td>VQ5L00</td>
<td>4.1</td>
</tr>
<tr>
<td></td>
<td>T kits 11 stations</td>
<td>VQ5L01</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S kits 9 stations</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note) For details about international standard threads other than Rc threads, refer to "Option" on page 2-6-39.

Flow Characteristics at the Number of Manifold Stations (Operated individually)

<table>
<thead>
<tr>
<th>Model</th>
<th>Passage/Stations</th>
<th>Station 1</th>
<th>Station 5</th>
<th>Station 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 position metal seal VQ5000-10A-1</td>
<td>1 → 4/2 (P → A/B)</td>
<td>C [dm³/(s·bar)] 11</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>0.24</td>
<td>0.24</td>
<td>0.24</td>
</tr>
<tr>
<td></td>
<td>Cv</td>
<td>2.7</td>
<td>2.7</td>
<td>2.7</td>
</tr>
<tr>
<td>4/2 → 5/3 (A/B → EA/EB)</td>
<td>C [dm³/(s·bar)] 12</td>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>0.14</td>
<td>0.14</td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td>Cv</td>
<td>2.9</td>
<td>2.9</td>
<td>2.9</td>
</tr>
<tr>
<td>2 position rubber seal VQ5000-16A-1</td>
<td>1 → 4/2 (P → A/B)</td>
<td>C [dm³/(s·bar)] 12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>0.33</td>
<td>0.33</td>
<td>0.33</td>
</tr>
<tr>
<td></td>
<td>Cv</td>
<td>3.4</td>
<td>3.4</td>
<td>3.4</td>
</tr>
<tr>
<td>4/2 → 5/3 (A/B → EA/EB)</td>
<td>C [dm³/(s·bar)] 16</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>0.33</td>
<td>0.33</td>
<td>0.33</td>
</tr>
<tr>
<td></td>
<td>Cv</td>
<td>4.4</td>
<td>4.4</td>
<td>4.4</td>
</tr>
</tbody>
</table>

Note) For port size Rc 1/2

Manifold Option

- Blanking plate assembly VVQ5000-10A-1
- Individual SUP spacer VVQ5000-P-1-03
- Individual EXH spacer VVQ5000-R-1-04
- EXH block plate VVQ5000-16A-2
- Throttle valve spacer VVQ5000-20A-1
- SUP stop valve spacer VVQ5000-37A-1
- SUP block plate VVQ5000-16A-1
- Double check spacer with residual pressure release valve VVQ5000-25A-1
- Release valve spacer VVQ5000-24A-1D
- Direct exhaust with silencer box [-S] [-C]
- For exhaust cleaner mounting [C]
- Interface regulator ARBQ5000-00-0-

* Refer to pages 2-6-34 to 2-6-38 for detailed dimensions of each option.
* For replacement parts, refer to page 2-6-43.
F
Kit (D-sub Connector kit)

- Simplification and labor savings for wiring work can be achieved by using a D-sub connector for the electrical connection.
- Using connector for flat ribbon cable (25P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
- Connector entry can be selected on either the U side or the D side according to the mounting orientation.
- Maximum stations are 12.

D-Sub Connector Kit (25Pins)

- Multi-core vinyl cable 0.3 mm² x 25C
- For other commercial connectors, use a 25 pins type with female connector conforming to MIL-C-24308.

How to Order Manifold

- Series VQ5000
- Stations 02 2 stations
- Cylinder port 03 Rc 3/8
- Option 08 03 F U 1
- Cable (Length) 0 Without cable
- Connector entry direction D D side entry
- Note 1) When two or more symbols are specified, indicate them alphabetically. Example -CD1K.

Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ5000</td>
<td>Side Rc 3/4, Rc 3/8</td>
<td>Max. 12 stations</td>
</tr>
</tbody>
</table>

D-sub Connector Cable Assembly Terminal No.

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Lead wire color</th>
<th>Dot marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Black</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>Brown</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>Red</td>
<td>None</td>
</tr>
<tr>
<td>4</td>
<td>Orange</td>
<td>None</td>
</tr>
<tr>
<td>5</td>
<td>Yellow</td>
<td>None</td>
</tr>
<tr>
<td>6</td>
<td>Pink</td>
<td>None</td>
</tr>
<tr>
<td>7</td>
<td>Blue</td>
<td>None</td>
</tr>
<tr>
<td>8</td>
<td>Purple</td>
<td>White</td>
</tr>
<tr>
<td>9</td>
<td>Gray</td>
<td>Black</td>
</tr>
<tr>
<td>10</td>
<td>White</td>
<td>Black</td>
</tr>
<tr>
<td>11</td>
<td>White</td>
<td>Red</td>
</tr>
<tr>
<td>12</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>13</td>
<td>Orange</td>
<td>None</td>
</tr>
<tr>
<td>14</td>
<td>Yellow</td>
<td>Black</td>
</tr>
<tr>
<td>15</td>
<td>Pink</td>
<td>None</td>
</tr>
<tr>
<td>16</td>
<td>Blue</td>
<td>White</td>
</tr>
<tr>
<td>17</td>
<td>Purple</td>
<td>None</td>
</tr>
<tr>
<td>18</td>
<td>Gray</td>
<td>None</td>
</tr>
<tr>
<td>19</td>
<td>Orange</td>
<td>Black</td>
</tr>
<tr>
<td>20</td>
<td>Red</td>
<td>White</td>
</tr>
<tr>
<td>21</td>
<td>Brown</td>
<td>White</td>
</tr>
<tr>
<td>22</td>
<td>Pink</td>
<td>Red</td>
</tr>
<tr>
<td>23</td>
<td>Gray</td>
<td>Red</td>
</tr>
<tr>
<td>24</td>
<td>Black</td>
<td>White</td>
</tr>
<tr>
<td>25</td>
<td>White</td>
<td>None</td>
</tr>
</tbody>
</table>

D-sub Connector Cable Assembly Part No. Note

- AXT100-DS25-015
- AXT100-DS25-030
- AXT100-DS25-050
- For other commercial connectors, use a 25 pins type with female connector conforming to MIL-C-24308.

Electric Characteristics

- Conductor resistance: 65 or less
- Voltage limit: 1000 VAC, 1 min.
- Insulation resistance: 5 or less

Note) The min. bending radius of D-sub cable is 20 mm.
1. How to Order

Mixed single and double wiring is available as an option. Internal wiring of each station regardless of valve and option types. Double wiring (connected to SOL. A and SOL. B) is used for the first station on the D side. Stations are counted starting from the first station on the D side.

2. Wiring Specifications

Connections begin with the A side solenoid being connected to terminal no. 1, and continue in the order indicated by the arrows in the drawing without skipping any terminals. However, the maximum number of stations is 12.

<Example>
D-sub connector kit with cable (3 m)
VQC51-0503FD2 - 1 set – Manifold base part no. VQC5000-5 – Valve part no. (Stations 1 to 2)
VQO300-5 - 2 sets – Valve part no. (Stations 3 and 4)
VQO350-5 - 1 set – Valve part no. (Station 5)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate them in the manifold specification sheet.

Note 1) Applicable to DC specifications.
Note 2) Refer to page 2-6-39 for details on external pilot specifications.
Note 3) When two or more symbols are specified, indicate them alphabetically.

Stations are counted starting from the first station on the D side.
Base Mounted
Series VQ5000

Kit (D-sub Connector kit)

Applicable connector: D sub connector (25P) (Conforming to MIL-C-24308)

When U side mounting (FU)

Indicator light

Manual override

With connector on D side (FD)

Stations

2-Rc 1/8 (External pilot port)

6-Rc 3/4 (P), 5(R1), 3(R2) port

When U side mounting (FU)

55.5 M5 ground screw

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

SMC

2-6-12
Bottom ported drawing

Formula: \( L_1 = 41n + 76, \ L_2 = 41n + 96 \)

Dimensions

<table>
<thead>
<tr>
<th>( n )</th>
<th>1</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>
</tr>
</thead>
<tbody>
<tr>
<td>( L_1 )</td>
<td>117</td>
<td>158</td>
<td>199</td>
<td>240</td>
<td>281</td>
<td>322</td>
<td>363</td>
<td>404</td>
<td>445</td>
<td>486</td>
<td>527</td>
<td>568</td>
</tr>
<tr>
<td>( L_2 )</td>
<td>137</td>
<td>178</td>
<td>219</td>
<td>260</td>
<td>301</td>
<td>342</td>
<td>383</td>
<td>424</td>
<td>465</td>
<td>506</td>
<td>547</td>
<td>588</td>
</tr>
</tbody>
</table>
**Kit (Terminal block box kit)**

- Enclosure IP65 compliant
- This type has a small terminal block inside a junction box. The provision of a G 3/4 electrical entry allows connection of conduit fittings.
- Maximum stations are 11. (12 stations as an option)
- 1 station is used for terminal block box mounting.

### Terminal Block Connections

**Step 1. How to remove terminal block cover**
Loosen the 4 mounting screws (M4) and open the terminal block cover.

**Step 2. The diagram on the right shows the terminal block wiring.**
All stations are provided with double wiring regardless of the valves which are mounted. Connect each wire to the power supply side, according to the markings provided inside the terminal block.

**Step 3. How to attach the terminal block cover**
Securely tighten the screws with the torque shown in the table below, after confirming that the gasket is installed correctly.

<table>
<thead>
<tr>
<th>Proper tightening torque (N·m)</th>
<th>0.7 to 1.2</th>
</tr>
</thead>
</table>

### How to Order Manifold

**VV5Q 5 1 08 03 T K**

- **Series**
  - 5: VQ5000
- **Manifold**
  - 1: Plug-in unit
- **Stations**
  - 02: 2 stations
  - 12: 12 stations

**Note 1)** Add 1 station for terminal block box.
**Note 2)** The maximum number of stations can be expanded with optional special wiring specifications. Refer to page 2-6-15 for details.

- **Box mounting position**
  - D: D side mounting
  - U: U side mounting

- **Cylinder port**
  - 03: Rc 3/8
  - 04: Rc 1/2
  - B: Bottom ported Rc 1/2
- **CM**: Mixed

- **Option**
  - Symbol: Option
  - Nil: None
  - CD1 (2): Exhaust cleaner for Rc 1: D side exhaust
  - CD2 (2): Exhaust cleaner for Rc 1 1/2: D side exhaust
  - CU1 (2): Exhaust cleaner for Rc 1: U side exhaust
  - CU2 (2): Exhaust cleaner for Rc 1 1/2: U side exhaust
  - K (2): Special wiring specification (Except double wiring)
  - N: Name plate
  - SD (2): Direct exhaust with silencer box: D side exhaust
  - SU (2): Direct exhaust with silencer box: U side exhaust
  - W: IP65 enclosure

**Note 1)** When two or more symbols are specified, indicate them alphabetically. Example: -CD1K.
**Note 2)** Combination of [CD] and [SU] is not possible.
**Note 3)** Specify the wiring specifications on the manifold specification sheet.
## How to Order Valves

### Series VQ5

<table>
<thead>
<tr>
<th>Type of actuation</th>
<th>Seal</th>
<th>Function</th>
<th>Enclosure</th>
<th>Manual override</th>
<th>Light/Surge voltage suppressor</th>
<th>Coil voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>E</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>Standard type (1 W)</td>
<td>Dustlight</td>
<td>Nil</td>
<td>Nil</td>
<td>100 VAC (50/60 Hz)</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>Low wattage type (0.5 W)</td>
<td>Dustlight/Low jetproof type (IP65)</td>
<td>Nil</td>
<td>Nil</td>
<td>200 VAC (50/60 Hz)</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>External pilot</td>
<td>Non-locking push type (Tool required)</td>
<td>Nil</td>
<td>Nil</td>
<td>110 VAC (50/60 Hz)</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>Nil</td>
<td>Locking type (Tool required)</td>
<td>Nil</td>
<td>Nil</td>
<td>220 VAC (50/60 Hz)</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>24 VDC</td>
</tr>
</tbody>
</table>

### Special Wiring Specifications

Double wiring (connected to SOL A and SOL B) is used for the internal wiring of each station regardless of valve and option types. The optional specification permits mixture of single and double wiring. However, the maximum number of stations is 12.

1. **How to Order**
   - Indicate option symbol ("–K") in the manifold part number and be sure to specify station positions for single or double wiring on the manifold specification sheet.

2. **Wiring specifications**
   - Connections begin with the A side solenoid of the first station being connected to terminal no. 1, and continue in the order indicated by the arrows in the drawing without skipping any terminals.

### How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

<Example>

VQS01-0603TU ... 1 set → Manifold base part no.
- VQS5100-5 ... 2 sets → Valve part no. (Stations 1 and 2)
- VQS3200-5 ... 2 sets → Valve part no. (Stations 3 and 4)
- VQS3300-5 ... 1 set → Valve part no. (Station 5)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate them in the manifold specification sheet.

### Notes

1. There is no polarity. It can also be used as a negative common.
2. Applies to DC specifications.
3. Refer to page 2-6-39 for details on external pilot specifications.
4. When two or more symbols are specified, indicate them alphabetically.

---

**Stations are counted starting from the first station on the D side.**
Bottom ported drawing

Formula: $L_1 = 41n + 76$, $L_2 = 41n + 96$

- Including 1 station for terminal box mounting.

### Dimensions

<table>
<thead>
<tr>
<th>L</th>
<th>n</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>
</tr>
</thead>
<tbody>
<tr>
<td>$L_1$</td>
<td>16</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
</tr>
<tr>
<td>$L_2$</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
</tr>
</tbody>
</table>
**Base Mounted**

**Series VQ5000**

**T1 Kit (Individual terminal block kit)**

- When the junction cover on the manifold is opened, terminal box is installed in the manifold block. Lead wire from a solenoid is connected with the terminals on the terminal box in the bottom side. (The terminal box is connected with lead wire for both SOL. A and SOL. B and they correspond with the marking 1, 2, 3, 4 on the terminal box. Refer to how to connect with the terminal box.)
- Maximum stations are 12.

### Terminal Block Connections

<table>
<thead>
<tr>
<th>Model</th>
<th>Terminal block marking</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ5100</td>
<td>A side + A side –</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQ5200</td>
<td>A side + A side – B side + B side –</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQ5400</td>
<td>A side + A side – B side + B side –</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Compatible crimp terminals: 1.25-3S, 1.25Y-3, 1.25Y-3N, 1.25Y-3.5
- There is no polarity (+, –).

### How to Order Manifold

**VV5Q 5 08 03 T1 SD**

- **Series**: 5 VQ5000
- **Manifold**: Plug-in unit
- **Stations**: 1 1 station
- **Cylinder port**:
  - 03: Rc 3/8
  - 04: Rc 1/2
  - B: Bottom ported Rc 1/2
  - CM: Mixed

### Option

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>None</td>
</tr>
<tr>
<td>CD1</td>
<td>Exhaust cleaner for Rc 1: D side exhaust</td>
</tr>
<tr>
<td>CD2</td>
<td>Exhaust cleaner for Rc 1 1/2: D side exhaust</td>
</tr>
<tr>
<td>CU1</td>
<td>Exhaust cleaner for Rc 1: U side exhaust</td>
</tr>
<tr>
<td>CU2</td>
<td>Exhaust cleaner for Rc 1 1/2: U side exhaust</td>
</tr>
<tr>
<td>SB</td>
<td>Direct exhaust with silencer box: Exhaust from both U and D side</td>
</tr>
<tr>
<td>SD</td>
<td>Direct exhaust with silencer box: D side exhaust</td>
</tr>
<tr>
<td>SU</td>
<td>Direct exhaust with silencer box: U side exhaust</td>
</tr>
</tbody>
</table>

(Note) Combination of [CD1] and [SB] is not possible.
How to Order Valves

**VQ 5**

<table>
<thead>
<tr>
<th>Series</th>
<th>Type of actuation</th>
<th>Seal</th>
<th>Function</th>
<th>Coil voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2 position single</td>
<td>0</td>
<td>Null</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>2 position double</td>
<td></td>
<td>Y</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>3 position closed center</td>
<td>1</td>
<td>R</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>3 position exhaust center</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>3 position pressure center</td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>3 position double check</td>
<td></td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

---

**How to Order Manifold Assembly**

Specify the part numbers for valves and options together beneath the manifold base part number.

### Individual terminal block kit

- VQS51-0503T1: 1 set—Manifold base part no. +VQS100-5: 2 sets—Valve part no. (Stations 1 and 2) +VQS200-5: 2 sets—Valve no. (Stations 3 and 4) +VQS300-5: 1 set—Valve part no. (Station 5)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.

### Note

1) Applicable to DC specification.
2) Refer to page 2-6-39 for details on external pilot specifications.
3) When two or more symbols are specified, indicate them alphabetically.
Kit (Individual terminal block kit)

Base Mounted
Series VQ5000

T1

2-G1 (Electrical entry)

2-Rc 1/8 (Pilot EXH port)

6-Rc 3/4 (P), 5(R1), 3(R2) port

Indicator light

Manual override

2-6-20
Bottom ported drawing

U side

D side

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

Stations

Dimensions

Formula: L1 = 41n + 76, L2 = 41n + 96
n: Stations (Maximum 12 stations)

<table>
<thead>
<tr>
<th>L1</th>
<th>1</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>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>117</td>
<td>158</td>
<td>199</td>
<td>240</td>
<td>281</td>
<td>322</td>
<td>363</td>
<td>404</td>
<td>445</td>
<td>486</td>
<td>527</td>
<td>568</td>
</tr>
</tbody>
</table>

VQC
SQ
VQ0
VQ4
VQ5
VQZ
VQD
Enclosure IP65 compliant
Direct electrical entry type available with two or more stations.
Electrical entry can be selected on either the U side or the D side according to the mounting orientation.
Maximum stations are 12.

### Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ5000</td>
<td>4(A), 2(B) port location</td>
<td>Max. 12 stations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Porting</th>
<th>Port size</th>
<th>Side</th>
<th>Bottom</th>
</tr>
</thead>
<tbody>
<tr>
<td>4(A)</td>
<td>Rc 3/8</td>
<td>Rc 3/4</td>
<td></td>
</tr>
<tr>
<td>2(B)</td>
<td>Rc 1/2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Wiring Specifications

Three lead wires are attached to each station regardless of the type of valve which is mounted. The red wire is for COM connection.

#### Lead Wire Assembly with Connector

<table>
<thead>
<tr>
<th>Lead wire length</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.6 m</td>
<td>VVQ5000-44A-6-L50132</td>
</tr>
<tr>
<td>1.5 m</td>
<td>VVQ5000-44A-15-L50132</td>
</tr>
<tr>
<td>3 m</td>
<td>VVQ5000-44A-30-L50132</td>
</tr>
</tbody>
</table>

- Number of stations 1 to 12
- For different lead wire lengths, order a lead wire assembly with connector shown in the table on the right.
- (Note) There is no polarity. It can also be used as a negative common.

### How to Order Manifold

**VV5Q Series 1 Plug-in unit**

<table>
<thead>
<tr>
<th>Stations</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>2 stations</td>
</tr>
<tr>
<td>12</td>
<td>12 stations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1</td>
<td>None</td>
</tr>
<tr>
<td>CD1</td>
<td>Exhaust cleaner for Rc 1: D side exhaust</td>
</tr>
<tr>
<td>CD2</td>
<td>Exhaust cleaner for Rc 1 1/2: D side exhaust</td>
</tr>
<tr>
<td>CU1</td>
<td>Exhaust cleaner for Rc 1: U side exhaust</td>
</tr>
<tr>
<td>CU2</td>
<td>Exhaust cleaner for Rc 1 1/2: U side exhaust</td>
</tr>
<tr>
<td>SB</td>
<td>Direct exhaust with silencer box: Exhaust from both U and D sides</td>
</tr>
<tr>
<td>SD</td>
<td>Direct exhaust with silencer box: D side exhaust</td>
</tr>
<tr>
<td>SU</td>
<td>Direct exhaust with silencer box: U side exhaust</td>
</tr>
<tr>
<td>W</td>
<td>IP65 enclosure</td>
</tr>
</tbody>
</table>

(Note) Combination of [C3] and [S3] is not possible.
### How to Order Valves

<table>
<thead>
<tr>
<th>VQ 5</th>
<th>1</th>
<th>0</th>
<th>0</th>
<th>5</th>
<th>0</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series</td>
<td>5</td>
<td>VQ5000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of actuation</td>
<td>1</td>
<td>2 position single</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2 position double</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3 position closed center</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>3 position exhaust center</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>3 position pressure center</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>3 position double check</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seal</td>
<td>0</td>
<td>Metal seal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Rubber seal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Enclosure
- Nil
- Dusttight
- W Dusttight/Low jetproof type (IP65)

### Manual override
- Nil Non-locking push type (Tool required)
- B Locking type (Tool required)

### Light/Surge voltage suppressor
- Nil
- Yes Without light, with surge voltage suppressor

### Function
- Nil Standard type (1 W)
- Y Low wattage type (0.5 W)
- P External pilot

### Coil 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

### How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

**<Example>**

Lead wire kit with cable (3 m)

<table>
<thead>
<tr>
<th>VV5Q51-0503LD2</th>
<th>1 set</th>
<th>Manifold base part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ5100-5</td>
<td>2 sets</td>
<td>Valve part no. (Stations 1 and 2)</td>
</tr>
<tr>
<td>VQ5200-5</td>
<td>2 sets</td>
<td>Valve part no. (Stations 3 and 4)</td>
</tr>
<tr>
<td>VQ5300-5</td>
<td>1 set</td>
<td>Valve part no. (Station 5)</td>
</tr>
</tbody>
</table>

Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Note 1) Applicable to DC specification.
Note 2) Refer to page 2-6-39 for details on external pilot specifications.
Note 3) When two or more symbols are specified, indicate them alphabetically.

* The drawing shows the electrical entry on the D side.
* Cable length is measured from the solenoid valve body.
Bottom ported drawing

Formula: \( L_1 = 41n + 76, \ L_2 = 41n + 96 \)

<table>
<thead>
<tr>
<th>( n )</th>
<th>( n )</th>
<th>( n )</th>
<th>( n )</th>
<th>( n )</th>
<th>( n )</th>
<th>( n )</th>
<th>( n )</th>
<th>( n )</th>
<th>( n )</th>
<th>( n )</th>
<th>( n )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>117</td>
<td>118</td>
<td>119</td>
<td>120</td>
<td>121</td>
<td>122</td>
<td>123</td>
<td>124</td>
<td>125</td>
<td>126</td>
<td>127</td>
</tr>
<tr>
<td>2</td>
<td>137</td>
<td>138</td>
<td>139</td>
<td>140</td>
<td>141</td>
<td>142</td>
<td>143</td>
<td>144</td>
<td>145</td>
<td>146</td>
<td>147</td>
</tr>
</tbody>
</table>

Dimensions:

- Lead wire length:
  - \( L_3: 600 \text{ mm} \)
  - \( L_1: 1500 \text{ mm} \)
  - \( L_2: 3000 \text{ mm} \)

- Station number:

- Electrical entry on U side (LU):
  - 2n-Rc 1/2
  - 4(A), 2(B) port

- Electrical entry on D side (LD):
  - 2-Rc 1/8
  - (External pilot port)

- 2-6-25
**Base Mounted**

**Series VQ5000**

- The serial transmission system reduces wiring work, while minimizing wiring and saving space.
- The system is available in types such as the type SA for equipment with a maximum of 32 input/output points (a general purpose type for small scale systems), the type SB capable of controlling up to 512 points of input/output (Mitsubishi Electric compatible), the type SC (OMRON compatible), the type SD (SHARP compatible, 504 points max.), the type SF (NKE compatible, 128 points max.), the type SK (SUNX compatible), the type SJ (Fuji Electric compatible), the type SQ (OMRON Compo Bus/D compatible), and the type SR (OMRON Compo Bus/S compatible).
- Maximum 9 stations (12 stations available as an option. Indicate 10 to 12 stations on the manifold specification sheet.)
- One station is used for serial unit mounting.

**Stations**

- Stations are counted from station 1 on the D side.
- Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring is available as an option.

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>External power supply</td>
<td>24 VDC +10%, −5%</td>
</tr>
<tr>
<td>Current consumption (Internal unit)</td>
<td>SA, SB, SBB, SD, SF, SJ, SQ, SR, SV: 0.1A SC: 0.3A</td>
</tr>
</tbody>
</table>

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ5000</td>
<td>Side</td>
<td>Bottom</td>
</tr>
<tr>
<td></td>
<td>1(P), 5(R1), 3(R2)</td>
<td>Rc 3/4</td>
</tr>
<tr>
<td></td>
<td>4(A), 2(B)</td>
<td>Rc 3/8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rc 1/2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rc 1/2</td>
</tr>
<tr>
<td></td>
<td>Max. 9 stations</td>
<td></td>
</tr>
</tbody>
</table>

**怎样定购配管**

**VV5Q  5  1  08  03  S  U  Q**

- **Models**
  - O: Without SI unit
  - A: With general type SI unit (Series EX300)
  - B: Mitsubishi Electric Corp.: MELSECNET/MINI-S3 Data Link System
  - BB: Mitsubishi Electric Corp.: MELSECNET/MINI-S3 Data Link System (2 power supply systems)
  - C: OMRON Corp.: SYSBUS Wire System
  - D: SHARP Corp.: Satellite I/O Link System
  - F1: NKE Corp.: Uni-wire System (16 output points)
  - J1: SUNX Corp.: S-LINK System (16 output points)
  - J2: SUNX Corp.: S-LINK System (8 output points)
  - K: Fuji Electric Co.: YLINK Mini System
  - Q: DeviceNet, CompoBusD (OMRON Corp.)
  - R1: OMRON Corp.: CompoBus/S System (16 output points)
  - R2: OMRON Corp.: CompoBus/S System (8 output points)
  - U: JEMANET (JPCN-1)
  - V: Mitsubishi Electric Corp.: CC-LINK System
  - G: Rockwell Automation: Allen Bradley Remote I/O (RIO) System
  - H: NKE Corp.: Uni-wire H System

- **Option**
  - Symbol | Option |
  - Nil    | None   |
  - CD1(2) | Exhaust cleaner for Rc 1: D side exhaust |
  - CD2(2) | Exhaust cleaner for Rc 11/2: D side exhaust |
  - CUI(2) | Exhaust cleaner for Rc 1: U side exhaust |
  - CUC(2) | Exhaust cleaner for Rc 11/2: U side exhaust |
  - K(2)   | Special wiring specifications (Except double wiring) |
  - SD(2)  | Direct exhaust with silencer box: D side exhaust |
  - SU(2)  | Direct exhaust with silencer box: U side exhaust |
  - W      | IP65 enclosure |

**Note 1)** When two or more symbols are specified, indicate them alphabetically. Example) CD1K.

**Note 2)** Combination of [CD1] and [SU] is not possible.

**Note 3)** Specify the wiring specifications on the manifold specification sheet.
How to Order Valves

Series VQ 5 1 0 0 5

Type of actuation

<table>
<thead>
<tr>
<th>Series</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2 position single</td>
</tr>
<tr>
<td>2</td>
<td>2 position double</td>
</tr>
<tr>
<td>3</td>
<td>3 position closed center</td>
</tr>
<tr>
<td>4</td>
<td>3 position exhaust center</td>
</tr>
<tr>
<td>5</td>
<td>3 position pressure center</td>
</tr>
<tr>
<td>6</td>
<td>3 position double check</td>
</tr>
</tbody>
</table>

Seal

| 0 | Metal seal |
| 1 | Rubber seal |

Function

<table>
<thead>
<tr>
<th>Seal</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Standard type (1 W)</td>
</tr>
<tr>
<td>Y(1)</td>
<td>Low wattage type (0.5 W)</td>
</tr>
<tr>
<td>R(2)</td>
<td>External pilot</td>
</tr>
</tbody>
</table>

Note 1) Applicable to DC specification.

Note 2) Refer to page 2-6-39 for details on external pilot specifications.

Note 3) When two or more symbols are specified, indicate them alphabetically.

Coil voltage

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>24 VDC</td>
</tr>
</tbody>
</table>

Enclosure

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Dusttight</td>
</tr>
<tr>
<td>W</td>
<td>Dusttight/Low jetproof type (IP65)</td>
</tr>
</tbody>
</table>

Manual override

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Non-locking push type (Tool required)</td>
</tr>
<tr>
<td>B</td>
<td>Locking type (Tool required)</td>
</tr>
</tbody>
</table>

How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

Wiring example 1 > Double wiring (Standard)

Wiring example 2 > Single/Double mixed wiring (Option)

Note 1)

Note 2)

Note 3)
Note) In the case of two power supply systems (separate SI unit and solenoid drive power supplies), there are conduit ports (G 1/2) in four locations. Other models have conduit ports in two locations.
Bottom port drawing

Dimensions

Formula: \( L_1 = 41n + 76 \), \( L_2 = 41n + 96 \)
- Including 1 station for SI unit box mounting

<table>
<thead>
<tr>
<th>( n )</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>
</tr>
</thead>
<tbody>
<tr>
<td>( L_1 )</td>
<td>158</td>
<td>199</td>
<td>240</td>
<td>281</td>
<td>322</td>
<td>363</td>
<td>404</td>
<td>445</td>
<td>486</td>
<td>527</td>
<td>568</td>
</tr>
<tr>
<td>( L_2 )</td>
<td>178</td>
<td>219</td>
<td>260</td>
<td>301</td>
<td>342</td>
<td>383</td>
<td>424</td>
<td>465</td>
<td>506</td>
<td>547</td>
<td>588</td>
</tr>
</tbody>
</table>
Series VQ5000
Base Mounted
Plug Lead Unit: C Kit (Connector Kit)

How to Order Manifold

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Exhaust cleaner for Rc 1: D side exhaust</td>
</tr>
<tr>
<td>CD1</td>
<td>Exhaust cleaner for Rc 1 1/2: D side exhaust</td>
</tr>
<tr>
<td>CD2</td>
<td>Exhaust cleaner for Rc 1: U side exhaust</td>
</tr>
<tr>
<td>CU1</td>
<td>Exhaust cleaner for Rc 1 1/2: U side exhaust</td>
</tr>
<tr>
<td>CU2</td>
<td>Direct exhaust with silencer box: U side exhaust</td>
</tr>
<tr>
<td>SB</td>
<td>Direct exhaust with silencer box: D side exhaust</td>
</tr>
<tr>
<td>SD</td>
<td>Direct exhaust with silencer box: U side exhaust</td>
</tr>
<tr>
<td>SU</td>
<td>Direct exhaust with silencer box: D side exhaust</td>
</tr>
<tr>
<td>W</td>
<td>IP65 enclosure</td>
</tr>
</tbody>
</table>

Note) Combination of [C] and [S] is not possible.

Refer to page 2-6-2 (Grommet style) for wiring specifications.

How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

Example>
Connector kit
W5Q50-504DC 2 x 1 set — Manifold base part no.
  + VQ5150-5G — 2 sets— Valve part no. (Stations 1 and 2)
  + VQ5250-5G — 2 sets— Valve part no. (Stations 3 and 4)
  + VQ5350-5G — 1 set — Valve part no. (Station 5)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Enter in order starting from the first station on the D side.
When entry of part numbers becomes complicated, indicate in the manifold specification sheet.

How to Order Valves

<table>
<thead>
<tr>
<th>Series</th>
<th>5 VQ5000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of actuation</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2 position single</td>
</tr>
<tr>
<td>2</td>
<td>2 position double</td>
</tr>
<tr>
<td>3</td>
<td>3 position closed center</td>
</tr>
<tr>
<td>4</td>
<td>3 position exhaust center</td>
</tr>
<tr>
<td>5</td>
<td>3 position pressure center</td>
</tr>
<tr>
<td>6</td>
<td>3 position double check</td>
</tr>
</tbody>
</table>

Seal

<table>
<thead>
<tr>
<th>Nil</th>
<th>Metal seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rubber seal</td>
</tr>
</tbody>
</table>

Function

<table>
<thead>
<tr>
<th>Nil</th>
<th>Standard type (1 W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>Low wattage type (5.5 W)</td>
</tr>
<tr>
<td>R</td>
<td>External pilot</td>
</tr>
</tbody>
</table>

Note 1) Applicable to DC specification.
Note 2) Refer to page 2-6-39 for details on external pilot specifications.
Note 3) When two or more symbols are specified, indicate them alphabetically.

Coil 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 |

Light/Surge voltage suppressor

<table>
<thead>
<tr>
<th>Nil</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>Without light, with surge voltage suppressor</td>
</tr>
</tbody>
</table>

Manual override

<table>
<thead>
<tr>
<th>Nil</th>
<th>Non-locking push type (Tool required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Locking type (Tool required)</td>
</tr>
</tbody>
</table>

Grommet

<table>
<thead>
<tr>
<th>G</th>
<th>Lead wire length 0.6 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>Lead wire length 1.5 m</td>
</tr>
</tbody>
</table>

Option

<table>
<thead>
<tr>
<th>Station</th>
<th>Kit type (Connector)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>C</td>
</tr>
<tr>
<td>12</td>
<td>C</td>
</tr>
</tbody>
</table>

Cylinder port

| 03 | Rc 3/8 |
| 04 | Rc 1/2 |
| B  | Bottom ported Rc 1/2 |
| CM | Mixed |

Max. 12 stations
## Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Base model</th>
<th>Type of connection</th>
<th>Porting specifications</th>
<th>Maximum applicable stations</th>
<th>Applicable solenoid valve</th>
<th>5 station weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ5000</td>
<td>VVSQ55-□□□□</td>
<td>C kit–Grommet</td>
<td>4(A), 2(B) port location</td>
<td>1(P), 5(R1), 3(R2) 4(A), 2(B)</td>
<td>VQS□□□0 VQS□□□1</td>
<td>3.7</td>
</tr>
</tbody>
</table>

Note) For details about international standard threads other than Rc threads, refer to “Option” on page 2-6-39.

### Flow Characteristics at the Number of Manifold Stations (Operated individually)

<table>
<thead>
<tr>
<th>Model</th>
<th>Passage/Stations</th>
<th>Station 1</th>
<th>Station 5</th>
<th>Station 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 position metal seal VQ5□00</td>
<td>1 → 4/2 (P → A/B)</td>
<td>C [dm³/(s·bar)]</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b</td>
<td>0.24</td>
<td>0.24</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cv</td>
<td>2.7</td>
<td>2.7</td>
</tr>
<tr>
<td></td>
<td>4/2 → 5/3 (A/B → EA/EB)</td>
<td>C [dm³/(s·bar)]</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b</td>
<td>0.14</td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cv</td>
<td>2.9</td>
<td>2.9</td>
</tr>
<tr>
<td>2 position rubber seal VQ5□01</td>
<td>1 → 4/2 (RA/B)</td>
<td>C [dm³/(s·bar)]</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b</td>
<td>0.33</td>
<td>0.33</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cv</td>
<td>3.4</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td>4/2 → 5/3 (A/B → EA/EB)</td>
<td>C [dm³/(s·bar)]</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b</td>
<td>0.33</td>
<td>0.33</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cv</td>
<td>4.4</td>
<td>4.4</td>
</tr>
</tbody>
</table>

Note) For port size Rc 1/2

### Manifold Option

- **Blanking plate assembly** VVQ5000-10A-5
- **Individual SUP spacer** VVQ5000-P-5-□□
- **Individual EXH spacer** VVQ5000-R-5-□□
- **EXH block plate** VVQ5000-16A-2
- **Throttle valve spacer** VVQ5000-20A-5
- **SUP stop valve spacer** VVQ5000-37A-5
- **SUP block plate** VVQ5000-16A-1
- **Double check spacer with residual pressure release valve** VVQ5000-25A-5
- **Release valve spacer** VVQ5000-24A-5D
- **Direct exhaust with silencer box** [-S□□□]
- **For exhaust cleaner mounting** [-C□□□]
- **Interface regulator** ARBQ5000-00-□□-□□

*Refer to pages 2-6-34 to 2-6-39 for detailed dimensions of each option. For replacement parts, refer to page 2-6-43.*
**Manifold Option Parts**

**Blanking plate assembly**

**VVQ5000-10A-1 (Plug-in type)**
**VVQ5000-10A-5 (Plug lead type)**

It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.

**Individual SUP spacer**

**VVQ5000-P-1-03 (Plug-in type)**
**VVQ5000-P-5-03 (Plug lead type)**

By mounting individual SUP spacers on a manifold block, it is possible to provide individual supply ports for each valve.

**Individual EXH spacer**

**VVQ5000-R-1-03 (Plug-in type)**
**VVQ5000-R-5-03 (Plug lead type)**

By mounting individual EXH spacers on a manifold block, exhaust ports can be provided individually for each valve. (Common EXH type)
**Throttle valve spacer**

**VVQ5000-20A-1 (Plug-in type)**  
**VVQ5000-20A-5 (Plug lead type)**

A throttle valve spacer is mounted on a manifold block to control cylinder speed by throttling exhaust air flow.

![Throttle valve spacer](image)

**SUP stop valve spacer**

**VVQ5000-37A-1 (Plug-in type)**  
**VVQ5000-37A-5 (Plug lead type)**

A SUP stop valve spacer is mounted on a manifold block, making it possible to individually shut off supply air to each valve.

![SUP stop valve spacer](image)

**Release valve spacer: For D side mounting**

**VVQ5000-24A-1D (Plug-in type)**  
**VVQ5000-24A-5D (Plug lead type)**

A VQ51□□ (single) valve can be used as an air release valve by combining it with a release valve spacer.  
Note) 2 position double and 3 position cannot be mounted.

![Release valve spacer](image)

**SUP block plate**  
**EXH block plate**

**VVQ5000-16A-1**  
**VVQ5000-16A-2**

When different pressures, high and low, are supplied to manifold, a SUP block plate is inserted between the stations under different pressures.

![SUP/EXH block plates](image)
Double check spacer with residual pressure release valve

**VVQ5000-25A-1 (Plug-in type)**
**VVQ5000-25A-5 (Plug lead type)**

Can hold an intermediate cylinder position for an extended time. When combined with a double check spacer with built-in double check valve, it is unaffected by air leakage between the spool valves, making it possible to hold a cylinder at an intermediate stopping position for an extended time. Further, a combination of a 2 position type (VQ51②) and a double check spacer can be used for drop prevention.

**Specifications**

<table>
<thead>
<tr>
<th>Leakage N cm³/min</th>
<th>Double check spacer part no.</th>
<th>Intermediate stop</th>
<th>Drop prevention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VQ5000-25A-1</td>
<td>VQ5000-25A-5</td>
<td></td>
</tr>
<tr>
<td>One solenoid energized</td>
<td>1(P)</td>
<td>5 (R1)</td>
<td>320 or less</td>
</tr>
<tr>
<td>Both solenoids unenergized</td>
<td>1(P)</td>
<td>5 (R1)</td>
<td>320 or less</td>
</tr>
<tr>
<td></td>
<td>4(A)</td>
<td>5 (R1)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>2(B)</td>
<td>3 (R2)</td>
<td></td>
</tr>
</tbody>
</table>

* Supply pressure: 0.5 MPa

**Caution**

- In the case of 3 position double check (VZS65③), check the leakage from piping and fittings in between valve and cylinder by means of synthetic detergent solutions, and ensure that there is no such leakage found there. Also check the leakage from cylinder seal and piston seal. If there is any leakage, sometimes the cylinder, when valve is de-energized, can move without stopping at intermediate position.
- Use caution, as excessive throttling of the double check spacer exhaust can cause a loss of intermediate stopping accuracy and malfunction.
- Combination with a 3 position VQ51② is not possible.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.

**Direct exhaust with silencer box**

**VV5Q5①-②③-SD (D side exhaust)**
**VV5Q5①-②③-SU (U side exhaust)**
**VV5Q5①-②③-SB (Double side exhaust)**

The EXH outlet is placed on the top side of the manifold end plate. The built-in silencer provides highly effective noise reduction. (Noise reduction of 35 dB or more)

**Note** Note that when excessive drainage occurs in the air supply, the drainage will be released along with the exhaust.

**Series VQ5000**

**Caution**

**Handling Precautions**

- In the case of 3 position double check (VZS65③), check the leakage from piping and fittings in between valve and cylinder by means of synthetic detergent solutions, and ensure that there is no such leakage found there. Also check the leakage from cylinder seal and piston seal. If there is any leakage, sometimes the cylinder, when valve is de-energized, can move without stopping at intermediate position.
- Use caution, as excessive throttling of the double check spacer exhaust can cause a loss of intermediate stopping accuracy and malfunction.
- Combination with a 3 position VQ51② is not possible.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.
Manifold mounted exhaust cleaner

**VVQ5-□□□□-CD** (D side mounting)  
**VVQ5-□□□□-CU** (U side mounting)

An adapter plate for exhaust cleaner mounting is provided on the top of the manifold end plate. The exhaust cleaner collects drainage and oil mist (99.9% or more) and is highly effective for noise reduction. (Noise reduction of 35 dB or more)

**Applicable exhaust cleaners**

- **AMC610-10** (Port size Rc 1), **AMC810-14** (Port size Rc 1½)

**Plug-in type**

- **Plug lead type**

---

**Dimensions**

Formula: \( L_1 = 41n + 76 \), \( L_2 = 41n + 96 \)

<table>
<thead>
<tr>
<th>( n )</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>
</tr>
</thead>
<tbody>
<tr>
<td>( L_1 )</td>
<td>158</td>
<td>199</td>
<td>240</td>
<td>281</td>
<td>322</td>
<td>363</td>
<td>404</td>
<td>445</td>
<td>486</td>
<td>527</td>
<td>568</td>
</tr>
<tr>
<td>( L_2 )</td>
<td>178</td>
<td>219</td>
<td>260</td>
<td>301</td>
<td>342</td>
<td>383</td>
<td>424</td>
<td>465</td>
<td>506</td>
<td>547</td>
<td>588</td>
</tr>
</tbody>
</table>

---

**Note**

1) Exhaust cleaner: AMC610-10 and AMC810-14 are not included. (Order separately)
2) Mount so that the exhaust cleaner is at the lower side.
3) For details about the exhaust cleaner, refer to Best Pneumatics vol.5.
Manifold Option Parts

Interface regulator (P, A, B port regulation)

ARBQ5000-00-□-1 (Plug-in type)
ARBQ5000-00-□-5 (Plug lead type)

By mounting a spacer regulator on the manifold block, it enables to regulate pressure per every valve.

Specifications

<table>
<thead>
<tr>
<th>Interface regulator</th>
<th>ARBQ5000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulating port</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>P</td>
</tr>
<tr>
<td>Applicable solenoid valve</td>
<td>Plug-in</td>
</tr>
<tr>
<td></td>
<td>Plug lead</td>
</tr>
<tr>
<td></td>
<td>Plug-in</td>
</tr>
<tr>
<td></td>
<td>Plug lead</td>
</tr>
<tr>
<td>Maximum operating pressure</td>
<td>1.0 MPa</td>
</tr>
<tr>
<td>Set pressure range</td>
<td>0.05 to 0.85 MPa</td>
</tr>
<tr>
<td>Fluid</td>
<td>Air</td>
</tr>
<tr>
<td>Ambient and fluid temperature</td>
<td>–5 to 60°C (No freezing)</td>
</tr>
<tr>
<td>Port size for connection of pressure gauge</td>
<td>M5 x 0.8</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>0.79 0.74 0.78 0.73 0.79 0.74</td>
</tr>
<tr>
<td>Effective area at supply side (mm²)</td>
<td>P → A 33 75 29</td>
</tr>
<tr>
<td></td>
<td>P → B 64 33 28</td>
</tr>
<tr>
<td>Effective area at exhaust side (mm²)</td>
<td>A → EA 36 75 78</td>
</tr>
<tr>
<td></td>
<td>B → EB 68 38 69</td>
</tr>
</tbody>
</table>

Note 1) Set the pressure within the operating pressure range of the solenoid valve.
Note 2) Use a spacer regulator by pressurizing from the P port on the base except the case of being used as a dual pressure valve. Besides, P port regulation is not allowed to use.
Note 3) When using a perfect spacer, assemble a valve, a spacer regulator and a perfect spacer in this order to use it.
Note 4) When using in A port regulation, B port regulation by closed center, since there is a problem in its operation, please contact SMC.
Note 5) Dusttight/splash proof enclosure (IP65) is not available with interface regulator.

How to Order

<table>
<thead>
<tr>
<th>Solenoid valve</th>
<th>Interface regulator</th>
<th>Regulating port</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQS□□□ (Plug-in type)</td>
<td>ARBQ5000-00-A-1</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>ARBQ5000-00-B-1</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>ARBQ5000-00-P-1</td>
<td>P</td>
</tr>
<tr>
<td>VQS□□□ (Plug lead type)</td>
<td>ARBQ5000-00-A-5</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>ARBQ5000-00-B-5</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>ARBQ5000-00-P-5</td>
<td>P</td>
</tr>
</tbody>
</table>

Dimensions

Flow Characteristics

Conditions
Inlet pressure: 0.7 MPa
Outlet pressure: 0.2 MPa
Flow rate: 20 /min(ANR)

Pressure Characteristics

Conditions
Inlet pressure: 0.7 MPa
Outlet pressure: 0.2 MPa
Flow rate: 20 /min(ANR)
External Pilot Specifications

When the supply pressure is
- lower than the minimum solenoid valve operating pressure of 0.1 to 0.2 MPa, or when it drops below this level,
- used for reverse pressure (R port pressure) or cylinder pressure (A, B port pressure),
- used for vacuum specifications (please contact SMC), it can be used for external pilot specifications.
Order a valve by adding the external pilot specification [R] to the part number.
External pilot is available as standard for manifolds and options.

How to Order Manifold
VQ5100 [R] — 5 — 04

External pilot specifications

<table>
<thead>
<tr>
<th>Pressure Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve construction</td>
</tr>
<tr>
<td>Operating pressure range</td>
</tr>
<tr>
<td>External pilot (Note) pressure range</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Note) Mixed mounting of internal and external pilots is possible

Rc specifications are standard for all ports, however, NPT, NPTF and G are available for international markets.
Add the appropriate symbol following the port size in the standard part number.

How to Order Single Valves (Example)
VQ5100 — 5 — 04

Cylinder port
Port size

• Thread type 1(P), 5(R1), 3(R2) and 4(A), 2(B) port

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

How to Order Manifold
VV5Q51 — 08 — 03 FU1

Cylinder port
Port size

• Thread type 1(P), 5(R1), 3(R2) and 4(A), 2(B) port

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

How to Order Sub-plates and Options (Example)

<table>
<thead>
<tr>
<th>Valve construction</th>
<th>Metal seal</th>
<th>Rubber seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating pressure range</td>
<td>Vacuum to 1.0 MPa</td>
<td></td>
</tr>
<tr>
<td>External pilot (Note) pressure range</td>
<td>Single</td>
<td>0.1 to 1.0 MPa (0.1 to 0.7 MPa)</td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td>0.15 to 1.0 MPa (0.15 to 0.7 MPa)</td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>0.15 to 1.0 MPa (0.15 to 0.7 MPa)</td>
</tr>
</tbody>
</table>

Note) Mixed mounting of internal and external pilots is possible

Rc specifications are standard for all ports, however, NPT, NPTF and G are available for international markets.
Add the appropriate symbol following the port size in the standard part number.

How to Order Sub-plates (Example)
VQ5000 — P — B 04 (Sub-plate)
VVQ5000 — P — 1 — 04 (Option)

<table>
<thead>
<tr>
<th>Port size</th>
<th>Thread type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Rc</td>
</tr>
<tr>
<td>N</td>
<td>NPT</td>
</tr>
<tr>
<td>T</td>
<td>NPTF</td>
</tr>
<tr>
<td>F</td>
<td>G</td>
</tr>
</tbody>
</table>
**Series VQ5000**

**Construction**

### Plug-in Unit

#### Metal seal

<table>
<thead>
<tr>
<th>Component</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></td>
</tr>
<tr>
<td>2</td>
<td>Spool/Sleeve</td>
<td>Stainless steel</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

**Replacement Parts**

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>Model</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Pilot valve assembly</td>
<td>VOZ111P-□</td>
<td>- Coil rated voltage (Example) 24 VDC: 5</td>
</tr>
</tbody>
</table>

#### Rubber seal type

**Component Parts**

<table>
<thead>
<tr>
<th>Number</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></td>
</tr>
<tr>
<td>2</td>
<td>Spool valve</td>
<td>Aluminum, NBR</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

**Replacement Parts**

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>Model</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Pilot valve assembly</td>
<td>VOZ111P-□</td>
<td>- Coil rated voltage (Example) 24 VDC: 5</td>
</tr>
</tbody>
</table>
Series VQ5000

Construction

Plug Lead Unit

Metal seal

Component Parts

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Aluminum die-cast</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Spool/Sleeve</td>
<td>Stainless steel</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

Replacement Parts

4 Pilot valve assembly VQZ111P-□ * Coil rated voltage Example) 24 VDC; 5

Rubber seal type

Component Parts

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Aluminum die-cast</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Spool valve</td>
<td>Aluminum, NBR</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

Replacement Parts

4 Pilot valve assembly VQZ111P-□ * Coil rated voltage Example) 24 VDC; 5

VQC

SQ

VQ0

VQ4

VQ5

VQZ

VQD

2-6-41
### Exploded View of Manifold

<table>
<thead>
<tr>
<th>D side end plate assembly</th>
<th>Manifold block assembly</th>
<th>Tie-rod</th>
<th>U side end plate assembly</th>
</tr>
</thead>
</table>

Note: The electrical entry cannot be changed.

The drawing shows a plug-in type.
### D Side End Plate Assembly
1. D side end plate assembly part no. (for F, L, S, T & T1 kits)

**VVQ5000 — 3A — 1**

- **Electrical entry**
  - **Option**
    - L: T1, F, L, T, S kits
    - F<sup>(1)</sup>: F kit (Connector side)
    - C: C kit (plug lead type)

- **Note**
  1. D-sub connector is not included.
  2. Splashproof specifications is not available for F and T1.

### U Side End Plate Assembly Part No.
2. U side end plate assembly part no. (for F, L, S, T & T1 kits)

**VVQ5000 — 2A — 1**

- **Electrical entry**
  - **Option**
    - L: T1, F, L, T, S kits
    - F<sup>(1)</sup>: F kit (Connector side)
    - C: C kit (plug lead type)

- **Note**
  1. D-sub connector is not included.
  2. Splashproof specifications is not available for F and T1.

### Manifold Block Assembly
3. Manifold block assembly part no.

**VVQ5000 — 1**

- **Type**
  - A: For 1 station

- **Electrical entry**
  - **Option**
    - L0: L0 kit: Stations (1 to 12)
    - L1: L1 kit: Stations (1 to 12)
    - L2: L2 kit: Stations (1 to 12)
    - C: C kit (Plug lead type)

- **Port size**
  - 03: Rc 3/8
  - 04: Rc 1/2

- **Note**
  1. Tie-rods (2 pcs.) and lead wire assembly for station addition included.
  2. Splashproof specifications is not available for F and T1.

### SI Unit
SI Unit Part No.

<table>
<thead>
<tr>
<th>Type</th>
<th>Model symbol</th>
<th>SI unit part no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dedicated output model</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>EX323U-S001</td>
<td>EX323D-S001</td>
<td>General type SI unit (Series EX300)</td>
</tr>
<tr>
<td>B</td>
<td>EX123U-SMB1</td>
<td>EX123D-SMB1</td>
<td>Mitsubishi Electric Corporation: MELSECNET/MINI-S3 Data Link System</td>
</tr>
<tr>
<td>BB</td>
<td>EX124U-SMB1</td>
<td>EX124D-SMB1</td>
<td>Mitsubishi Electric Corporation: MELSECNET/MINI-S3 Data Link System (2 power supply systems)</td>
</tr>
<tr>
<td>C</td>
<td>EX123U-STA1</td>
<td>EX123D-STA1</td>
<td>OMRON: SYSBUS Wire System</td>
</tr>
<tr>
<td>D</td>
<td>EX123U-SSH1</td>
<td>EX123D-SSH1</td>
<td>SHARP: Satellite I/O Link System</td>
</tr>
<tr>
<td>F1</td>
<td>EX123U-SUW1</td>
<td>EX123D-SUW1</td>
<td>NKE: Uni-wire System (16 output points)</td>
</tr>
<tr>
<td>H</td>
<td>EX123U-SUH1</td>
<td>EX123D-SUH1</td>
<td>NKE: Uni-wire H System</td>
</tr>
<tr>
<td>J1</td>
<td>EX123U-SSL1</td>
<td>EX123D-SSL1</td>
<td>SUNX: S-LINK System (16 point outputs)</td>
</tr>
<tr>
<td>J2</td>
<td>EX123U-SSL2</td>
<td>EX123D-SSL2</td>
<td>SUNX Corporation: S-LINK System (8 output points)</td>
</tr>
<tr>
<td>K</td>
<td>EX123U-SFU1</td>
<td>EX123D-SFU1</td>
<td>Fuji Electric Co.: T-LINK Mini System</td>
</tr>
<tr>
<td>Q</td>
<td>EX124D-SDN1</td>
<td>EX124D-SDN1</td>
<td>OMRON Corp.: DeviceNet, CompoBus/D (2 power supply systems)</td>
</tr>
<tr>
<td>R1</td>
<td>EX124U-SCS1</td>
<td>EX124D-SCS1</td>
<td>OMRON Corp.: CompoBus/S (16 output points, 2 power supply systems)</td>
</tr>
<tr>
<td>R2</td>
<td>EX124U-SCS2</td>
<td>EX124D-SCS2</td>
<td>OMRON Corp.: CompoBus/S (8 output points, 2 power supply systems)</td>
</tr>
<tr>
<td>U</td>
<td>EX124U-SJN1</td>
<td>EX124D-SJN1</td>
<td>JEMANET (2 power supply systems)</td>
</tr>
<tr>
<td>V</td>
<td>EX124U-SMJ1</td>
<td>EX124D-SMJ1</td>
<td>Mitsubishi Electric Corporation: CC-Link System (2 power supply systems)</td>
</tr>
<tr>
<td>G</td>
<td>EX124U-SAB1</td>
<td>EX124D-SAB1</td>
<td>Allen-Bradley Remote I/O (RIO) System (2 power supply systems) (Rockwell Automation, Inc.)</td>
</tr>
</tbody>
</table>

- **Note** Spare parts consist of sets containing 10 pcs. each.

---

<SI Unit>