5 Port Solenoid Valve
Metal Seal / Rubber Seal

Power saving

Standard: **0.4 W**
(Reduced by **60%** compared to existing model)

High-pressure (1 MPa, Metal seal): **0.95 W**

Series **VQ1000/2000**
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.

The non-bias, one-clamp structure permits easy valve replacement.

Built-in one-touch fittings for easy piping

Slide locking type manual override provided
Manual override cannot be pushed by sliding the switch, to prevent malfunction.

Thin compact design with high flow capacity

<table>
<thead>
<tr>
<th>Model</th>
<th>Manifold pitch (mm)</th>
<th>Flow-rate characteristics</th>
<th>Applicable cylinder bore size</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>10.5</td>
<td>0.72</td>
<td>1.0</td>
</tr>
<tr>
<td>VQ2000</td>
<td>16</td>
<td>2.6</td>
<td>3.2</td>
</tr>
</tbody>
</table>

> Flow-rate characteristics: 4/2 → 5/3 (A/B → R1/R2)

A wide variety of optional parts
The photo does not show an actual use example.

Regulator unit
This regulator adjusts the SUP pressure of a manifold and reduces the supply pressure from the D-side SUP port.

Direct EXH outlet with built-in silencer

Slide locking type Manual

Locking type Manual

Ejector unit
It is possible to mount an ejector on the manifold together with the solenoid valve. Reduced wiring and space saving.

Blanking plate assembly

Port plug

Individual SUP spacer

Individual EXH spacer

Elbow fitting assembly bottom ported

Elbow fitting assembly top ported

Valve Specifications

<table>
<thead>
<tr>
<th>Model</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>24 VDC</td>
<td>Plug-in</td>
<td>Slide locking</td>
</tr>
<tr>
<td>P. 7</td>
<td>Single</td>
<td>110 VAC</td>
<td>L-type plug connector</td>
<td>(FL kit only)</td>
</tr>
<tr>
<td>VQ2000</td>
<td>Double</td>
<td>120 VAC</td>
<td>M-type plug connector</td>
<td>(FL kit only)</td>
</tr>
<tr>
<td>P. 15</td>
<td>Single</td>
<td>230 VAC</td>
<td>Reversing path plug connector</td>
<td>(FL kit only)</td>
</tr>
<tr>
<td>VQ2000</td>
<td>Single</td>
<td>120 VAC</td>
<td>Regulator unit</td>
<td>Slide locking</td>
</tr>
<tr>
<td>P. 15</td>
<td>Double</td>
<td>230 VAC</td>
<td>Ejector unit</td>
<td>(FL kit only)</td>
</tr>
</tbody>
</table>

Bore ø1.7

Bore ø1.7

Base Mounted

Series VQ1000

<table>
<thead>
<tr>
<th>Model</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>24 VDC</td>
<td>Plug-in</td>
<td>Slide locking</td>
</tr>
<tr>
<td>P. 7</td>
<td>Single</td>
<td>110 VAC</td>
<td>L-type plug connector</td>
<td>(FL kit only)</td>
</tr>
</tbody>
</table>

Series VQ2000

<table>
<thead>
<tr>
<th>Model</th>
<th>Type of actuation</th>
<th>Voltage</th>
<th>Electrical entry</th>
<th>Manual override</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ2000</td>
<td>Single</td>
<td>24 VDC</td>
<td>Plug-in</td>
<td>Slide locking</td>
</tr>
<tr>
<td>P. 15</td>
<td>Single</td>
<td>110 VAC</td>
<td>L-type plug connector</td>
<td>(FL kit only)</td>
</tr>
</tbody>
</table>
A variety of common wiring methods are standardized.

### F kit
(D-sub connector)
- Number of pins: 15/25
- Top entry
- Side entry

### P kit
(Flat ribbon cable)
- Number of pins: 10/16/20/26
- Top entry
- Side entry

### J kit
(PC Wiring System compliant Flat ribbon cable)
- Number of pins: 20
- Top entry
- Side entry

### G kit
(Flat ribbon cable with terminal block)
- Number of pins: 20
- Top entry
- Side entry

### T kit
(Terminal block box)

### L kit
(Lead wire)

### S kit
(Serial transmission)

### M kit
(Circular connector)
(VQ2000 only)

#### Dual 3-port valves, 4 positions
Rubber seal only
- Two 3-port valves built into one body.
- The 3-port valves on the A and B sides can operate independently.
- When used as 3 port valves, only half the number of stations is required.
- Can also be used as a 4-position, 5-port type valve.

Exhaust center:
- VQ1A01
- VQ2A01
Pressure center:
- VQ1B01
- VQ2B01

<table>
<thead>
<tr>
<th>Model</th>
<th>A side</th>
<th>B side</th>
<th>JIS symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1A01</td>
<td>N.C. valve</td>
<td>N.C. valve</td>
<td></td>
</tr>
<tr>
<td>VQ2A01</td>
<td>N.C. valve</td>
<td>N.C. valve</td>
<td></td>
</tr>
<tr>
<td>VQ1B01</td>
<td>N.O. valve</td>
<td>N.O. valve</td>
<td></td>
</tr>
<tr>
<td>VQ2B01</td>
<td>N.O. valve</td>
<td>N.O. valve</td>
<td></td>
</tr>
<tr>
<td>VQ1C01</td>
<td>N.C. valve</td>
<td>N.O. valve</td>
<td></td>
</tr>
<tr>
<td>VQ2C01</td>
<td>N.O. valve</td>
<td>N.O. valve</td>
<td></td>
</tr>
</tbody>
</table>

#### Semi-standard Options

<table>
<thead>
<tr>
<th>Feature</th>
<th>Series VQ1000</th>
<th>Series VQ2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>External pilot</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D-sub connector</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flat ribbon cable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative COM specifications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inch-size one-touch fittings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special wiring specifications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blanking plate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual SUPER EXH plate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUP/EXH block plate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name plate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black pressure check valve</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIN rail mounting</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>Dual flow fitting</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</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silence block (Semi-standard)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **P. 55**
- **P. 71**

![Diagram showing the connections and symbols for the 3-port valves](image-url)
## Manifold Variations

<table>
<thead>
<tr>
<th>D-sub connector</th>
<th>Flat ribbon cable (26/20/16/10 pins)</th>
<th>Flat ribbon cable (20 pins)</th>
<th>Flat ribbon cable with terminal block</th>
<th>Terminal block box (Terminal block)</th>
<th>Lead wire</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>F</strong> kit</td>
<td><strong>P</strong> kit</td>
<td><strong>J</strong> kit</td>
<td><strong>G</strong> kit</td>
<td><strong>T</strong> kit</td>
<td><strong>L</strong> kit</td>
</tr>
<tr>
<td>D-sub connector</td>
<td>Flat ribbon cable connector</td>
<td>Flat ribbon cable connector</td>
<td>Flat ribbon cable connector</td>
<td>Terminal block</td>
<td>Lead wire</td>
</tr>
<tr>
<td>Conforming to MIL D-sub connector</td>
<td>Conforming to MIL flat ribbon cable connector</td>
<td>Conforming to MIL flat ribbon cable connector</td>
<td>Applicable to OMRON’s serial transmission unit</td>
<td>PC Wiring System compatible</td>
<td>Direct electrical entry type</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Series VQ1000</th>
<th>Series VQ2000</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
</tr>
<tr>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
</tr>
<tr>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
</tr>
<tr>
<td><img src="image7.png" alt="Image" /></td>
<td><img src="image8.png" alt="Image" /></td>
</tr>
<tr>
<td><img src="image9.png" alt="Image" /></td>
<td><img src="image10.png" alt="Image" /></td>
</tr>
</tbody>
</table>

**Pages:**
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- Series VQ2000: P. 17, P. 21, P. 29, P. 33, P. 37
Manifold Variations

<table>
<thead>
<tr>
<th>Gateway-type serial transmission system</th>
<th>Integrated-type serial transmission system (for Output)</th>
<th>Integrated-type serial transmission system (for I/O)</th>
<th>Circular connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial unit: EX510</td>
<td>Serial unit: EX120/123/124</td>
<td>Serial unit: EX240</td>
<td>IP65 (Dust-tight, Water-jet-proof)</td>
</tr>
<tr>
<td>IP20 enclosure compliant</td>
<td>IP20 enclosure compliant</td>
<td>IP65 enclosure compliant</td>
<td>W type only</td>
</tr>
<tr>
<td>P. 41</td>
<td>P. 45</td>
<td>P. 49</td>
<td>P. 51</td>
</tr>
<tr>
<td>Dust-tight, Water-jet-proof (-W)</td>
<td>IP65 enclosure compliant</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dust-protected (-XP)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Cylinder Speed Chart

This chart is provided as guidelines only. For performance under various conditions, use SMC’s Model Selection Program before making a judgment.

<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, CA2</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1101</td>
<td></td>
<td>ø6 ø10 ø16</td>
<td>ø20 ø25 ø32</td>
<td>ø40 ø50 ø63 ø80 ø100</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>800</td>
<td>700</td>
<td>600</td>
<td>500</td>
</tr>
<tr>
<td>VQ2101</td>
<td></td>
<td>ø8 ø16</td>
<td>ø20 ø25 ø32</td>
<td>ø40 ø50 ø63 ø80 ø100</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>800</td>
<td>700</td>
<td>600</td>
<td>500</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 mass x 9.8)/Theoretical force) x 100%

Conditions

<table>
<thead>
<tr>
<th>Series</th>
<th>Conditions</th>
<th>Series CJ2</th>
<th>Series CM2</th>
<th>Series MB, CA2</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1101</td>
<td>Tube bore x Length</td>
<td>T0604 (O.D. ø6/I.D. ø4) x 1 m</td>
<td>AS3001F-06</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>AN200-KM8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQ2101</td>
<td>Tube bore x Length</td>
<td>T0806 (O.D. ø8/I.D. ø6) x 1 m</td>
<td>AS3001F-08</td>
<td>AN200-KM10</td>
</tr>
</tbody>
</table>
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- **VQ1000/2000 Model, Standard/Manifold Specifications** P. 15

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- **P** kit (Flat ribbon cable) .................................... P. 21
- **J** kit (Flat ribbon cable) .................................... P. 25
- **G** kit (Flat ribbon cable with terminal block) .......... P. 29
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Plug-in Unit
Base Mounted

Series VQ1000

How to Order Manifold

**F** kit (D-sub connector)
**P** kit (Flat ribbon cable)
**J** kit (Flat ribbon cable 20P)
**G** kit (Flat ribbon cable with terminal block)

- **CE compliant**
- **Option**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Option</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>With name plate</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>With back pressure check valve</td>
<td></td>
</tr>
<tr>
<td>D0</td>
<td>With DIN rail bracket (Without DIN rail)</td>
<td></td>
</tr>
<tr>
<td>D1</td>
<td>DIN rail length specified</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>1 set of regulator unit</td>
<td></td>
</tr>
<tr>
<td>G2</td>
<td>2 sets of regulator unit</td>
<td></td>
</tr>
<tr>
<td>G3</td>
<td>3 sets of regulator unit</td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>With ejector unit</td>
<td></td>
</tr>
<tr>
<td>J0</td>
<td>Special wiring spec. (Except double wiring)</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>With name plate</td>
<td></td>
</tr>
</tbody>
</table>

**Symbols**
- **Kit type**
- **Electrical entry**
- **Cable length**

**Cylinder port**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Port size</th>
<th>Symbol</th>
<th>Port size</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3</td>
<td>With ø3.2 one-touch fitting</td>
<td>C4</td>
<td>With ø4 one-touch fitting</td>
</tr>
<tr>
<td>C6</td>
<td>With ø6 one-touch fitting</td>
<td>M5</td>
<td>MS thread</td>
</tr>
<tr>
<td>Q</td>
<td>Mixed sizes and with port plug</td>
<td>L5</td>
<td>Top ported elbow MS thread</td>
</tr>
<tr>
<td>L3</td>
<td>Top ported elbow with ø3.2 one-touch fitting</td>
<td>L4</td>
<td>Top ported elbow with ø4 one-touch fitting</td>
</tr>
<tr>
<td>L6</td>
<td>Top ported elbow with ø6 one-touch fitting</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes**
- Note 1: Indicate "Mixed sizes and with port plug" by means of the manifold specification sheet.
- Note 2: When selecting the mixed size for different types of piping or dual flow fitting assembly, enter "MM" and give instructions in the manifold specification sheet.
- Note 3: Inch-size one-touch fittings are also available. Refer to page 57 for details.
- Note 4: M5 fittings for MS thread are attached without being incorporated.
- Simple specials are available with SMC Simple Specials System. Refer to Best Pneumatics No. (1) for details on applicable models.

**Kit type/Electrical entry/Cable length**

**F** kit (D-sub connector)
- Top entry
- Side entry

**P** kit (Flat ribbon cable)
- Top entry
- Side entry

**J** kit (Flat ribbon cable 20P)
- Top entry
- Side entry

**G** kit (Flat ribbon cable with terminal block)
- Top entry
- Side entry

**Option**
- **Nil**
- 200/220 VAC models (F/L kit only)
- With back pressure check valve
- With DIN rail mounting
- With DIN rail bracket (Without DIN rail)
- DIN rail length specified
- 1 set of regulator unit
- 2 sets of regulator unit
- 3 sets of regulator unit
- With ejector unit
- Special wiring spec. (Except double wiring)

**Symbol**
- With name plate
- Direct EXH outlet with built in silencer
- With back pressure check valve
- With DIN rail mounting
- DIN rail length specified
- 1 set of regulator unit
- 2 sets of regulator unit
- 3 sets of regulator unit
- With ejector unit
- Special wiring spec. (Except double wiring)

**Option**
- **Nil**
- 200/220 VAC models (F/L kit only)
- With back pressure check valve
- With DIN rail mounting
- With DIN rail bracket (Without DIN rail)
- DIN rail length specified
- 1 set of regulator unit
- 2 sets of regulator unit
- 3 sets of regulator unit
- With ejector unit
- Special wiring spec. (Except double wiring)

**Note**
- Note 1: Indicate "Mixed sizes and with port plug" by means of the manifold specification sheet.
- Note 2: When selecting the mixed size for different types of piping or dual flow fitting assembly, enter "MM" and give instructions in the manifold specification sheet.
- Note 3: Inch-size one-touch fittings are also available. Refer to page 57 for details.
- Note 4: M5 fittings for MS thread are attached without being incorporated.
- Simple specials are available with SMC Simple Specials System. Refer to Best Pneumatics No. (1) for details on applicable models.

**Note**
- Note 1: Besides the above, F/P kit with different number of pins are available. Refer to page 55 for details.
- Note 2: Refer to page 56 for details.

**Approved**

**OMRON Corp.**
How to Order Valves

<table>
<thead>
<tr>
<th>Series</th>
<th>VQ 1 1 0 0</th>
<th>5</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of actuation</td>
<td>1</td>
<td>2-position single valve</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2-position double valve</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3-position closed center valve</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>3-position exhaust center valve</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>5-position pressure center valve</td>
<td></td>
</tr>
<tr>
<td>Seal</td>
<td>0</td>
<td>Metal seal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Rubber seal</td>
<td></td>
</tr>
<tr>
<td>Manual override</td>
<td>Nil</td>
<td>Non-locking type (Tool required)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>Locking type (Tool required)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>Slide locking type (Manual)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>Locking type (Manual)</td>
<td></td>
</tr>
</tbody>
</table>

Note 1) Refer to page 16 for power consumption of AC type.
Note 2) Metal seal only.
Note 3) For external pilot and negative common specifications, refer to "Semi-standard" on pages 56 to 57.
Note 4) When two or more symbols are specified, indicate them alphabetically. Combination of [B] and [K] is not possible.

Use the standard (DC) specification when continuously energizing for long periods of time.

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Kit (Terminal block box)

P. 37

Kit (Lead wire)

P. 45

Kit (Serial transmission)

Caution

Example

Single solenoid (24 VDC)

VQ1100-51 (4 sets)

Double solenoid (24 VDC)

VQ1200-51 (4 sets)

Blanking plate

VQ1000-10A-1 (1 set)

Cylinder port

Fitting port size

C6: With ø6 one-touch fitting

Manifold base (9 stations)

VVQ5Q11-09C6FU2

Note) Not applicable to the S kit.

Specifications

Standard

High-speed response type

Negative common

External pilot

High-pressure type (1.0 MPa)

Function

Symbol

Specifications

DC

AC

B

High-speed response type

0.4 W

0.95 W

K

Negative common

0.95 W

Note 1) Refer to page 16 for power consumption of AC type.
Note 2) Metal seal only.
Note 3) For external pilot and negative common specifications, refer to "Semi-standard" on pages 56 to 57.
Note 4) When two or more symbols are specified, indicate them alphabetically. Combination of [B] and [K] is not possible.

T kit (Terminal block box)

L kit (Lead wire)

S kit (Serial transmission)

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 45 for details.

P. 33

T kit (Terminal block box)

L kit (Lead wire)

S kit (Serial transmission)

P. 45

P. 37
## Series VQ1000

**VQ1000: Manifold Options**

<table>
<thead>
<tr>
<th>Description</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blanking plate assembly</td>
<td>VVQ1000-10A-1</td>
</tr>
<tr>
<td>Individual SUP spacer</td>
<td>VVQ1000-P-1</td>
</tr>
<tr>
<td>Individual EXH spacer</td>
<td>VVQ1000-R-1</td>
</tr>
<tr>
<td>SUP block plate</td>
<td>VVQ1000-16A</td>
</tr>
<tr>
<td>Blanking plate with connector</td>
<td>VVQ1000-1C</td>
</tr>
<tr>
<td>EXH block base assembly</td>
<td>VVQ1000-19A</td>
</tr>
<tr>
<td>Back pressure check valve assembly [-B]</td>
<td>VVQ1000-18A</td>
</tr>
<tr>
<td>Name plate [-N]</td>
<td>VVQ1000-18A</td>
</tr>
<tr>
<td>Blanking plug</td>
<td>KQ2P</td>
</tr>
<tr>
<td>Port plug</td>
<td>VVQ0000-58A</td>
</tr>
<tr>
<td>Elbow fitting assembly</td>
<td>VVQ1000-F-L</td>
</tr>
<tr>
<td>DIN rail mounting bracket [-D/-D0/-D]</td>
<td>VVQ1000-57A</td>
</tr>
<tr>
<td>Direct EXH outlet with built-in silencer [-S]</td>
<td>VVQ1000-52A</td>
</tr>
<tr>
<td>Dual flow fitting assembly</td>
<td>VVQ1000-FPG</td>
</tr>
<tr>
<td>Silencer (For EXH port)</td>
<td>AN200-KM8/AN203-KM8</td>
</tr>
<tr>
<td>Regulator unit</td>
<td>VVQ1000-AR-1</td>
</tr>
<tr>
<td>Double check block</td>
<td>VVQ1000-FPG</td>
</tr>
<tr>
<td>With ejector unit</td>
<td>VVQ1000-FPG</td>
</tr>
</tbody>
</table>

**C6 (SUP port)ø6 one-touch fitting**

**C6 (EXH port)ø6 one-touch fitting**

- Refer to page 4 for cylinder port fittings part number.
- Refer to page 62 for replacement parts.

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

**Supported by SMC**
# Plug-in Unit
## Base Mounted
### Series VQ2000

#### How to Order Manifold

<table>
<thead>
<tr>
<th>Kit type</th>
<th>Electrical entry/Cable length</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>F</strong> kit (D-sub connector)</td>
<td>Top entry Side entry</td>
</tr>
<tr>
<td><strong>P</strong> kit (Flat ribbon cable)</td>
<td>Top entry Side entry</td>
</tr>
<tr>
<td><strong>J</strong> kit (Flat ribbon cable 20P)</td>
<td>Top entry Side entry</td>
</tr>
<tr>
<td><strong>G</strong> kit (Flat ribbon cable with terminal block)</td>
<td>Top entry Side entry</td>
</tr>
</tbody>
</table>

#### Stations

<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>
</tr>
</thead>
<tbody>
<tr>
<td>Cylinder port</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Port size</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C4</td>
<td>With e4 one-touch fitting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C6</td>
<td>With e6 one-touch fitting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C8</td>
<td>With e8 one-touch fitting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed sizes and with port plug</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L4</td>
<td>Top/Bottom above with all one-touch fitting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L5</td>
<td>Bottom/Bottom above with all one-touch fitting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Kit type

- **Option**
  - Symbol: C6, F, U1
  - CE compliant: Yes
  - DC specification only: Yes
  - **Option**
    - Symbol: B
      - With back pressure check valve
    - Symbol: I
      - Without back pressure check valve
    - Symbol: D
      - DIN rail mounting
    - Symbol: G
      - DIN rail length specified
    - Symbol: N
      - With name plate

#### Note
1. Indicate "Mixed size and with port plug" by means of the manifold specification sheet.
2. When selecting the mixed size for different types of piping, dual flow fitting assembly, or double check block (direct mounting), enter "MM" and give instructions in the manifold specification sheet.
3. Inch-size one-touch fittings are also available. Refer to page 57 for details.
4. Simple specials are available with SMC Sipexa Simplex Systems. Refer to Best Pneumatics No. 1 for details on applicable models.

### Kit type/Electrical entry/Cable length

- **F** kit (D-sub connector)
  - **Option**
    - Symbol: C6, F, U1
  - CE compliant: Yes
  - DC specification only: Yes

- **P** kit (Flat ribbon cable)
  - **Option**
    - Symbol: C6, F, U1
  - CE compliant: Yes
  - DC specification only: Yes

- **J** kit (Flat ribbon cable 20P)
  - **Option**
    - Symbol: C6, F, U1
  - CE compliant: Yes
  - DC specification only: Yes

- **G** kit (Flat ribbon cable with terminal block)
  - **Option**
    - Symbol: C6, F, U1
  - CE compliant: Yes
  - DC specification only: Yes

### Kit type

- **T** kit (Terminal block box)
- **L** kit (Lead wire)
- **S** kit (Serial transmission)
- **M** kit (Circular-connector)
### How to Order Valves

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Standard</td>
</tr>
<tr>
<td>B</td>
<td>High-speed response type (0.95 W)</td>
</tr>
<tr>
<td>K</td>
<td>High-pressure type (1 MPa) (0.95 W)</td>
</tr>
<tr>
<td>N</td>
<td>Negative common</td>
</tr>
<tr>
<td>R</td>
<td>External pilot (DC)</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

#### Seal

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

#### Function

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Standard</td>
</tr>
<tr>
<td>B</td>
<td>High-speed response type (0.95 W)</td>
</tr>
<tr>
<td>K</td>
<td>High-pressure type (1 MPa) (0.95 W)</td>
</tr>
<tr>
<td>N</td>
<td>Negative common</td>
</tr>
<tr>
<td>R</td>
<td>External pilot</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

#### Light/surge voltage suppressor

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

### How to Order Manifold Assembly

#### Example

- Single solenoid (24 VDC) VQ2000-51 (4 sets)
- Blanking plate VVQ2000-10A-1 (1 set)

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

### Specifications

<table>
<thead>
<tr>
<th>Symbol</th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>O</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>O</td>
<td></td>
</tr>
</tbody>
</table>

#### Caution

Use the standard (DC) specification when continuously energizing for long periods of time.
Series VQ2000

VQ2000: Manifold Options

Blanking plate assembly
VVQ2000-10A-1

Individual SUP spacer
VVQ2000-P-1-

Individual EXH spacer
VVQ2000-R-1-

SUP block plate
VVQ2000-16A

EXH block plate
VVQ2000-19A

SUP stop valve spacer
VVQ2000-24A-1

Back pressure check valve
assembly [-B]
VVQ2000-18A

Name plate [-N]
VVQ2000-N-Station
(1 to Max. stations)

Blanking plug
KQ2P-

Port plug
VVQ1000-58A

DIN rail mounting bracket
[-D/-D0/-D]
VVQ2000-57A

Direct EXH outlet with
built-in silencer
[-S]

Silencer (For EXH port)
AN200-KM10

Elbow fitting assembly
VVQ2000-F-L

Dual flow fitting assembly
VVQ2000-52A-

Double check block
(Separated)
VVQ2000-FPG-

Double check block
(Direct mounting)
VVQ2000-23A-

• Refer to back page 4 for cylinder port fittings part number.
• Refer to page 64 for replacement parts.

Approved
<table>
<thead>
<tr>
<th>Model</th>
<th>Type of actuation</th>
<th>Model</th>
<th>Flow rate characteristics Note 1)</th>
<th></th>
<th></th>
<th>Response time (ms) Note 2)</th>
<th>Mass (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>Metal seal VQ1000</td>
<td>1 → 2/4 (P → A/B) C [dm³/(s·bar)] b Cv C [dm³/(s·bar)] b Cv</td>
<td>0.70 0.15 0.16 0.72 0.25 0.18</td>
<td>15 or less</td>
<td>29 or less</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td>Double</td>
<td>Rubber seal VQ1101</td>
<td>2/4 → 3/5 (A/B → R1/R2)</td>
<td>0.85 0.20 0.21 1.0 0.30 0.25</td>
<td>20 or less</td>
<td>34 or less</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>Metal seal VQ1200</td>
<td>2/4 → 3/5 (A/B → R1/R2)</td>
<td>0.70 0.15 0.16 0.72 0.25 0.18</td>
<td>13 or less</td>
<td>29 or less</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>Double</td>
<td>Rubber seal VQ1201</td>
<td>2/4 → 3/5 (A/B → R1/R2)</td>
<td>0.85 0.20 0.21 1.0 0.30 0.25</td>
<td>20 or less</td>
<td>34 or less</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>Metal seal VQ1300</td>
<td>2/4 → 3/5 (A/B → R1/R2)</td>
<td>0.68 0.15 0.16 0.72 0.25 0.18</td>
<td>26 or less</td>
<td>40 or less</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>Double</td>
<td>Rubber seal VQ1301</td>
<td>2/4 → 3/5 (A/B → R1/R2)</td>
<td>0.70 0.20 0.16 0.65 0.42 0.18</td>
<td>33 or less</td>
<td>47 or less</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>Metal seal VQ1400</td>
<td>2/4 → 3/5 (A/B → R1/R2)</td>
<td>0.68 0.15 0.16 0.72 0.25 0.18</td>
<td>26 or less</td>
<td>40 or less</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>Double</td>
<td>Rubber seal VQ1401</td>
<td>2/4 → 3/5 (A/B → R1/R2)</td>
<td>0.70 0.20 0.16 1.0 0.30 0.25</td>
<td>33 or less</td>
<td>47 or less</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>Metal seal VQ1500</td>
<td>2/4 → 3/5 (A/B → R1/R2)</td>
<td>0.70 0.15 0.16 0.72 0.25 0.18</td>
<td>26 or less</td>
<td>40 or less</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>Double</td>
<td>Rubber seal VQ1501</td>
<td>2/4 → 3/5 (A/B → R1/R2)</td>
<td>0.85 0.20 0.21 0.65 0.42 0.18</td>
<td>33 or less</td>
<td>47 or less</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>Dual 2-position</td>
<td>Pressure center</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>Metal seal VQ1600</td>
<td>2/4 → 3/5 (A/B → R1/R2)</td>
<td>0.70 0.20 0.16 0.72 0.25 0.18</td>
<td>26 or less</td>
<td>40 or less</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>Double</td>
<td>Rubber seal VQ1601</td>
<td>2/4 → 3/5 (A/B → R1/R2)</td>
<td>0.70 0.20 0.16 0.72 0.25 0.18</td>
<td>33 or less</td>
<td>47 or less</td>
<td>77</td>
<td></td>
</tr>
</tbody>
</table>

Note 1) The values are given for port size C6: (VQ1000), C8: (VQ2000) without back pressure check valve.
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.
Base Mounted Plug-in Unit Series VQ1000/2000

Standard Specifications

<table>
<thead>
<tr>
<th>Valve type</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>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Maximum operating pressure</th>
<th>Single</th>
<th>Double</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1 MPa</td>
<td>0.15 MPa</td>
<td></td>
</tr>
<tr>
<td>0.1 MPa</td>
<td>0.1 MPa</td>
<td></td>
</tr>
<tr>
<td>0.2 MPa</td>
<td>0.15 MPa</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Minimum operating pressure</th>
<th>10 to 50°C</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Ambient and fluid temperature</th>
<th>±10% of rated voltage</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Enclosure</th>
<th>Dust-protected; Dust-tight, Water-jet-proof (IP65)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Coil rated voltage</th>
<th>12, 24 VDC, 100, 110, 200, 220 VAC (50/60 Hz)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Allowable voltage fluctuation</th>
<th>±10% of rated voltage</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Power consumption (Current)</th>
<th>24 VDC: 0.4 W DC (17 mA)</th>
<th>12 VDC: 0.4 W DC (34 mA)</th>
<th>100 VAC: Inrush 0.96 VA (10 mA), Holding 0.96 VA (10 mA)</th>
<th>200 VAC: Inrush 1.26 VA (6 mA), Holding 1.26 VA (6 mA)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Coil insulation type</th>
<th>Equivalent to Class B</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Electrical specifications</th>
<th>150/30 m/s²</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Manual override</th>
<th>Push type, Locking type (Tool required, Manual) semi-standard</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Impact/Vibration resistance</th>
<th>Note 2)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Ambient and fluid temperature</th>
<th>Note 4) Dust-tight, Water-jet-proof (IP65) is available on T/L/S/M kit of the VQ2000.</th>
</tr>
</thead>
</table>

Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Base model</th>
<th>Connection type</th>
<th>Piping specifications</th>
<th>Port size Note 1)</th>
<th>Applicable stations</th>
<th>Applicable solenoid valve</th>
<th>5-station mass (g)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>VQ1000</th>
<th>VV5Q11</th>
<th>F kit-D-sub connector</th>
<th>C8 (ø8)</th>
<th>1(P), 3(R)</th>
<th>C3 (ø3.2)</th>
<th>F/P/T kit</th>
<th>C6 (ø6)</th>
<th>L kit</th>
<th>VQ11:00</th>
<th>643 (Single)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>P kit-Flat ribbon cable</td>
<td></td>
<td>4(A), 2(B)</td>
<td>C4 (ø4)</td>
<td>J/G/S kit</td>
<td>C6 (ø6)</td>
<td>L kit</td>
<td>VQ11:01</td>
<td>75A (Double, 3-position)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>J kit-Flat ribbon cable (20P)</td>
<td></td>
<td></td>
<td>C4 (ø4)</td>
<td>J/G/S kit</td>
<td>C6 (ø6)</td>
<td>L kit</td>
<td>VQ20:00</td>
<td>1076 (Single)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G kit-Flat ribbon cable with terminal block</td>
<td></td>
<td></td>
<td>M5 (M5 thread)</td>
<td>J/G/S kit</td>
<td>C6 (ø6)</td>
<td>L kit</td>
<td>VQ20:01</td>
<td>1119 (Double, 3-position)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VQ2000</th>
<th>VV5Q21</th>
<th>F kit-D-sub connector</th>
<th>C10 (ø10)</th>
<th>1(P), 3(R)</th>
<th>C4 (ø4)</th>
<th>F/P/T kit</th>
<th>C6 (ø6)</th>
<th>L kit</th>
<th>VQ20:00</th>
<th>1076 (Single)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>P kit-Flat ribbon cable</td>
<td></td>
<td>4(A), 2(B)</td>
<td>C4 (ø4)</td>
<td>J/G/S kit</td>
<td>C6 (ø6)</td>
<td>L kit</td>
<td>VQ20:01</td>
<td>1119 (Double, 3-position)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>J kit-Flat ribbon cable (20P)</td>
<td></td>
<td></td>
<td>C4 (ø4)</td>
<td>J/G/S kit</td>
<td>C6 (ø6)</td>
<td>L kit</td>
<td>VQ20:00</td>
<td>1076 (Single)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G kit-Flat ribbon cable with terminal block</td>
<td></td>
<td></td>
<td>M5 (M5 thread)</td>
<td>J/G/S kit</td>
<td>C6 (ø6)</td>
<td>L kit</td>
<td>VQ20:01</td>
<td>1119 (Double, 3-position)</td>
</tr>
</tbody>
</table>

**Notes:**
1. Inch-size one-touch fittings are also available. Refer to page 57 for details.
2. Refer to page 54 for details.
3. Value for high-speed response, high-voltage type (0.95 W)
4. Dust-tight, Water-jet-proof (IP65) is available on T/L/S/M kit of the VQ2000.
Notes: 1) Types with 15 pins are also available. Refer to page 55 for details.
2) Lengths other than the above are also available. Please contact SMC for details.
3) Indicate "Mixed sizes and with port plug" by means of the manifold specification sheet.
4) When selecting the mixed size for different types of piping, dual flow fitting assembly, or option installed pressure at all manifold stations. When a back pressure check valve is desired, and is to be installed only in certain manifold stations, specify the mounting position by means of the manifold specification sheet.
5) The number of stations that may be displayed is longer than the manifold number of stations.
6) Specify the mounting position by means of the manifold specification sheet.
7) Refer to page 69 for the details on with ejector unit. A combination of "J" and "N" is not available.
8) Refer to the wiring specifications by means of the manifold specification sheet.
9) Refer to page 56 for details.
How to Order Valves

<table>
<thead>
<tr>
<th>Station</th>
<th>Type of Actuation</th>
<th>Seal</th>
<th>Function</th>
<th>Manual Override</th>
<th>Coil Voltage</th>
<th>Notes</th>
</tr>
</thead>
</table>
| 1       | 2-position single | B    | B        | Nil             | 100 VAC (50/60 Hz) | 1. | Note 1 Refer to page 16 for power consumption of AC type. Note 2) Metal seal only. Note 3) For external pilot and negative common specifications, refer to “Semi-standard” on pages 56 to 57. Note 4) When two or more symbols are specified, indicate them alphabetically. Combination of [B] and [K] is not possible. 
| 2       | 2-position double | A    | B        | Nil             | 200 VAC (50/60 Hz) | 2. | "CE compliant" 
| 3       | 3-position closed center | C    | C        | Nil             | 110 VAC (50/60 Hz) | 3. | "DC specification only" 
| 4       | 3-position exhaust center | D    | E        | Nil             | 220 VAC (50/60 Hz) | 4. | "Coil voltage" 
| 5       | 3-position pressure center | E    | Nil      | Nil             | 24 VDC | 5. | "Coil voltage" 
| 6       | 4-position dual port (N.C.-N.O.) | F    | Nil      | Nil             | 12 VDC | 6. | "Coil voltage" 

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 semi-standard. Refer to page 56 for details.

<Example>

D-sub connector assembly set with cable (3 m)
VVQ1000-09DFU2 – 5 set-Manifold base part no.
VVQ1100-51 – 4 set-Valve part no. (Stations 1 to 2)
VVQ1200-51 – 4 set-Valve part no. (Stations 3 to 6)
VVQ1300-51 – 4 set-Valve part no. (Stations 7 to 9)
VVQ1400-51 – 4 set-Valve part no. (Stations 10 to 11)
VVQ1500-51 – 4 set-Valve part no. (Stations 12 to 15)
VVQ1600-51 – 4 set-Valve part no. (Stations 16 to 18)
VVQ1700-51 – 4 set-Valve part no. (Stations 19 to 21)
VVQ1800-51 – 4 set-Valve part no. (Stations 22 to 24)
VVQ1900-51 – 4 set-Valve part no. (Stations 25 to 27)
VVQ2000-51 – 4 set-Valve part no. (Stations 28 to 30)

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

<Example>

VVQ1000-10A-1 – Valve part no. (Stations 3 to 6)
VVQ1100-51 – Manifold base part no. (Stations 1 to 2)
VVQ1200-51 – Manifold base part no. (Stations 3 to 6)
VVQ1300-51 – Manifold base part no. (Stations 7 to 9)
VVQ1400-51 – Manifold base part no. (Stations 10 to 11)
VVQ1500-51 – Manifold base part no. (Stations 12 to 15)
VVQ1600-51 – Manifold base part no. (Stations 16 to 18)
VVQ1700-51 – Manifold base part no. (Stations 19 to 21)
VVQ1800-51 – Manifold base part no. (Stations 22 to 24)
VVQ1900-51 – Manifold base part no. (Stations 25 to 27)
VVQ2000-51 – Manifold base part no. (Stations 28 to 30)

Note) When using the negative common specifications, use valves for negative common. (Refer to page 56.) Refer to “Semi-standard” on page 56 for details.
VV5Q11

Applicable connector: D-sub connector (25P)
(Complies with MIL-C-24308)

DIN rail clamp screw

Applicable connector: D-sub connector (25P)
(Complies with MIL-C-24308)

Applicable connector: D-sub connector (25P)
(Complies with MIL-C-24308)

Formulas:
L1 = 10.5n + 44.5, L2 = 10.5n + 62.5, n: Station (Maximum 24 stations)

With ejector unit:
L1 = 10.5n + 28.7 + (Number of ejector units x 26.7)
L2 = 10.5n + 46.3 + (Number of ejector units x 26.7)
L4 is L2 plus about 30.

Dimensions:

<table>
<thead>
<tr>
<th>Stations</th>
<th>Dimension (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>65.5</td>
</tr>
<tr>
<td>3</td>
<td>68.5</td>
</tr>
<tr>
<td>4</td>
<td>70.0</td>
</tr>
<tr>
<td>5</td>
<td>71.5</td>
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<tr>
<td>6</td>
<td>73.0</td>
</tr>
<tr>
<td>7</td>
<td>74.5</td>
</tr>
<tr>
<td>8</td>
<td>76.0</td>
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<tr>
<td>9</td>
<td>77.5</td>
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<tr>
<td>10</td>
<td>79.0</td>
</tr>
<tr>
<td>11</td>
<td>80.5</td>
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<tr>
<td>12</td>
<td>82.0</td>
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<tr>
<td>13</td>
<td>83.5</td>
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<tr>
<td>14</td>
<td>85.0</td>
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<tr>
<td>15</td>
<td>86.5</td>
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<tr>
<td>16</td>
<td>88.0</td>
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<tr>
<td>17</td>
<td>89.5</td>
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<td>91.0</td>
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<td>19</td>
<td>92.5</td>
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<td>20</td>
<td>94.0</td>
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<td>21</td>
<td>95.5</td>
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<td>22</td>
<td>97.0</td>
</tr>
<tr>
<td>23</td>
<td>98.5</td>
</tr>
<tr>
<td>24</td>
<td>100.0</td>
</tr>
</tbody>
</table>

(C8: ø8 one-touch fitting)
(C8 [1(P) SUP port])
C8: ø8 one-touch fitting

Indicators
Manual override

Stations: 1, 2, 3, 4, 5, 6, 7, 8, n

D side U side

Series VQ1000/2000

Kit (D-sub connector)
**VV5Q21**

- < >: AC
- The dashed lines indicate the DIN rail mounting [-D] and the side entry connection [-FS].

**Dimensions**

<table>
<thead>
<tr>
<th>n (Station)</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>
<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>
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<td>325</td>
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<td>373</td>
<td>389</td>
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<td>421</td>
<td>437</td>
<td></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>
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<td>265</td>
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<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>
<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>437.5</td>
<td>450</td>
<td>462.5</td>
<td>487.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(L4)</td>
<td>148</td>
<td>160.5</td>
<td>173</td>
<td>196</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>446</td>
<td>460.5</td>
<td>473</td>
<td>498</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Formula: L1 = 16n + 53, L2 = 16n + 73, n: Station (Maximum 24 stations)
How to Order Manifold

Flat Ribbon Cable (26 Pins)

**AXT100-FC26-2**

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

**Cable Assembly**

<table>
<thead>
<tr>
<th>Length (L)</th>
<th>Assembly part no.</th>
<th>Cable 26 cores x 28AWG</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>

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

**Connectors manufacturers’ example**

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

Note 1) Other than the above model, 10P, 16P, 20P are also available. Refer to page 55 for details.

Note 2) Lengths other than the above are also available. Please contact SMC for details.

Note 3) Indicate “Mixed sizes and with port plug” by means of the manifold specification sheet.

Note 4) Specify the mounting position by means of the manifold specification sheet.

Note 5) When two or more symbols are specified, indicate them alphabetically. Example: VQ1000-15BRS

Note 6) Specify the wiring specifications by means of the manifold specification sheet.

Note 7) Indicate “R” for the valve with external pilot.

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Piping direction</th>
<th>Port size</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>Side C8</td>
<td>C3, C4, C6, M5</td>
<td>Max. 24 stations</td>
</tr>
<tr>
<td>VQ2000</td>
<td>Side C10</td>
<td>C4, C6, C8</td>
<td>Max. 24 stations</td>
</tr>
</tbody>
</table>

**Option**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Option</th>
<th>VQ1000</th>
<th>VQ2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</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</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D0</td>
<td>With DIN rail bracket (Without DIN rail)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D1</td>
<td>DIN rail length specified (Station 02 to 24)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q1</td>
<td>1 set of regulator unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K1</td>
<td>2 sets of regulator unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K2</td>
<td>3 sets of regulator unit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>With 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>With back pressure check valve and silencer</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**How to Order Manifold**

**VV5Q11**

**VV5Q21**

The total number of stations is tabulated starting from one on the D-side.
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 cable (3 m)
VVQ11-09DPU2 -1 set-Manifold base part no.
VVQ1100-51 -2 sets-Valve part no. (Stations 1 to 2)
VVQ1200-51 -2 sets-Valve part no. (Stations 3 to 6)
VVQ1300-51 -2 sets-Valve part no. (Stations 7 to 8)
VVQ1400-51 -1 set-Blanking plate part no. (Station 9)

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

Write sequentially from the 1st station on the D-side.
When part nos. written collectively are complicated, specify them by means of the manifold specification sheet.

Caution
Use the standard (DC) specification when continuously energizing for long periods of time.

How to Order Valves

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

<Example>
Flat ribbon cable kit with cable (3 m)
VVQ11-09DPU2 -1 set-Manifold base part no.
VVQ1100-51 -2 sets-Valve part no. (Stations 1 to 2)
VVQ1200-51 -2 sets-Valve part no. (Stations 3 to 6)
VVQ1300-51 -2 sets-Valve part no. (Stations 7 to 8)
VVQ1400-51 -1 set-Blanking plate part no. (Station 9)

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

Write sequentially from the 1st station on the D-side.
When part nos. written collectively are complicated, specify them by means of the manifold specification sheet.

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 cable (3 m)
VVQ11-09DPU2 -1 set-Manifold base part no.
VVQ1100-51 -2 sets-Valve part no. (Stations 1 to 2)
VVQ1200-51 -2 sets-Valve part no. (Stations 3 to 6)
VVQ1300-51 -2 sets-Valve part no. (Stations 7 to 8)
VVQ1400-51 -1 set-Blanking plate part no. (Station 9)

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

Write sequentially from the 1st station on the D-side.
When part nos. written collectively are complicated, specify them by means of the manifold specification sheet.

Caution
Use the standard (DC) specification when continuously energizing for long periods of time.
Series VQ1000/2000
kit (Flat ribbon cable)

VV5Q11

<=> AC
The dashed lines indicate the DIN rail mounting [-D] and the side entry connection [-PS].

Dimensions

<table>
<thead>
<tr>
<th>C</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
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<th>12</th>
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<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>75.6</td>
<td>86.5</td>
<td>97</td>
<td>107.5</td>
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<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>
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<td>254.5</td>
<td>265</td>
<td>275.5</td>
<td>286</td>
<td></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>
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<td>257</td>
<td>267.5</td>
<td>278</td>
<td>288.5</td>
<td>299</td>
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<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>209.5</td>
<td>220</td>
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<td>244.5</td>
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<td>280.5</td>
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<td>304.5</td>
<td>316.5</td>
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<td>340.5</td>
<td>352.5</td>
<td>364.5</td>
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<tr>
<td>(L4)</td>
<td>123</td>
<td>135.5</td>
<td>148</td>
<td>160.5</td>
<td>173</td>
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<td>323</td>
<td>335.5</td>
<td>348</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

With ejector unit: Formula L1 = 10.5n + 28.7 + (Number of ejector units x 26.7)  
L2 = 10.5n + 41.3 + (Number of ejector units x 26.7)  
L4 is L2 plus about 30.
### VV5Q21

Applicable connector: Flat ribbon cable connector (26P)
(Complies with MIL-C-83503)

**Dimensions**

<table>
<thead>
<tr>
<th>L1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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<th>10</th>
<th>11</th>
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<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>
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<td>421</td>
<td>437</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>
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<td>356</td>
<td>372</td>
<td>388</td>
<td>404</td>
<td>420</td>
<td>436</td>
<td>452</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>
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<td>135.5</td>
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<td>423</td>
<td>435.5</td>
<td>460.5</td>
<td>473</td>
<td>485.5</td>
</tr>
</tbody>
</table>

**Formula**

\[ L1 = 16n + 53, \quad L2 = 16n + 68 \]

\( n \): Station (Maximum 24 stations)

The dashed lines indicate the DIN rail mounting [-D] and the side entry connection [-PR].

**Base Mounted Plug-in Unit Series VQ1000/2000**

**VV5Q21**

**Dimensions**

<table>
<thead>
<tr>
<th>L1</th>
<th>2</th>
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<th>4</th>
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<th>6</th>
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<th>24</th>
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<tbody>
<tr>
<td>L1</td>
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<tr>
<td>L2</td>
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<td>473</td>
<td>485.5</td>
</tr>
</tbody>
</table>

**Formula**

\[ L1 = 16n + 53, \quad L2 = 16n + 68 \]

\( n \): Station (Maximum 24 stations)
Series VQ1000/2000 kit (Flat ribbon cable)

- MIL flat ribbon cable connector reduces installation labor for electrical connection.
- Using the connector for flat ribbon cable connectors (20P) conforming to MIL standard permits the use of connector 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)

How to Order Manifold

**Note)** Lengths other than the above are also available. Please contact SMC for details.

Flat Ribbon Cable Connector Assembly

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

- **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.”)

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

- **Cable (20 cores x 28AWG)**

**Series**

- **VQ5Q**
  - **1**
  - **08**
  - **C6**
  - **J**
  - **U**
  - **1**

**Manifold**

- **Plug-in Unit**
  - **0** 2 stations
  - **1** 4 stations
  - **2** 8 stations
  - **3** 16 stations

**Stations**

- **02** 2 stations
- **08** 8 stations
- **16** 16 stations

**Cylinder port**

- **Symbol**
  - **C3** With ø5.0 one-touch fitting
  - **C4** With ø4.0 one-touch fitting
  - **C6** With ø6.0 one-touch fitting
  - **C8** With ø8.0 one-touch fitting
  - **M6** Mixed sizes and with port plug

**Option**

- **Symbol**
  - **B** With back pressure check valve
  - **D** DIN rail mounting
  - **D0** DIN rail length specified (except double wiring)
  - **G1** With ejector unit
  - **G2** With 2 sets of regulator unit
  - **G3** With 3 sets of regulator unit
  - **K** With double fitting
  - **N** With name plate
  - **R** With external pilot
  - **S** Ext. Ejector plate

**Connector entry direction**

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

**Cable Length**

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

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Piping direction</th>
<th>Port size</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>Side</td>
<td>C6, C4, C6, C8, M6</td>
<td>Max. 16 stations</td>
</tr>
<tr>
<td>VQ2000</td>
<td>Side</td>
<td>C10, C6, C8</td>
<td>Max. 16 stations</td>
</tr>
</tbody>
</table>

**Connector manufacturers’ example**

- Hirose Electric Co., Ltd.
- Sumitomo 3M Limited
- Fujitsu Limited
- Oki Electric Cable Co., Ltd.

**Note Assembly part no.**

- **Cable length**
  - **1** 1.5 m
  - **2** 3 m
  - **3** 5 m

**Option**

- **Symbol**
  - **B** With back pressure check valve
  - **D** DIN rail mounting
  - **D0** DIN rail length specified
  - **G1** With ejector unit
  - **G2** With 2 sets of regulator unit
  - **G3** With 3 sets of regulator unit
  - **K** With double fitting
  - **N** With name plate
  - **R** With external pilot
  - **S** Ext. Ejector plate

**Note**

- **Note 1)** Insert “L” (Top ported) or “B” (Bottom ported) for elbow type.
- **Note 2)** Indicate “LM” for models with elbow fittings and mixed cylinder port sizes.
- **Note 3)** Indicate “Mixed sizes and with port plug” by means of the manifold specification sheet.
- **Note 4)** When selecting the mixed size for different types of piping, dual flow fitting assembly, or double check block (direct mounting), enter “MM” and give instructions in the manifold specification sheet.
- **Note 5)** Refer to page 56 for details.
- **Note 6)** Specify the wiring specifications by means of the manifold specification sheet.
- **Note 7)** Refer to page 68 for details on with ejector unit. A combination of “J” and “N” is not available.
- **Note 8)** Specify the mounting position by means of the manifold specification sheet.
- **Note 9)** Indicate “R” for the valve with external pilot.

**Flat Ribbon Cable (20 Pins)**

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Piping direction</th>
<th>Port size</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>Side</td>
<td>C6, C4, C6, C8, M6</td>
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</tr>
<tr>
<td>VQ2000</td>
<td>Side</td>
<td>C10, C6, C8</td>
<td>Max. 16 stations</td>
</tr>
</tbody>
</table>
**Base Mounted Plug-in Unit Series VQ1000/2000**

### Electrical Wiring Specifications

- **Flat ribbon cable connector**
- **Terminal no.**
- **Polarity**

### How to Order Valves

#### 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: 4-position dual port (N.C. + N.O.)
- 7: 4-position dual port (N.O. + N.O.)
- 8: 4-position dual port (N.C. + N.O.)

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

#### Function
- Nil: Non-locking push type (Tool required)
- B: Locking type (Tool required)
- C: Locking type (Manual)
- D: Slide locking type (Manual)

#### Light/surge voltage suppressor
- Nil: Yes

#### CE compliant
- Nil: —
- Q: —

### 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 cable (3 m)
- Station 1: SOL.A
- Station 2: SOL.B
- Station 3: SOL.A
- Station 4: SOL.B
- Station 5: SOL.B
- Station 6: SOL.B
- Station 7: SOL.B
- Station 8: Blank

#### CE compliant
- Nil: —
- Q: —

#### Note
- When using the negative common specifications, use valves for negative common. Refer to “Semi-standard” on page 56 for details.

### Notes
- Note 1: Metal seal only
- Note 2: Refer to “Semi-standard” on page 56 for external pilot and negative common specifications.
- Note 3: When two or more symbols are specified, indicate them alphabetically. Combination of (B) and (K) is not possible.
**Series VQ1000/2000**

**kit (Flat ribbon cable)**

**VV5Q11**

The dashed lines indicate the DIN rail mounting [-D] and the side entry connection [-JS].

Applicable connector: Flat ribbon cable connector (20P)

(Complies with MIL-C-83503)

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Formula L1 = 10.5n + 44.5, L2 = 10.5n + 57.5</th>
<th>n: Station (Maximum 16 stations)</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>65.5 76 86.5 97 107.5 118 128.5 139 149.5 160 170.5 181 191.5 202 212.5</td>
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</tr>
<tr>
<td>L2</td>
<td>78.5 89 99.5 110 120.5 131 141.5 152 162.5 173 183.5 194 204.5 215 225.5</td>
<td></td>
</tr>
<tr>
<td>(L3)</td>
<td>112.5 125 137.5 150 162.5 175 187.5 187.5 200 212.5 225 225 237.5 250</td>
<td></td>
</tr>
<tr>
<td>(L4)</td>
<td>123 135.5 135.5 148 160.5 173 185.5 198 198 210.5 223 235.5 235.5 248 260.5</td>
<td></td>
</tr>
</tbody>
</table>

With ejector unit: Formula L1 = 10.5n + 28.7 + (Number of ejector units x 26.7)
L2 = 10.5n + 41.3 + (Number of ejector units x 26.7)
L4 is L2 plus about 30.
The dashed lines indicate the DIN rail mounting [-D] and the side entry connection [-JS].

Dimensions

<table>
<thead>
<tr>
<th>L</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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</thead>
<tbody>
<tr>
<td>L1</td>
<td>85</td>
<td>101</td>
<td>117</td>
<td>133</td>
<td>149</td>
<td>165</td>
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<td>245</td>
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</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>
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<td>260</td>
<td>276</td>
<td>292</td>
<td>308</td>
<td>324</td>
</tr>
<tr>
<td>L3</td>
<td>125</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
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<td>287.5</td>
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<td>337.5</td>
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<tr>
<td>L4</td>
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<td>185.5</td>
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<td>298</td>
<td>310.5</td>
<td>323</td>
<td>348</td>
<td>360.5</td>
</tr>
</tbody>
</table>

Formula L1 = 16n + 53, L2 = 16n + 68  n: Station (Maximum 16 stations)
Terminal block for power supply equipped with a 20 pins flat ribbon 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.
- Maximum stations are 16.

**Flat Ribbon Cable (20 Pins)**

AXT100-FC20-3

*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**

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

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

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Piping specifications</th>
<th>Port size</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1(P), 3(R)</td>
<td>4(A), 2(B)</td>
</tr>
<tr>
<td>VQ1000</td>
<td>Side</td>
<td>C8, C3, C4, C6, M5</td>
<td>Max. 16 stations</td>
</tr>
<tr>
<td>VQ2000</td>
<td>Side</td>
<td>C10, C4, C6</td>
<td>Max. 16 stations</td>
</tr>
</tbody>
</table>

**How to Order Manifold**

**Series**

1 VQ1000
2 VQ2000

**Manifold**

1 Plug-in unit

**Stations**

2 stations
16 stations

**Manifold Specifications**

- CE compliant
- Option

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Option</th>
<th>VQ1000</th>
<th>VQ2000</th>
</tr>
</thead>
<tbody>
<tr>
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<td>⬤</td>
<td>⬤</td>
</tr>
<tr>
<td>O</td>
<td>⬤</td>
<td>⬤</td>
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</tr>
<tr>
<td>N</td>
<td>⬤</td>
<td>⬤</td>
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</tr>
<tr>
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</tr>
<tr>
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</tr>
<tr>
<td>R</td>
<td>⬤</td>
<td>⬤</td>
<td></td>
</tr>
</tbody>
</table>

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

**Note 2:** Models with a suffix "-M" have check valves for prevention of back pressure at all manifold stations. When a back pressure check valve is desired, and is to be installed only in certain manifold stations, specify the mounting position by means of the manifold specification sheet.

**Note 3:** The number of stations that may be displayed is longer than the manifold number of stations.

**Note 4:** Specify the mounting position by means of the manifold specification sheet.

**Note 5:** Refer to page 63 for details on with ejector units.

**Note 6:** Specify the mounting position by means of the manifold specification sheet.

**Note 7:** Indicate "R" for the valve with external pilot.
**Connector Assembly**

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 semi-standard. Refer to page 56 for details.

**How to Order Valves**

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

- **Flat ribbon cable connector**
- **Terminal no.**
- **Station 1**
- **Station 2**
- **Station 3**
- **Station 4**
- **Station 5**
- **Station 6**
- **Station 7**
- **Station 8**

**How to Order Manifold Assembly**

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

**Flat ribbon cable kit with terminal block with cable (3 m)**

- **VQ1100-51**
- **VQ1200-51**
- **VQ1300-51**

**Function**

- **Symbol**
- **Function**
- **Coil voltage**
- **Type of actuation**
- **Seal**
- **Manual override**
- **Light/surge voltage suppressor**

**Note 1)** Metal seal only

**Note 2)** Refer to "Semi-standard" on page 57 for external pilot specifications.

**Note 3)** When two or more symbols are specified, indicate them alphabetically. Combination of (B) and (K) is not possible.
**Series VQ1000/2000**

**kit (Flat ribbon cable with terminal block)**

**VV5Q11**

The dashed lines and dimensions in parentheses indicate DIN rail mounting [D].

---

**Dimensions**

Formula: \( L_1 = 10.5n + 45.5, L_2 = 10.5n + 63 \) 
\( n \): Station (Maximum 16 stations)

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

With ejector unit: 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.
Base Mounted Plug-in Unit Series VQ1000/2000

VV5Q21

The dashed lines indicate DIN rail mounting [-D] (with DIN rail mounting bracket).

Dimensions

<table>
<thead>
<tr>
<th>Station</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>252.5</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>
<tr>
<td>(L4)</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>335.5</td>
<td>348</td>
<td>360.5</td>
<td>373</td>
</tr>
</tbody>
</table>

Formula: $L1 = 16n + 53$, $L2 = 16n + 87$  n: Station (Maximum 16 stations)
### Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Piping specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>Side: C8, C3, C4, C6, C8</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 (VQ1000)

- **Open the terminal block cover to connect the wires to the terminal block.**
- **Step 1. Removing the 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. Wiring**
  - 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 it. How to connect is inserting the lead wire into the terminal opening and tighten the screw directly above it. (Tightening torque: 0.25 to 0.35 N·m)
- **Step 3. Mounting the terminal block cover**
  - Hook groove (a) on shaft (b) and close the cover. Then tighten the screws.

### Electrical Wiring Specifications: VQ1000

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Polarity</th>
<th>Symbol</th>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM</td>
<td>COM (+)</td>
<td>E</td>
<td>None</td>
<td>With back pressure check valve</td>
</tr>
<tr>
<td>COM</td>
<td>COM (+)</td>
<td>D</td>
<td></td>
<td>DIN rail mounting</td>
</tr>
<tr>
<td>COM</td>
<td>COM (+)</td>
<td>G</td>
<td></td>
<td>DIN rail length specified (in.) Stations 02 to 24</td>
</tr>
<tr>
<td>G1</td>
<td>(-)</td>
<td></td>
<td></td>
<td>1 set of regulator unit</td>
</tr>
<tr>
<td>G2</td>
<td>(-)</td>
<td></td>
<td></td>
<td>2 sets of regulator unit</td>
</tr>
<tr>
<td>O1</td>
<td>(-)</td>
<td></td>
<td></td>
<td>3 sets of regulator unit</td>
</tr>
<tr>
<td>O2</td>
<td>(-)</td>
<td></td>
<td></td>
<td>With solenoid unit</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>K</td>
<td></td>
<td>Special wiring spec. (Except double wiring)</td>
</tr>
<tr>
<td>T</td>
<td></td>
<td>L</td>
<td></td>
<td>With name plate</td>
</tr>
<tr>
<td>P</td>
<td></td>
<td>M</td>
<td></td>
<td>Enclosure: Dust-tight, Water-jet-proof (IP65)</td>
</tr>
</tbody>
</table>

#### Notes
- Use lead wires only of no 1.5 to 2.5 mm².
- When using the negative common specifications, use valves for negative common.
- Refer to "Semi-standard" on page 56 for details.

### How to Order Manifold

**Example:**

- **VQ5Q1** 1 08 C6 T 0

#### Option

- **Option**: Option set
- **Option**: Option 1, Option 2, Option 3

#### Notes
- **C**: With a suffix -C has check valves for prevention of back pressure at all manifold stations. When a back pressure check valve is desired, it is to be installed only in certain manifold stations, specify by mounting position by means of the manifold specification sheet.
- **S**: The number of stations that may be displayed is longer than the manifold number of stations.
- **W**: With ejector unit. A combination of "J" and "N" is not available.
- **F**: With flow fitting assembly, or double check block (direct mounting), enter "F01" and give instructions in the manifold specification sheet.
- **M**: With solenoid valve, enter "M01" and give instructions in the manifold specification sheet.
- **H**: With flow fitting assembly, or double check block (direct mounting), enter "H01" and give instructions in the manifold specification sheet.
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
VVQ11-0020TD — 1 set-Manifold base part no.
VVQ11-0051 — 2 sets-Valve part no. (Stations 1 to 2)
VVQ11-0052 — 4 sets-Valve part no. (Stations 3 to 6)
VVQ1200-51 — 1 set-Valve part no. (Station 7)
VVQ1200-51 — 1 set-Blanking plate part no. (Station 8)

Write sequentially from the 1st station on the D-side. When part nos. written collectively are complicated, specify them by means of the manifold specification sheet.

How to Order Valves

<table>
<thead>
<tr>
<th>VQ</th>
<th>1</th>
<th>1</th>
<th>0</th>
<th>0</th>
<th>5</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of actuation</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>1</td>
<td>2 position single</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>2 position double</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>3 position closed center</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td>3 position exhaust center</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>5</td>
<td>5 position pressure center</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>6</td>
<td>A 4 position dual port (N.C. + N.C.)</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>7</td>
<td>B 4 position dual port (N.O. + N.O.)</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>8</td>
<td>C 4 position dual port (N.O. + N.C.)</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>9</td>
<td>D 4 position dual port (N.C. + N.C.)</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>10</td>
<td>E 4 position dual port (N.C. + N.O.)</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>11</td>
<td>VE 4 position dual port (N.O. + N.O.)</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>12</td>
<td>V 4 position dual port (N.O. + N.C.)</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>13</td>
<td>W 4 position dual port (N.C. + N.O.)</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
</tr>
</tbody>
</table>

Coil voltage

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specification</th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Standard (0.4 W)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>B</td>
<td>high-speed response type (0.95 W)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>N</td>
<td>low pressure (0.95 W)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>M</td>
<td>Negative common</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>W</td>
<td>External pilot</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Note 1) Refer to page 16 for power consumption of AC type.
Note 2) Metal seal only
Note 3) Refer to "Semi-standard" on pages 56 to 61 for external pilot and negative common specifications.
Note 4) When two or more symbols are specified, indicate them alphabetically. Combination of (B) and (K) is not possible.

Caution

Use the standard (DC) specification when continuously energizing for long periods of time.
The dashed lines and dimensions in parentheses indicate DIN rail mounting [-D].

**Dimensions**

|   | 2   | 3   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22  | 23  | 24  |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| L1| 66.5| 77  | 87.5| 98  | 108.5| 119 | 129.5| 140 | 150.5| 161 | 171.5| 182 | 192.5| 203 | 213.5| 224 | 234.5| 245 | 255.5| 266 | 276.5| 287 |
| L2| 126 | 136.5| 147 | 157.5| 168 | 178.5| 189 | 199.5| 210 | 220.5| 231 | 241.5| 252 | 262.5| 273 | 283.5| 294 | 304.5| 315 | 325.5| 336 | 346.5| 357 |
| L3| 150 | 162.5| 175 | 187.5| 197.5| 208 | 218.5| 228.5| 239 | 249.5| 260 | 270.5| 281 | 291.5| 302 | 312.5| 323 | 333.5| 344 | 355 | 365.5| 376.5| 387.5|
| L4| 160.5| 173 | 185.5| 198 | 210.5| 223 | 235.5| 248 | 260.5| 273 | 285.5| 298 | 310.5| 323 | 335.5| 348 | 360.5| 373 | 385.5| 398 |

With ejector unit: 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.
VV5Q21

Dust-tight, Water-jet-proof

Dimensions

<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>1</td>
<td>150.5</td>
<td>163</td>
<td>182.5</td>
<td>200</td>
</tr>
<tr>
<td>2</td>
<td>166.5</td>
<td>179</td>
<td>198.5</td>
<td>225</td>
</tr>
<tr>
<td>3</td>
<td>182.5</td>
<td>195</td>
<td>214.5</td>
<td>250</td>
</tr>
<tr>
<td>4</td>
<td>198.5</td>
<td>211</td>
<td>230.5</td>
<td>262.5</td>
</tr>
<tr>
<td>5</td>
<td>214.5</td>
<td>227</td>
<td>230.5</td>
<td>262.5</td>
</tr>
<tr>
<td>6</td>
<td>230.5</td>
<td>243</td>
<td>230.5</td>
<td>262.5</td>
</tr>
<tr>
<td>7</td>
<td>230.5</td>
<td>243</td>
<td>230.5</td>
<td>262.5</td>
</tr>
<tr>
<td>8</td>
<td>230.5</td>
<td>243</td>
<td>230.5</td>
<td>262.5</td>
</tr>
<tr>
<td>9</td>
<td>230.5</td>
<td>243</td>
<td>230.5</td>
<td>262.5</td>
</tr>
<tr>
<td>10</td>
<td>230.5</td>
<td>243</td>
<td>230.5</td>
<td>262.5</td>
</tr>
<tr>
<td>11</td>
<td>230.5</td>
<td>243</td>
<td>230.5</td>
<td>262.5</td>
</tr>
<tr>
<td>12</td>
<td>230.5</td>
<td>243</td>
<td>230.5</td>
<td>262.5</td>
</tr>
<tr>
<td>13</td>
<td>230.5</td>
<td>243</td>
<td>230.5</td>
<td>262.5</td>
</tr>
<tr>
<td>14</td>
<td>230.5</td>
<td>243</td>
<td>230.5</td>
<td>262.5</td>
</tr>
<tr>
<td>15</td>
<td>230.5</td>
<td>243</td>
<td>230.5</td>
<td>262.5</td>
</tr>
<tr>
<td>16</td>
<td>230.5</td>
<td>243</td>
<td>230.5</td>
<td>262.5</td>
</tr>
<tr>
<td>17</td>
<td>230.5</td>
<td>243</td>
<td>230.5</td>
<td>262.5</td>
</tr>
<tr>
<td>18</td>
<td>230.5</td>
<td>243</td>
<td>230.5</td>
<td>262.5</td>
</tr>
<tr>
<td>19</td>
<td>230.5</td>
<td>243</td>
<td>230.5</td>
<td>262.5</td>
</tr>
<tr>
<td>20</td>
<td>230.5</td>
<td>243</td>
<td>230.5</td>
<td>262.5</td>
</tr>
</tbody>
</table>

Formula: 

$L1 = 16n + 118.5$, $L2 = 16n + 131$  
$n$: Station (Maximum 20 stations)

The dashed lines indicate DIN rail mounting [D] (with DIN rail mounting bracket).
### How to Order Manifold

**Series VQ1000/2000**

**Kit (Lead wire)**

**IP65 compliant**
- Direct electrical entry. Models with one or more stations are available.
- (SUP) and (EXH) ports are provided on one side for further space savings.
- Maximum stations are 8.
- Enclosure: Dust-tight, Water-jet-proof (IP65) compatible (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.

#### Use any of the below cable lead wire assembly to change the lead wire length:

| Lead wire assembly with connector | Lead wire length | Part no.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.6 m</td>
<td>VVQ1009 84A-6-4</td>
</tr>
<tr>
<td></td>
<td>1.5 m</td>
<td>VVQ1009 84A-15-4</td>
</tr>
<tr>
<td></td>
<td>3.0 m</td>
<td>VVQ1009 84A-30-4</td>
</tr>
</tbody>
</table>

* Station number 1 to 8

#### Piping Specifications: Positive COM

<table>
<thead>
<tr>
<th>Option</th>
<th>Symbol</th>
<th>Option</th>
<th>VQ1000</th>
<th>VQ2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>N</td>
<td>Nil</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>With back pressure check valve</td>
<td>B</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>With DIN rail mounting</td>
<td>D</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>With DIN rail bracket (Without DIN rail)</td>
<td>D0</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>DIN rail length specified (Stations 0 to 24)</td>
<td>D4</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>With ejector unit</td>
<td>E</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>With name plate</td>
<td>N</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>External pilot</td>
<td>O</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Direct EXH outlet with built-in silencer</td>
<td>S</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>With name plate</td>
<td>D5</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>With name plate</td>
<td>D6</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

#### Station number 1 to 8

- Station number 1 to 8

#### Note 3)
- The number of stations that may be displayed is longer than the manifold number of stations.

#### Note 4)
- Specify the mounting position by means of the manifold specification sheet.
- Models with a suffix "B" have check valves for prevention of back pressure at all manifold stations. When a back pressure check valve is desired, and to be installed only in certain manifold stations, specify the mounting position by means of the manifold specification sheet.

#### Note 5)
- Models with a suffix "A" have check valves for prevention of back pressure at all manifold stations. When a back pressure check valve is desired, and to be installed only in certain manifold stations, specify the mounting position by means of the manifold specification sheet.

#### Note 6)
- Indicate "R" for the valve with external pilot.

---

![Manifold Specifications Diagram](image-url)

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Piping specifications</th>
<th>Port size</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>Side C8, C3, C4, C6, M5</td>
<td>1(P), 3(R)</td>
<td>Max. 8 stations</td>
</tr>
<tr>
<td>VQ2000</td>
<td>Side C10, C6, C8</td>
<td>4(A), 2(B)</td>
<td>Max. 8 stations</td>
</tr>
</tbody>
</table>

**Cable (Length)**

<table>
<thead>
<tr>
<th>Cable (Length)</th>
<th>Station number 1 to 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.6 m</td>
<td>1 station</td>
</tr>
<tr>
<td>1.5 m</td>
<td>1 station</td>
</tr>
<tr>
<td>3.0 m</td>
<td>1 station</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>C6</td>
<td>With Ø6 one-touch fitting</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>C4</td>
<td>With Ø4 one-touch fitting</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>C2</td>
<td>With Ø2 one-touch fitting</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>M5</td>
<td>Metric thread</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>CM</td>
<td>Mixed sizes and with port plug</td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

**Cable 3 cores x 24AWG**

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

**Note 2)** Models with a suffix "A" have check valves for prevention of back pressure at all manifold stations. When a back pressure check valve is desired, and to be installed only in certain manifold stations, specify the mounting position by means of the manifold specification sheet.

**Note 3)** The number of stations that may be deployed is longer than the manifold number of stations.

**Note 4)** Specify the mounting position by means of the manifold specification sheet.

**Note 5)** Indicate "R" for the valve with external pilot.

**Note 6)** Model with a suffix "B" has check valves for prevention of back pressure at all manifold stations. When a back pressure check valve is desired, and to be installed only in certain manifold stations, specify the mounting position by means of the manifold specification sheet.

---

![Symbol L](image-url)

**Symbol L**

- Direct electrical entry. Models with one or more stations are available.
- (SUP) and (EXH) ports are provided on one side for further space savings.
- Maximum stations are 8.
- Enclosure: Dust-tight, Water-jet-proof (IP65) compatible (Series VQ2000)
### Base Mounted Plug-in Unit Series VQ1000/2000

**VQ5Q21**
Dust-tight, Water-jet-proof

---

#### Wiring Specifications: Negative COM (Semi-standard)

Three lead wires are attached to each station regardless of the type of valve which is mounted. The black wire is for COM connection.

<table>
<thead>
<tr>
<th>Lead wire color</th>
<th>Lead wire color</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOL A (+) Red</td>
<td>SOL A (+) Red</td>
</tr>
<tr>
<td>COM (–) Black</td>
<td>COM (–) Black</td>
</tr>
<tr>
<td>SOL B (+) White</td>
<td>SOL B (+) White</td>
</tr>
</tbody>
</table>

**Single solenoid**

**Double solenoid**

Red: A side solenoid (+)
Black: COM (–)
White: B side solenoid (+)
(Not used for single solenoid)

---

**How to Order Valves**

<table>
<thead>
<tr>
<th>Series</th>
<th>Seal</th>
<th>Type of actuation</th>
<th>Function</th>
<th>Symbol</th>
<th>Specifications</th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>0</td>
<td>2-position single</td>
<td>Nil</td>
<td>B</td>
<td>High-speed type</td>
<td>0.4 W</td>
<td>-</td>
</tr>
<tr>
<td>VQ2000</td>
<td>1</td>
<td>4-position dual port (N.C. +N.O.)</td>
<td>Nil</td>
<td>B</td>
<td>High-speed type</td>
<td>0.95 W</td>
<td>-</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

---

**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)
VV5Q11-06C6L2: 1 set—Manifold base part no.
VVQ1200-51: 2 sets—Valve part no. (Stations 1 to 2)
VVQ1200-51: 2 sets—Valve part no. (Stations 3 to 4)
VVQ1200-51: 1 set—Valve part no. (Station 5)
VVQ1200-51: 1 set—Blanking plate part no. (Station 6)

---

**Caution**

Use the standard (DC) specification when continuously energizing for long periods of time.

---

**Note:**

1) Refer to page 16 for power consumption of AC type.
2) Metal seal only
3) For external pilot and negative common specifications, refer to “Semi-standard” on pages 56 to 57.
4) When two or more symbols are specified, indicate them alphabetically. Combination of [B] and [K] is not possible.
### 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>39</td>
<td>49.5</td>
<td>60</td>
<td>70.5</td>
<td>81</td>
<td>91.5</td>
<td>102</td>
<td>112.5</td>
</tr>
<tr>
<td>L2</td>
<td>48.5</td>
<td>59</td>
<td>69.5</td>
<td>80</td>
<td>90.5</td>
<td>101</td>
<td>111.5</td>
<td>122</td>
</tr>
<tr>
<td>L3</td>
<td>75</td>
<td>87.5</td>
<td>87.5</td>
<td>100</td>
<td>112.5</td>
<td>125</td>
<td>137.5</td>
<td>150</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>
</tr>
</tbody>
</table>

With ejector unit: Formula L1 = 10.5n + 28.5 + (Number of ejector units x 26.7)  
L2 = 10.5n + 38 + (Number of ejector units x 26.7)  
L4 is L2 plus about 30.

< >: AC  
The dashed lines indicate DIN rail mounting [-D] (with DIN rail mounting bracket).
**VV5Q21**

- **Dust-tight, Water-jet-proof**

- **Dimensions**

<table>
<thead>
<tr>
<th>L1</th>
<th>L2</th>
<th>(L3)</th>
<th>(L4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>51</td>
<td>67</td>
<td>83</td>
<td>99</td>
</tr>
<tr>
<td>99</td>
<td>115</td>
<td>131</td>
<td>147</td>
</tr>
<tr>
<td>147</td>
<td>153</td>
<td>163</td>
<td></td>
</tr>
<tr>
<td>63</td>
<td>79</td>
<td>95</td>
<td>111</td>
</tr>
<tr>
<td>111</td>
<td>127</td>
<td>143</td>
<td>159</td>
</tr>
<tr>
<td>159</td>
<td>175</td>
<td></td>
<td></td>
</tr>
<tr>
<td>87.5</td>
<td>100</td>
<td>125</td>
<td>137.5</td>
</tr>
<tr>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>184.5</td>
</tr>
<tr>
<td>184.5</td>
<td>200</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Formula** \( L1 = 16n + 35, L2 = 16n + 47 \)
  - \( n \): Station (Maximum 8 stations)

- **Safety Instructions**
  - Approved

- **Specific Precautions**
  - Semi-standard
  - Exploded View of Manifold
  - Optional Parts
  - Construction
  - Sub-plate Single Unit
  - Safety Instructions

- **Note**
  - \(<\) AC
  - The dashed lines indicate DIN rail mounting [-D] (with DIN rail mounting bracket).
Series VQ1000/2000
kit (Serial transmission) Base mounted plug-in manifold: For EX510 Gateway-type serial transmission system

How to Order Manifold

**Manifold series**

- VQ1000
- VQ2000

**Valve stations**

- NPN output (+COM.)
- PNP output (+COM.)

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Stations</th>
<th>SI unit specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Nil</td>
<td>SI unit specifications</td>
</tr>
<tr>
<td>N</td>
<td>Nil</td>
<td>SI unit specifications</td>
</tr>
</tbody>
</table>

**Valve stations**

- 08: 8 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 ø3.2 one-touch fitting</td>
<td>☐</td>
<td>—</td>
</tr>
<tr>
<td>C4</td>
<td>With ø4 one-touch fitting</td>
<td>☐</td>
<td>—</td>
</tr>
<tr>
<td>C5</td>
<td>With ø5 one-touch fitting</td>
<td>☐</td>
<td>—</td>
</tr>
<tr>
<td>C6</td>
<td>With ø6 one-touch fitting</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>M5</td>
<td>MS thread</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>D8LM</td>
<td>With mixed sizes and with port plug</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>L3</td>
<td>Top ported elbow with ø3.2 one-touch fitting</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>L4</td>
<td>Top ported elbow with ø4 one-touch fitting</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>L5</td>
<td>Top ported elbow with ø5 one-touch fitting</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>L8</td>
<td>Top ported elbow with ø8 one-touch fitting</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>L5</td>
<td>Bottom ported elbow M5 thread</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>B3</td>
<td>Bottom ported elbow with ø3.2 one-touch fitting</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>B4</td>
<td>Bottom ported elbow with ø4 one-touch fitting</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>B5</td>
<td>Bottom ported elbow with ø5 one-touch fitting</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>B5LM</td>
<td>Bottom ported elbow M5 thread</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>N1</td>
<td>ø1/8&quot; with one-touch fitting</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>N3</td>
<td>ø3/32&quot; with one-touch fitting</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>N7</td>
<td>ø1/4&quot; with one-touch fitting</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>N9</td>
<td>ø5/16&quot; with one-touch fitting</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>M15</td>
<td>UNF10-32 thread</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>L1NT</td>
<td>Top ported elbow with a 1/8&quot; one-touch fitting</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>L3NT</td>
<td>Top ported elbow with ø3/32&quot; one-touch fitting</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>L7NT</td>
<td>Top ported elbow with ø1/4&quot; one-touch fitting</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>L9NT</td>
<td>Top ported elbow with ø5/16&quot; one-touch fitting</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>L9T</td>
<td>Top ported elbow with ø5/32&quot; one-touch fitting</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>L9ST</td>
<td>Top ported elbow with ø5/32&quot; one-touch fitting</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>B1N</td>
<td>Bottom ported elbow with ø1/8&quot; one-touch fitting</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>B3N</td>
<td>Bottom ported elbow with ø3/32&quot; one-touch fitting</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>B7N</td>
<td>Bottom ported elbow with ø1/4&quot; one-touch fitting</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>B9N</td>
<td>Bottom ported elbow with ø5/16&quot; one-touch fitting</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>B11N</td>
<td>Bottom ported elbow with ø5/32&quot; one-touch fitting</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>B11ST</td>
<td>Bottom ported elbow with ø1/8&quot; one-touch fitting</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>M18NT</td>
<td>Mixed size for different types of piping, option installed</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

**SI unit part no.**

- Nil
- N

**Symbol/Port size**

- NPN output (+COM.)
- PNP output (+COM.)

**SI unit specifications**

- CE compliant

How to Order Manifold Assembly

**Example**

- VQ1000-51: 1 set (Single type part no.)
- VQ1200-51: 3 sets (Double type part no.)
- VQ1300-51: 4 sets (3 position type part no.)

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

**Function**

- Nil: Standard (0.4 W)
- B: High-speed response type (0.95 W)
- K: High-pressure type (1.0 MPa) [0.95 W]
- Note 1: Negative common
- M: External pilot

**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)
- D: Slide locking type (Manual)

**Rated voltage**

- 5: 24 VDC

**CE compliant**

- Nil
- G: CE compliant

- Note 1) Metal seal only
- Note 2) For external pilot and negative common specifications, refer to “Semi-standard” on pages 56 to 57.
- Note 3) When two or more symbols are specified, indicate them alphabetically. Combination of [B] and [K] is not possible.
Series VQ1000/2000
kit (Serial transmission) Base mounted plug-in manifold: For EX510 Gateway-type serial transmission system

VV5Q11

Applicable connector: Flat ribbon cable connector (20P)
(Complies with MIL-C-83503)

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>55</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>101.5</td>
<td>112</td>
<td>122.5</td>
<td>133</td>
<td>143.5</td>
<td>154</td>
<td>164.5</td>
<td>175</td>
<td>185.5</td>
<td>196</td>
<td>206.5</td>
<td>217</td>
<td>227.5</td>
<td>238</td>
<td>248.5</td>
<td>259</td>
</tr>
<tr>
<td>L3</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>237.5</td>
<td>250</td>
<td>262.5</td>
<td>275</td>
</tr>
<tr>
<td>L4</td>
<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>
<td>235.5</td>
<td>248</td>
<td>248</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
<td>285.5</td>
</tr>
</tbody>
</table>

Formula L1 = 10.5n + 44.5, L2 = 10.5n + 91 in: Station (Maximum 16 stations)
Base Mounted Plug-in Manifold Series VQ1000/2000

VV5Q21

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>69</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>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>
</tr>
<tr>
<td>L3</td>
<td>137.5</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>250</td>
<td>275</td>
<td>287.5</td>
<td>300</td>
<td>312.5</td>
<td>337.5</td>
<td>350</td>
<td>362.5</td>
<td>387.5</td>
</tr>
<tr>
<td>L4</td>
<td>148</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
<td>323</td>
<td>348</td>
<td>360.5</td>
<td>373</td>
<td>398</td>
</tr>
</tbody>
</table>

Formula: \( L1 = 16n + 53 \), \( L2 = 16n + 101 \)  \( n \): Station (Maximum 16 stations)

Applicable connector: Flat ribbon cable connector (20P)
(Complies with MIL-C-83503)
**Series VQ1000/2000**

**kit (Serial transmission): For EX120/123/124 Integrated-type (Output) serial transmission system**

**IP65 compliant**
- The serial transmission system reduces wiring work, while minimizing wiring and saving space.
- Enclosure: Dust-tight, Water-jet-proof (IP65) compatible (Series VQ2000)

**How to Order Manifold**

![Manifold Diagram](image)

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Piping specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>Side</td>
<td>C8, C3, C4, C6, M5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Max. 16 stations</td>
</tr>
<tr>
<td>VQ2000</td>
<td>Side</td>
<td>C10, C4, C6, C8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Max. 16 stations</td>
</tr>
</tbody>
</table>

**Cylinder port**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Port size</th>
<th>VQ10000 VQ2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3</td>
<td>With ø3.2 one-touch fitting</td>
<td>—</td>
</tr>
<tr>
<td>C4</td>
<td>With ø4 one-touch fitting</td>
<td>—</td>
</tr>
<tr>
<td>C6</td>
<td>With ø6 one-touch fitting</td>
<td>—</td>
</tr>
<tr>
<td>M5</td>
<td>MS thread</td>
<td>—</td>
</tr>
<tr>
<td>CM</td>
<td>Mixed sizes and with port plug</td>
<td>—</td>
</tr>
<tr>
<td>MM</td>
<td>Back to former piping type (not available)</td>
<td>—</td>
</tr>
</tbody>
</table>

**SI unit specifications**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Protocol</th>
<th>Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>J1</td>
<td>SUNX Corp.: S-LINK (16 outputs)</td>
<td>—</td>
</tr>
<tr>
<td>J2</td>
<td>SUNX Corp.: S-LINK (8 outputs)</td>
<td>—</td>
</tr>
<tr>
<td>Q</td>
<td>DeviceNet™</td>
<td>—</td>
</tr>
<tr>
<td>R1</td>
<td>OMROM Corp.: CompoBus/S (16 outputs)</td>
<td>—</td>
</tr>
<tr>
<td>R2</td>
<td>OMROM Corp.: CompoBus/S (8 outputs)</td>
<td>—</td>
</tr>
<tr>
<td>V</td>
<td>CC-LINK</td>
<td>—</td>
</tr>
</tbody>
</table>

**Dust-protected (-XP)**

Suffix "-XP" to the end of the part number for the dust-protected SI units. (Except Q when the SI unit specifications are compatible with DeviceNet™.)

**CE compliant**

- Refer to "SI Unit Part No." when ordering the CE-compliant SI unit.

**Option**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Option</th>
<th>SI unit part no.</th>
<th>CE compliant</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</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Q</td>
<td>Set of regulator unit</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>S</td>
<td>Special wiring specifications (Except double wiring)</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

**SI Unit Part No. (Without option W [Dust-protected (-XP) is included])**

Refer to Best Pneumatics No. 1 for details on the EX120/123/124 integrated-type (Output) serial transmission system.

**SI Unit Part No. (With option W)**

Refer to Best Pneumatics No. 1 for details on the EX120/123/124 integrated-type (Output) serial transmission system.
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 pressure center
- A: 4-position dual port (N.C., N.O.)
- B: 4-position dual port (N.O., N.O.)
- C: 4-position dual port (N.C., N.O.)

**Seal**

- 0: Metal seal
- 1: Rubber seal

**Enclosure**

- Nil: Dust-tight, Water-jet-proof (IP65)
- W: Dust-protected (XP)

**Manual override**

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

**Coil voltage**

- S: 24 VDC; With indicator light/surge voltage suppressor

**Function**

- Nil: Standard (0.4 W)
- B: High-speed response type (0.95 W)
- K: High-pressure type (1.0 MPa) (0.95 W)
- N: Negative common
- R: External pilot

**Specifications**

- DC

**Notes**

1. Metal seal only
2. For external pilot and negative common specifications, refer to "Semi-standard" on pages 56 to 57.
3. When two or more symbols are specified, indicate them alphabetically. Combination of [B] and [K] is not possible.

How to Order Manifold Assembly

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

**Example**

- VVQ1000-10-A-1
- VQ1300-51
- VQ1200-51
- VQ1100-51

Write sequentially from the 1st station on the D-side. When part nos. written collectively are complicated, specify them by means of the manifold specification sheet.
**Series VQ1000/2000**

*kit (Serial transmission): For EX120 Integrated-type (Output) serial transmission system*

**VV5Q11**

The dashed lines indicate DIN rail mounting [D] (with DIN rail mounting bracket).

**Dimensions**

<table>
<thead>
<tr>
<th>Station</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>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>201.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>280.5</td>
<td>280.5</td>
<td>273</td>
</tr>
</tbody>
</table>

With ejector unit: 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

Dust-protected SI unit: L5 = 10.5n + 97, L6 = L3 + 25, L7 = L4 + 25

**Formulas**
- \( L1 = 10.5n + 44.5 \)
- \( L2 = 10.5n + 72.5 \)

**n**: Station (Maximum 16 stations)

---

**Notes**

- **Drawing shows a SC case.**
- **Dust-protected SI unit**
- **With ejector unit: Formula**
- **Dimensions**
- **Approved**
The dashed lines indicate DIN rail mounting (D) (with DIN rail mounting bracket).

**Dimensions**

<table>
<thead>
<tr>
<th></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>115</td>
<td>131</td>
<td>147</td>
<td>163</td>
<td>179</td>
<td>195</td>
<td>211</td>
<td>227</td>
<td>243</td>
<td>259</td>
<td>275</td>
<td>291</td>
<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>
<td>337.5</td>
<td>350</td>
<td>362.5</td>
</tr>
<tr>
<td>(L4)</td>
<td>148</td>
<td>173</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>
</tr>
</tbody>
</table>

**Notes:**
- C10: ø10 one-touch fitting
- C10 [3(R) EXH port]
- C10 [1(P) SUP port]
- C10: ø10 one-touch fitting
- DIN rail clamp screw
- Indicator light
- Manual override

**Base Mounted Plug-in Unit Series VQ1000/2000**

Drawing shows a SC case.
S

Series VQ2000

kit (Serial transmission): For EX240 Integrated-type (I/O) serial transmission system

IP65 compliant

VQ2000 only

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

How to Order Manifold

VQ2000

Plug-in series

Stations

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Port size</th>
</tr>
</thead>
<tbody>
<tr>
<td>C4</td>
<td>With ø4 one-touch fitting</td>
</tr>
<tr>
<td>C6</td>
<td>With ø6 one-touch fitting</td>
</tr>
<tr>
<td>C8</td>
<td>With ø8 one-touch fitting</td>
</tr>
<tr>
<td>CM</td>
<td>Mixed sizes and with port plug</td>
</tr>
<tr>
<td>MM</td>
<td>Used for elbow fittings with ø4/ø6 one-touch fitting</td>
</tr>
</tbody>
</table>

Note 1) Insert "L" (Top ported) or "B" (Bottom ported) for elbow type. Example: B6 (Bottom ported elbow with ø6 one-touch fitting)

Note 2) Indicate "LM" for models with elbow fittings and mixed cylinder port sizes.

Note 3) Indicate "Mixed sizes and with port plug" by means of the manifold specification sheet.

Note 4) When selecting the mixed size for different types of piping, dual flow fitting assembly, or double check block (direct mounting), enter "MM" and give instructions in the manifold specification sheet.

Note 5) Inch-size one-touch fittings are available. Refer to "Semi-standard" on page 57 for details.

Refer to Best Pneumatics No. 1 for details on the EX240 integrated-type (Output) serial transmission system.

How to Order Manifold

VQ 2 1 0 0 C W 1

- Seal
  - Metal seal
  - Rubber seal

- 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

- A: 4-position dual port (N.C. - N.O.)
- B: 4-position dual port (N.O. - N.O.)
- C: 4-position dual port (N.C. - N.O.)

Note) For external pilot and negative common specifications, refer to "Semi-standard" on pages 56 to 57.

Enclosure

IP65 (Dust-tight, Water-jet-proof)

Function

Symbol | Specifications | DC
|-------|---------------|---
| N     | Standard      | (0.4 W) 0
| B     | High-speed response type | (0.95 W) 0
| K     | High-pressure (1.0 MPa) | (0.95 W) 0
| N     | Negative common |
| R     | External pilot |

Note 1) Metal seal only

Note 2) For external pilot and negative common specifications, refer to "Semi-standard" on pages 56 to 57.

Note 3) When a valve is compatible with PROFIBUS DP, the SI unit is negative common. Select valves for negative common.

Note 4) When two or more symbols are specified, indicate them alphabetically. Combination of (B) and (K) is not possible.

Coil voltage

5: 24 VDC; With indicator light/surge voltage suppressor

Note 1) Only +COM is available for DeviceNet™. Order a mounting valve with +COM.

Since PROFIBUS is –COM only, order –COM for valves to be mounted.

Model

- QW: Without SI unit
- QW: DeviceNet™ +COM
- NW: PROFIBUS-DP +COM

DI unit specifications

Symbol | Option
|-------|-------------------|
| N     | PH sensor input (+COM) or without SI/DI unit
| N     | NPN sensor input (+COM)

Number of DI unit

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>DI unit: None</td>
</tr>
<tr>
<td>1</td>
<td>DI unit: 1 pc.</td>
</tr>
<tr>
<td>2</td>
<td>DI unit: 2 pcs.</td>
</tr>
<tr>
<td>3</td>
<td>DI unit: 3 pcs.</td>
</tr>
<tr>
<td>4</td>
<td>DI unit: 4 pcs.</td>
</tr>
</tbody>
</table>

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.

CE compliant

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>CE compliant</td>
</tr>
<tr>
<td>Q</td>
<td>CE compliant</td>
</tr>
</tbody>
</table>

Option

- N: With name plate

Refer to “SI Unit Part No.” when ordering the CE-compliant SI unit.

Note 1) Insert "L" (Top ported) or "B" (Bottom ported) for elbow type.

Example) B6 (Bottom ported elbow with ø6 one-touch fitting)

Note 2) Indicate "LM" for models with elbow fittings and mixed cylinder port sizes.

Note 3) Indicate "Mixed sizes and with port plug" by means of the manifold specification sheet.

Note 4) When selecting the mixed size for different types of piping, dual flow fitting assembly, or double check block (direct mounting), enter "MM" and give instructions in the manifold specification sheet.

Note 5) Inch-size one-touch fittings are available. Refer to "Semi-standard" on page 57 for details.

Caution

Use the standard (DC) specification when continuously energizing for long periods of time.
**VV5Q21**

(Serial transmission kit: EX240)

Formula: \( L1 = 16n + 36.5 \) \( L2 = 16n + 186 \)

(In case of 1 pc. DI unit, 54 mm will be added for increasing every 1 pc.)

| Station | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| L1      | 68.5 | 84.5 | 100.5 | 116.5 | 132.5 | 148.5 | 164.5 | 180.5 | 196.5 | 212.5 | 228.5 | 244.5 | 260.5 | 276.5 | 292.5 | 308.5 | 324.5 | 340.5 | 356.5 | 372.5 | 388.5 | 404.5 | 420.5 |
| L2      | 218 | 234 | 250 | 266 | 282 | 298 | 314 | 330 | 346 | 362 | 378 | 394 | 410 | 426 | 442 | 458 | 474 | 490 | 506 | 522 | 538 | 554 | 570 |
Circular Connector (26 Pins)

How to Order Manifold

Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Piping specifications</th>
<th>Port size</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ2000</td>
<td>Side</td>
<td>C10</td>
<td>C4, C6, M8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Max. 24 stations</td>
</tr>
</tbody>
</table>

Circular connector cable assembly

- Cable length
  - 1.5 m AXT100-MC26-015
  - 3 m AXT100-MC26-030
  - 5 m AXT100-MC26-050

- Cannot be used for transfer wiring.

Cable Assembly

- Multi-core vinyl cable
  - 0.3 mm² x 26 cores

Electric characteristics

- Contact resistance: ≤10 mΩ, 20°C
- Voltage limit: V, 1 min, AC 1000
- Insulation resistance: ≥5 MΩ, 20°C or more

Note: The minimum bending radius of the circular connector cable is 20 mm.

How to Order Manifold

<table>
<thead>
<tr>
<th>Series</th>
<th>Manifold</th>
<th>Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VV5Q</td>
<td>2000</td>
<td>02, 2 stations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24 stations</td>
</tr>
</tbody>
</table>

Cylinder port

- Port size
  - C4: With ø4 one-touch fitting
  - C6: With ø6 one-touch fitting
  - C8: With ø8 one-touch fitting
  - CM: With ø4/ø6 one-touch fitting

Note: Refer to page 56 for details.
**Base Mounted Plug-in Unit Series VQ2000**

**How to Order Manifold Assembly**

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

**<Example>**

Circular connector kit with cable (3 m)

**VQ2000-10A-1** – 1 set–Manifold base part no.

**VQ2100-51** – 4 sets–Valve part no. (Stations 1 to 3)

**VQ2200-51** – 3 sets–Valve part no. (Stations 4 to 6)

**VQ2300-51** – 2 sets–Valve part no. (Stations 7 to 8)

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.

How to Order Valves

**VQ Series**

**VQ2000**

- **Function**
  - Nil
  - Standard
  - High-speed spool type
  - External pilot

- **Enclosure**
  - IP65 (Dust-tight, Water-jet-proof)

- **Manual override**
  - Nil
  - No-locking push type (Tool required)
  - Button type (Manual)

- **Light/surge voltage suppressor**
  - Nil
  - Yes

- **Coil voltage**
  - 110 VAC (50/60 Hz)

**Note**

1) For power consumption of AC type, refer to page 16.
2) Nil seal only
3) Nil seal only
4) When two or more symbols are specified, indicate them alphabetically. Combination of [B] and [K] is not possible.

How to Order Manifold Assembly

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

**<Example>**

Circular connector kit with cable (3 m)

**VQ2000-10A-1** – 1 set–Manifold base part no.

**VQ2100-51** – 4 sets–Valve part no. (Stations 1 to 3)

**VQ2200-51** – 3 sets–Valve part no. (Stations 4 to 6)

**VQ2300-51** – 2 sets–Valve part no. (Stations 7 to 8)

**VQ2000-10A-1** – 1 set–Manifold base part no.

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.
Series VQ2000
kit (Circular connector)

VV5Q21

< - AC
The dashed lines and dimensions in parentheses indicate DIN rail mounting [D].

Dimensions

<table>
<thead>
<tr>
<th></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>L1</td>
<td>109.5</td>
<td>125.5</td>
<td>141.5</td>
<td>157.5</td>
<td>173.5</td>
<td>189.5</td>
<td>205.5</td>
<td>221.5</td>
<td>237.5</td>
<td>253.5</td>
<td>269.5</td>
</tr>
<tr>
<td>L2</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>(L3)</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>275</td>
<td>287.5</td>
<td>300</td>
<td>312.5</td>
</tr>
<tr>
<td>(L4)</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
<td>323</td>
</tr>
</tbody>
</table>
Sub-plate Single Unit
VQ2000 Only

Series VQ2000

How to Order

**IP65 enclosure in standard specifications**

**Easy-to-use terminal block**

In the case of **Valve** + **Sub-plate**

- Entry is the same as standard products.

**Enclosure**

- Dust-protected
- IP65 (Dust-tight, Water-jet-proof)

**Thread type**

- Nil
- CE compliant
- DC specification only

**Port size**

- Nil
- 5VQ2 0 0 02

- Entry is the same as standard products.

**Dimensions**

Note 1) Valves are IP65 specifications.
Note 2) When the valve is a standard (dust-protected) specification, it is not compatible with 200 or 220 VAC.

When using this valve for IP65, mount a seal connector to the electrical entry.
Series VQ1000/2000

Semi-standard

Different Number of Connector Pins

F and P kits with the following number of pins are available besides the standard number (F = 25P; P = 26P). 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)
10/16/20 pins

How to Order Manifold

VV5Q11 – 06 C6 F SA

Stations

Cylinder port

Option

Kit type/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>F kit</td>
<td>UA</td>
<td>F kit</td>
</tr>
</tbody>
</table>

* 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

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

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Connector</th>
<th>Dot marking</th>
<th>Lead wire color</th>
<th>Terminal no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Black</td>
<td>None</td>
<td>Black</td>
<td>11</td>
</tr>
<tr>
<td>2</td>
<td>Blue</td>
<td>None</td>
<td>Black</td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>Red</td>
<td>None</td>
<td>Black</td>
<td>13</td>
</tr>
<tr>
<td>4</td>
<td>Yellow</td>
<td>None</td>
<td>Black</td>
<td>14</td>
</tr>
<tr>
<td>5</td>
<td>Pink</td>
<td>None</td>
<td>Black</td>
<td>14</td>
</tr>
<tr>
<td>6</td>
<td>Purple</td>
<td>None</td>
<td>Black</td>
<td>14</td>
</tr>
<tr>
<td>7</td>
<td>Gray</td>
<td>None</td>
<td>Black</td>
<td>14</td>
</tr>
<tr>
<td>8</td>
<td>White</td>
<td>Black</td>
<td>Black</td>
<td>14</td>
</tr>
<tr>
<td>9</td>
<td>White</td>
<td>Black</td>
<td>Black</td>
<td>14</td>
</tr>
<tr>
<td>10</td>
<td>Yellow</td>
<td>Red</td>
<td>Black</td>
<td>14</td>
</tr>
<tr>
<td>11</td>
<td>White</td>
<td>Red</td>
<td>Black</td>
<td>14</td>
</tr>
<tr>
<td>12</td>
<td>Yellow</td>
<td>Red</td>
<td>Black</td>
<td>14</td>
</tr>
<tr>
<td>13</td>
<td>Orange</td>
<td>Red</td>
<td>Black</td>
<td>14</td>
</tr>
<tr>
<td>14</td>
<td>Yellow</td>
<td>Red</td>
<td>Black</td>
<td>14</td>
</tr>
<tr>
<td>15</td>
<td>Pink</td>
<td>Red</td>
<td>Black</td>
<td>14</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>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.

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

In the internal wiring of F/P/J/T/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–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>Type</th>
<th>F kit (D-sub connector) (25P)</th>
<th>P kit (Flat ribbon cable connector) (26P)</th>
<th>J kit (Flat ribbon cable)</th>
<th>T kit Terminal block (VQ1000, 24 terminals)</th>
<th>M kit Terminal block (VQ2000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. points</td>
<td>24</td>
<td>14</td>
<td>14</td>
<td>16</td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>T kit (Terminal block box)</th>
<th>S kit (Serial transmission)</th>
<th>M kit (Circular connector)</th>
</tr>
</thead>
<tbody>
<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 common specification. The manifold no. shown below is for the T (VQ1000) and L (VQ1000/2000) kits. For other kits the standard manifold can be used. However, negative common is not compatible with S (except EX510 gateway-type and EX240 integrated-type) and G kits.

How to Order Manifold

T kit (VQ1000):

L kit (VQ1000/2000):

How to Order Valves

VQ1100 N – 51

• Negative common specifications

Cylinders
Stations
Electrical entry
Cable length
0 With cable (0.6 m)
1 With cable (1.5 m)
2 With cable (3 m)
Series VQ1000/2000

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 (ø4 one-touch fitting)
VQ2000: C6 (ø6 one-touch fitting)

How to Order Manifold

VV5Q11-08C6FU1-R S

External pilot specifications

Others, option symbols:

to be indicated alphabetically.

How to Order Valves

VQ1100 R – 51

External pilot specifications

Inch-size One-touch Fittings

The valve with inch-size one-touch fittings is shown below.

VV5Q11-06 N7 PS0

Stations

Option

Cylinder port

Symbol N1 N3 N7 N9 MST NM
Applicable tubing O.D. (Inch) ø1/8" ø5/32" ø1/4" ø5/16" ø3/32" ø1/16" ø3/32" ø5/64" ø7/64" ø9/64" Mixed
4(A), 2(B) port (VQ1000)
VQ1000

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

Note 2) Since the pilot EXH of this valve is released from the R1 passage, it is not possible to vacuum from a part other than EXH pressure and SUP ports.

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 part number.

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 part number.

Example)

VV5Q11-08C6FU1-D09S

DIN rail for 9 stations

Others, option symbols:

to be indicated alphabetically.

Note) When inch-size fittings are selected for the cylinder port, inch-size fittings are selected on 1(P), 3(R) port, too.


d = 12.5 x n + 10.5

L Dimension

L = 12.5 x 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>Model</td>
<td>23</td>
<td>35.5</td>
<td>48</td>
<td>60.5</td>
<td>73</td>
<td>83.5</td>
<td>98</td>
<td>110.5</td>
<td>123</td>
<td>135.5</td>
</tr>
<tr>
<td>Model</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>Linear</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>Model</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>Linear</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>Model</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>Linear</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>

Note: When inch-size fittings are selected for the cylinder port, inch-size fittings are selected on 1(P), 3(R) port, too.
**Series VQ1000/2000**

**Construction**

VQ1000 Plug-in Unit: Main Parts/Replacement Parts

### Metal seal

- VQ1100
- VQ1200
- VQ1300
- VQ1400
- VQ1500

### Rubber seal

- VQ1110
- VQ1210
- VQ1310
- VQ1410
- VQ1510

### 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, Spool/Sleeve</td>
<td>Zinc die-casted</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Pilot valve assembly</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Refer to page 62 for “How to Order Pilot Valve Assembly”.

### 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>
<tr>
<td>4</td>
<td>Pilot valve assembly</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Refer to page 62 for “How to Order Pilot Valve Assembly”.

---

---
VQ2000 Plug-in Unit: Main Parts/Replacement Parts

### 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-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>
<tr>
<td>4</td>
<td>Pilot valve assembly</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Rubber 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-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>
<tr>
<td>4</td>
<td>Pilot valve assembly</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note) Refer to page 62 for “How to Order Pilot Valve Assembly”. 
Exploded View of Manifold

VQ1000 Plug-in Unit: Exploded View

(F/P/J/L/S kit)

<table>
<thead>
<tr>
<th>S Kit</th>
<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>P/J Kit</td>
<td>①</td>
<td>②</td>
<td>④</td>
<td>⑥</td>
</tr>
<tr>
<td>F Kit</td>
<td>③</td>
<td>⑤</td>
<td>⑦</td>
<td></td>
</tr>
<tr>
<td>L Kit</td>
<td>⑧</td>
<td>⑨</td>
<td>⑩</td>
<td></td>
</tr>
</tbody>
</table>

Approved
Exploded View of Manifold

**Housing Assembly and SI Unit**

**Manifold 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>(SF1 kit)</td>
<td>EX120-SUW1-(X) Pl.</td>
<td>NKE Corp.: Univ-wire System (16 outputs)</td>
</tr>
<tr>
<td></td>
<td>(SH kit)</td>
<td>EX120-SUH1-(X) Pl.</td>
<td>NKE Corp.: Univ-wire H System (16 outputs)</td>
</tr>
<tr>
<td></td>
<td>(SJ1 kit)</td>
<td>EX120-SSL1-(X)</td>
<td>SUNX Corp.: S-LINK System (16 outputs)</td>
</tr>
<tr>
<td></td>
<td>(SJ2 kit)</td>
<td>EX120-SSL2-(X)</td>
<td>SUNX Corp.: S-LINK System (8 outputs)</td>
</tr>
<tr>
<td></td>
<td>(SO kit)</td>
<td>EX120-SO11</td>
<td>DeviceNet™</td>
</tr>
<tr>
<td></td>
<td>(SR1 kit)</td>
<td>EX120-SCS1-(X)</td>
<td>OMRON Corp.: CompBus/S 16 outputs</td>
</tr>
<tr>
<td></td>
<td>(SR2 kit)</td>
<td>EX120-SCS2-(X)</td>
<td>OMRON Corp.: CompBus/S 8 outputs</td>
</tr>
<tr>
<td></td>
<td>(SV kit)</td>
<td>EX120-SM1</td>
<td>CC-LINK</td>
</tr>
<tr>
<td></td>
<td>(F kit)</td>
<td>AXT100-1-J</td>
<td>Flat ribbon cable housing assembly (26/20/16/10)</td>
</tr>
<tr>
<td></td>
<td>(P kit)</td>
<td>AXT100-1-J</td>
<td>Flat ribbon cable housing assembly (25/15)</td>
</tr>
</tbody>
</table>

**Option**

- 
- 

**Replacement Parts for Manifold Block**

**Part no.**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gasket</td>
<td>HNBR</td>
<td>12</td>
</tr>
<tr>
<td>2</td>
<td>Packing</td>
<td>HNBR</td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>Clamp screw</td>
<td>Carbon steel</td>
<td>12</td>
</tr>
<tr>
<td>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.

**<Manifold Block Assembly>**

**Manifold block no.**

**<D-Side End Plate Assembly>**

**VVQ1000-3A-1**

**Electrical entry**

- F: For P kit
- P: For F kit
- J: For J kit
- L: For L kit
- S: For S kit

**Port size**

**Option**

- Common EXH
- Direct EXH outlet with built-in silencer

**<Fitting Assembly>**

**VVQ1000-2A-1-L**

**Applicable tubing ø8**

**<Replacement Parts for Manifold Block>**

**Replacement Parts**

<table>
<thead>
<tr>
<th>No.</th>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>VVQ1000-80A-1</td>
<td>Gasket</td>
<td>HNBR</td>
<td>12</td>
</tr>
<tr>
<td>10</td>
<td>VVQ1000-80A-2</td>
<td>Packing</td>
<td>HNBR</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.

**<U-Side End Plate Assembly>**

**VVQ1000-2A-1-L**

**Applicable tubing ø8**

**<Tie-rod assembly part no. (2 pcs./set)>**

**VVQ1000-TR**

**Pilot valve assembly**

**V112**

**Function**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
<th>Coil voltage</th>
<th>Enclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Standard</td>
<td>100 VAC (50/60 Hz)</td>
<td>Dust-tight, Water-jet-proof (IP65)</td>
</tr>
<tr>
<td>B</td>
<td>Standard</td>
<td>200 VAC (50/60 Hz)</td>
<td>Dust-tight, Water-jet-proof (IP65)</td>
</tr>
<tr>
<td>C</td>
<td>Standard</td>
<td>110 VAC (50/60 Hz)</td>
<td>Dust-tight, Water-jet-proof (IP65)</td>
</tr>
<tr>
<td>D</td>
<td>Standard</td>
<td>220 VAC (50/60 Hz)</td>
<td>Dust-tight, Water-jet-proof (IP65)</td>
</tr>
<tr>
<td>E</td>
<td>Standard</td>
<td>24 VDC</td>
<td>Dust-tight, Water-jet-proof (IP65)</td>
</tr>
<tr>
<td>F</td>
<td>Standard</td>
<td>12 VDC</td>
<td>Dust-tight, Water-jet-proof (IP65)</td>
</tr>
</tbody>
</table>

**Note:**

- Refer to page 16 for power consumption of AC type.
- Common to single solenoid and double solenoid.
### Exploded View of Manifold

#### VQ2000 Plug-in Unit: Exploded View

*(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><strong>S Kit</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>P/J Kit</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>F Kit</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>G Kit</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>L Kit</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

![Diagram of manifold assembly](image_url)
Exploded View of Manifold

**<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></td>
<td>EX120-SUW1-X</td>
<td>NKK Corp.: Uni-wire System (16 outputs)</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>EX120-SUH1-X</td>
<td>NKK Corp.: Uni-H wire System (16 outputs)</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>EX120-SUL1-X</td>
<td>NKK Corp.: Uni-L wire System (16 outputs)</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>EX120-SUL2-X</td>
<td>SUNX Corp.: S-LINK System (8 outputs)</td>
</tr>
</tbody>
</table>

Note 1) Suffix “-XP” to the end of the part number for dust-protected SI unit.

**<D-Side End Plate Assembly>**

D-side end plate assembly no.

<table>
<thead>
<tr>
<th>No.</th>
<th>Part no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>EX120-SDN1-X</td>
<td>DeviceNet™</td>
</tr>
<tr>
<td>2</td>
<td>EX120-SCS1-X</td>
<td>OMRON Corp.: CompoBus/S (16 outputs)</td>
</tr>
<tr>
<td>3</td>
<td>EX120-SCS2-X</td>
<td>OMRON Corp.: CompoBus/S (8 outputs)</td>
</tr>
</tbody>
</table>

Note 3) “S” (Built-in silencer) and “W” (IP65) cannot be combined.

**<Manifold Block Assembly>**

Manifold block assembly no.

<table>
<thead>
<tr>
<th>No.</th>
<th>Part no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VVQ2000-3A-1</td>
<td>M kit for 2 to 24 stations/Double wiring</td>
</tr>
<tr>
<td>2</td>
<td>VVQ2000-4A-1</td>
<td>M kit for 13 to 24 stations/Double wiring</td>
</tr>
<tr>
<td>3</td>
<td>VVQ2000-3A-2</td>
<td>M kit for 2 to 12 stations/Double wiring</td>
</tr>
<tr>
<td>4</td>
<td>VVQ2000-4A-2</td>
<td>Without lead wire</td>
</tr>
</tbody>
</table>

**<Replacement Parts for Manifold Block>**

Replacement Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VVQ2000-80A-1</td>
<td>Gasket</td>
<td>HNBR</td>
<td>12</td>
</tr>
<tr>
<td>2</td>
<td>VVQ2000-80A-2</td>
<td>Seal</td>
<td>HNBR</td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>VVQ2000-80A-3</td>
<td>Clamp screw</td>
<td>Carbon steel</td>
<td>12</td>
</tr>
</tbody>
</table>

Note) A set of parts containing 12 pcs. each is enclosed.
**Series VQ1000**

### VQ1000: Manifold Optional Parts

**Blanking plate assembly**  
**JIS symbol**

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 example.)
- Specify the spacer mounting position and SUP block plate position by means of the manifold specification sheet.
- The block plate is used in one or two places for one set. (Two SUP block plates for blocking SUP station are attached to the individual SUP spacer.)
- As a standard, electric wiring is connected to the position of the manifold station where the individual SUP spacer is mounted.
- If wiring is not required for stations equipped with spacers, enter “X” in the special wiring specifications column in the manifold specification sheet.

#### Individual EXH spacer
**VQ1000-R-1-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. (Refer to the application example.)
- Specify the mounting position, as well as the EXH block base or EXH block plate position by means of the manifold specification sheet. The block plate is used in one or two places for one set.
- An EXH block base assembly is used in the blocking position when ordering an EXH spacer incorporated with a manifold no. However, do not order an EXH block base assembly because it is attached to the spacer.
- When separately ordering an individual EXH spacer, separately order an EXH block base assembly because it is not attached to the spacer.
- As a standard, electric wiring is connected to the position of the manifold station where the individual EXH spacer is mounted.
- If wiring is not required for stations equipped with spacers, enter “X” in the special wiring specifications column in the manifold specification sheet.

#### SUP block plate
**VQ1000-16A**

When different pressures are supplied to a manifold, a SUP block plate is used to block the stations under different pressures.

- Specify the mounting position by means of the manifold specification sheet.

**Block indication label**

Indication labels to confirm the blocking position are attached. (Each for SUP passage and SUP/EXH passage blocking positions).

- When ordering a block plate incorporated with a manifold, a block indication label is attached to the manifold.

#### Blanking plate with connector
**VQ1000-10A-1**

- **Connector lead wire length (mm)**

<table>
<thead>
<tr>
<th></th>
<th>Lead wire color: Black</th>
<th>Lead wire color: Red</th>
<th>Lead wire color: White</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>4-wire</td>
<td>20</td>
<td>2000</td>
</tr>
<tr>
<td>6</td>
<td>4-wire</td>
<td>25</td>
<td>2500</td>
</tr>
<tr>
<td>10</td>
<td>6-wire</td>
<td>30</td>
<td>3000</td>
</tr>
<tr>
<td>15</td>
<td>10-wire</td>
<td>35</td>
<td>3500</td>
</tr>
</tbody>
</table>

Blanking plate with a connector for individually outputting electricity to drive a single valve or equipment that are not on the manifold base.

- When “N” is suffixed to the end of the name plate, 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-[B-(C3/C4/C6/M5/N1/N3/N7)]

Manifold block assembly

Central entry

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>P0</td>
<td>Without wire</td>
</tr>
<tr>
<td>P1</td>
<td>F: for 1 to 2 stations/Double wiring</td>
</tr>
<tr>
<td>P2</td>
<td>F: for 3 to 4 stations/Double wiring</td>
</tr>
<tr>
<td>P3</td>
<td>F: for 5 to 24 stations/Single wiring</td>
</tr>
<tr>
<td>P4</td>
<td>F: for 5 to 5 stations/Double wiring</td>
</tr>
<tr>
<td>P5</td>
<td>F: for 5 to 24 stations/Double wiring</td>
</tr>
<tr>
<td>P6</td>
<td>F: for 5 to 5 stations/Double wiring</td>
</tr>
<tr>
<td>P7</td>
<td>F: for 5 to 24 stations/Double wiring</td>
</tr>
<tr>
<td>P8</td>
<td>F: for 5 to 5 stations/Double wiring</td>
</tr>
<tr>
<td>P9</td>
<td>F: for 5 to 24 stations/Double wiring</td>
</tr>
<tr>
<td>P10</td>
<td>L: 1 to 2 stations</td>
</tr>
<tr>
<td>P11</td>
<td>L: 1 to 8 stations</td>
</tr>
</tbody>
</table>

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.

<Block indication label>
Indication labels to confirm the blocking position are attached.
- Each for EXH passage and SUP/EXH passage blocking positions.
- When ordering a EXH block base incorporated with a manifold, 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 entry. 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.
- When ordering it being mounted on all manifold stations, suffix "B" to the end of the manifold part number.

Name plate [-N]  
VVQ1000-NSt-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 becomes "VVQ1000-Nc-n".
- When ordering this option incorporated with a manifold, suffix "N" to the end of the manifold part number.

Blanking plug (For one-touch fittings)
KQ2P-[
It is inserted into an unused cylinder port and PLU/EXH ports.

Port plug  
VVQ0000-58A
The plug is used to block the cylinder port.
- When ordering this option incorporated with a manifold, indicate "CM" for the port size of the manifold part number, as well as, the mounting station and cylinder port mounting positions 4(A) and 2(B) by means of the manifold specification sheet.
- Gently screw an M3 screw in the port plug hole and pull it for removal.

Elbow fitting assembly  
VVQ1000-F-L(C3/C4/C6/M5/N1/N3/N7)
It is used for piping that extends upward or downward from the manifold.
- When ordering this option incorporated with a manifold, indicate "UP" or "DOWN" for the manifold port size (when installed in all stations).
- When installing it in part of the manifold stations, specify the elbow fitting assembly port number and the mounting port size by means of the manifold specification sheet.
- When mounting elbow fitting assembly on the edge of manifold station and a silencer on EXH port, select a silencer, AN203-KMB. A silencer (AN202-KMB) is interfered with fittings.

*Note: When a back pressure check valve is desired, and is to be installed only in certain manifold stations, clearly indicate the port number and specify the mounting station by means of the manifold specification sheet.

*Note: When ordering this option incorporated with a manifold, indicate "CM" for the port size of the manifold part number.

*Note: When ordering it being mounted on all manifold stations, suffix "B" to the end of the manifold part number.

*(Precautions)
1. The back pressure check valve assembly is the parts with a check valve structure. However, since the valve has slight air leakage, take precautions for the exhaust air not to be restricted at the exhaust port.
2. When a back pressure check valve is mounted, the effective area of the valve will decrease by about 20%.

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>1/4&quot;</td>
<td>KQ2P-03</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>5/32&quot;</td>
<td>KQ2P-04</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>1/8&quot;</td>
<td>KQ2P-05</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>5/32&quot;</td>
<td>KQ2P-06</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>KQ2P-07</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>5/32&quot;</td>
<td>KQ2P-08</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
</tbody>
</table>

*Note: ( ): VVQ1000-NC-n

Series VQ1000

Base Mounted Plug-in Unit Series VQ1000
### Series VQ1000

#### DIN rail mounting bracket [-D/-D0/-D/-L50]/L50132

It is used for mounting a manifold on a DIN rail.
- When ordering this option incorporated with a manifold, suffix "D" to the end of the manifold part number.
- 1 set of DIN rail mounting bracket is used for 1 manifold (2 DIN rail mounting brackets).

#### Direct EXH outlet with built-in silencer [-S]

This is a type with an exhaust port at the top of the manifold end plate. The built-in silencer exhibits an excellent noise suppression effect. (Noise reduction: 30 dB)
- When ordering this option incorporated with a manifold, suffix "S" to the end of the manifold part number.
- A large quantity of drainage generated in the air source results in exhaust of air together with drainage.

#### Dual flow fitting assembly VVQ1000-52A-

This is a fitting to multiply the flow rate by combining the outputs of 2 valve stations. It is used for driving a large bore cylinder. This is a one-touch fitting for a port size of ø8 or ø5/16".
- The port size for the manifold part number is "CM". Clearly indicate the dual flow fitting assembly part number and specify the mounting station by means of the manifold specifications.
- In dual flow 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 fitting assembly (VVQ1000-F-L5/L50132) on the edge of manifold station, select a silencer, AN203-KM8. A silencer (AN200-KM8) is interfered with fittings.

#### Regulator unit VVQ1000-AR-1

The regulator controls the SUP pressure in a manifold. Supply air from D-side SUP port is regulated. SUP port on U-side is plugged.
- When a regulator unit is mounted, the SUP port on the U-side of the manifold will be plugged. A maximum of 3 units can be mounted on a manifold.

#### Specifications

- **Maximum operating pressure (MPa)**: 0.8
- **Set pressure range (MPa)**: 0.05 to 0.7
- **Ambient and fluid temp. (°C)**: 5 to 50
- **Cracking pressure valve (MPa)**: 0.02
- **Structure**: Reliefing type

#### How to Order Manifold VVQ1114C6FUO-D G 2

- **Number of manifold stations**
  - Number of mounted valves = 12 sets
  - Number of regulator units = 2 sets
- **With regulator unit**
  - Others, option symbols to be indicated alphabetically.

#### Flow Characteristics

- **Inlet pressure**: 0.7 MPa
- **Outlet pressure**: 0.2 MPa
- **Conditions (Initial setting)**

#### Pressure Characteristics

- **Inlet pressure**: 0.175 MPa
- **Outlet pressure**: 0.0 MPa

#### Caution

- **Pressure setting**
  - Check the inlet pressure and then turn the pressure control screw to set the outlet pressure. Turning the screw clockwise will increase the outlet 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) 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 long periods of 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 and 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 (10 bar)
- Max. operating frequency: 180 c.p.m

Dimensions

- Single unit Manifold
  - ø1/4" one-touch fitting
  - ø5/32" one-touch fitting
  - ø6 one-touch fitting
  - ø4 one-touch fitting
  - ø3.2 one-touch fitting
  - M5 thread
  - M3 mounting hole
  - M2.5 mounting hole

How to Order

- Double check block VQ1000 – FPG – C4 M5 – F
  - IN side port size
    - M5: M5 thread
    - C3: ø3.2 one-touch fitting
    - C4: ø4 one-touch fitting
    - C6: ø6 one-touch fitting
  - OUT side port size
    - M5: M5 thread
    - C3: ø3.2 one-touch fitting
    - C4: ø4 one-touch fitting
    - C6: ø6 one-touch fitting

- Bracket Assembly
  - Part no.: VQ1000-FPG-FB
  - Tightening torque: 0.22 to 0.25 N·m

- Option
  - N: None
  - D: DIN rail mounting (For manifold)
  - F: With bracket
  - With manual override

- Caution
  - Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for long periods of 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.
  - When the cylinder pressure will be within two times that of the supply pressure.
  - If the exhaust of the double check block is restricted 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.
Series VQ1000

VQ1000: Manifold Option/With Ejector Unit

An ejector unit can be mounted on the manifold base for a solenoid valve. Instead of mounting the valve and ejector unit separately, this option reduces piping, wiring and creates additional space savings.

Specifications

<table>
<thead>
<tr>
<th>Ejector valve model</th>
<th>VQ1000-1-J-1-A</th>
<th>VQ1000-1-J-1-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/min</td>
<td>11</td>
<td>20</td>
</tr>
<tr>
<td>Max. vacuum pressure (mmHg)</td>
<td>–630</td>
<td></td>
</tr>
<tr>
<td>Max. operating pressure (MPa)</td>
<td>0.7 (High-pressure type 0.8)</td>
<td></td>
</tr>
<tr>
<td>Standard supply pressure (MPa)</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Operating temperature (°C)</td>
<td>5 to 50</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 ejector units</th>
<th>Max. number of mounted valves</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>F, P, T kit</td>
</tr>
<tr>
<td>2</td>
<td>S, G, J kit</td>
</tr>
<tr>
<td>3</td>
<td>L kit</td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Note 1) 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

How to Order

VV5Q11-05C6FUO-JP1

Example)

VV5Q11-05C6FUO-JP1

1 set-Manifold part no.

- VQ1100-51 2 sets-Valve part no. (Stations 1 to 2)
- VQ1200-51 2 sets-Valve part no. (Stations 3 to 4)
- ZSE1-00-15CL 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 Ejector Valves

**VVQ1000**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specification</th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Standard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>High-speed response type (0.95 W)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>High-pressure (0.8 MPa)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>Negative</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1: For power consumption of AC type, refer to page 16.
Note 2: When two or more symbols are specified, indicate them alphabetically. Combination of [B] and [K] is not possible.

**Specifications**

- **Nozzle Diameter**: ø0.7
- **Exhaust Characteristics**

**Flow Characteristics**

<table>
<thead>
<tr>
<th>Supply pressure (MPa)</th>
<th>Vacuum pressure (mmHg)</th>
<th>Air consumption Nl/min</th>
<th>Suction flow rate Nl/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1</td>
<td>-100</td>
<td>30</td>
<td>750</td>
</tr>
<tr>
<td>0.2</td>
<td>-120</td>
<td>50</td>
<td>900</td>
</tr>
<tr>
<td>0.3</td>
<td>-140</td>
<td>70</td>
<td>1100</td>
</tr>
<tr>
<td>0.4</td>
<td>-160</td>
<td>90</td>
<td>1300</td>
</tr>
<tr>
<td>0.5</td>
<td>-180</td>
<td>110</td>
<td>1500</td>
</tr>
</tbody>
</table>

**How to Order Vacuum Pressure Switches**

**ZSE1-00-15 CL**

- **Switch spec./Voltage** (Solid state: 12 to 24 VDC)
  - 14: 1 setting, Without analog output, 3 revolution adjustment
  - 15: 1 setting, Without analog output, 3 revolution adjustment
  - 16: 1 setting, Without analog output, 200° adjustment
  - 17: 1 setting, Without analog output, 200° adjustment
  - 18: 1 setting, Without analog output, 3 revolution adjustment
  - 19: 1 setting, Without analog output, 200° adjustment

- **Wiring specifications**
  - Ni: 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

- **Lead wire length (m)**
  - ZS-20-A: 30, 3
  - ZS-20-SA-50: 50, 5

**Flow/Exhaust Characteristics of Ejector Unit**

**Nozzle Diameter ø0.7**

**Exhaust Characteristics**

**Flow Characteristics**

<table>
<thead>
<tr>
<th>Supply pressure (MPa)</th>
<th>Vacuum pressure (mmHg)</th>
<th>Air consumption Nl/min</th>
<th>Suction flow rate Nl/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1</td>
<td>-100</td>
<td>30</td>
<td>750</td>
</tr>
<tr>
<td>0.2</td>
<td>-120</td>
<td>50</td>
<td>900</td>
</tr>
<tr>
<td>0.3</td>
<td>-140</td>
<td>70</td>
<td>1100</td>
</tr>
<tr>
<td>0.4</td>
<td>-160</td>
<td>90</td>
<td>1300</td>
</tr>
<tr>
<td>0.5</td>
<td>-180</td>
<td>110</td>
<td>1500</td>
</tr>
</tbody>
</table>

**Nozzle Diameter ø1.0**

**Exhaust Characteristics**

**Flow Characteristics**

<table>
<thead>
<tr>
<th>Supply pressure (MPa)</th>
<th>Vacuum pressure (mmHg)</th>
<th>Air consumption Nl/min</th>
<th>Suction flow rate Nl/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1</td>
<td>-100</td>
<td>30</td>
<td>750</td>
</tr>
<tr>
<td>0.2</td>
<td>-120</td>
<td>50</td>
<td>900</td>
</tr>
<tr>
<td>0.3</td>
<td>-140</td>
<td>70</td>
<td>1100</td>
</tr>
<tr>
<td>0.4</td>
<td>-160</td>
<td>90</td>
<td>1300</td>
</tr>
<tr>
<td>0.5</td>
<td>-180</td>
<td>110</td>
<td>1500</td>
</tr>
</tbody>
</table>
Series VQ2000

VQ2000: Manifold Optional Parts

Blanking plate assembly JIS symbol
VQ2000-10A-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
VQ2000-P-1-5G

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 example.)
• Specify the spacer mounting position and SUP block plate position by means of the manifold specification sheet. The block plate is used in one or two places for one set. (Two SUP block plates for blocking SUP station are attached to the individual SUP spacer.)
• As a standard, electric wiring is connected to the position of the manifold station where the individual SUP spacer is mounted.
• If wiring is not required for stations equipped with spacers, enter “X” in the special wiring specifications column in the manifold specification sheet.

Individual EXH spacer
VQ2000-R-1-5G

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. (Refer to the application example.)
• Specify the mounting position, as well as the EXH block base or EXH block plate position by means of the manifold specification sheet. The block plate is used in one or two places for one set. (Two EXH block plates for blocking EXH station are attached to the individual EXH spacer.)
• As a standard, electric wiring is connected to the position of the manifold station where the individual EXH spacer is mounted.
• If wiring is not required for stations equipped with spacers, enter “X” in the special wiring specifications column in the manifold specification sheet.

SUP block plate
VQ2000-16A

When different pressures are supplied to a manifold, a SUP block plate is used to block the stations under different pressures.
• Specify the mounting position by means of the manifold specification sheet.
• Indication labels to confirm the blocking position are attached. (Each for SUP passage and SUP/EXH passage blocking positions)

EXH block plate
VQ2000-19A

This EXH block plate is used between stations for which exhaust is desired to be divided when valve exhaust affects other stations configuration. It is also used in combination with an individual EXH spacer for individual exhaust.
• Specify the mounting position by means of the manifold specification sheet.
• Indication labels to confirm the blocking position are attached. (Each for EXH passage and SUP/EXH passage blocking positions)
**SUP stop valve spacer**
*VQ2000-24A-1*
A SUP stop valve spacer is mounted on a manifold block, making it possible to individually shut off supply air to each valve.

Enclosure: Dust-tight, Water-jet-proof (IP65) compliant

---

**Back pressure check valve assembly [-B]**
*VQ2000-18A*
It prevents cylinder malfunction caused by other valve exhaust entry. 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.

- When ordering assemblies incorporated with a manifold, add suffix "-B" to the end of the manifold part number.

Note: When a check valve for back pressure prevention is desired and is to be installed only in certain manifold stations, clearly indicate the part number and specify the mounting position by means of 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.

- When ordering this option incorporated with a manifold, add suffix "-N" to the end of the manifold part number.

---

**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 ordering a plug incorporated with a manifold, indicate "CM" for the port size of the manifold part number, as well as, the mounting position and number of stations and cylinder port mounting positions, A and B by means of the manifold specification sheet.
**Series VQ2000**

**VQ2000: Manifold Optional Parts**

**DIN rail mounting bracket [-D/-D0/-D1]**
VQQ2000-57A

It is used for mounting a manifold on a DIN rail.
- When ordering this option incorporated with a manifold, suffix "-D" to the end of the manifold part number.

1 set of DIN rail mounting bracket is used for 1 manifold (2 DIN rail mounting brackets).

**Direct EXH outlet with built-in silencer [-S]**

This is a type with an exhaust port atop the manifold end plate. The built-in silencer exhibits an excellent noise suppression effect. (Noise reduction: 30 dB)
- When ordering this option incorporated with a manifold, suffix "-S" to the end of the manifold part number.

Note: A large quantity of drainage generated in the air source results in exhaust of air together with drainage.
- Refer to back page 5 for maintenance.

**Silencer (For EXH port)**

This silencer is to be inserted into the EXH port (One-touch fittings).

**Dimensions**

<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>VQQ2000</td>
<td>15</td>
<td>80.8</td>
<td>95.6</td>
<td>22</td>
<td>(1.4)</td>
<td>30</td>
</tr>
</tbody>
</table>

**Elbow fitting assembly**

VQQ2000-F-L(C4/C6/C8/N3/N7/N9)

It is used for piping that extends upward or downward from the manifold.
When not installed in the manifold stations, specify the assembly part number and the mounting position by means of the manifold specification sheet.

**Dual flow fitting assembly**

VQQ2000-52A-C10

This is a fitting to multiply the flow rate by combining the outputs of 2-valve stations. It is used for driving a large bore cylinder. This is a one-touch fitting for a port size of ø10 or ø3/8".

- The port size for the manifold part number is "CM".
- Clearly indicate the dual flow fitting assembly part number and specify the mounting position by means of the manifold specifications.
**Manifold Option**

Double check block (Separated) for VQ2000

**VQ2000-FPG-06**

It is mounted on the outlet side piping to keep the cylinder in the intermediate position for a long time. Combining the double check block with a 3-position exhaust center solenoid valve will enable the cylinder to stop in the middle or maintain its position for long periods of time. The combination with a 2-position single/double solenoid valve will prevent the dropping at the cylinder stroke and 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
- **Max. operating frequency**: 180 c.p.m

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

### Dimensions

**Single unit**

<table>
<thead>
<tr>
<th>IN side port size</th>
<th>OUT side port size</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>01: ø6 one-touch fitting</td>
<td>01: ø6 one-touch fitting</td>
<td>02: ø6 one-touch fitting</td>
</tr>
<tr>
<td>02: ø1/4</td>
<td>03: ø6 one-touch fitting</td>
<td>04: ø6 one-touch fitting</td>
</tr>
<tr>
<td>05: ø1/4 one-touch fitting</td>
<td>06: ø6 one-touch fitting</td>
<td>07: ø6 one-touch fitting</td>
</tr>
<tr>
<td>07: ø1/4 one-touch fitting</td>
<td>08: ø6 one-touch fitting</td>
<td>09: ø6 one-touch fitting</td>
</tr>
<tr>
<td>09: ø1/4 one-touch fitting</td>
<td>10: ø6 one-touch fitting</td>
<td>11: ø6 one-touch fitting</td>
</tr>
<tr>
<td>12: ø6 one-touch fitting</td>
<td>13: ø6 one-touch fitting</td>
<td>14: ø6 one-touch fitting</td>
</tr>
<tr>
<td>15: ø6 one-touch fitting</td>
<td>16: ø6 one-touch fitting</td>
<td>17: ø6 one-touch fitting</td>
</tr>
</tbody>
</table>

**Manifold (DIN rail mounting)**

**VQ2000-FPG-06**

When ordering a double check block, order the DIN rail mounting (D).

**Ordering Example**

VQ2000-FPG-06-6-station manifold

**Components**

- **Double check block**
- **DIN rail mounting**

**Bracket Assembly**

**Part no.**

| VQ2000-FPG-FB | 0.8 to 1.0 N·m |

**Option**

- Nil
- DIN rail mounting (For manifold)
- With bracket
- Name plate

**Caution**

- Air leakage from the joint between the valve and cylinder or from the fittings will prevent the cylinder from stopping for long periods of time. Check the leakage using neutral household detergent and 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 is recommended when stopping the cylinder in the middle for long periods of time.
- Combining double check block and 3-position exhaust center solenoid valve will not work.
- Combining double check block with 3-position closed center or pressure center solenoid valve will not work.
- When fittings, etc. are being screwed to the double check block, tighten them with the torque below.

**Connection threads**

- Proper tightening torque (N·m)

| Rc 1/8 | 3 to 5 |
| 12 to 14 | 3 to 5 |

**Tightening torque**

- If the exhaust of the double check block is restricted 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.
Series VQ2000

Manifold Option

Double check block (Direct mounting)
VVQ2000-23A-

It is mounted directly on the manifold 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 long periods of 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 and when the SUP residual pressure is released.

 specifications

<table>
<thead>
<tr>
<th>Specifications</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. operating pressure</td>
<td>0.7 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: C</td>
<td>1.8 dm³/(s·bar)</td>
</tr>
<tr>
<td>Max. operating frequency</td>
<td>180 c.p.m</td>
</tr>
</tbody>
</table>

Dimensions

When the manifold is mounted.

2-position 3-position exhaust center

Drop prevention

Intermediate prevention

Top ported (VVQ2000-23A-C) Bottom ported (VVQ2000-23A-B)

Caution

- Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for long periods of 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 zero air leakage is not guaranteed, it is sometimes not possible to hold a stop position for long periods of time.
- Combining double check block with 3-position closed center or pressure center solenoid valve will not work.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.
- If the exhaust of the double check block is restricted too much, the cylinder may not operate properly and may not stop intermediate.
Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of “Caution,” “Warning” or “Danger.” They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC), Japan Industrial Standards (JIS)*1 and other safety regulations*2.

+1) ISO 4414: Pneumatic fluid power – General rules relating to systems.
ISO 4413: Hydraulic fluid power – General rules relating to systems.
IEC 60204-1: Safety of machinery – Electrical equipment of machines. (Part 1: General requirements)
JIS B 8370: General rules for pneumatic equipment.
JIS B 8361: General rules for hydraulic equipment.
JIS B 9960-1: Safety of machinery – Electrical equipment of machines. (Part 1: General requirements)
e etc.
+2) Labor Safety and Sanitation Law, etc.

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications. Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment. The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.
1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.
1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalog.
3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

Caution: Caution indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

Warning: Warning indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

Danger: Danger indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.
Caution

1. The product is provided for use in manufacturing industries.
The product herein described is basically provided for peaceful use in manufacturing industries.
If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.
If anything is unclear, contact your nearest sales branch.

Limited warranty and Disclaimer/Compliance Requirements

The product used is subject to the following “Limited warranty and Disclaimer” and “Compliance Requirements”.
Read and accept them before using the product.

Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered.
   *3) Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.
   This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog for the particular products.
   *3) Vacuum pads are excluded from this 1 year warranty.
   A vacuum pad is a consumable part, so it is warranted for a year after it is delivered.
   Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

Compliance Requirements

When the product is exported, strictly follow the laws required by the Ministry of Economy, Trade and Industry (Foreign Exchange and Foreign Trade Control Law).
**Series VQ1000/2000 Specific Product Precautions 1**

Be sure to read before handling.
Refer to back pages 1 and 2 for Safety Instructions and Handling Precautions for SMC Products (M-E03-3) for 3/4/5 Port Solenoid Valves Precautions.

---

**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.

![DC circuit diagram]

**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) Locking type is semi-standard. (Tool required/Manual)

- **Push type (Tool required)**
  - VQ1000
  - VQ2000

- **Locking type (Tool required) <Semi-standard>**
  - With wrong wiring prevention (stop diode) mechanism
  - Push down on the manual override with a small screwdriver, etc. until it stops. Release the screwdriver and the manual override will return.

- **Locking type (Manual) <Semi-standard>**
  - With a surge absorption (surge absorption diode) mechanism
  - Push down on the manual override with a flat head screwdriver until it stops. Turn it 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)

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Back page 3
Series VQ1000/2000
Specific Product Precautions 2

Be sure to read before handling. Refer to back pages 1 and 2 for Safety Instructions and Handling Precautions for SMC Products (M-E03-3) for 3/4/5 Port Solenoid Valves Precautions.

How to Mount/Remove Solenoid Valves

**Warning**
- Slide locking type (Manual) <Semi-standard>

**Caution**
- 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. Take out the clip with a flat head screwdriver, etc., then replace the fittings.

For mounting, insert the fitting assembly until it strikes against the inside wall and then insert the clip to the specified position.

Caution
- Remove the 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.

**How to Mount/Remove Solenoid Valves**

**Warning**
- Clamp bracket B
- Clamp bracket A

**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.

**Warning**
- Bore ø1.7
- Bore ø2

The manual override is locked by sliding it all the way to the pilot valve side (ON side) with a small flat head screwdriver or finger. Slide it to the fitting side (OFF side) to release it. In addition, it can also be used as a push type by using a screwdriver, etc., of ø1.7 or less. (ø2 or less for VQ2000).

**How to Mount/Remove Solenoid Valves**

**Warning**
- Bore ø1.7
- Bore ø2

**Caution**
- 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.

**How to Mount/Remove Solenoid Valves**

**Warning**
- Clamp screw

**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.

**Warning**
- Bore ø1.7
- Bore ø2

The manual override is locked by sliding it all the way to the pilot valve side (ON side) with a small flat head screwdriver or finger. Slide it to the fitting side (OFF side) to release it. In addition, it can also be used as a push type by using a screwdriver, etc., of ø1.7 or less. (ø2 or less for VQ2000).

**Caution**
- 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. Take out the clip with a flat head screwdriver, etc., then replace the fittings.

For mounting, insert the fitting assembly until it strikes against the inside wall and then insert the clip to the specified position.

**How to Mount/Remove Solenoid Valves**

**Warning**
- Clamp screw

**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.

**Warning**
- Bore ø1.7
- Bore ø2

The manual override is locked by sliding it all the way to the pilot valve side (ON side) with a small flat head screwdriver or finger. Slide it to the fitting side (OFF side) to release it. In addition, it can also be used as a push type by using a screwdriver, etc., of ø1.7 or less. (ø2 or less for VQ2000).

**Caution**
- 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. Take out the clip with a flat head screwdriver, etc., then replace the fittings.

For mounting, insert the fitting assembly until it strikes against the inside wall and then insert the clip to the specified position.

**How to Mount/Remove Solenoid Valves**

**Warning**
- Clamp screw

**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.

**Warning**
- Bore ø1.7
- Bore ø2

The manual override is locked by sliding it all the way to the pilot valve side (ON side) with a small flat head screwdriver or finger. Slide it to the fitting side (OFF side) to release it. In addition, it can also be used as a push type by using a screwdriver, etc., of ø1.7 or less. (ø2 or less for VQ2000).

**Caution**
- 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. Take out the clip with a flat head screwdriver, etc., then replace the fittings.

For mounting, insert the fitting assembly until it strikes against the inside wall and then insert the clip to the specified position.

**How to Mount/Remove Solenoid Valves**

**Warning**
- Clamp screw

**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.

**Warning**
- Bore ø1.7
- Bore ø2

The manual override is locked by sliding it all the way to the pilot valve side (ON side) with a small flat head screwdriver or finger. Slide it to the fitting side (OFF side) to release it. In addition, it can also be used as a push type by using a screwdriver, etc., of ø1.7 or less. (ø2 or less for VQ2000).

**Caution**
- 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. Take out the clip with a flat head screwdriver, etc., then replace the fittings.

For mounting, insert the fitting assembly until it strikes against the inside wall and then insert the clip to the specified position.
Series VQ1000/2000
Specific Product Precautions 3
Be sure to read before handling.
Refer to back pages 1 and 2 for Safety Instructions and Handling Precautions for SMC Products (M-E03-3) for 3/4/5 Port Solenoid Valves Precautions.

How to Mount/Remove DIN Rail

**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.

IP65 Enclosure

**Caution**

Wiring connection for models conforming to IP65 should also have enclosures equivalent to or of stricter than IP65.

Built-in Silencer Element

**Caution**

A filter 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</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 flat head screwdriver, etc.

How to Calculate Flow Rate

Refer to Best Pneumatics No. 1 for obtaining the flow rate.