Installation volume  
42% Reduction

Installation area  
26% Reduction

- Compact and large flow capacity
  - **VQ4000** Possible to drive cylinders up to Ø160*  
  - **VQ5000** Possible to drive cylinders up to Ø180*  
    - *When manifold is IP65 compliant.
    - *Except F and T1 kits

- Power saving
  - **VQ**
    - Power consumption [W] | Maximum operating pressure [MPa]
    - Current product: 0.5 (1.0) | 0.7
    - Low wattage type ( ): Standard

- Long service life  
  - 100 million cycles  
  - *According to SMC life test conditions

- Enclosure IP65 compliant  
  - Dust-tight/Water-jet-proof  
    - *When manifold is IP65 compliant.
    - *Except F and T1 kits

---

**VQ4000**: 25 mm pitch  
C[dm³/(s·bar)]: 7.3*

**VQ5000**: 41 mm pitch  
C[dm³/(s·bar)]: 17*

* *2-position single, rubber seal, 4/2 → 5/3 (A/B → R1/R2)
## Base Mounted Type Variations

### Valve Specifications

<table>
<thead>
<tr>
<th>Sonic conductance (C(\text{dm}^3/(\text{s} \cdot \text{bar})))</th>
<th>Wiring</th>
<th>Type of actuation</th>
</tr>
</thead>
<tbody>
<tr>
<td>(4/2 \rightarrow 5/3)</td>
<td>Plug-in</td>
<td>Plug lead</td>
</tr>
<tr>
<td>((A/B \rightarrow \text{EA/EB}))</td>
<td>Single</td>
<td>Double</td>
</tr>
</tbody>
</table>

#### Series VQ4000 (Page 450)

<table>
<thead>
<tr>
<th>Plug-in/Plug Lead</th>
<th>Metal Seal</th>
<th>Rubber Seal</th>
<th>C</th>
<th>Wiring</th>
<th>Type of actuation</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ4□00</td>
<td>6.9</td>
<td>6.3</td>
<td></td>
<td>P.456</td>
<td>Single</td>
</tr>
<tr>
<td>VQ4□01</td>
<td>7.3</td>
<td>6.4</td>
<td></td>
<td>P.460</td>
<td>Double</td>
</tr>
</tbody>
</table>

#### Series VQ5000 (Page 492)

<table>
<thead>
<tr>
<th>Plug-in/Plug Lead</th>
<th>Metal Seal</th>
<th>Rubber Seal</th>
<th>C</th>
<th>Wiring</th>
<th>Type of actuation</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ5□00</td>
<td>14</td>
<td>11</td>
<td></td>
<td>P.498</td>
<td>Single</td>
</tr>
<tr>
<td>VQ5□01</td>
<td>17</td>
<td>13</td>
<td></td>
<td>P.502</td>
<td>Double</td>
</tr>
</tbody>
</table>

### Wiring

#### Common wiring/Plug-in

- **D-sub connector**
  - IP65
- **Terminal block box**
  - IP65
- **Lead wire**
  - IP65

#### Individual wiring/Plug lead

- **Serial transmission**
  - With individual terminal blocks (VQ5000 only)
  - IP65
- **Connector**
  - IP65
# VQ4000/5000 Series

## Manifold Options

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Electrical entry</th>
<th>Manual override</th>
</tr>
</thead>
<tbody>
<tr>
<td>12, 24 VDC</td>
<td>Plug-in</td>
<td>SUP/EXH block plate</td>
</tr>
<tr>
<td>100, 110 VAC, 50/60 Hz</td>
<td>Grommet</td>
<td>Blanking plate assembly</td>
</tr>
<tr>
<td>200, 220 VAC, 50/60 Hz</td>
<td>Push type/Tool required</td>
<td>Individual SUP spacer</td>
</tr>
<tr>
<td></td>
<td>Locking type/Tool required</td>
<td>Individual EXH spacer</td>
</tr>
<tr>
<td></td>
<td>Locking type/Manual</td>
<td>Release valve spacer: For D side mounting</td>
</tr>
<tr>
<td></td>
<td>External plot</td>
<td>SUP stop valve spacer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Direct exhaust with silencer box</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Double check spacer with residual pressure exhaust</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Manifold mounted with exhaust cleaner</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Interface regulator (P, A, B port regulation)</td>
</tr>
</tbody>
</table>

### Manifold with Control Unit

---

**Manifold Options**

- Blanking plate assembly
- Individual SUP spacer
- Individual EXH spacer
- Restrictor spacer
- SUP stop valve spacer
- Release valve spacer: For D side mounting
- Direct exhaust with silencer box
- Double check spacer with residual pressure exhaust
- Manifold mounted with exhaust cleaner
- Interface regulator (P, A, B port regulation)

---

Air filter, regulator and equipment for controlling the air release valve pressure switch in one unit reduced piping work.

---

**SUP block plate**

**EXH block plate**

(Order q’ty: 2 pcs.)

**SUP/EXH block plate**

**Interface regulator** (P, A, B port regulation)
This chart is provided as guidelines only. For performance under various conditions, use SMC’s Model Selection Software before making a judgment.

<table>
<thead>
<tr>
<th>Series</th>
<th>Average speed [mm/s]</th>
<th>Bore size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>MB, CA2 series</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pressure 0.5 MPa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Load ratio 50%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stroke 500 mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CS1, CS2 series</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pressure 0.5 MPa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Load ratio 50%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stroke 1000 mm</td>
</tr>
<tr>
<td></td>
<td>ø40</td>
<td>ø50</td>
</tr>
<tr>
<td></td>
<td>ø63</td>
<td>ø80</td>
</tr>
<tr>
<td></td>
<td>ø100</td>
<td>ø125</td>
</tr>
<tr>
<td></td>
<td>ø140</td>
<td>ø160</td>
</tr>
<tr>
<td></td>
<td>ø180</td>
<td>ø200</td>
</tr>
<tr>
<td></td>
<td>ø250</td>
<td></td>
</tr>
</tbody>
</table>

* Values at extension of a directly coupled cylinder when meter-out speed controllers are used with the needle full open.
* The average speed of the cylinder is obtained by dividing the stroke by the total stroke time.
* The load ratio is obtained by the following formula: ((Load mass x 9.8)/Theoretical output) x 100%

### Conditions

<table>
<thead>
<tr>
<th>Series</th>
<th>Condition</th>
<th>MB, CA2 series</th>
<th>CS1, CS2 series</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ4100-□-03</td>
<td>SGP (Steel pipe) dia. x Length</td>
<td>10A x 1 m</td>
<td></td>
</tr>
<tr>
<td>VQ4101-□-03</td>
<td>SGP (Steel pipe) dia. x Length</td>
<td>10A x 1 m</td>
<td></td>
</tr>
<tr>
<td>VQ5100-□-04</td>
<td>SGP (Steel pipe) dia. x Length</td>
<td>10A x 1 m</td>
<td></td>
</tr>
<tr>
<td>VQ5101-□-04</td>
<td>SGP (Steel pipe) dia. x Length</td>
<td>10A x 1 m</td>
<td></td>
</tr>
<tr>
<td>VQ4100-□-03</td>
<td>Speed controller</td>
<td>AS420-03</td>
<td></td>
</tr>
<tr>
<td>VQ4101-□-03</td>
<td>Speed controller</td>
<td>AS420-03</td>
<td></td>
</tr>
<tr>
<td>VQ5100-□-04</td>
<td>Speed controller</td>
<td>AS420-04</td>
<td></td>
</tr>
<tr>
<td>VQ5101-□-04</td>
<td>Speed controller</td>
<td>AS420-04</td>
<td></td>
</tr>
<tr>
<td>VQ4100-□-03</td>
<td>Silencer</td>
<td>AN30-03</td>
<td></td>
</tr>
<tr>
<td>VQ4101-□-03</td>
<td>Silencer</td>
<td>AN30-03</td>
<td></td>
</tr>
<tr>
<td>VQ5100-□-04</td>
<td>Silencer</td>
<td>AN40-04</td>
<td></td>
</tr>
<tr>
<td>VQ5101-□-04</td>
<td>Silencer</td>
<td>AN40-04</td>
<td></td>
</tr>
</tbody>
</table>
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- T Kit (Terminal block box kit) [IP65] ....................................... Page 460
- L Kit (Lead wire cable) [IP65] .................................................. Page 464
- S Kit (Serial transmission unit): EX123/124 [IP65] .................. Page 468

Plug Lead Unit

- C Kit (Connector kit) [IP65] ..................................................... Page 472

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**Base Mounted**

**Plug-in/Plug Lead: Single Unit**

**VQ4000 Series**

---

**Model**

<table>
<thead>
<tr>
<th>Series</th>
<th>Configuration</th>
<th>Model</th>
<th>Port size</th>
<th>Flow rate characteristics</th>
<th>Response time [ms]</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ4000</td>
<td>2-position</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Single</td>
<td>VQ41</td>
<td>3/8</td>
<td>6.2 0.19 1.5 6.9 0.17 1.7</td>
<td>20 22 22 0.23</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td>VQ42</td>
<td></td>
<td>7.2 0.43 2.1 7.3 0.38 2.0</td>
<td>25 27 27 (0.29)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Closed</td>
<td>VQ43</td>
<td></td>
<td>6.2 0.19 1.5 6.9 0.17 1.7</td>
<td>12 16 14 0.26</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exhaust</td>
<td>VQ44</td>
<td></td>
<td>7.2 0.43 2.1 7.3 0.38 2.0</td>
<td>15 17 17 (0.32)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pressure</td>
<td>VQ45</td>
<td></td>
<td>5.9 0.23 1.5 6.3 0.18 1.6</td>
<td>45 47 47 0.28</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td>VQ46</td>
<td></td>
<td>7.0 0.34 1.9 6.4 0.42 1.9</td>
<td>50 52 52 (0.34)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Standard Specifications**

- **Fluid**
  - Standard [DC and AC]: Air/Inert gas
  - Low wattage type: Metal seal
- **Max. operating pressure**
  - Single: 0.15 MPa
  - Low wattage type: 0.20 MPa
- **Min. operating pressure**
  - Double: 0.15 MPa
  - Low wattage type: 0.15 MPa
- **3-position**
  - Single: 0.15 MPa
  - Low wattage type: 0.20 MPa
- **Proof pressure**: 1.5 MPa
- **Ambient and fluid temperature**: –10 to 50°C (Note 1)
- **Lubrication**: Not required
- **Manual override**: Push type/Locking type (Tool required)
- **Impact/Vibration resistance**: 150/30 m/s² (Note 2)
- **Enclosure**: Dust-tight (IP65 compatible) (Note 3)
- **Allowable voltage fluctuation**: ±10% of rated voltage
- **Coil insulation type**: Class B or equivalent
- **Power consumption [W]**
  - DC Standard: 0.95
  - Low wattage type: 0.4
- **Apparent power [VA]**
  - AC: 100 V 1.19
  - 110 V 1.32
  - 200 V 1.90
  - 220 V 2.08

---

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

Note 2) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)

Note 3) Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

---

**Symbol**

- 2-position single
- 2-position double (Metal)
- 2-position double (Rubber)
- 3-position closed center
- 3-position exhaust center
- 3-position pressure center
- 3-position double check

**Plug-in unit**

**Plug lead unit**

---

450
### How to Order Valves (Single Unit)

**Body**

- **Plug-in**
  - VQ4 1 0 0 - 5
  - VQ4 2 5 1 - 5 G

- **Plug lead**
  - Nil

**Type of actuation**

1. 2-position single
2. 2-position double
3. 3-position closed center
4. 3-position exhaust center
5. 3-position pressure center
6. 3-position double check

**Porting specifications**

- Nil Side ported
- B Bottom ported

**Enclosure**

- Nil Dust-protected
- W Dust-tight/Water-jet-proof (IP65)

**Port size**

- Nil Without sub-plate (For manifold)
- 02 1/4
- 03 3/8

**Thread type**

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

**Manual override**

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

**Light/Surge voltage suppressor**

- Nil
- Yes

**Coil voltage**

- 01 100 VAC (50/60 Hz)
- 02 200 VAC (50/60 Hz)
- 03 110 VAC (50/60 Hz)
- 04 220 VAC (50/60 Hz)
- 05 24 VDC
- 06 12 VDC

**Electrical entry**

- G Lead wire length 0.6 m
- H Lead wire length 1.5 m

**Function**

- Nil Note 1)
- Y Note 2)
- R Note 3)

**Replacement of pilot valve assembly (Voltage)**

- Refer to pages 486 and 487 for pilot valve assembly part numbers.
- Refer to page 534 for replacement method.
Dimensions: Plug Lead Type

Grommet

2-position single: VQ415  
Indicator light
Manual override

2 x ø5.6 Mounting hole

3-position closed center: VQ435  
3-position exhaust center: VQ445  
3-position pressure center: VQ455  
3-position double check: VQ465  

2-position double: VQ425  
1/8" PE. port

1/4", 3/8" (5(R1), 3(R2) port: 1/4")

3-position double check: VQ465  
1/8" PE. port

2 x ø5.6 Mounting hole

( ): Values for 3/8"

Bottom ported drawing

(): Values for 3/8"
### Base Mounted Plug-in Unit

**VQ4000 Series**

#### How to Order Manifold

<table>
<thead>
<tr>
<th>Series</th>
<th>Manifold</th>
<th>Stations</th>
<th>Cylinder port</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Plug-in unit</td>
<td>1 station</td>
<td>(\varnothing 6) One-touch fitting</td>
</tr>
<tr>
<td>4</td>
<td>Plug-in unit</td>
<td>3/8</td>
<td>(\varnothing 10) One-touch fitting</td>
</tr>
<tr>
<td>4</td>
<td>Plug-in unit</td>
<td>1/4</td>
<td>(\varnothing 12) One-touch fitting</td>
</tr>
<tr>
<td>4</td>
<td>Plug-in unit</td>
<td></td>
<td>(\varnothing 1/4) One-touch fitting</td>
</tr>
<tr>
<td>4</td>
<td>Plug-in unit</td>
<td></td>
<td>(\varnothing 5/16) One-touch fitting</td>
</tr>
<tr>
<td>4</td>
<td>Plug-in unit</td>
<td></td>
<td>(\varnothing 3/8) One-touch fitting</td>
</tr>
</tbody>
</table>

#### Control unit
Refer to pages 482 to 485.

#### Kit type/Electrical entry/Cable length

<table>
<thead>
<tr>
<th>Kit</th>
<th>(D-sub connector)</th>
<th>(Terminal block box kit)</th>
<th>(Lead wire cable)</th>
<th>(Serial transmission unit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>D0</td>
<td>U0</td>
<td>Without cable</td>
<td>Terminal block mounting position</td>
</tr>
<tr>
<td></td>
<td>D1</td>
<td>U1</td>
<td>Cable length 1.5 m</td>
<td>IP65 compatible</td>
</tr>
<tr>
<td></td>
<td>D2</td>
<td>U2</td>
<td>Cable length 3 m</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D3</td>
<td>U3</td>
<td>Cable length 5 m</td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>K0</td>
<td>TD</td>
<td>D side</td>
<td>3 to 18 stations</td>
</tr>
<tr>
<td></td>
<td>K1</td>
<td>T0</td>
<td>U side</td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>Kit</td>
<td>U0</td>
<td>Cable length 0.6 m</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kit</td>
<td>U1</td>
<td>Cable length 1.5 m</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kit</td>
<td>U2</td>
<td>Cable length 3 m</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>SD</td>
<td>S0</td>
<td>Without SI Unit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>S1</td>
<td>DeviceNet</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>S2</td>
<td>CompoBus/S (16 output points)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>S3</td>
<td>CompoBus/S (8 output points)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>S4</td>
<td>CC-Link</td>
<td></td>
</tr>
</tbody>
</table>

#### Note
- CE-compliant: For DC only.
- Kit type: Refer to pages 482 to 485.
- Control unit: Refer to pages 482 to 485.
- Simple specials are available with SMC Simple Special System. Please contact your local sales representative for more details.
- For option, refer to page 468 when ordering the CE-compliant SI Unit.
## Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Base model</th>
<th>Type of connection</th>
<th>Porting specifications</th>
<th>Maximum applicable stations</th>
<th>Applicable valve</th>
<th>Weight [kg] (Formula)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>4(A), 2(B) port location</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1(P), 5(R1), 3(R2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4(A), 2(B)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQ4000</td>
<td>VV5Q41-□□□□</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Manifold Options**

- **Blanking plate assembly**: VVQ4000-10A-1
- **Individual SUP spacer**: VVQ4000-P-1-□02-□03
- **Individual EXH spacer**: VVQ4000-R-1-□02-□03
- **Restrictor spacer**: VVQ4000-20A-1
- **SUP stop valve spacer**: VVQ4000-37A-1
- **SUP/EXH block plate**: VVQ4000-16A (1 pc./set)
- **Interface regulator (P, A, B port regulation)**: ARBQ4000-00-□P-□

**Flow Rate Characteristics at the Number of Manifold Stations (Operated individually)**

<table>
<thead>
<tr>
<th>Model</th>
<th>Passage/Stations</th>
<th>Station 1</th>
<th>Station 5</th>
<th>Station 10</th>
<th>Station 15</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2-position metal seal VQ4100</td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td>4/2 → 5/3 (A/B → EA/EB)</td>
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<tr>
<td></td>
<td>2-position rubber seal VQ4101</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>1 → 4/2 (P → A/B)</td>
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<td>4/2 → 5/3 (A/B → EA/EB)</td>
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<td>1.9</td>
<td>1.9</td>
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</tr>
</tbody>
</table>

Note) Port size: 3/8

**Note**

- Release valve spacer and double check spacer with residual pressure exhaust cannot be combined with external pilot.
- Can be mounted on L kit only. For other kits, order E type control unit.

## Flow Rate Characteristics at the Number of Manifold Stations (Operated individually)

<table>
<thead>
<tr>
<th>Model</th>
<th>Passage/Stations</th>
<th>Station 1</th>
<th>Station 5</th>
<th>Station 10</th>
<th>Station 15</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>2-position metal seal VQ4100</td>
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<td></td>
<td>1 → 4/2 (P → A/B)</td>
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<td>5.9</td>
<td>5.9</td>
</tr>
<tr>
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<td>1.5</td>
<td>1.5</td>
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</tr>
<tr>
<td></td>
<td>4/2 → 5/3 (A/B → EA/EB)</td>
<td>6.2</td>
<td>6.2</td>
<td>6.2</td>
<td>6.2</td>
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<td></td>
<td>2-position rubber seal VQ4101</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 → 4/2 (P → A/B)</td>
<td>6.8</td>
<td>6.8</td>
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<td>6.8</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>0.31</td>
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<td>1.8</td>
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<tr>
<td></td>
<td>4/2 → 5/3 (A/B → EA/EB)</td>
<td>7.0</td>
<td>7.0</td>
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<td>1.9</td>
<td>1.9</td>
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</tr>
</tbody>
</table>

Note) Port size: 3/8

**Note**

- Release valve spacer and double check spacer with residual pressure exhaust cannot be combined with external pilot.
- Can be mounted on L kit only. For other kits, order E type control unit.

(Refer to pages 482 to 485.)
**VQ4000 Series**

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

- Simplification and labor savings for wiring work can be achieved by using a D-sub connector for the electrical connection.
- Using connector for flat ribbon cable (25P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
- Connector entry can be selected on either the U side or the D side according to the mounting orientation.
- Maximum stations are 18.

### Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Port size</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ4000 Side</td>
<td>4(A), 2(B)</td>
<td>1/2</td>
<td>C6, C8, C10, C12, 1/4, 3/8, N7, N9, N11, Max. 18 stations</td>
</tr>
<tr>
<td>Bottom</td>
<td></td>
<td>1/4</td>
<td></td>
</tr>
</tbody>
</table>

### D-Sub Connector Kit (25 pins)

**AXT100-DS25-015**

Multi-core vinyl cable

- 0.3 mm² x 25 cores

- Approx. ø10

- 2 x M2.6 x 0.45

- Socket side

- Terminal no.

- D-SUB connector cable assemblies can be ordered by using D-sub connectors for the electrical connection.

- Using connector for flat ribbon cable (25P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.

- Connector entry can be selected on either the U side or the D side according to the mounting orientation.

- Maximum stations are 18.

### Electric Characteristics

- Conductor resistance (20°C): 65 or less
- Voltage limit (1 min. VAC): 1000
- Insulation resistance (20°C): 5 or more

### Cable assembly

- Conductor resistance: 65 or less
- Voltage limit (1 min. VAC): 1000
- Insulation resistance (20°C): 5 or more

**Note**

- The minimum bending radius for D-sub connector cables is 20 mm.

### How to Order Manifold

**Series**

- **VV5Q**

**C8**

**F**

**U**

**1**

**Option**

- CE-compliant

**Symbol**

- Nil

**Option**

- None

- CD (Exhaust cleaner: For D side mounting)

- CU (Exhaust cleaner: For U side mounting)

- K (Special wiring specifications (Except double wiring))

- SB (Direct exhaust with silencer box: Exhaust from both sides)

- SD (Direct exhaust with silencer box: D side exhaust)

- SU (Direct exhaust with silencer box: U side exhaust)

**Note**

1. When multiple symbols are specified, indicate them alphabetically.
2. Combination of [C1] and [S1] is not possible.
3. Specify the wiring specifications on the manifold specification sheet.
4. Refer to pages 482 to 485 for control unit.
1. How to Order
Mixed single and double wiring is available as a semi-standard specification. Double wiring (connected to SOL A and SOL B) is used for the internal wiring of the first station on the D side. Stations are counted starting from the first station on the D side.

Special Wiring Specifications
Double wiring (connected to SOL A and SOL B) is used for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring is available as a semi-standard specification. For details, refer below.

Note 1) When the unit is energized continuously, refer to “Specific Product Precautions 1” on page 533.
Note 2) In addition, only DC is available with Y.
Note 3) For external pilot specifications, refer to page 481. Combination of external pilot and perfect interface is not possible.
Note 4) When multiple symbols are specified, indicate them alphabetically.

2. Wiring specifications
Connections begin with the A side solenoid of the first station being connected to terminal no. 1, and continue in the order indicated by the arrows in the drawing without skipping any terminals. Maximum stations are 18.

How to Order Valves
Specify the part numbers for valves and options together beneath the manifold base part number. Enter in order starting from the first station on the D side. When entry of part numbers is not possible, enter the asterisk to the part nos. of the valve etc.

Example
D-sub connector kit with cable (3 m)
VQ4011-05F3D0-Q—1 set—Manifold base part no.
VQ4100-51-Q—2 sets—Valve part no. (Stations 1 and 2)
VQ4200-51-Q—2 sets—Valve part no. (Station 3 and 4)
VQ4300-51-Q—1 set—Valve part no. (Station 5)
**VQ4000 Series**

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

Applicable connector: D-sub connector (25P)
(Conforming to MIL-C-24308)

Connector location on D side (FD)

Connector location on U side (FU)

Manual override

Indicator light

Stations

1/4", 3/8" C6, C8, C10, C12, N7, N9, N11
4(A), 2(B) port

External pilot port

Ground screw M5 x 0.8

Department

**Applicable connector:** D-sub connector (25P)

- **PE port:** 2 x 1/8"
- **PE, port:** 6 x 1/2"
- **Port:** 1(P), 5(R1), 3(R2)

**Connector location:**

- **On U side (FU):**
  - Manual override
  - Indicator light

- **On D side (FD):**
  - Connectors: A, B
  - Stations: 1, 2, 3, 4, 5, 6, 7, 8

**Dimensions:**

- **91**
- **47**
- **91**
- **106**
- **163**

**Connector locations:**

- **A**
- **B**
- **A**
- **B**
- **A**
- **B**
- **A**
- **B**
- **A**
- **B**
- **A**
- **B**
- **A**
- **B**
- **A**
- **B**
- **A**
- **B**
- **A**
- **B**
- **A**
- **B**

**Kit:** D-sub connector kit F

**Dimensions:**

- **458**
- **35**
- **30**
- **27**
- **24**
- **22**
- **20**
- **18**
- **16**
- **14**
- **12**
- **10**
- **8**
- **6**
- **4**
- **2**
- **1**

**Port:** 1/4", 3/8" C6, C8, C10, C12, N7, N9, N11

**Port:** 4(A), 2(B)
**Dimensions**

Formula: \( L_1 = 25n + 63, \quad L_2 = 25n + 76 \)

<table>
<thead>
<tr>
<th>( n )</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<th>13</th>
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<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
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</thead>
<tbody>
<tr>
<td>( L_1 )</td>
<td>88</td>
<td>113</td>
<td>138</td>
<td>163</td>
<td>188</td>
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<td>488</td>
<td>513</td>
</tr>
<tr>
<td>( L_2 )</td>
<td>101</td>
<td>126</td>
<td>151</td>
<td>176</td>
<td>201</td>
<td>226</td>
<td>251</td>
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<td>301</td>
<td>326</td>
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<td>401</td>
<td>426</td>
<td>451</td>
<td>476</td>
<td>501</td>
<td>526</td>
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</table>
**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ4000</td>
<td>4(A, 2(B) port location</td>
<td>4(A, 2(B)</td>
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<tr>
<td></td>
<td>1(P), 5(R1), 3(R2)</td>
<td>Max. 18 stations</td>
</tr>
<tr>
<td></td>
<td>1/2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1/4</td>
<td></td>
</tr>
</tbody>
</table>

**Terminal Block Connections**

**Step 1. How to remove terminal block cover**
Loosen the 4 mounting screws (M4) and open the terminal block cover.

**Step 2. The diagram on the right shows the terminal block wiring. All stations are provided with double wiring regardless of the valves which are mounted.**
Connect each wire to the power supply side, according to the markings provided inside the terminal block.

**Step 3. How to attach the terminal block cover**
Securely tighten the screws with the torque shown in the table below, after confirming that the gasket is installed correctly.

| Proper tightening torque [N·m] | 0.7 to 1.2 |

**How to Order Manifold**

**VQ4000 Series**

**Stations**
- 03: 3 stations
- 18: 18 stations

**Cylinder port**
- C6: ø6 One-touch fitting
- C8: ø8 One-touch fitting
- C10: ø10 One-touch fitting
- C12: ø12 One-touch fitting
- D: Bottom ported 1/4
- B: Bottom ported 1/4
- N7: ø1/4" One-touch fitting
- N9: ø5/16" One-touch fitting
- N11: ø3/8" One-touch fitting

**Box mounting position**
- 0: U side mounting
- 1: D side mounting

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

**CE-compliant**

**Symbol**
- Nil
- Q

**Option**
- CD (Side exhaust cleaner)
- CU (Side exhaust cleaner)
- K (Special wiring specifications [Except double wiring, 13 stations or more])
- N (Name plate)
- SD (Direct exhaust with silencer box: D side exhaust)
- SU (Direct exhaust with silencer box: U side exhaust)
- W (IP65 enclosure)

**Notes**
1) When multiple symbols are specified, indicate them alphabetically.
2) Combination of [CD] and [SD] is not possible.
3) Specify the wiring specifications on the manifold specification sheet.
4) Name plate is inlaid in the terminal block cover.
5) Refer to pages 482 to 485 for control unit.
How to Order Manifold Assembly

1. How to Order
   Indicate option symbol "-K" in the manifold part number and be sure to specify station positions for single or double wiring on the manifold specification sheet.

2. Wiring Connections
   Connections begin with the A side solenoid of the first station being connected to terminal no. 1, and continue in the order indicated by the arrows in the drawing without skipping any terminals.

How to Order Valves

<table>
<thead>
<tr>
<th>Type of actuation</th>
<th>Seal</th>
<th>Function</th>
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<tr>
<td>1</td>
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<td>1</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
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<td>5</td>
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<tr>
<td>6</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

- **VQ 4 1 0 0**
- **VQ 0 1 5 1**

Special Wiring Specifications

Double wiring (connected to SOL A and SOL B) is used for the internal wiring of each station regardless of valve and option types. Mixed single and double wiring is available as a semi-standard specification. However, the maximum number of stations is 16.

- **Note 1)** Standard (0.95 W)
- **Note 2)** Low wattage type (0.4 W)
- **Note 3)** External pilot
- **Note 4)** When multiple symbols are specified, indicate them alphabetically.

Electrical wiring specifications

- **Standard wiring**
- **Wiring with control unit**

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Terminal no.</th>
<th>Polarity</th>
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<tbody>
<tr>
<td>SOL A 1A</td>
<td>Pressure</td>
<td>(–) (+)</td>
</tr>
<tr>
<td>SOL B 1B</td>
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<td></td>
</tr>
<tr>
<td>SOL A 2A</td>
<td></td>
<td>(–) (+)</td>
</tr>
<tr>
<td>SOL B 2B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOL A 3A</td>
<td></td>
<td>(–) (+)</td>
</tr>
<tr>
<td>SOL B 3B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOL A 4A</td>
<td></td>
<td>(–) (+)</td>
</tr>
<tr>
<td>SOL B 4B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOL A 5A</td>
<td></td>
<td>(–) (+)</td>
</tr>
<tr>
<td>SOL B 5B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOL A 6A</td>
<td></td>
<td>(–) (+)</td>
</tr>
<tr>
<td>SOL B 6B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOL A 7A</td>
<td></td>
<td>(–) (+)</td>
</tr>
<tr>
<td>SOL B 7B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOL A 8A</td>
<td></td>
<td>(–) (+)</td>
</tr>
<tr>
<td>SOL B 8B</td>
<td></td>
<td></td>
</tr>
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<td>SOL A 9A</td>
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<td>(–) (+)</td>
</tr>
<tr>
<td>SOL B 9B</td>
<td></td>
<td></td>
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<tr>
<td>SOL A 10A</td>
<td></td>
<td>(–) (+)</td>
</tr>
<tr>
<td>SOL B 10B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COM</td>
<td></td>
<td>(+) (–)</td>
</tr>
</tbody>
</table>

2. Wiring Specifications

Connections begin with the A side solenoid of the first station being connected to terminal no. 1, and continue in the order indicated by the arrows in the drawing without skipping any terminals.

How to Order Manifold Assembly

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

<Example>

Terminal block box kit

- **VQ5091-VCC70(1-Q)**—1 set—Manifold base part no.
- **VQ4010-51(1-Q)**—2 sets—Valve part no. (Stations 1 and 2)
- **VQ4200-51(1-Q)**—2 sets—Valve part no. (Stations 3 and 4)
- **VQ4300-51(1-Q)**—1 set—Valve part no. (Station 5)

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

Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.

- **Electrical entry**
- **Stations are counted starting from the first station on the D side.**

- **Nil**
- **Metal seal**
- **Rubber seal**
VQ4000 Series

Kit (Terminal block box kit)

For U side mounting (TO)
+ For D side mounting (TD)

1/4", 3/8" C6, C8, C10, C12, N7, N9, N11 (4A), (2B) port

1/4" Note)

2 x G3/4 Conduit port

2 x 1/8" PE, port

6 x 1/2" 1(P), 5(R1), 3(R2) port

2 x 1/8" External pilot port

1/4" Note)

44

91

47

38

18

163

106

9

4.5

129.5

96.2

71.7

27

27

11.7

43.2

16.2

58.2

50.5

96.2

10.7

2 x 1/8" Ground screw

M5 x 0.8

6 x 1/2" P1, 5(R1), 3(R2) port

2 x 1/8"

For D side mounting (TD)

For U side mounting (TO)

1/4", 3/8" C6, C8, C10, C12, N7, N9, N11 (4A), (2B) port

2 x 1/8"

External pilot port

Shown VV5Q41-08C12TO-W.

Note) 4(A) and 2(B) port at the bottom of the terminal block box are 1/4".
Note) 4(A) and 2(B) port at the bottom of the terminal block box are 1/4".

Dimensions

Formula: \( L_1 = 25n + 63 \), \( L_2 = 25n + 76 \)  
* Including 2 stations for mounting terminal box.

<table>
<thead>
<tr>
<th>( n )</th>
<th>3</th>
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<th>5</th>
<th>6</th>
<th>7</th>
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<th>15</th>
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<th>17</th>
<th>18</th>
</tr>
</thead>
<tbody>
<tr>
<td>( L_1 )</td>
<td>138</td>
<td>163</td>
<td>188</td>
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<td>438</td>
<td>463</td>
<td>488</td>
<td>513</td>
</tr>
<tr>
<td>( L_2 )</td>
<td>151</td>
<td>176</td>
<td>201</td>
<td>226</td>
<td>251</td>
<td>276</td>
<td>301</td>
<td>326</td>
<td>351</td>
<td>376</td>
<td>401</td>
<td>426</td>
<td>451</td>
<td>476</td>
<td>501</td>
<td>526</td>
</tr>
</tbody>
</table>
VQ4000 Series

- Enclosure IP65 compliant
- Direct electrical entry. Models with two or more stations are available.
- Electrical entry can be selected on either the U side or the D side according to the mounting orientation.
- Maximum stations are 16.

Wiring Specifications

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

![Wiring Diagram]

Lead Wire Assembly with Connector

For different lead wire lengths, order a lead wire assembly with connector shown in the table on the right.

Note 1) There is no polarity. It can also be used as a negative common.
Note 2) Connect the release valve and the pressure switch to SOL. A side on the manifold with control unit.

How to Order Manifold

![Ordering Diagram]

Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ4000</td>
<td>Side 1/2</td>
<td>Max. 16 stations</td>
</tr>
<tr>
<td></td>
<td>Bottom</td>
<td></td>
</tr>
</tbody>
</table>

Cable: 3 core 24 x AWG

Station number

Cable: 3 core 24 x AWG

Station number

For different lead wire lengths, order a lead wire assembly with connector shown in the table on the right.

Note 1) There is no polarity. It can also be used as a negative common.
Note 2) Connect the release valve and the pressure switch to SOL. A side on the manifold with control unit.
How to Order Valves

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

**Example**
Lead wire kit with cable (3 m)

VQ41-05CILD2(-Q) - 1 set—Manifold base part no. [VQ4100-51(-Q)] - 2 sets—Valve part no. (Stations 1 and 2)
VQ4200-51(-Q) - 2 sets—Valve part no. (Stations 3 and 4)
VQ4300-51(-Q) - 1 set—Valve part no. (Station 5)

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

Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.

### How to Order Manifold Assembly

1. The drawing shows the electrical entry on the D side.
2. Cable length is measured from the valve body.
3. When the unit is energized continuously, refer to “Specific Product Precautions 1” on page 533.
4. In addition, only DC is available with Y.
5. For external pilot specifications, refer to page 481.
6. Combination of external pilot and perfect interface is not possible.
7. When multiple symbols are specified, indicate them alphabetically.
**VQ4000 Series**

**Kit (Lead wire cable)**

---

**Electrical entry on D side (LD):**
- 2 x G3/4
- 6 x 1/2"
- 2 x 1/8"

**Electrical entry on U side (LU):**
- 0.75" 3/8"
- 1/4", 3/8"
- C6, C8, C10, C12, N7, N9, N11

**Lead wire length:**
- L0: 600 mm
- L1: 1500 mm
- L2: 3000 mm

**Ground screw:**
- M5 x 0.8

**Station number:**
- 1 (P), 5 (R1), 3 (R2) port
- 1(P), 5(R1), 3(R2) port

**Station number (U side):**
- 139.9 (Single)
- 149.9 (Double)
- 163 (3-position)

**Station number (D side):**
- 149.9 (Double)
- 163 (3-position)

---

**Manual override:**

**Indicator light:**

**External pilot port:**
- 2 x 1/8"

---

**Stations:**
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8

---

**Kit (Lead wire cable):**
- 466
Base Mounted Plug-in Unit VQ4000 Series

Bottom ported drawing

Dimensions

<table>
<thead>
<tr>
<th>L</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>88</td>
<td>113</td>
<td>138</td>
<td>163</td>
<td>188</td>
<td>213</td>
<td>238</td>
<td>263</td>
<td>288</td>
<td>313</td>
<td>338</td>
<td>363</td>
<td>398</td>
<td>413</td>
<td>438</td>
<td>463</td>
</tr>
<tr>
<td>L2</td>
<td>101</td>
<td>126</td>
<td>151</td>
<td>176</td>
<td>201</td>
<td>226</td>
<td>251</td>
<td>276</td>
<td>301</td>
<td>326</td>
<td>351</td>
<td>376</td>
<td>401</td>
<td>426</td>
<td>451</td>
<td>476</td>
</tr>
</tbody>
</table>

Formula: $L_1 = 25n + 63$, $L_2 = 25n + 76$  
$n$: Stations (Maximum 16 stations)
The serial transmission system reduces wiring work, while minimizing wiring and saving space.

Double wiring (connected to SOL A and SOL B) is adopted for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring is available as a semi-standard specification.

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Port size</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ4000</td>
<td>4(A), 2(B) port location</td>
<td>1/2, 1/4</td>
<td>18 stations</td>
</tr>
</tbody>
</table>

**Item** | Specifications
---|---
External power supply | 24 VDC +10%, –5%
Current consumption (Internal unit) | 0.1 A

- Drip proof plug assembly (for G1/2): AXT100-B04A
- IP65 compliant

**How to Order Manifold**

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

**SI Unit**

- Without SI Unit
- NKE Corp.: Fieldbus H System (16 output points)
- DeviceNet™ (16 output points)
- OMRON Corp.: CompoBus/S System (16 output points)
- OMRON Corp.: CompoBus/S System (8 output points)
- CC-Link (16 output points)

**SI Unit Part No.**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Protocol type</th>
<th>SI Unit part no.</th>
<th>CE-compliant</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>NKE Corp.: Fieldbus H System (16 output points)</td>
<td>D side: EX123D-SUH1, U side: EX123U-SUH1</td>
<td>—</td>
<td>489</td>
</tr>
<tr>
<td>Q</td>
<td>DeviceNet™ (16 output points)</td>
<td>D side: EX124D-SDN1, U side: EX124U-SDN1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R1</td>
<td>OMRON Corp.: CompoBus/S System (16 output points)</td>
<td>D side: EX124D-SCS1, U side: EX124U-SCS1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>CC-Link (16 output points)</td>
<td>D side: EX124D-SMJ1, U side: EX124U-SMJ1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How to Order Valves

How to Order Manifold Assembly

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

Example>
VV5041-67035V(Q)-1 set—Manifold base part no.
VVQ4100-51(Q)——2 sets—Valve part no. (Stations 1 and 2)
VVQ4200-51(Q)——2 sets—Valve part no. (Stations 3 and 4)
VVQ4300-51(Q)——1 set—Valve part no. (Station 5)

Prefix the asterisk to the part nos. of the valve etc.
Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.
VQ4000 Series

Kit (Serial transmission unit): EX123/124 (For Output) Serial Transmission System

Dimensions

<table>
<thead>
<tr>
<th>L</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>138</td>
<td>163</td>
<td>188</td>
<td>213</td>
<td>238</td>
<td>263</td>
<td>288</td>
<td>313</td>
<td>338</td>
<td>363</td>
<td>388</td>
<td>413</td>
<td>438</td>
<td>463</td>
<td>488</td>
<td>513</td>
</tr>
<tr>
<td>L2</td>
<td>151</td>
<td>176</td>
<td>201</td>
<td>226</td>
<td>251</td>
<td>276</td>
<td>301</td>
<td>326</td>
<td>351</td>
<td>376</td>
<td>401</td>
<td>426</td>
<td>451</td>
<td>476</td>
<td>501</td>
<td>526</td>
</tr>
</tbody>
</table>

Formula: L1 = 25n + 63, L2 = 25n + 76  n: Stations (Maximum standard 18 stations)

* Including 2 stations for mounting SI Unit box.

Note 1) In the case of EX124 for SI Unit, conduit port (G1/2) will be 4 locations. In the case of EX123D(U), conduit port will be 2 locations.
Note 2) In the case of EX124D(U)-SMJ1, this dimension becomes 133.
Note 3) 4(A) and 2(B) port at the bottom of the SI Unit are 1/4".

Figure shows VV5Q41-08C12SQ-W.
Bottom ported drawing

Formula: \( L_1 = 25n + 63, \quad L_2 = 25n + 76 \)

- \( n \): Stations (Maximum standard 18 stations)
- Including 2 stations for mounting SI Unit.

Dimensions

<table>
<thead>
<tr>
<th>( n )</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
</tr>
</thead>
<tbody>
<tr>
<td>( L_1 )</td>
<td>138</td>
<td>163</td>
<td>188</td>
<td>213</td>
<td>238</td>
<td>263</td>
<td>288</td>
<td>313</td>
<td>338</td>
<td>363</td>
<td>388</td>
<td>413</td>
<td>438</td>
<td>463</td>
<td>488</td>
<td>513</td>
</tr>
<tr>
<td>( L_2 )</td>
<td>151</td>
<td>176</td>
<td>201</td>
<td>226</td>
<td>251</td>
<td>276</td>
<td>301</td>
<td>326</td>
<td>351</td>
<td>376</td>
<td>401</td>
<td>426</td>
<td>451</td>
<td>476</td>
<td>501</td>
<td>526</td>
</tr>
</tbody>
</table>

Note) 4(A) and 2(B) port at the bottom of the terminal block box are 1/4".
**Base Mounted**

**Plug Lead Unit: C Kit (Connector Kit)**

**VQ4000 Series**

---

### How to Order Manifold

**VV5Q 4 5 08 C8 C**

- **Symbol**
  - Nil
  - Q

- **Kit type**
  - C: Connector kit
  - Max. 16 stations

- **Option**
  - CE-compliant

- **Thread type**
  - Nil
  - Rc

- **Seal**
  - Nil
  - Rubber seal

- **Function**
  - Nil
  - N: Metal seal
  - G: Rubber seal

- **Enclosure**
  - Nil
  - Q: CE-compliant
  - W: Dust-protected
  - Dust-light/ Water-jet-proof (IP65)

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

- **Light/Surge voltage suppressor**
  - Nil
  - E: Without light, with surge voltage suppressor

- **Electrical entry**
  - A: Connector lead wire length 0.6 m
  - B: Lead wire length 0.6 m

---

### How to Order Valves

**VQ 4 15 05 1**

- **Series**
  - Nil

- **Type of actuation**
  - 1: 2-position single
  - 2: 2-position double
  - 3: 3-position closed center
  - 4: 3-position exhaust center
  - 5: 3-position pressure center
  - 6: 3-position double check

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

- **Function**
  - Nil
  - Y: Low wattage type (0.4 W)

- **Coil voltage**
  - 1: 100 VAC (50/60 Hz)
  - 2: 200 VAC (50/60 Hz)
  - 3: 110 VAC (50/60 Hz)

---

### How to Order Manifold Assembly

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

**<Example>**

Connector kit

```
VV5Q 55G1Q(-Q) 1 set—Manifold base part no.
VV4150-5G1(-Q) 2 sets—Valve part no. (Stations 1 and 2)
VV4250-5G1(-Q) 2 sets—Valve part no. (Stations 3 and 4)
VV4350-5G1(-Q) 1 set—Valve part no. (Station 5)
```

Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.
### Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Base model</th>
<th>Type of connection</th>
<th>Porting specifications</th>
<th>Maximum applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ4000</td>
<td>VVQ45-□□□□</td>
<td>C kit-Grommet</td>
<td>4(A), 2(B) port location</td>
<td>2 to 16 stations</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1(P), 5(R1), 3(R2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1/2 Option</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Direct exhaust with silencer box)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>N7</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>N11</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bottom</td>
<td>1/4</td>
<td></td>
</tr>
</tbody>
</table>

#### Flow Rate Characteristics at the Number of Manifold Stations (Operated individually)

<table>
<thead>
<tr>
<th>Model</th>
<th>Passage/Stations</th>
<th>Station 1</th>
<th>Station 5</th>
<th>Station 10</th>
<th>Station 15</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-position metal seal VQ4150</td>
<td>4/2 → 5/3 (A/B → EA/EB)</td>
<td>6.8</td>
<td>6.8</td>
<td>6.8</td>
<td>6.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.31</td>
<td>0.31</td>
<td>0.31</td>
<td>0.31</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.8</td>
<td>1.8</td>
<td>1.8</td>
<td>1.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7.0</td>
<td>7.0</td>
<td>7.0</td>
<td>7.0</td>
</tr>
</tbody>
</table>

#### Manifold Options

- **Blanking plate assembly**: VVQ4000-10A-5
- **Individual SUP spacer**: VVQ4000-P-5-02, VVQ4000-R-5-02
- **Restrictor spacer**: VVQ4000-20A-5
- **SUP stop valve spacer**: VVQ4000-37A-5
- **SUP/EXH block plate**: VVQ4000-16A (1 pc./set)
- **Interface regulator (P, A, B port regulation)**: ARBQ4000-00-□□-5
- **Release valve spacer**: For D side mounting VVQ4000-24A-5D
- **Double check spacer with residual pressure exhaust**: VVQ4000-25A-5
- **Direct exhaust with silencer box** [-S-D]
- **Manifold mounted exhaust cleaner** [-C-D]

---

- Refer to pages 476 to 480 for detailed dimensions of each option.
- For replacement parts, refer to page 489.
- Refer to pages 482 to 485 for control unit.

---

Note) Release valve spacer and double check spacer with residual pressure exhaust cannot be combined with external pilot.
Bottom ported drawing

Dimensions

<table>
<thead>
<tr>
<th>L1</th>
<th>L2</th>
</tr>
</thead>
<tbody>
<tr>
<td>88</td>
<td>101</td>
</tr>
<tr>
<td>113</td>
<td>126</td>
</tr>
<tr>
<td>138</td>
<td>151</td>
</tr>
<tr>
<td>163</td>
<td>176</td>
</tr>
<tr>
<td>188</td>
<td>201</td>
</tr>
<tr>
<td>213</td>
<td>226</td>
</tr>
<tr>
<td>238</td>
<td>251</td>
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<td>263</td>
<td>276</td>
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<td>288</td>
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<td>313</td>
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<tr>
<td>388</td>
<td>401</td>
</tr>
<tr>
<td>413</td>
<td>426</td>
</tr>
<tr>
<td>438</td>
<td>451</td>
</tr>
<tr>
<td>463</td>
<td>476</td>
</tr>
</tbody>
</table>

Formula: \( L1 = 25n + 63 \), \( L2 = 25n + 76 \)  
\( n \): Stations (Maximum 16 stations)
**Manifold Option Parts**

**Blanking plate assembly**

**VVQ4000-10A-1 (Plug-in type)**
**VVQ4000-10A-5 (Plug lead type)**

It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve etc.

![Circuit diagram](image)

**Individual SUP spacer**

**VVQ4000-P**

- **Manifold**
  - Port size
    - 1: Plug-in type
    - 5: Plug lead type
  - Thread type
    - NIL
    - Rc
    - F
    - G
    - N
    - NPT
    - Y
    - NPTF

![Circuit diagram](image)

**Individual EXH spacer**

**VVQ4000-R**

- **Manifold**
  - Port size
    - 1: Plug-in type
    - 5: Plug lead type
  - Thread type
    - NIL
    - Rc
    - F
    - G
    - N
    - NPT
    - Y
    - NPTF

![Circuit diagram](image)
Restrictor spacer
VVQ4000-20A-1 (Plug-in type)
VVQ4000-20A-5 (Plug lead type)
A restrictor spacer is mounted on a manifold block to control cylinder speed by throttling exhaust air flow.

SUP stop valve spacer
VVQ4000-37A-1 (Plug-in type)
VVQ4000-37A-5 (Plug lead type)
A SUP stop valve spacer is mounted on a manifold block, making it possible to individually shut off supply air to each valve.

Release valve spacer: For D side mounting
VVQ4000-24A-1D (Plug-in type)
VVQ4000-24A-5D (Plug lead type)
Combination of VQ4111 (Single) and release valve spacer can be used as air release valve.
Note 1) Mounting on 2-position double and 3-position valve is not possible.
Note 2) Can be mounted on L kit only. For other kits, order E type control unit. (Refer to pages 482 to 485.)

SUP/EXH block plate
VVQ4000-16A (1 pc./set)
When supplying two different pressures to one manifold, this is used to shut off between stations with different pressures.

<Passage blocked label>
Indication labels to confirm the blocking position are attached. (Each for SUP passage, EXH passage, and SUP/EXH passage blocking positions)
Manifold Option Parts

Direct exhaust with silencer box
VV5Q4- SB (Exhaust from both sides)
VV5Q4- SD (D side exhaust)
VV5Q4- SU (U side exhaust)

The EXH outlet is placed on the top side of the manifold end plate. The built-in silencer provides highly effective noise reduction. (Noise reduction of 35 dB(A) or more)
Effective area: 60.2 mm²

Note: Note that when excessive drainage occurs in the air supply, the drainage will be released along with the exhaust.

Silencer box assembly: VVQ4000-33A (With gasket, screw)

Double check spacer with residual pressure exhaust
VVQ4000-25A-1 (Plug-in type)
VVQ4000-25A-5 (Plug lead type)

Can hold an intermediate cylinder position for an extended time.

When combined with a double check spacer with built-in double check valve, it is unaffected by air leakage between the spool valves, making it possible to hold a cylinder at an intermediate stopping position for an extended time. Besides, combination between 2-position solenoid valve (VO4□□□) and double check spacer cannot hold an intermediate position, but can be used for drop prevention at the cylinder stroke end.

Specifications

<table>
<thead>
<tr>
<th>Double check spacer part no.</th>
<th>VOQ4000-25A-1</th>
<th>Intermediate stop</th>
<th>Drop prevention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable solenoid valve</td>
<td>VQ4□□□</td>
<td>VQ4□□□</td>
<td></td>
</tr>
</tbody>
</table>

Caution

Handling Precautions

- In the case of 3-position double check (VO4□□□), check the leakage from piping and fittings in between valve and cylinder by means of synthetic detergent solutions, and ensure that there is no such leakage found there. Also, check the leakage from cylinder seal and piston seal. If there is any leakage, sometimes the cylinder, when valve is de-energized, can move without stopping at intermediate position.
- Since One-touch fittings allow slight air leakage, screw piping is recommended when stopping the cylinder in the middle for a long time.
- If exhaust side of double check spacer is narrowed down, this causes a decrease in intermediate stop accuracy and may malfunction.
- Combining with 3-position valves “VOQ4□□□” is not possible.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.
- Combining double check spacer with external pilot is not possible.
Manifold mounted exhaust cleaner

**VVQ5Q4** - -□□□□□□□□ (D side mounting)
**VVQ5Q4** - -□□□□□□□□ (U side mounting)

An adapter plate for exhaust cleaner mounting is provided on the top of the manifold end plate. The exhaust cleaner collects drainage and oil mist (99.9% or more) and is highly effective for noise reduction.

(Noise reduction of 35 dB(A) or more)

**Applicable exhaust cleaner**

AMC610-10 (Port size Rc 1)

Note 1) Exhaust cleaner AMC610-10 is not attached. Please order it separately.
Note 2) Mount so that the exhaust cleaner is at the lower side.
Note 3) For details about the exhaust cleaner, refer to Best Pneumatics No. 7.

**Formula:**

L1 = 25n + 63, L2 = 25n + 76

n: Stations (Maximum 16 stations)

---

**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>
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<tbody>
<tr>
<td>L1</td>
<td>88</td>
<td>113</td>
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<td>188</td>
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**Dimensions**

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<th>8</th>
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<tr>
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<tr>
<td>L2</td>
<td>301</td>
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<td>376</td>
<td>401</td>
<td>426</td>
<td>476</td>
<td>476</td>
</tr>
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</table>
**VQ4000 Series**

**Manifold Option Parts**

Interface regulator (P, A, B port regulation)
ARBQ4000-00-□-1 (Plug-in type)
ARBQ4000-00-□-5 (Plug lead type)

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

### Specifications

<table>
<thead>
<tr>
<th>Interface regulator</th>
<th>ARBQ4000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulating port</td>
<td>A</td>
</tr>
<tr>
<td>Applicable valve</td>
<td>Plug-in</td>
</tr>
<tr>
<td>Plug-in</td>
<td>Plug lead</td>
</tr>
</tbody>
</table>

- **Maximum operating pressure**: 1.0 MPa
- **Set pressure range**: 0.05 to 0.85 MPa
- **Fluid**: Air
- **Ambient and fluid temperature**: –5 to 60°C (No freezing)
- **Port size for connection of pressure gauge**: M5 x 0.8
- **Weight [kg]**: 0.30
- **Effective area at supply side [mm²]**: P → A = 15, P → B = 35
- **Effective area at exhaust side [mm²]**: A → EA = 18, B → EB = 37

#### Flow Rate Characteristics

**Conditions**
- Inlet pressure: 0.7 MPa
- Outlet pressure: 0.2 MPa
- Flow rate: 20 L/min (ANR)

#### Pressure Characteristics

**Conditions**
- Inlet pressure: 0.7 MPa
- Outlet pressure: 0.2 MPa
- Flow rate: 20 L/min (ANR)

### How to Order

<table>
<thead>
<tr>
<th>Valve model</th>
<th>Interface regulator</th>
<th>Regulating port</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ4□□□00 (Plug-in type)</td>
<td>ARBQ4000-00-A-1</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>ARBQ4000-00-B-1</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>ARBQ4000-00-P-1</td>
<td>P</td>
</tr>
<tr>
<td>VQ4□□□00 (Plug lead type)</td>
<td>ARBQ4000-00-A-5</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>ARBQ4000-00-B-5</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>ARBQ4000-00-P-5</td>
<td>P</td>
</tr>
</tbody>
</table>

### Dimensions

![Diagram showing dimensions and configurations of the interface regulator](image)

### Notes

1. Set the pressure within the operating pressure range of the valve.
2. Operate an interface regulator only by applying pressure from the P port of the base, except when using it as a reverse pressure valve. When using it as a reverse pressure valve, P port regulation is not allowed to use.
3. When using a perfect spacer, assemble a valve, a spacer regulator and a perfect spacer in this order to use it.
4. When using in A port regulation, B port regulation by closed center, since there is a problem in its operation, please contact SMC.
5. Dust-tight/Water-jet-proof (IP65) is not available with interface regulator.
External Pilot Specifications

- When the supply air pressure is:
  - lower than the required minimum operating pressure 0.15 to 0.2 MPa,
  - opposite air supply (R port supply), cylinder supply (A and B port supply),
- used for vacuum specification, it can be used for external pilot specification.

Order a valve by adding the external pilot specification [R] to the part number.

External pilot is available as standard for manifolds and options.

- Internal/external pilot can be mounted in a manifold.
- Compatibility with universal porting is possible for the single, double and 3-position (excluding double check) types.

How to Order Valves

VQ4100 R - 5 - 03

External pilot

External Pilot Port 1/8

External Pilot Port 2 x 1/8

Note) Possible to mix mounting of internal and external pilot

Pressure Specifications

<table>
<thead>
<tr>
<th>Valve construction</th>
<th>Metal seal</th>
<th>Rubber seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating pressure range</td>
<td>−100 kPa to 1.0 MPa</td>
<td></td>
</tr>
<tr>
<td>External pilot pressure range</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>0.2 to 1.0 MPa</td>
<td></td>
</tr>
<tr>
<td>Double</td>
<td>0.15 to 1.0 MPa</td>
<td></td>
</tr>
<tr>
<td>3-position</td>
<td>0.2 to 1.0 MPa</td>
<td></td>
</tr>
</tbody>
</table>

Combination of manifold options shown below and external pilot specification is not possible.

- Release valve spacer: VVQ4000-24A-□D
- Manifold with control unit: VV5Q4□-□□□ [Control unit model no.]
- Double check spacer with residual pressure exhaust: VVQ4000-25A-□

Valve construction Metal seal Rubber seal

Operating pressure range

External pilot pressure range

Single

Double

3-position

External Pilot

Pressure Specifications

<table>
<thead>
<tr>
<th>Valve construction</th>
<th>Metal seal</th>
<th>Rubber seal</th>
</tr>
</thead>
<tbody>
<tr>
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<td>−100 kPa to 1.0 MPa</td>
<td></td>
</tr>
<tr>
<td>External pilot pressure range</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>0.2 to 1.0 MPa</td>
<td></td>
</tr>
<tr>
<td>Double</td>
<td>0.15 to 1.0 MPa</td>
<td></td>
</tr>
<tr>
<td>3-position</td>
<td>0.2 to 1.0 MPa</td>
<td></td>
</tr>
</tbody>
</table>

Combination of manifold options shown below and external pilot specification is not possible.

- Release valve spacer: VVQ4000-24A-□D
- Manifold with control unit: VV5Q4□-□□□ [Control unit model no.]
- Double check spacer with residual pressure exhaust: VVQ4000-25A-□

Valve construction Metal seal Rubber seal

Operating pressure range

External pilot pressure range

Single

Double

3-position

External Pilot

Pressure Specifications
**VQ4000 Series**

**Manifold with Control Unit**

- Mounting air filter, regulator, pressure switch for air release valve on manifold as unit is possible and permits piping labor savings.
- Maximum number of stations depends on each kit. Refer to manifold specifications.
- 2 stations are used for control unit mounting. (1 station is used for E type.)

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Base model</th>
<th>Type of connection</th>
<th>Porting specifications</th>
<th>Port size</th>
<th>Max. stations</th>
<th>Applicable valve</th>
</tr>
</thead>
<tbody>
<tr>
<td>VV5Q41</td>
<td>F kit – D-sub connector</td>
<td>4(A), 2(B) port location</td>
<td>1/2</td>
<td>4(A), 2(B)</td>
<td>1/2</td>
</tr>
<tr>
<td></td>
<td>T kit – Terminal block box</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>L kit – Lead wire</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VV5Q45</td>
<td>C kit – Connector</td>
<td>4(A), 2(B) port location</td>
<td>1/4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Manifold for mounting is included. ( ): E type

**Control Unit Specifications**

- Air filter (With auto-drain/With manual drain)
- Filtration: 5 μm
- Regulator
- Pressure switch
- Pressure range: OFF
- Differential: 0.08 MPa or less
- Contact: 1a
- Light: LED (RED)
- Max. switch capacity: 2 VA (AC), 2 W (DC)
- Max. operating current: 50 mA at 24 VAC, DC or less
- 20 mA at 100 VAC, DC
- Air release valve (Single only)
- Operating pressure range: 0.15 to 1 MPa

**Control Unit/Option**

- Air release valve
- Pressure switch
- Regulator
- Pressure switch
- Release valve
- Filter element

**How to Order**

- Plug-in type
- Plug lead type

**Cylinder port**

- C6 ø6 One-touch fitting
- C8 ø8 One-touch fitting
- C10 ø10 One-touch fitting
- C12 ø12 One-touch fitting
- 02 1/4
- 03 3/8
- B Bottom ported 1/4
- CM Mixed
- N7 Ø1/4 One-touch fitting
- N9 Ø5/16 One-touch fitting
- N11 Ø3/8 One-touch fitting

**Thread**

- Nil
- F G
- N NPT
- T NPTF

**Control unit type**

- Symbol
- Nil
- A AP MP F G C E

**Option**

- Nil
- Name plate (Applicable to T kit)
- Direct exhaust with silencer box: U side exhaust
- IP65 enclosure

**Note**

1) Rated voltage: 24 VDC to 100 VAC
2) Internal voltage drop: 4 V
3) Combination with pressure switch (AP and MP type) is not possible.
4) Combination with pressure switch (AP and MP type) is not possible.
5) The release valve and the pressure switch on S kit are removed except E kit.

**Contact**

In the case of air filters with auto-drain or manual drain, mount so that the air filter is at the bottom.
Use of Control Unit

<Construction and piping>
1. The supply pressure (Po) passes through the filter regulator (1) and is adjusted to the prescribed pressure. Next, it goes through the release valve (2) (outlet residual pressure switching function used as normally ON) and is supplied to the manifold base side (P).
2. Supply pressure from Po port is blocked when release valve (2) is OFF.
   Air supplied to manifold side P port is exhausted to R1 port through release valve (2).
3. Pressure switch is piped at outlet side of release valve (2). (Release valve (2) is operated at energizing.)
   Also, since there is an internal voltage drop of 4 V, it may not be possible to confirm the OFF and ON states with a tester, etc.

<Wiring>
1. Electrical entry of manifold (except L and C kit) is individual wiring. For details, refer to internal wiring figure of each kit. Cable length is 0.6 m for L kit.

<Change of pressure switch piping>
1. Pressure switch (3) is changed to piping on inlet side of release valve (2), remove the pressure switch, reverse the gasket up and down, and fix mark.
2. When pressure switch is mounted, tightening torque of bolt is 0.8 to 1.2 N·m.

Use of Control Unit

<Construction and piping>
1. The supply pressure (Po) passes through the filter regulator (1) and is adjusted to the prescribed pressure. Next, it goes through the release valve (2) (outlet residual pressure switching function used as normally ON) and is supplied to the manifold base side (P).
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   Also, since there is an internal voltage drop of 4 V, it may not be possible to confirm the OFF and ON states with a tester, etc.

<Wiring>
1. Electrical entry of manifold (except L and C kit) is individual wiring. For details, refer to internal wiring figure of each kit. Cable length is 0.6 m for L kit.

<Change of pressure switch piping>
1. Pressure switch (3) is changed to piping on inlet side of release valve (2), remove the pressure switch, reverse the gasket up and down, and fix mark.
2. When pressure switch is mounted, tightening torque of bolt is 0.8 to 1.2 N·m.
Dimensions

Plug-in type

Formula: \( L_1 = 25n + 63, L_2 = 25n + 76, L_3 = 25n + 282 \) \( (260.5) \) \( n \): Stations

<table>
<thead>
<tr>
<th>( n )</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<th>9</th>
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</thead>
<tbody>
<tr>
<td>( L_1 )</td>
<td>113</td>
<td>138</td>
<td>163</td>
<td>188</td>
<td>213</td>
<td>238</td>
<td>263</td>
<td>288</td>
<td>313</td>
<td>338</td>
<td>363</td>
</tr>
<tr>
<td>( L_2 )</td>
<td>126</td>
<td>151</td>
<td>176</td>
<td>201</td>
<td>226</td>
<td>251</td>
<td>276</td>
<td>301</td>
<td>326</td>
<td>351</td>
<td>376</td>
</tr>
<tr>
<td>( L_3 )</td>
<td>332</td>
<td>357</td>
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<td>407</td>
<td>432</td>
<td>457</td>
<td>482</td>
<td>507</td>
<td>532</td>
<td>557</td>
<td>582</td>
</tr>
<tr>
<td>(310.5)</td>
<td>(335.5)</td>
<td>(360.5)</td>
<td>(385.5)</td>
<td>(410.5)</td>
<td>(435.5)</td>
<td>(460.5)</td>
<td>(485.5)</td>
<td>(510.5)</td>
<td>(535.5)</td>
<td>(560.5)</td>
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</tr>
</tbody>
</table>

* \( L_3 \): Type MP
Plug lead type

Dimensions

Formula: \( L_1 = 25n + 63 \), \( L_2 = 25n + 76 \), \( L_3 = 25n + 282 \) (260.5) \( n \): Stations

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<th>( n )</th>
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<tbody>
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<td>238</td>
<td>263</td>
<td>288</td>
<td>313</td>
<td>338</td>
<td>363</td>
</tr>
<tr>
<td>( L_2 )</td>
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<td>376</td>
</tr>
<tr>
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<td>(485.5)</td>
<td>(510.5)</td>
<td>(535.5)</td>
<td>(560.5)</td>
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</table>

* \( L_3 \) ( ): Type MP
VQ4000 Series
Construction

Plug-in Unit

Metal seal type

<table>
<thead>
<tr>
<th>Component Parts</th>
<th>Replacement Parts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>Description</td>
</tr>
<tr>
<td>1</td>
<td>Body</td>
</tr>
<tr>
<td>2</td>
<td>Spool/Sleeve</td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Replacement Parts</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
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</tbody>
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<table>
<thead>
<tr>
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<th>Replacement Parts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>Description</td>
</tr>
<tr>
<td>1</td>
<td>Body</td>
</tr>
<tr>
<td>2</td>
<td>Spool valve</td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
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<table>
<thead>
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</thead>
<tbody>
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<td>4</td>
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<table>
<thead>
<tr>
<th>Coil type</th>
<th>Coil type</th>
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<tbody>
<tr>
<td>Nil</td>
<td>Standard (0.95 W)</td>
</tr>
<tr>
<td>Y</td>
<td>Low wattage type (0.4 W)</td>
</tr>
</tbody>
</table>

Rubber seal type

<table>
<thead>
<tr>
<th>Component Parts</th>
<th>Replacement Parts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>Description</td>
</tr>
<tr>
<td>1</td>
<td>Body</td>
</tr>
<tr>
<td>2</td>
<td>Spool/Sleeve</td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Replacement Parts</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>Y</td>
<td>Low wattage type (0.4 W)</td>
</tr>
</tbody>
</table>

Coil rated voltage

Example) 24 VDC: 5
A: With light (For A side)
B: With light (For B side)
E: Without light (A/B side common)
## Plug Lead Unit

### Metal seal type

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Aluminum</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Spool/Sleeve</td>
<td>Stainless steel</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

### Rubber seal type

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Aluminum</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Spool valve</td>
<td>Aluminum, HNBR</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

## Component Parts

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Aluminum</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Spool valve</td>
<td>Stainless steel</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
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</table>

### Replacement Parts

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>Coilt type</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Pilot valve</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

Coil type:
- Standard (0.95W)
- Low wattage type (0.4W)

Example: 24 VDC: 5
A: With light (For A side)
B: With light (For B side)
E: Without light (A/B side common)
### VQ4000 Series

#### Exploded View of Manifold

<table>
<thead>
<tr>
<th>D-side end plate assembly</th>
<th>Manifold block assembly</th>
<th>Tie-rod</th>
<th>U-side end plate assembly</th>
</tr>
</thead>
</table>

#### Note
- The electrical entry cannot be changed.

#### Example
- 1······2······3······4······5······6······Stations
- D side: 2 stations, 2 stations, 1 station
- U side: 2 stations, 2 stations, 2 stations

Figure shows a plug-in type.
**Exploded View of Manifold VQ4000 Series**

### D-Side End Plate Assembly

1. D-side end plate assembly part no. (For F, L, S, T kit)

   **VVQ4000 – 3A – 1**

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

   - **Electrical entry**
     - L (Note 3): F kit (Connector location on D side)
     - C: C kit (Plug lead type)

   **Option 1**

   **Option 2**

2. D-side end plate assembly part no. (For input/output type for S kit)

   **VVQ4000 – 3A – 12**

   - With connector on the SI Unit

### U-Side End Plate Assembly

1. U-side end plate assembly part no. (For F, L, S, T kit)

   **VVQ4000 – 2A – 1**

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

   - **Electrical entry**
     - L (Note 1): F kit (Connector location on U side)
     - C: C kit (Plug lead type)

   **Option 1**

   **Option 2**

2. U-side end plate assembly part no. (For input/output type for S kit)

   **VVQ4000 – 2A – 12**

   - With connector on the SI Unit

### D-sub connector assembly

- D-sub connector assembly

### Manifold Block Assembly

3. Manifold block assembly part no. (Including ④, ⑤ and ⑥)

   **VVQ4000 – 1**

   - **Type**
     - A: For 1 station
     - C: For 2 stations (Note 3)

   - **Port thread type**
     - Nil: Standard
     - N: NPT
     - T: NPTF
     - F: G

   **Option**

   - **Electrical entry**
     - Port size

   **Note 1** Tie-rods (2 pcs.), and lead wire assembly for station addition included.

   **Note 2** Drip-proof F kit is not available.

   **Note 3** When ordering block assembly for L kit 2 stations, the lead wire should be ordered by the smaller numbers of the D side (no. of station).

   **Note 4** Bottom ported type: For 1-station type only.

### Fitting Assembly

7. Fitting assembly part no. (For cylinder port)

**VVQ4000 – 50B**

- **Port size**

   **C6** Applicable tubing ø6
   **C8** Applicable tubing ø8
   **C10** Applicable tubing ø10
   **C12** Applicable tubing ø12
   **N7** Applicable tubing ø7/8
   **N9** Applicable tubing ø9/16
   **N11** Applicable tubing ø11/16
   **C14** Applicable tubing ø11/16

**Note** Purchasing order is available in units of 10 pieces.

### Tie-rods part no. (2 pcs.)

**VVQ4000 – TR**

- **Stations: 02 to 18**

**Note** When eliminating manifold stations, order this separately. When increasing manifold stations, it is not necessary to order since tie-rods are included in the manifold block assembly.

### Housing Assembly and SI Unit

<table>
<thead>
<tr>
<th>Kit type</th>
<th>Model symbol</th>
<th>Part no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S (Serial transmission unit)</td>
<td>O</td>
<td>-</td>
<td>Without SI Unit</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>EX12302-SUH1</td>
<td>NKE Corp.: Fieldbus H System (16 output points)</td>
</tr>
<tr>
<td></td>
<td>Q</td>
<td>EX12402-SDN1</td>
<td>DeviceNet (2 power supply systems)</td>
</tr>
<tr>
<td></td>
<td>R1</td>
<td>EX12402-SCS1</td>
<td>OMRON Corp.: CompoBus/S (16 output points, 2 power supply systems)</td>
</tr>
<tr>
<td></td>
<td>R2</td>
<td>EX12402-SCS2</td>
<td>OMRON Corp.: CompoBus/S (8 output points, 2 power supply systems)</td>
</tr>
<tr>
<td></td>
<td>V</td>
<td>EX12402-SMJ1</td>
<td>CC-Link (2 power supply systems)</td>
</tr>
<tr>
<td>T (Terminal block box kit)</td>
<td>-</td>
<td>VVQ5000-70A-2(W)</td>
<td>-</td>
</tr>
</tbody>
</table>
## List of Valves, Options, and Mounting Bolts

### VQ4000 Series

<table>
<thead>
<tr>
<th>Number of options</th>
<th>Valve and options</th>
<th>Bolt part no.</th>
<th>Qty [pcs.]</th>
<th>Note</th>
<th>Option mounting diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Single valve</td>
<td>AXT632-17-4</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(M3 x 37)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Blanking plate</td>
<td>AXT632-38-1</td>
<td>4</td>
<td>For manifold</td>
<td>Blank plate</td>
</tr>
<tr>
<td></td>
<td>(VVQ4000-10A-12)</td>
<td>(M3 x 14)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Valve + Individual SUP spacer (VVQ4000-37A-11)</td>
<td>1 AXT632-17-10 (M3 x 62)</td>
<td>3</td>
<td>For manifold</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 AXT632-17-19 (M3 x 26)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valve + Individual EXH spacer (VVQ4000-25A-11)</td>
<td>1 AXT632-17-10 (M3 x 62)</td>
<td>3</td>
<td>For manifold</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 AXT632-17-19 (M3 x 26)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valve + Restrictor spacer (VVQ4000-20A-11)</td>
<td>1 AXT632-17-10 (M3 x 62)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 AXT632-17-19 (M3 x 26)</td>
<td>2</td>
<td>Not necessary when mounting the sub-plate.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valve + Release valve spacer (VVQ4000-24A-11)</td>
<td>1 AXT632-17-10 (M3 x 62)</td>
<td>3</td>
<td>For manifold</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 AXT632-17-19 (M3 x 26)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valve + SUP stop valve spacer (VVQ4000-37A-11)</td>
<td>1 AXT632-17-10 (M3 x 62)</td>
<td>3</td>
<td>For manifold</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 AXT632-17-19 (M3 x 26)</td>
<td>2</td>
<td>Not necessary when mounting the sub-plate.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valve + Interface regulator (ARBQ4000-000)</td>
<td>1 AXT632-17-11 (M3 x 87)</td>
<td>3</td>
<td>For manifold</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 AXT632-17-18 (M3 x 52)</td>
<td>2</td>
<td>Not necessary when mounting the sub-plate.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Blanking plate + SUP stop valve (Top) (Bottom)</td>
<td>1 AXT632-41-4 (M3 x 42)</td>
<td>3</td>
<td>For manifold</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 AXT632-17-19 (M3 x 26)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Valve + Individual SUP + Individual EXH (Top) (Bottom)</td>
<td>1 AXT632-17-11 (M3 x 87)</td>
<td>3</td>
<td>For manifold</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 AXT632-17-17 (M3 x 52)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valve + Restrictor + Individual SUP or Individual EXH (Top) (Bottom)</td>
<td>1 AXT632-17-11 (M3 x 87)</td>
<td>3</td>
<td>For manifold</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 AXT632-17-17 (M3 x 52)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valve + SUP stop valve + Individual SUP, Individual EXH or Restrictor (Top) (Bottom)</td>
<td>1 AXT632-17-11 (M3 x 87)</td>
<td>3</td>
<td>For manifold</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 AXT632-17-17 (M3 x 52)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valve + Double check spacer with residual pressure exhaust (Top) + Individual SUP or Individual EXH (Bottom)</td>
<td>1 AXT632-17-14 (M3 x 112)</td>
<td>3</td>
<td>For manifold</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 AXT632-41-2 (M3 x 78)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valve + Interface regulator + Individual SUP, Individual EXH or Restrictor (Top) (Bottom)</td>
<td>1 AXT632-17-14 (M3 x 112)</td>
<td>3</td>
<td>For manifold</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 AXT632-41-2 (M3 x 78)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valve + Restrictor + Double check spacer with residual pressure exhaust (Top) + Individual SUP or Individual EXH (Bottom)</td>
<td>1 AXT632-17-14 (M3 x 112)</td>
<td>3</td>
<td>For manifold</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 AXT632-41-3 (M3 x 103)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Blanking plate + SUP stop valve + Individual SUP (Top) (Bottom)</td>
<td>1 AXT632-17-17 (M3 x 66)</td>
<td>3</td>
<td>For manifold</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 AXT632-17-17 (M3 x 66)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Valve + SUP stop valve (Top) + Individual SUP (Middle, Bottom) + Individual EXH (Middle, Bottom)</td>
<td>1 AXT632-17-14 (M3 x 112)</td>
<td>3</td>
<td>For manifold</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 AXT632-17-13 (M3 x 77)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valve + Double check spacer with residual pressure exhaust (Top) + Individual SUP (Middle, Bottom) + Individual EXH (Middle, Bottom)</td>
<td>1 AXT632-17-16 (M3 x 137)</td>
<td>3</td>
<td>For manifold</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 AXT632-41-3 (M3 x 103)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valve + Spacer (Top): Interface regulator (Middle): Individual SUP or Individual EXH? Restrictor (Bottom): Restrictor (Individual SUP or Individual EXH)</td>
<td>1 AXT632-17-16 (M3 x 137)</td>
<td>3</td>
<td>For manifold</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 AXT632-41-3 (M3 x 103)</td>
<td>2</td>
<td>The individual EXH and restrictor can be mounted on the top.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valve + Interface regulator (TOP) + Double check spacer with residual pressure exhaust (Middle) + Individual SUP (EXH) (Bottom)</td>
<td>1 AXT632-17-20 (M3 x 162)</td>
<td>3</td>
<td>For manifold</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 AXT632-41-5 (M3 x 128)</td>
<td>2</td>
<td>The individual EXH and restrictor can be mounted on the top.</td>
<td></td>
</tr>
</tbody>
</table>

Note 1) When the SUP stop valve and individual SUP are mounted, the stop valve is mounted on the top of the individual SUP.

---

490

SMC
Base Mounted
Plug-in/Plug Lead: Single Unit
VQ5000 Series

Model

<table>
<thead>
<tr>
<th>Series</th>
<th>Configuration</th>
<th>Model</th>
<th>Flow rate characteristics</th>
<th>Response time [ms]</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ5000</td>
<td>Single</td>
<td>Metal seal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td>Metal seal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Closed center</td>
<td>Metal seal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exhaust center</td>
<td>Metal seal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pressure center</td>
<td>Metal seal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double check</td>
<td>Metal seal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1) Value for valve on sub-plate.

Note 2) Based on JIS B 8419: 2010. (Supply pressure: 0.5 MPa, with indicator light and surge voltage suppressor, clean air.
This will change depending on pressure and air quality.) The value when ON for the double type.

Note 3) Values inside ( ) indicate the weight of plug lead units.

Table: Without sub-plate, With sub-plate; Add 0.65 kg for plug-in type, 0.55 kg for plug lead type.

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Air/inert gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. operating pressure</td>
<td>Standard (DC and AC) 1.0 MPa</td>
</tr>
<tr>
<td>Low wattage type (DC)</td>
<td>0.20 MPa</td>
</tr>
<tr>
<td>Min. operating pressure</td>
<td>Single 0.10 MPa</td>
</tr>
<tr>
<td>Double 0.15 MPa</td>
<td></td>
</tr>
<tr>
<td>3-position</td>
<td>Double 0.15 MPa</td>
</tr>
<tr>
<td>0.20 MPa</td>
<td></td>
</tr>
<tr>
<td>Proof pressure</td>
<td>1.5 MPa</td>
</tr>
<tr>
<td>Ambient and fluid temperature</td>
<td>–10 to 50 °C</td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not required</td>
</tr>
<tr>
<td>Manual override</td>
<td>Push type/locking type (Tool required)</td>
</tr>
<tr>
<td>Impact/Vibration resistance</td>
<td>150/30 m/s²</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Dust-tight (IP65 compatible)</td>
</tr>
</tbody>
</table>

| Coil rated voltage | 12, 24 VDC, 100, 110, 200, 220 VAC (50/60 Hz) |
| Allowable voltage fluctuation | ±10% of rated voltage |

| Coil insulation type | Class B or equivalent |

| Power consumption [W] | DC Standard 0.95 |
| Low wattage type | 0.4 |
| Apparent power [VA] | AC 100 V 1.19 |
| 110 V 1.32 |
| 200 V 1.90 |
| 220 V 2.08 |

Note 1) Use dry air to prevent condensation when operating at low temperatures.
Note 2) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)
Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)
Note 3) Available only with T, L, S and C.
How to Order Valves (Single Unit)

**Body**
- Plug-in sub-plate
- Plug-in conduit terminal
- Plug lead

**Type of actuation**
- 2-position single
- 2-position double
- 3-position closed center
- 3-position exhaust center
- 3-position pressure center
- 3-position double check

**Porting specifications**
- Nil
- Side ported
- Bottom ported

**Port size**
- Nil: Without sub-plate (For manifold)
- 04: 1/2

**Enclosure**
- Nil: Dust-protected
- W: Dust-tight/Water-jet-proof (IP65)

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

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

**Light/Surge voltage suppressor**
- Nil: Without light, with surge voltage suppressor
- E: With light, with surge voltage suppressor

**Coil voltage**
- 1: 100 VAC (50/60 Hz)
- 2: 200 VAC (50/60 Hz)
- 3: 110 VAC (50/60 Hz)
- 4: 220 VAC (50/60 Hz)
- 5: 24 VDC
- 6: 12 VDC

**Function**
- Nil (Note 1): Standard (0.95 W)
- Y (Note 2): Low wattage type (0.4 W)
- R (Note 3): External pilot

**CE-compliant**
- Nil
- Q: CE-compliant

**Electrical entry**
- G: Lead wire length 0.5 m
- H: Lead wire length 1.5 m

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

How to Order Sub-plates

**VQ5000**
- P
- 04

**Enclosure**
- Nil: Dust-protected
- W: Dust-tight/Water-jet-proof (IP65)

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

**Porting specifications**
- Nil: Side ported
- B: Bottom ported

**Port size**
- Nil: Not required for plug lead type.
- 04: 1/2

**Replacement of pilot valve assembly (Voltage)**
- Refer to pages 528 and 529 for pilot valve assembly part numbers.
- Refer to page 534 for replacement method.
Dimensions: Plug-in Type

Conduit terminal

2-position single: VQ510

2-position double: VQ520

3-position closed center: VQ530

3-position exhaust center: VQ540

3-position pressure center: VQ550

3-position double check: VQ560

Numbers inside ( ) are for metal seal 3-position type.
Dimensions: Plug Lead Type

Grommet

2-position single: VQ515

2-position double: VQ525

3-position closed center: VQ535

3-position exhaust center: VQ545

3-position pressure center: VQ555

3-position double check: VQ565

Numbers inside ( ) are for metal seal 3-position type.
Base Mounted Plug-in Unit

VQ5000 Series

How to Order Manifold

**Manifold**

<table>
<thead>
<tr>
<th>Series</th>
<th>VQ5000</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Station</th>
<th>01</th>
<th>1 station</th>
</tr>
</thead>
</table>

Minimum number of stations depends on the kit. (Refer to the table below.)

**Connector entry direction**

<table>
<thead>
<tr>
<th>Side</th>
<th>Kit</th>
<th>Cable Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>F</td>
<td>1.5 m</td>
</tr>
<tr>
<td>D</td>
<td>D1</td>
<td>1 m</td>
</tr>
<tr>
<td>D</td>
<td>D2</td>
<td>3 m</td>
</tr>
<tr>
<td>D</td>
<td>D3</td>
<td>5 m</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Side</th>
<th>Kit</th>
<th>Cable Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>U</td>
<td>U0</td>
<td>1 m</td>
</tr>
<tr>
<td>U</td>
<td>U1</td>
<td>3 m</td>
</tr>
<tr>
<td>U</td>
<td>U2</td>
<td>5 m</td>
</tr>
</tbody>
</table>

**Kit type**

<table>
<thead>
<tr>
<th>Kit</th>
<th>Option</th>
<th>Electrical entry/Cable Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>None</td>
<td>-</td>
</tr>
<tr>
<td>L</td>
<td>None</td>
<td>-</td>
</tr>
<tr>
<td>T</td>
<td>None</td>
<td>-</td>
</tr>
<tr>
<td>S</td>
<td>None</td>
<td>-</td>
</tr>
</tbody>
</table>

**Kit/Electrical entry/Cable length**

**Note**

1) When multiple symbols are specified, indicate them alphabetically. (Example: CD1K)
2) Combination of [D], [S], and [U] is not possible. Also, exhaust cleaner is not attached. Please order it separately.
3) Available only with F, L, and T1 kits.
4) Specify the wiring specifications on the manifold specification sheet. (Except L kit)

**Option**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>None</td>
</tr>
<tr>
<td>CD1</td>
<td>Exhaust cleaner for Rc 1: D side exhaust</td>
</tr>
<tr>
<td>CD2</td>
<td>Exhaust cleaner for Rc 1 1/2: D side exhaust</td>
</tr>
<tr>
<td>CU1</td>
<td>Exhaust cleaner for Rc 1: U side exhaust</td>
</tr>
<tr>
<td>CU2</td>
<td>Exhaust cleaner for Rc 1 1/2: U side exhaust</td>
</tr>
<tr>
<td>K</td>
<td>Special wiring specifications (Except double wiring)</td>
</tr>
<tr>
<td>N</td>
<td>Name plate (T kit only)</td>
</tr>
<tr>
<td>SB</td>
<td>Direct exhaust with silencer box: Exhaust from both D and U sides</td>
</tr>
<tr>
<td>SD</td>
<td>Direct exhaust with silencer box: D side exhaust</td>
</tr>
<tr>
<td>SU</td>
<td>Direct exhaust with silencer box: U side exhaust</td>
</tr>
<tr>
<td>W</td>
<td>IP65 enclosure (Except F and T1 kits)</td>
</tr>
</tbody>
</table>

**Thread type**

<table>
<thead>
<tr>
<th>Nil</th>
<th>Rc</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
</tr>
<tr>
<td>T</td>
<td></td>
</tr>
</tbody>
</table>

**Note**

- CE-compliant: For DC only.

**Type of connection**

<table>
<thead>
<tr>
<th>Port</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>External pilot supply port</td>
</tr>
<tr>
<td>P</td>
<td>A, B port</td>
</tr>
<tr>
<td>R2</td>
<td></td>
</tr>
</tbody>
</table>

**Indicator light**

**Note**

- For the T kit and S kit, one station is required to mount the terminal block box or SI Unit, so the minimum number of stations is 2 stations.

- Figure shows VV5Q51-0504FD0.
# Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Base model</th>
<th>Type of connection</th>
<th>Porting specifications</th>
<th>Maximum applicable stations</th>
<th>Applicable valve</th>
<th>Weight [kg] (Formula)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ5000</td>
<td>VV5Q51-□□□</td>
<td>F kit–D-sub connector</td>
<td>Side: 3/4</td>
<td>3/8 1/2</td>
<td>F, L, T1 kits 12 stations T kit 12 stations S kit 12 stations</td>
<td>VQ5000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>T kit–Terminal block box</td>
<td>Bottom: 1/2</td>
<td>1/2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>T1 kit–Individual terminal block kit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>L kit–Lead wire</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>S kit–Serial transmission</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Flow Rate Characteristics at the Number of Manifold Stations (Operated individually)

### Model: VQ5000 Series

- **SV**: Station 1
- **SYJ**: Station 5
- **SZ**: Station 10
- **VF**: Station 1
- **VP4**: Station 5
- **VQ**: Station 10
- **VQ4**: Station 1
- **VQC**: Station 5
- **VQZ**: Station 10
- **SQ**: Station 1
- **VFS**: Station 5
- **VFR**: Station 10
- **VQ7**: Station 1

### Flow Rate Characteristics

<table>
<thead>
<tr>
<th>Model</th>
<th>Passage/Stations</th>
<th>Station 1</th>
<th>Station 5</th>
<th>Station 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-position metal seal VQ5000</td>
<td>4/2 → 5/3 (A/B → EA/EB)</td>
<td>C [dm³/(s·bar)]</td>
<td>b</td>
<td>0.24</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cv</td>
<td>2.7</td>
<td>2.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C [dm³/(s·bar)]</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b</td>
<td>0.14</td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cv</td>
<td>2.9</td>
<td>2.9</td>
</tr>
</tbody>
</table>

### 2-position rubber seal VQ5000

<table>
<thead>
<tr>
<th>Model</th>
<th>Passage/Stations</th>
<th>Station 1</th>
<th>Station 5</th>
<th>Station 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/2 → 5/3 (A/B → EA/EB)</td>
<td>C [dm³/(s·bar)]</td>
<td>b</td>
<td>0.33</td>
<td>0.33</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cv</td>
<td>3.4</td>
<td>3.4</td>
</tr>
</tbody>
</table>

Note: For port size 1/2

### Manifold Options

- **Blanking plate assembly VVQ5000-10A-1**
- **Individual SUP spacer VVQ5000-P-1-□□□**
- **Individual EXH spacer VVQ5000-R-1-□□□**
- **EXH block plate VVQ5000-16A-2 (1 pc./set)** (Order qty: 2 pcs.)
- **Restrictor spacer VVQ5000-20A-1**
- **SUP stop valve spacer VVQ5000-37A-1**
- **SUP block plate VVQ5000-16A-1**
- **Double check spacer with residual pressure exhaust VVQ5000-25A-1**
- **Release valve spacer: For D side mounting VVQ5000-24A-1D**
- **Direct exhaust with silencer box [S□□]**
- **Manifold mounted exhaust cleaner [C□□]**
- **Interface regulator (P, A, B port regulation) ARBQ5000-00-□-□**

---

*Refer to pages 522 to 526 for detailed dimensions of each option.

*For replacement parts, refer to page 531.*
VQ5000 Series

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

- Simplification and labor savings for wiring work can be achieved by using a D-sub connector for the electrical connection.
- Using connector for flat ribbon cable (25P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
- Connector entry can be selected on either the U side or the D side according to the mounting orientation.
- Maximum stations are 12.

**D-Sub Connector Kit (25 pins)**

AXT100-DS25-015 030 050

(D-sub connector cable assemblies can be ordered with manifolds. Refer to How to Order Manifold.)

**D-sub Connector Cable Assembly**

- Multi-core vinyl cable: 0.3 mm² x 25 cores
- Approx. ø10
- 2 x M2.6 x 0.45
- Connector side: Terminal no.
- Approx. ø10
- 47.04
- 15
- 14············ 25
- 1················ 13

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4(A), 2(B) port location</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1(P), 5(R1), 3(R2)</td>
<td>3/4</td>
</tr>
<tr>
<td>VQ5000</td>
<td>Side</td>
<td>1/2</td>
</tr>
<tr>
<td></td>
<td>Bottom</td>
<td>1/2</td>
</tr>
<tr>
<td></td>
<td>Max. 12 stations</td>
<td></td>
</tr>
</tbody>
</table>

**Electric Characteristics**

- Conductor resistance: 65 or less
- Voltage limit: 1000 VAC, 1 min.
- Insulation resistance: 5 or more
- Note: The minimum bending radius for D-sub connector cables is 20 mm.

**Connector Manufacturers Example**

- Fujitsu, Limited
- Japan Aviation Electronics Industry, Limited
- J.S.T. Mfg. Co., Ltd.
- HIROSE ELECTRIC CO., LTD.

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

**How to Order Manifold**

**Series**

- VV5Q 5 1 - 08 03 01 03 1 -

**Manifold**

- Plug-in unit

**Stations**

- 01 1 station
- 12 12 stations

**Cylinder port**

- 03 3/8
- 04 1/2
- B Bottom ported 1/2
- CM Mixed

**Thread type**

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

**Connector entry direction**

- D D side entry
- U U side entry

**Cable (Length)**

- 0 Without cable
- 1 Cable length 1.5 m
- 2 Cable length 3 m
- 3 Cable length 5 m

**D-sub Connector Cable Assembly Terminal No.**

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Lead wire color</th>
<th>Dot marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Black</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>Brown</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>Red</td>
<td>None</td>
</tr>
<tr>
<td>4</td>
<td>Orange</td>
<td>None</td>
</tr>
<tr>
<td>5</td>
<td>Yellow</td>
<td>None</td>
</tr>
<tr>
<td>6</td>
<td>Pink</td>
<td>None</td>
</tr>
<tr>
<td>7</td>
<td>Blue</td>
<td>None</td>
</tr>
<tr>
<td>8</td>
<td>Purple</td>
<td>White</td>
</tr>
<tr>
<td>9</td>
<td>Gray</td>
<td>Black</td>
</tr>
<tr>
<td>10</td>
<td>White</td>
<td>Black</td>
</tr>
<tr>
<td>11</td>
<td>White</td>
<td>Red</td>
</tr>
<tr>
<td>12</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>13</td>
<td>Orange</td>
<td>Red</td>
</tr>
<tr>
<td>14</td>
<td>Yellow</td>
<td>Black</td>
</tr>
<tr>
<td>15</td>
<td>Pink</td>
<td>Black</td>
</tr>
<tr>
<td>16</td>
<td>Blue</td>
<td>White</td>
</tr>
<tr>
<td>17</td>
<td>Purple</td>
<td>None</td>
</tr>
<tr>
<td>18</td>
<td>Gray</td>
<td>None</td>
</tr>
<tr>
<td>19</td>
<td>Orange</td>
<td>Black</td>
</tr>
<tr>
<td>20</td>
<td>Red</td>
<td>None</td>
</tr>
<tr>
<td>21</td>
<td>Brown</td>
<td>White</td>
</tr>
<tr>
<td>22</td>
<td>Pink</td>
<td>Red</td>
</tr>
<tr>
<td>23</td>
<td>Gray</td>
<td>Red</td>
</tr>
<tr>
<td>24</td>
<td>Black</td>
<td>White</td>
</tr>
<tr>
<td>25</td>
<td>White</td>
<td>None</td>
</tr>
</tbody>
</table>

**Option**

- CE-compliant
  - Nil
  - Q CE-compliant

**Option**

- Symbol
  - Nil
  - CD1 Exhaust cleaner for Rc 1: D side exhaust
  - CD2 Exhaust cleaner for Rc 1 1/2: D side exhaust
  - CU1 Exhaust cleaner for Rc 1: U side exhaust
  - CU2 Exhaust cleaner for Rc 1 1/2: U side exhaust
  - K Special wiring specifications (except double wiring)
  - SB Direct exhaust with silencer box: For mounting on both D and U sides
  - SD Direct exhaust with silencer box: D side exhaust
  - SU Direct exhaust with silencer box: U side exhaust

**Note 1:** When multiple symbols are specified, indicate them alphabetically. Example) -CD1K.
**Note 2:** Combination of [C(G)] and [S(T)] is not possible.
**Note 3:** Specify the wiring specifications on the manifold specification sheet.
## How to Order Manifold Assembly

1. **How to Order**

   - Double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station regardless of valve and option types.
   - Mixed single and double wiring is available as a semi-standard specification.

   - Stations are counted starting from the first station on the D side.

2. **Wiring specifications**

   - Connections begin with the A side solenoid of the first station being connected to terminal no. 1, and continue in the order indicated by the arrows in the drawing without skipping any terminals. However, the maximum number of stations is 12.

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

### Special Wiring Specifications

- Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station regardless of valve and option types.
- Mixed single and double wiring is available as a semi-standard specification. For details, refer to the manifold specification sheet.

### How to Order Manifold Assembly

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

#### How to Order Valves

<table>
<thead>
<tr>
<th>VQ</th>
<th>5</th>
<th>1</th>
<th>0</th>
<th>0</th>
<th>0</th>
<th>5</th>
<th>1</th>
<th>[Option]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of actuation</td>
<td>1</td>
<td>2-position single</td>
<td>2</td>
<td>2-position double</td>
<td>3</td>
<td>3-position closed center</td>
<td>4</td>
<td>3-position exhaust center</td>
</tr>
<tr>
<td>Seal</td>
<td>0</td>
<td>Metal seal</td>
<td>1</td>
<td>Rubber seal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Series</td>
<td>S</td>
<td>VQ5000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Function</td>
<td>Nil Note 1)</td>
<td>Standard (0.95 W)</td>
<td>Y Note 2)</td>
<td>Low wattage type (0.4 W)</td>
<td>R Note 3)</td>
<td>External pilot</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nil</td>
<td>CE-compliant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note 1)</td>
<td>When the unit is energized continuously, refer to &quot;Specific Product Precautions 1&quot; on page 533.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note 2)</td>
<td>In addition, only DC is available with Y.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note 3)</td>
<td>For details about external pilot specifications, refer to page 527.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note 4)</td>
<td>When multiple symbols are specified, indicate them alphabetically.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### How to Order D-sub connector assembly

Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.

<table>
<thead>
<tr>
<th>COM</th>
<th>13</th>
<th>(-)</th>
<th>(-)</th>
<th>(+)</th>
<th>(+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ</td>
<td>5000</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Function</td>
<td>Nil</td>
<td>CE-compliant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nil</td>
<td>CE-compliant</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note 1)</td>
<td>Standard (0.95 W)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note 2)</td>
<td>Low wattage type (0.4 W)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note 3)</td>
<td>External pilot</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note 4)</td>
<td>When multiple symbols are specified, indicate them alphabetically.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Wiring specification table

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Polarity</th>
<th>Lead wire color</th>
<th>Dot marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 S O L A</td>
<td>(-)</td>
<td>Black</td>
<td>None</td>
</tr>
<tr>
<td>1 S O L B</td>
<td>(-)</td>
<td>Yellow</td>
<td>Black</td>
</tr>
<tr>
<td>2 S O L A</td>
<td>(-)</td>
<td>Brown</td>
<td>None</td>
</tr>
<tr>
<td>2 S O L B</td>
<td>(-)</td>
<td>Pink</td>
<td>Black</td>
</tr>
<tr>
<td>3 S O L A</td>
<td>(-)</td>
<td>Red</td>
<td>None</td>
</tr>
<tr>
<td>3 S O L B</td>
<td>(-)</td>
<td>Blue</td>
<td>White</td>
</tr>
<tr>
<td>4 S O L A</td>
<td>(-)</td>
<td>Orange</td>
<td>None</td>
</tr>
<tr>
<td>4 S O L B</td>
<td>(-)</td>
<td>Purple</td>
<td>None</td>
</tr>
<tr>
<td>5 S O L A</td>
<td>(-)</td>
<td>Yellow</td>
<td>None</td>
</tr>
<tr>
<td>5 S O L B</td>
<td>(-)</td>
<td>Blue</td>
<td>None</td>
</tr>
<tr>
<td>6 S O L A</td>
<td>(-)</td>
<td>Gray</td>
<td>None</td>
</tr>
<tr>
<td>6 S O L B</td>
<td>(-)</td>
<td>Black</td>
<td>None</td>
</tr>
<tr>
<td>7 S O L A</td>
<td>(-)</td>
<td>Red</td>
<td>White</td>
</tr>
<tr>
<td>7 S O L B</td>
<td>(-)</td>
<td>White</td>
<td>Black</td>
</tr>
<tr>
<td>8 S O L A</td>
<td>(-)</td>
<td>Blue</td>
<td>None</td>
</tr>
<tr>
<td>8 S O L B</td>
<td>(-)</td>
<td>Orange</td>
<td>Black</td>
</tr>
<tr>
<td>9 S O L A</td>
<td>(-)</td>
<td>Purple</td>
<td>None</td>
</tr>
<tr>
<td>9 S O L B</td>
<td>(-)</td>
<td>Gray</td>
<td>White</td>
</tr>
<tr>
<td>10 S O L A</td>
<td>(-)</td>
<td>Yellow</td>
<td>Purple</td>
</tr>
<tr>
<td>10 S O L B</td>
<td>(-)</td>
<td>Black</td>
<td>Blue</td>
</tr>
<tr>
<td>11 S O L A</td>
<td>(-)</td>
<td>Red</td>
<td>White</td>
</tr>
<tr>
<td>11 S O L B</td>
<td>(-)</td>
<td>White</td>
<td>Black</td>
</tr>
<tr>
<td>12 S O L A</td>
<td>(-)</td>
<td>Brown</td>
<td>White</td>
</tr>
<tr>
<td>12 S O L B</td>
<td>(-)</td>
<td>Black</td>
<td>White</td>
</tr>
<tr>
<td>13 V O M E N T</td>
<td>(+)</td>
<td>None</td>
<td>Orange</td>
</tr>
<tr>
<td>Note 1)</td>
<td>When the unit is energized continuously, refer to &quot;Specific Product Precautions 1&quot; on page 533.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note 2)</td>
<td>In addition, only DC is available with Y.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note 3)</td>
<td>For details about external pilot specifications, refer to page 527.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note 4)</td>
<td>When multiple symbols are specified, indicate them alphabetically.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Double wiring details

- Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station regardless of valve and option types.
- Mixed single and double wiring is available as a semi-standard specification. For details, refer to the manifold specification sheet.

### Wiring specifications

- Connections begin with the A side solenoid of the first station being connected to terminal no. 1, and continue in the order indicated by the arrows in the drawing without skipping any terminals. However, the maximum number of stations is 12.

### How to Order D-sub connector assembly

Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.

### Electrical wiring specifications

- Standard wiring
- D-sub connector assembly (AXT1100-DS25-**W**D0**W**)
- Wire colors

### Diagram

- D-sub connector
- Special wiring specifications
- Wiring specifications
- How to Order Manifold Assembly
VQ5000 Series

F

Kit (D-sub connector kit)

Applicable connector: D-sub connector (25P)
(Conforming to MIL-C-24308)

83

29.5

29.5

36

2 x 1/8" PE. port

6 x 3/4" 1(P), 5(R1), 3(R2) port

For U side mounting (FU)

Indicator light

Manual override

With connector on D side (FD)

179 (Single, Double, 3-position, Rubber seal type)

184.5 (3-position, Metal seal type)

Kit (D-sub connector kit)
Bottom ported drawing

Dimensions  
Formula: \( L_1 = 41n + 76 \), \( L_2 = 41n + 96 \)  
\( n \): Stations (Maximum 12 stations)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>( L_1 )</td>
<td>117</td>
<td>158</td>
<td>199</td>
<td>240</td>
<td>281</td>
<td>322</td>
<td>363</td>
<td>404</td>
<td>445</td>
<td>486</td>
<td>527</td>
<td>568</td>
</tr>
<tr>
<td>( L_2 )</td>
<td>137</td>
<td>178</td>
<td>219</td>
<td>260</td>
<td>301</td>
<td>342</td>
<td>383</td>
<td>424</td>
<td>465</td>
<td>506</td>
<td>547</td>
<td>588</td>
</tr>
</tbody>
</table>
VQ5000 Series

Kit (Terminal block box kit)

- Enclosure IP65 compliant
- This type has a small terminal block inside a junction box. The provision of a G3/4 electrical entry allows connection of conduit fittings.
- Maximum stations are 11 (12 stations as a semi-standard specification).
- 1 station is used for terminal block box mounting.

Terminal Block Connections

Step 1. How to remove terminal block cover
Loosen the 4 mounting screws (M4) and open the terminal block cover.

Step 2. How to attach the terminal block cover
Securely tighten the screws with the torque shown in the table below, after confirming that the gasket is installed correctly.

Proper tightening torque [N·m] 0.7 to 1.2

Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ5000</td>
<td>Side 3/4 3/8 1/2 Max. 12 stations</td>
<td></td>
</tr>
</tbody>
</table>

Step 2. The diagram on the right shows the terminal block wiring. All stations are provided with double wiring regardless of the valves which are mounted. Connect each wire to the power supply side, according to the markings provided inside the terminal block.

How to Order Manifold

- Applicable terminal: 1.25-3S, 1.25Y-3, 1.25Y-3N, 1.25Y-3.5
- Name plate: VQ5000-N-T
- Dripproof plug assembly (for G3/4): AXT100-B06A

VQ5000 Series

02 2 stations
12 12 stations
03 3/8
04 1/2
B Bottom ported 1/2
CM Mixed

Box mounting position
- D D side mounting
- U U side mounting

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

CE-compliant

Option

Symbol Option
N Nil
I CE-compliant

Option

Symbol Option
CD1 Note 2 Exhaust cleaner for Rc 1: D side exhaust
CD2 Note 3 Exhaust cleaner for Rc 1 1/2: D side exhaust
CU1 Note 2 Exhaust cleaner for Rc 1: U side exhaust
CU2 Note 3 Exhaust cleaner for Rc 1 1/2: U side exhaust
K Note 3 Special wiring specifications (Except double wiring, 12 stations)
N Name plate
S[ ] Direct exhaust with silencer box: D side exhaust
S[ ] Direct exhaust with silencer box: U side exhaust
W IP65 enclosure

Note 1) When multiple symbols are specified, indicate them alphabetically. Example) -CD1K
Note 2) Combination of [CD] and [SU] is not possible.
Note 3) Specify the wiring specifications on the manifold specification sheet.
Stations are counted starting from the first station on the D side.

Electric wiring specifications (IP65 available)

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Polarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOL_A - 1A</td>
<td>(-)</td>
</tr>
<tr>
<td>SOL_A - 1B</td>
<td>(-)</td>
</tr>
<tr>
<td>SOL_A - 2A</td>
<td>(-)</td>
</tr>
<tr>
<td>SOL_A - 2B</td>
<td>(-)</td>
</tr>
<tr>
<td>SOL_A - 3A</td>
<td>(-)</td>
</tr>
<tr>
<td>SOL_A - 3B</td>
<td>(-)</td>
</tr>
<tr>
<td>SOL_A - 4A</td>
<td>(-)</td>
</tr>
<tr>
<td>SOL_A - 4B</td>
<td>(-)</td>
</tr>
<tr>
<td>SOL_A - 5A</td>
<td>(-)</td>
</tr>
<tr>
<td>SOL_A - 5B</td>
<td>(-)</td>
</tr>
<tr>
<td>SOL_A - 6A</td>
<td>(-)</td>
</tr>
<tr>
<td>SOL_A - 6B</td>
<td>(-)</td>
</tr>
<tr>
<td>SOL_A - 7A</td>
<td>(-)</td>
</tr>
<tr>
<td>SOL_A - 7B</td>
<td>(-)</td>
</tr>
<tr>
<td>SOL_A - 8A</td>
<td>(-)</td>
</tr>
<tr>
<td>SOL_A - 8B</td>
<td>(-)</td>
</tr>
<tr>
<td>SOL_A - 9A</td>
<td>(-)</td>
</tr>
<tr>
<td>SOL_A - 9B</td>
<td>(-)</td>
</tr>
<tr>
<td>SOL_A - 10A</td>
<td>(-)</td>
</tr>
<tr>
<td>SOL_A - 10B</td>
<td>(-)</td>
</tr>
<tr>
<td>SOL_A_COM</td>
<td>(+)</td>
</tr>
</tbody>
</table>

Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring is available as a semi-standard specification.

How to Order Valves

VQ 5 1 0 0 [Option]

Type of actuation:
1. 2-position single
2. 2-position double
3. 3-position closed center
4. 3-position exhaust center
5. 3-position pressure center
6. 3-position double check

Seal:
0. Metal seal
1. Rubber seal

Function:
Nil (Note 1) Standard (0.95 W)
Y (Note 2) Low wattage type (0.4 W)
R (Note 3) External pilot

Notes:
1) When the unit is energized continuously, refer to "Specific Product Precautions" on page 533.
2) In addition, only DC is available with Y.
3) For details about external pilot specifications, refer to page 527.
4) When multiple symbols are specified, indicate them alphabetically.

Special Wiring Specifications

Double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station regardless of valve and option types. The optional specification permits mixture of single and double wiring. However, the maximum number of stations is 12.

1. How to Order
   Indicate option symbol (“–K”) in the manifold part number and be sure to specify station positions for single or double wiring on the manifold specification sheet.

2. Wiring specifications
   Connections begin with the A side solenoid of the first station being connected to terminal no. 1, and continue in the order indicated by the arrows in the drawing without skipping any terminals.

How to Order Manifold Assembly

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

Example:
Terminal block box kit
VQS01-0603TU(-Q) — 1 set — Manifold base part no.
VQS100-51(-Q) — 2 sets — Valve part no. (Stations 1 and 2)
VQS200-51(-Q) — 2 sets — Valve part no. (Stations 3 and 4)
VQS500-51(-Q) — 1 set — Valve part no. (Station 5)

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

Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.
VQ5000 Series

Kit (Terminal block box kit)

107.8

29.5

29.5

47.5

6 x 3/4"
1(P), 5(R1), 3(R2) port

2 x 1/8"
PE. port

6 x 3/4"

2 x G3/4 Conduit port

3/8", 1/2" 4(A), 2(B) port

3/8" Note)

Indicator light

Manual override

D side

U side

179 (Single, Double, 3-position, Rubber seal type)

184.5 (3-position, Metal seal type)

2 x 1/8" External pilot port

Note) 4(A) and 2(B) port at the bottom of the terminal block box are 3/8".
Base Mounted Plug-in Unit  VQ5000 Series

Bottom ported drawing

2 x G3/4 Conduit port

55.5 M5 x 0.8 Ground screw

1/8" External pilot port

3/8" Note)

Formula: L1 = 41n + 76, L2 = 41n + 96
n: Stations (Maximum 12 stations)
+ Including 1 station for mounting terminal box.

Note) 4(A) and 2(B) port at the bottom of the terminal block box are 3/8".

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>158</td>
<td>199</td>
<td>240</td>
<td>281</td>
<td>322</td>
<td>363</td>
<td>404</td>
<td>445</td>
<td>486</td>
<td>527</td>
<td>568</td>
</tr>
<tr>
<td>L2</td>
<td>178</td>
<td>219</td>
<td>260</td>
<td>301</td>
<td>342</td>
<td>383</td>
<td>424</td>
<td>465</td>
<td>506</td>
<td>547</td>
<td>588</td>
</tr>
</tbody>
</table>
**VQ5000 Series**

**T1 Kit (Individual terminal block kit)**

- When the junction cover on the manifold is opened, terminal box is installed in the manifold block. Lead wire from a solenoid is connected with the terminals on the terminal box in the bottom side. (The terminal box is connected with lead wire for both SOL. A and SOL. B and they correspond with the marking 1, 2, 3, 4 on the terminal box. Refer to how to connect with the terminal box.)
- Maximum stations are 12.

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ5000</td>
<td>Side 3/4</td>
<td>3/8, 1/2</td>
</tr>
</tbody>
</table>

**Terminal Block Connections**

<table>
<thead>
<tr>
<th>Model</th>
<th>Terminal block marking</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ510</td>
<td>A side +</td>
<td>A side –</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQ520</td>
<td>A side +</td>
<td>A side –</td>
<td>B side +</td>
<td>B side –</td>
<td></td>
</tr>
<tr>
<td>VQ540</td>
<td>A side +</td>
<td>A side –</td>
<td>B side +</td>
<td>B side –</td>
<td></td>
</tr>
</tbody>
</table>

- Compatible crimp terminals: 1.25-3S, 1.25Y-3, 1.25Y-3N, 1.25Y-3.5
- There is no polarity (+, –).

**How to Order Manifold**

1. **Series**
   - VV5Q 5 1
2. **Manifold**
   - Plug-in unit
3. **Stations**
   - 1 station
   - 12 stations
4. **Thread type**
   - Nil
   - Rc
   - F
   - G
   - N
   - NPT
   - T
   - NPTF
5. **Cylinder port**
   - 3/8
   - 1/2
   - Bottom ported 1/2
6. **Option**
   - CE-compliant
   - Nil
   - Q

**Note**

- Combination of [C] & [S] is not possible.

---

**VQ5000 Series**

**B**

---

© 506 SMC
How to Order Valves

**VQ 5 0 0** - **5 1** -

**Series**
- 5: VQ5000 Series

**Type of actuation**
- 1: 2-position single
- 2: 2-position double
- 3: 3-position closed center
- 4: 3-position exhaust center
- 5: 3-position pressure center
- 6: 3-position double check

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

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

**CE-compliant**
- Nil
- Q: CE-compliant

**Light/Surge voltage suppressor**
- Nil
- E: Without light, with surge voltage suppressor

**Coil voltage**
- 1: 100 VAC (50/60 Hz)
- 2: 200 VAC (50/60 Hz)
- 3: 110 VAC (50/60 Hz)
- 4: 220 VAC (50/60 Hz)
- 5: 24 VDC
- 6: 12 VDC

**Function**
- Nil
- Y: Low wattage type (0.4 W)
- R: External pilot

Note 1) When the unit is energized continuously, refer to “Specific Product Precautions 1” on page 533.
Note 2) In addition, only DC is available with Y.
Note 3) For details about external pilot specifications, refer to page 527.
Note 4) When multiple symbols are specified, indicate them alphabetically.

---

How to Order Manifold Assembly

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

**Example**
Individual terminal block kit
VVSQ51-0503T(1-Q)—1 set—Manifold base part no.
+ VVS100-51(-Q)—2 sets—Valve part no. (Stations 1 and 2)
+ VVS200-51(-Q)—2 sets—Valve part no. (Stations 3 and 4)
+ VVS300-51(-Q)—1 set—Valve part no. (Station 5)

Prefix the asterisk to the part nos. of the valve etc.
Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.
### Bottom ported drawing

![Diagram showing the layout of stations and dimensions](image)

**Dimensions**

Formula: \( L_1 = 41n + 76, \ L_2 = 41n + 96 \)

<table>
<thead>
<tr>
<th>Station</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>( L_1 )</td>
<td>117</td>
<td>158</td>
<td>199</td>
<td>240</td>
<td>281</td>
<td>322</td>
<td>363</td>
<td>404</td>
<td>445</td>
<td>486</td>
<td>527</td>
<td>568</td>
</tr>
<tr>
<td>( L_2 )</td>
<td>137</td>
<td>178</td>
<td>219</td>
<td>260</td>
<td>301</td>
<td>342</td>
<td>383</td>
<td>424</td>
<td>465</td>
<td>506</td>
<td>547</td>
<td>588</td>
</tr>
</tbody>
</table>
**Wiring Specifications**

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

For different lead wire lengths, order a lead wire assembly with connector shown in the table on the right.

**How to Order Manifold**

**Lead Wire Assembly with Connector**

<table>
<thead>
<tr>
<th>Lead wire length</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.6 m</td>
<td>VV5000-44A-8-0</td>
</tr>
<tr>
<td>1.5 m</td>
<td>VV5000-44A-15-0</td>
</tr>
<tr>
<td>3 m</td>
<td>VV5000-44A-30-0</td>
</tr>
</tbody>
</table>

Note 1) Combination of [C] and [S] is not possible.
Note 2) When multiple symbols are specified, indicate them alphabetically.
Example) -CD1W.
The drawing shows the electrical entry on the D side. Cable length is measured from the valve body.

### How to Order Valves

**VQ 5** | 1 | 0 | 0 | - | 5 | 1 | -
--- | --- | --- | --- | --- | --- | --- | ---
**Series** | VQ5000

**Type of actuation**
- 1: 2-position single
- 2: 2-position double
- 3: 3-position closed center
- 4: 3-position exhaust center
- 5: 3-position pressure center
- 6: 3-position double check

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

**Function**
- **Nil**
- **Y**: Low wattage type (0.4 W)
- **R**: External pilot

**Coil voltage**
- 1: 100 VAC (50/60 Hz)
- 2: 200 VAC (50/60 Hz)
- 3: 110 VAC (50/60 Hz)
- 4: 220 VAC (50/60 Hz)
- 5: 24 VDC
- 6: 12 VDC

**CE-compliant**
- **Nil**
- **Q**: CE-compliant

**Enclosure**
- **Nil**
- **W**: Dust-tight/Water-jet-proof (IP65)

**Manual override**
- **Nil**
- **B**: Locking type (Tool required)
- **C**: Locking type (Manual)

**Light/Surge voltage suppressor**
- **Nil**
- **E**: Without light, with surge voltage suppressor

**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)
- VQ5100-51-(-Q)·······1 set—Manifold base part no.
- VQ5200-51-(-Q)·······2 sets—Valve part no. (Stations 1 and 2)
- VQ5300-51-(-Q)·······1 set—Valve part no. (Station 5)

Prefix the asterisk to the part nos. of the valve etc.
Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.

**Note 1** When the unit is energized continuously, refer to “Specific Product Precautions 1” on page 533.

**Note 2** In addition, only DC is available with Y.

**Note 3** For details about external pilot specifications, refer to page 527.

**Note 4** When multiple symbols are specified, indicate them alphabetically.
Bottom ported drawing

Lead wire length
L = 0: 600 mm
L = 1: 1500 mm
L = 2: 3000 mm

Dimensions

<table>
<thead>
<tr>
<th>n</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
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<tbody>
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<td>L1</td>
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<td>527</td>
<td>568</td>
</tr>
<tr>
<td>L2</td>
<td>137</td>
<td>178</td>
<td>219</td>
<td>260</td>
<td>301</td>
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<td>383</td>
<td>424</td>
<td>465</td>
<td>506</td>
<td>547</td>
<td>588</td>
</tr>
</tbody>
</table>

Formula: \( L_1 = 41n + 76 \), \( L_2 = 41n + 96 \)  

n: Stations (Maximum 12 stations)

Base Mounted Plug-in Unit VQ5000 Series

SMC
Kit (Serial transmission unit): EX123/124 (For Output) Serial Transmission System

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

* Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring is available as a semi-standard specification.

### Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ5000</td>
<td>4(A), 2(B) port location: 1(P), 5(R1), 3(R2), 4(A), 2(B)</td>
<td>Max. 12 stations</td>
</tr>
<tr>
<td>Side</td>
<td>3/4</td>
<td></td>
</tr>
<tr>
<td>Bottom</td>
<td>3/8, 1/2</td>
<td></td>
</tr>
</tbody>
</table>

### How to Order Manifold

**VV5Q 5 1**

- **Series**
  - VQ5000
- **Manifold**
  - Plug-in unit
- **Stations**
  - 02: 2 stations
  - 12: 12 stations

**Note:** One station is used for mounting SI Unit. The number of stations is the number of manifold valves plus one station for SI Unit. For 10 stations or more, specify the wiring specifications by means of the manifold specification sheet.

- **Cylinder port**
  - 03: 3/8
  - 04: 1/2
  - B: Bottom ported 1/2
  - CM: Mixed

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

**Note 1:** When multiple symbols are specified, indicate them alphabetically. Example: CD1K

**Note 2:** Combination of [C] and [S] is not possible.

**Note 3:** Specify the wiring specifications on the manifold specification sheet.

### SI Unit Part No.

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Protocol type</th>
<th>SI Unit part no.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>NKE Corp.: Fieldbus H System (16 output points)</td>
<td>D side: EX123D-SUH1 U side: EX123U-SUH1</td>
<td>531</td>
</tr>
<tr>
<td>Q</td>
<td>DeviceNet™ (16 output points)</td>
<td>D side: EX124D-SDN1 U side: EX124U-SDN1</td>
<td>531</td>
</tr>
<tr>
<td>R1</td>
<td>OMRON Corp.: CompoBus/S System (16 output points)</td>
<td>D side: EX124D-SCS1 U side: EX124U-SCS1</td>
<td>531</td>
</tr>
<tr>
<td>R2</td>
<td>OMRON Corp.: CompoBus/S System (8 output points)</td>
<td>D side: EX124D-SCS2 U side: EX124U-SCS2</td>
<td>531</td>
</tr>
<tr>
<td>V</td>
<td>CC-Link (16 output points)</td>
<td>D side: EX124D-SMJ1 U side: EX124U-SMJ1</td>
<td>531</td>
</tr>
</tbody>
</table>


---

**S**

VQ5000 Series

IP65 compliant
### How to Order Valves

<table>
<thead>
<tr>
<th>VQ</th>
<th>Series</th>
<th>Function</th>
<th>Type of actuation</th>
<th>Seal</th>
<th>Light/Surge voltage suppressor</th>
<th>Manual override</th>
<th>CE-compliant</th>
<th>Enclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>1 0 0</td>
<td>5 VQ5000</td>
<td>1 2-position single</td>
<td>0</td>
<td>Metal seal</td>
<td>Non-locking push type (Tool required)</td>
<td>Nil —</td>
<td>Dust-protected</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2 2-position double</td>
<td>0</td>
<td>Rubber seal</td>
<td>Locking type (Tool required)</td>
<td>Nil —</td>
<td>Dust-tight/ Water-jet-proof (IP65)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3 3-position closed center</td>
<td>0</td>
<td></td>
<td>Locking type (Manual)</td>
<td>Nil —</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4 3-position exhaust center</td>
<td>1</td>
<td></td>
<td></td>
<td>Nil —</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5 3-position pressure center</td>
<td>1</td>
<td></td>
<td></td>
<td>Nil —</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6 3-position double check</td>
<td>1</td>
<td></td>
<td></td>
<td>Nil —</td>
<td></td>
</tr>
</tbody>
</table>

#### Notes:
1. When the unit is energized continuously, refer to “Specific Product Precautions 1” on page 533.
2. In addition, only DC is available with Y.
3. For details about external pilot specifications, refer to page 527.
4. When multiple symbols are specified, indicate them alphabetically.

#### Example:

- VQ5001-0603SUQ(-Q) – 1 set – Manifold base part no.
- VQ5000-51(-Q) – 2 sets – Valve part no. (Stations 1 and 2)
- VQ5000-51(-Q) – 2 sets – Valve part no. (Stations 3 and 4)
- VQ5000-51(-Q) – 1 set – Valve part no. (Station 5)

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

Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.

### CE-compliant

- Nil
- Q

### Types of Actuation

- 1: 2-position single
- 2: 2-position double
- 3: 3-position closed center
- 4: 3-position exhaust center
- 5: 3-position pressure center
- 6: 3-position double check

### Seals

- 0: Metal seal
- 1: Rubber seal

### Coil Voltage

- 5: 24 VDC

### Manual Override

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

### Light/Surge Voltage Suppressor

- Nil: Without light with surge voltage suppressor
- E: Without light with surge voltage suppressor

### Enclosure

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

### How to Order Manifold Assembly

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

<Example>

- VQ5001-0603SUQ(-Q) – 1 set – Manifold base part no.
- VQ5000-51(-Q) – 2 sets – Valve part no. (Stations 1 and 2)
- VQ5000-51(-Q) – 2 sets – Valve part no. (Stations 3 and 4)
- VQ5000-51(-Q) – 1 set – Valve part no. (Station 5)

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

Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.
Kit (Serial transmission unit): EX123/124 Integrated-type (For Output) Serial Transmission System

Note 1) When the SI Unit is EX124D(U), conduit port (G1/2) will be 4 locations. In the case of EX123D(U), conduit port will be 2 locations.

Note 2) In the case of EX124D(U)-SMJ1, this dimension becomes 149.

Note 3) 4(A) and 2(B) port at the bottom of the SI Unit are 3/8".
**Dimensions**

Formula: \( L_1 = 41n + 76 \), \( L_2 = 41n + 96 \)

- \( n \): Stations (Maximum 12 stations)
- Including 1 station for mounting SI Unit.

<table>
<thead>
<tr>
<th>Station</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>( L_1 )</td>
<td>158</td>
<td>199</td>
<td>240</td>
<td>281</td>
<td>322</td>
<td>363</td>
<td>404</td>
<td>445</td>
<td>486</td>
<td>527</td>
<td>568</td>
<td></td>
</tr>
<tr>
<td>( L_2 )</td>
<td>178</td>
<td>219</td>
<td>260</td>
<td>301</td>
<td>342</td>
<td>383</td>
<td>424</td>
<td>465</td>
<td>506</td>
<td>547</td>
<td>588</td>
<td></td>
</tr>
</tbody>
</table>

Note: 4(A) and 2(B) port at the bottom of the SI Unit are 3/8".
Base Mounted
Plug Lead Unit: C Kit (Connector Kit)
VQ5000 Series

How to Order Manifold

**VQ5Q** 5 5 - 08 03 C

- **Series**
  - 5: VQ5000

- **Manifold**
  - 5: Plug lead unit

- **Stations**
  - 01: 1 station
  - 02: 2 stations
  - 12: 12 stations

- **Cylinder port**
  - 03: 3/8
  - 04: 1/2
  - B: Bottom ported 1/2
  - CM: Mixed

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

- **Kit type**
  - C: Connector kit

- **Option**
  - Nil: CE-compliant
  - Q: CE-compliant

- **Symbol**
  - Note 1: Exhaust cleaner for Rc 1: D side exhaust
  - CD1: Exhaust cleaner for Rc 1 1/2: D side exhaust
  - CD2: Exhaust cleaner for Rc 1: U side exhaust
  - CU1: Exhaust cleaner for Rc 1 1/2: U side exhaust
  - SB: Direct exhaust with silencer box: Exhaust from both U and D sides
  - SD: Direct exhaust with silencer box: D side exhaust
  - SU: Direct exhaust with silencer box: U side exhaust
  - W: IP65 enclosure

- **Function**
  - Nil: Standard (0.95 W)
  - Y: Low wattage type (0.4 W)
  - R: External pilot

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

- **Enclosure**
  - Nil: Dust-protected
  - W: Dust-light / Water-jet-proof (IP65)

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

- **Light/Surge voltage suppressor**
  - Nil: Without light, with surge voltage suppressor
  - E: Yes

- **Electrical entry**
  - G: Lead wire length 0.6 m
  - H: Lead wire length 1.5 m

How to Order Valves

**VQ 5 1 5 0** - 5 G 1

- **Series**
  - 5: VQ5000

- **Type of actuation**
  - 1: 2-position single
  - 2: 2-position double
  - 3: 3-position closed center
  - 4: 3-position exhaust center
  - 5: 3-position pressure center
  - 6: 3-position double check

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

- **Function**
  - Nil: Standard (0.95 W)
  - Y: Low wattage type (0.4 W)
  - R: External pilot

- **Note 1:** When the unit is energized continuously, refer to “Specific Product Precautions 1” on page 533.
- **Note 2:** In addition, only DC is available with Y.
- **Note 3:** For details about external pilot specifications, refer to page 527.
- **Note 4:** When multiple symbols are specified, indicate them alphabetically.

- **Coil voltage**
  - 1: 100 VAC (50/60 Hz)
  - 2: 200 VAC (50/60 Hz)
  - 3: 110 VAC (50/60 Hz)
  - 4: 220 VAC (50/60 Hz)
  - 5: 24 VDC
  - 6: 12 VDC

How to Order Manifold Assembly

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

<Example>
Connector kit
VQ5055-05042C(-Q)···1 set
—
Manifold base part no.
*VQ5000 Series*

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

Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate in the manifold specification sheet.

Refer to page 534 (Grommet type) for wiring specifications.

Note 1) Combination of [C] and [S] is not possible. Also, exhaust cleaner is not attached. Please order it separately.

Refer to page 534 (Grommet type) for wiring specifications.

Note 1) CE-compliant: For DC only.

Note 2) In addition, only DC is available with Y.

Note 3) For details about external pilot specifications, refer to page 527.

Note 4) When multiple symbols are specified, indicate them alphabetically.

Note 1) CE-compliant:
For DC only.

Note 2) In addition, only DC is available with Y.

Note 3) For details about external pilot specifications, refer to page 527.

Note 4) When multiple symbols are specified, indicate them alphabetically.

Note 1) CE-compliant: For DC only.

Note 2) In addition, only DC is available with Y.

Note 3) For details about external pilot specifications, refer to page 527.

Note 4) When multiple symbols are specified, indicate them alphabetically.

Note 1) CE-compliant: For DC only.

Note 2) In addition, only DC is available with Y.

Note 3) For details about external pilot specifications, refer to page 527.

Note 4) When multiple symbols are specified, indicate them alphabetically.

Note 1) CE-compliant: For DC only.

Note 2) In addition, only DC is available with Y.

Note 3) For details about external pilot specifications, refer to page 527.

Note 4) When multiple symbols are specified, indicate them alphabetically.

Note 1) CE-compliant: For DC only.

Note 2) In addition, only DC is available with Y.

Note 3) For details about external pilot specifications, refer to page 527.

Note 4) When multiple symbols are specified, indicate them alphabetically.

Note 1) CE-compliant: For DC only.

Note 2) In addition, only DC is available with Y.

Note 3) For details about external pilot specifications, refer to page 527.

Note 4) When multiple symbols are specified, indicate them alphabetically.

Note 1) CE-compliant: For DC only.

Note 2) In addition, only DC is available with Y.

Note 3) For details about external pilot specifications, refer to page 527.

Note 4) When multiple symbols are specified, indicate them alphabetically.
Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Base model</th>
<th>Type of connection</th>
<th>Porting specifications</th>
<th>Maximum applicable stations</th>
<th>Applicable valve</th>
<th>Weight [kg] (Formula)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ5000</td>
<td>VVQ5000-□□□</td>
<td>C kit–Grommet</td>
<td>Side: 3/4</td>
<td>1/2</td>
<td>VQS□□□</td>
<td>0.58n + 0.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bottom: 1/2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Flow Rate Characteristics at the Number of Manifold Stations (Operated individually)

<table>
<thead>
<tr>
<th>Model</th>
<th>Passage/Stations</th>
<th>Station 1</th>
<th>Station 5</th>
<th>Station 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-position metal seal VQ5000</td>
<td>1 → 4/2 (P → A/B)</td>
<td>11</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>C [dm³/(s·bar)]</td>
<td>0.24</td>
<td>0.24</td>
<td>0.24</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>2.7</td>
<td>2.7</td>
<td>2.7</td>
</tr>
<tr>
<td></td>
<td>4/2 → 5/3 (A/B → EA/EB)</td>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>C [dm³/(s·bar)]</td>
<td>0.14</td>
<td>0.14</td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>2.9</td>
<td>2.9</td>
<td>2.9</td>
</tr>
<tr>
<td>2-position rubber seal VQ5000</td>
<td>1 → 4/2 (P → A/B)</td>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>C [dm³/(s·bar)]</td>
<td>0.33</td>
<td>0.33</td>
<td>0.33</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>3.4</td>
<td>3.4</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td>4/2 → 5/3 (A/B → EA/EB)</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>C [dm³/(s·bar)]</td>
<td>0.33</td>
<td>0.33</td>
<td>0.33</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>4.4</td>
<td>4.4</td>
<td>4.4</td>
</tr>
</tbody>
</table>

Note: For port size 1/2

Manifold Options

<table>
<thead>
<tr>
<th>Option</th>
<th>Model</th>
<th>Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blanking plate assembly VVQ5000-10A-5</td>
<td>VVQ5000</td>
<td><img src="blanking_plate.png" alt="Image" /></td>
</tr>
<tr>
<td>Individual SUP spacer VVQ5000-P-5□□□</td>
<td>VVQ5000</td>
<td><img src="individual_sup_spacer.png" alt="Image" /></td>
</tr>
<tr>
<td>Individual EXH spacer VVQ5000-R-5□□□</td>
<td>VVQ5000</td>
<td><img src="individual_exh_spacer.png" alt="Image" /></td>
</tr>
<tr>
<td>EXH block plate VVQ5000-16A-2 (1 pcs./set)</td>
<td>VVQ5000</td>
<td><img src="exh_block_plate.png" alt="Image" /></td>
</tr>
<tr>
<td>Restrictor spacer VVQ5000-20A-5</td>
<td>VVQ5000</td>
<td><img src="restrictor_spacer.png" alt="Image" /></td>
</tr>
<tr>
<td>SUP stop valve spacer VVQ5000-37A-5</td>
<td>VVQ5000</td>
<td><img src="sup_stop_valve_spacer.png" alt="Image" /></td>
</tr>
<tr>
<td>SUP block plate VVQ5000-16A-1</td>
<td>VVQ5000</td>
<td><img src="sup_block_plate.png" alt="Image" /></td>
</tr>
<tr>
<td>Double check spacer with residual pressure exhaust VVQ5000-25A-5</td>
<td>VVQ5000</td>
<td><img src="double_check_spacer.png" alt="Image" /></td>
</tr>
<tr>
<td>Release valve spacer: For D side mounting VVQ5000-24A-5D</td>
<td>VVQ5000</td>
<td><img src="release_valve_spacer.png" alt="Image" /></td>
</tr>
<tr>
<td>Direct exhaust with silencer box [-SD]</td>
<td>VVQ5000</td>
<td><img src="direct_exhaust_with_silencer.png" alt="Image" /></td>
</tr>
<tr>
<td>Manifold mounted exhaust cleaner [-CD]</td>
<td>VVQ5000</td>
<td><img src="manifold_mounted_exhaust_cleaner.png" alt="Image" /></td>
</tr>
<tr>
<td>Interface regulator (P, A, B port regulation)ARBQ5000-00□□□</td>
<td>VVQ5000</td>
<td><img src="interface_regulator.png" alt="Image" /></td>
</tr>
</tbody>
</table>

* Refer to pages 522 to 526 for detailed dimensions of each option.
* For replacement parts, refer to page 531.
Bottom ported drawing

Dimensions

<table>
<thead>
<tr>
<th>n</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>L₁</td>
<td>117</td>
<td>158</td>
<td>199</td>
<td>240</td>
<td>281</td>
<td>322</td>
<td>363</td>
<td>404</td>
<td>445</td>
<td>486</td>
<td>527</td>
<td>568</td>
</tr>
<tr>
<td>L₂</td>
<td>137</td>
<td>176</td>
<td>219</td>
<td>260</td>
<td>301</td>
<td>342</td>
<td>383</td>
<td>424</td>
<td>465</td>
<td>506</td>
<td>547</td>
<td>588</td>
</tr>
</tbody>
</table>

Formula: \[ L₁ = 41n + 76, \quad L₂ = 41n + 96 \]

n: Stations (Maximum 12 stations)

1/2" port

2 x 1/8" External pilot port

55.5 M5 x 0.8 Ground screw

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

Cable length (600 or 1500 mm)
### Manifold Option Parts

#### Blanking plate assembly

**VVQ5000-10A-1 (Plug-in type)**

**VVQ5000-10A-5 (Plug lead type)**

It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve etc.

#### Individual SUP spacer

**VVQ5000 – P – 03**

<table>
<thead>
<tr>
<th>Manifold</th>
<th>Port size</th>
<th>Thread type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>03: 3/8</td>
<td>F</td>
</tr>
<tr>
<td>5</td>
<td>04: 1/2</td>
<td>G</td>
</tr>
</tbody>
</table>

#### Individual EXH spacer

**VVQ5000 – R – 03**

<table>
<thead>
<tr>
<th>Manifold</th>
<th>Port size</th>
<th>Thread type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>03: 3/8</td>
<td>F</td>
</tr>
<tr>
<td>5</td>
<td>04: 1/2</td>
<td>G</td>
</tr>
</tbody>
</table>
Restrictor spacer

**VVQ5000-20A-1 (Plug-in type)**  
**VVQ5000-20A-5 (Plug lead type)**

A restrictor spacer is mounted on a manifold block to control cylinder speed by throttling exhaust air flow.

![Circuit diagram](image)

SUP stop valve spacer

**VVQ5000-37A-1 (Plug-in type)**  
**VVQ5000-37A-5 (Plug lead type)**

A SUP stop valve spacer is mounted on a manifold block, making it possible to individually shut off supply air to each valve.

![Circuit diagram](image)

Release valve spacer: For D side mounting

**VVQ5000-24A-1D (Plug-in type)**  
**VVQ5000-24A-5D (Plug lead type)**

A VQ51-valve (single) valve can be used as an air release valve by combining it with a release valve spacer.  
Note) 2-position double and 3-position cannot be mounted.

![Circuit diagram](image)

SUP block plate  
**VVQ5000-16A-1**  
**VVQ5000-16A-2**

When supplying two different pressures to one manifold, this is used to shut off between stations with different pressures.

![Circuit diagram](image)

<Passage blocked label>

Indication labels to confirm the blocking position are attached.  
(Order q’ty: 2 pcs.)
Manifold Option Parts

Direct exhaust with silencer box

**VV5Q5 SD** (D side exhaust)
**VV5Q5 SU** (U side exhaust)
**VV5Q5 SB** (Exhaust from both sides)

The EXH outlet is placed on the top side of the manifold end plate. The built-in silencer provides highly effective noise reduction. (Noise reduction of 35 dB(A) or more)

Note: Note that when excessive drainage occurs in the air supply, the drainage will be released along with the exhaust.

Double check spacer with residual pressure exhaust

**VV5Q5000-25A-1** (Plug-in type)
**VV5Q5000-25A-5** (Plug lead type)

Can hold an intermediate cylinder position for an extended time.

When combined with a double check spacer and double check valve, it is unaffected by air leakage between the spool valves, making it possible to hold a cylinder at an intermediate stopping position for an extended time.

Besides, combination between 2-position solenoid valve (VQ51001) and double check spacer can be used for drop prevention.

![Diagram of VQ5000 Series components]

**Table: Specifications**

<table>
<thead>
<tr>
<th>Double check spacer part no.</th>
<th>Intermediate stop</th>
<th>Drop prevention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable solenoid valve</td>
<td>VQ54 □□</td>
<td>VQ5□□</td>
</tr>
</tbody>
</table>

**Caution**

Handling Precautions

- In the case of 3-position double check (VQ56□□□□□), check the leakage from piping and fittings in between valve and cylinder by means of synthetic detergent solutions, and ensure that there is no such leakage found there. Also, check the leakage from cylinder seal and piston seal. If there is any leakage, sometimes the cylinder, when valve is de-energized, can move without stopping at intermediate position.
- If exhaust side of double check spacer is narrowed down, this causes a decrease in intermediate stop accuracy and may malfunction.
- Combination with 3-position valves "VQ5□□□□□" is not possible.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.
Manifold mounted exhaust cleaner

**VV5QS - D side mounting**
**VV5QS - U side mounting**

An adapter plate for exhaust cleaner mounting is provided on the top of the manifold end plate. The exhaust cleaner collects drainage and oil mist (99.9% or more) and is highly effective for noise reduction. (Noise reduction of 35 dB(A) or more)

### Applicable exhaust cleaners

**AMC610-10** (Port size Rc 1), **AMC810-14** (Port size Rc 1 1/2)

- Note 1) Exhaust cleaner: AMC610-10 and AMC810-14 are not included. Please order it separately.
- Note 2) Mount so that the exhaust cleaner is at the lower side.
- Note 3) For details about the exhaust cleaner, refer to Best Pneumatics No. 7.

### Dimensions

<table>
<thead>
<tr>
<th>Stations (Maximum 12 stations)</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>158</td>
</tr>
<tr>
<td>L2</td>
<td>178</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stations (Maximum 12 stations)</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>158</td>
</tr>
<tr>
<td>L2</td>
<td>178</td>
</tr>
</tbody>
</table>
Interface regulator (P, A, B port regulation)

ARBQ5000-00-□-1 (Plug-in type)
ARBQ5000-00-□-5 (Plug lead type)

By mounting a spacer regulator on the manifold block, it enables to regulate pressure per every valve.

Specifications

<table>
<thead>
<tr>
<th>Interface regulator</th>
<th>ARBQ5000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulating port</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>P</td>
</tr>
<tr>
<td>Applicable valve</td>
<td>Plug-in</td>
</tr>
<tr>
<td></td>
<td>Plug lead</td>
</tr>
<tr>
<td></td>
<td>Plug-in</td>
</tr>
<tr>
<td></td>
<td>Plug lead</td>
</tr>
<tr>
<td></td>
<td>Plug lead</td>
</tr>
</tbody>
</table>

| Maximum operating pressure | 1.0 MPa |
| Set pressure range         | 0.05 to 0.85 MPa |
| Fluid                      | Air |
| Ambient and fluid temperature | –5 to 60°C (No freezing) |
| Port size for connection of pressure gauge | M5 x 0.8 |

| Weight [kg] | 0.79 | 0.74 | 0.78 | 0.73 | 0.79 | 0.74 |

| Effective area at supply side [mm²] | P → A | 33 | 75 | 29 |
| S at P₁ = 0.7 MPa/P₂ = 0.5 MPa |
| P → B | 64 | 33 | 28 |

| Effective area at exhaust side [mm²] | A → EA | 36 | 75 | 78 |
| S at P₂ = 0.5 MPa |
| B → EB | 68 | 38 | 69 |

Note 1) Set the pressure within the operating pressure range of the valve.
Note 2) Operate an interface regulator only by applying pressure from the P port of the base, except when using it as a reverse pressure valve. When using it as a reverse pressure valve, P port regulation is not allowed to use.
Note 3) When using a perfect spacer, assemble a valve, a spacer regulator and a perfect spacer in this order to use it.
Note 4) When using in A port regulation, B port regulation by closed center, since there is a problem in its operation, please contact SMC.
Note 5) Dust-tight/Water-jet-proof (IP65) is not available with interface regulator.

How to Order

<table>
<thead>
<tr>
<th>Solenoid valve</th>
<th>Interface regulator</th>
<th>Regulating port</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQS□0□ (Plug-in type)</td>
<td>ARBQ5000-00-A-1</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>ARBQ5000-00-B-1</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>ARBQ5000-00-P-1</td>
<td>P</td>
</tr>
<tr>
<td>VQS□5□ (Plug lead type)</td>
<td>ARBQ5000-00-A-5</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>ARBQ5000-00-B-5</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>ARBQ5000-00-P-5</td>
<td>P</td>
</tr>
</tbody>
</table>

Dimensions

Pressure Characteristics

Conditions
Inlet pressure: 0.7 MPa
Outlet pressure: 0.2 MPa
Flow rate: 20 L/min (ANR)
VQ5000 Series
Semi-standard Specifications

External Pilot Specifications

- When the supply pressure is:
  - lower than the minimum valve operating pressure of 0.1 to 0.2 MPa, or when it drops below this level,
  - used for reverse pressure (R port pressure) or cylinder pressure (A, B port pressure),
  - used for vacuum specification, it can be used for external pilot specification. Order a valve by adding the external pilot specification [R] to the part number.

External pilot is available as standard for manifolds and options.

- Compatibility with universal porting is possible for the single, double and 3-position (excluding double check) types.

How to Order Valves

VQ5100 [R] 5 04

External pilot

External pilot port
1/8

External pilot port
2 x 1/8

Note) Possible to mix mounting of internal and external pilot

Pressure Specifications

<table>
<thead>
<tr>
<th>Valve construction</th>
<th>Operating pressure range</th>
<th>Metal seal</th>
<th>Rubber seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>−100 kPa to 1.0 MPa</td>
<td>0.1 to 1.0 MPa</td>
<td>0.2 to 1.0 MPa</td>
</tr>
<tr>
<td>Double</td>
<td>0.15 to 1.0 MPa</td>
<td>0.2 to 1.0 MPa</td>
<td></td>
</tr>
<tr>
<td>3-position</td>
<td>0.15 to 1.0 MPa</td>
<td>0.2 to 1.0 MPa</td>
<td></td>
</tr>
</tbody>
</table>
### Metal seal type

#### VQ5000 Series

**Plug-in Unit**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Aluminum die-casted</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Spool/Sleeve</td>
<td>Stainless steel</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

**Component Parts**

<table>
<thead>
<tr>
<th>No.</th>
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<td>1</td>
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<td>Aluminum die-casted</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Spool valve</td>
<td>Aluminum, HNBR</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
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<td></td>
</tr>
</tbody>
</table>

**Replacement Parts**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Pilot valve assembly</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### VQ5100

- (A) 4
- (B) 2
- (P) 5
- (R1) 3
- (R2) 3

#### VQ5200

- (A) 4
- (B) 2
- (P) 5
- (R1) 3
- (R2) 3

#### VQ5300

- (A) 4
- (B) 2
- (P) 5
- (R1) 3
- (R2) 3

#### VQ5400

- (A) 4
- (B) 2
- (P) 5
- (R1) 3
- (R2) 3

#### VQ5500

- (A) 4
- (B) 2
- (P) 5
- (R1) 3
- (R2) 3

### Rubber seal type

#### VQ5101

- (A) 4
- (B) 2
- (P) 5
- (R1) 3
- (R2) 3

#### VQ5201

- (A) 4
- (B) 2
- (P) 5
- (R1) 3
- (R2) 3

#### VQ5301

- (A) 4
- (B) 2
- (P) 5
- (R1) 3
- (R2) 3

#### VQ5401

- (A) 4
- (B) 2
- (P) 5
- (R1) 3
- (R2) 3

#### VQ5501

- (A) 4
- (B) 2
- (P) 5
- (R1) 3
- (R2) 3

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#### VQ5100

- (A) 4
- (B) 2
- (P) 5
- (R1) 3
- (R2) 3

#### VQ5200

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- (P) 5
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#### VQ5400

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- (B) 2
- (P) 5
- (R1) 3
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#### VQ5500

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#### VQ5101

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<td></td>
</tr>
</tbody>
</table>
Plug Lead Unit

Metal seal type

Rubber seal type

Component Parts

<table>
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<tr>
<th>No.</th>
<th>Description</th>
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<th>Note</th>
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<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

Replacement Parts

4  Pilot valve assembly

Coil type

- Nil: Standard (0.95 W)
- Y: Low wattage type (0.4 W)

□: Coil rated voltage Example) 24 VDC: 5
A: With light (For A side)
B: With light (For B side)
E: Without light
(A/B side common)

Replacement Parts

4  Pilot valve assembly

Coil type

- Nil: Standard (0.95 W)
- Y: Low wattage type (0.4 W)

□: Coil rated voltage Example) 24 VDC: 5
A: With light (For A side)
B: With light (For B side)
E: Without light
(A/B side common)
VQ5000 Series
Exploded View of Manifold

<table>
<thead>
<tr>
<th>D-side end plate assembly</th>
<th>Manifold block assembly</th>
<th>Tie-rod</th>
<th>U-side end plate assembly</th>
</tr>
</thead>
</table>

Note) The electrical entry cannot be changed. Figure shows a plug-in type.
D-Side End Plate Assembly
1. D-side end plate assembly part no. (For F, L, S, T & T1 kits)

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>VVQ5000-3A-1</td>
<td>D-Side End Plate Assembly</td>
<td>HNBR</td>
<td>10</td>
</tr>
</tbody>
</table>

Electrical entry
- L: F, L, S, T, T1 kit
- C: C kit (Plug lead type)

Note 1) D-sub connector assembly for D side: VVQ4000-19A-D is not included. (Order separately)

D-sub connector assembly

U-Side End Plate Assembly
2. U-side end plate assembly part no. (For F, L, S, T & T1 kits)

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>VVQ5000-2A-1</td>
<td>U-Side End Plate Assembly</td>
<td>HNBR</td>
<td>10</td>
</tr>
</tbody>
</table>

Electrical entry
- L: F, L, S, T, T1 kit
- C: C kit (Plug lead type)

Note 1) D-sub connector assembly for U side: VVQ4000-19A-U is not included. (Order separately)

Manifold Block Assembly
3. Manifold block assembly part no. (Including ④ and ⑤)

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>VVQ5000-1</td>
<td>Manifold Block Assembly</td>
<td>HNBR</td>
<td>10</td>
</tr>
</tbody>
</table>

Electrical entry
- F: F kit (Connector location on D side)
- C: C kit (Plug lead type)

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

6. Tie-rods part no. (2 pcs.)

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>VVQ5000-TR</td>
<td>Tie-rods assembly for station addition</td>
<td>HNBR</td>
<td>10</td>
</tr>
</tbody>
</table>

Note 1) Tie-rods (2 pcs.) and lead wire assembly for station addition included.

Note 2) Drip proof type is not available for F and T1.

Manifold Block Replacement Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>④</td>
<td>VVQ5000-80A-1</td>
<td>Gasket</td>
<td>HNBR</td>
<td>10</td>
</tr>
<tr>
<td>⑤</td>
<td>VVQ5000-80A-2</td>
<td>Gasket</td>
<td>HNBR</td>
<td>10</td>
</tr>
</tbody>
</table>

Note) Spare parts consist of sets containing 10 pcs. each.
### List of Valves, Options, and Mounting Bolts

<table>
<thead>
<tr>
<th>Number of options</th>
<th>Valve and options</th>
<th>Bolt part no.</th>
<th>Q’ty</th>
<th>Note</th>
<th>Option mounting diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Single valve</td>
<td>AXT632-25-4 (M4 x 50)</td>
<td>4</td>
<td></td>
<td><img src="image1" alt="Valve" /></td>
</tr>
<tr>
<td></td>
<td>Blanking plate (VQ5000-10A-1)</td>
<td>AXT632-25-8 (M4 x 17)</td>
<td>4</td>
<td>For manifold</td>
<td><img src="image2" alt="Blanking plate" /></td>
</tr>
<tr>
<td>1</td>
<td>Valve + Individual SUP spacer (VQ5000-P-15)</td>
<td>1) AXT632-25-5 (M4 x 82)</td>
<td>4</td>
<td>For manifold</td>
<td><img src="image1" alt="Valve" /></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) AXT632-25-10 (M4 x 34)</td>
<td>2</td>
<td></td>
<td><img src="image2" alt="Spacer" /></td>
</tr>
<tr>
<td></td>
<td>Valve + Individual EXH spacer (VQ5000-R-15)</td>
<td>1) AXT632-25-5 (M4 x 82)</td>
<td>4</td>
<td>For manifold</td>
<td><img src="image1" alt="Valve" /></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) AXT632-25-10 (M4 x 34)</td>
<td>2</td>
<td></td>
<td><img src="image2" alt="Spacer" /></td>
</tr>
<tr>
<td></td>
<td>Valve + Restrictor spacer (VQ5000-20A-15)</td>
<td>1) AXT632-25-5 (M4 x 82)</td>
<td>4</td>
<td></td>
<td><img src="image1" alt="Valve" /></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) AXT632-66-1 (M4 x 84)</td>
<td>2</td>
<td>Not necessary when mounting the sub-plate.</td>
<td><img src="image2" alt="Spacer" /></td>
</tr>
<tr>
<td></td>
<td>Valve + Release valve spacer (VQ5000-24A-15D)</td>
<td>1) AXT632-25-5 (M4 x 82)</td>
<td>4</td>
<td>For manifold</td>
<td><img src="image1" alt="Valve" /></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) AXT632-25-10 (M4 x 34)</td>
<td>2</td>
<td></td>
<td><img src="image2" alt="Spacer" /></td>
</tr>
<tr>
<td></td>
<td>Valve + Double check spacer with residual pressure exhaust (VQ5000-25A-15)</td>
<td>1) AXT632-25-6 (M4 x 114)</td>
<td>4</td>
<td></td>
<td><img src="image1" alt="Valve" /></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) AXT632-66-1 (M4 x 64)</td>
<td>2</td>
<td>Not necessary when mounting the sub-plate.</td>
<td><img src="image2" alt="Spacer" /></td>
</tr>
<tr>
<td></td>
<td>Valve + SUP stop valve spacer (VQ5000-37A-15)</td>
<td>1) AXT632-25-6 (M4 x 114)</td>
<td>4</td>
<td></td>
<td><img src="image1" alt="Valve" /></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) AXT632-25-10 (M4 x 34)</td>
<td>2</td>
<td></td>
<td><img src="image2" alt="Spacer" /></td>
</tr>
<tr>
<td></td>
<td>Valve + Interface regulator (ARBQ5000-00A-15)</td>
<td>1) AXT632-25-6 (M4 x 114)</td>
<td>4</td>
<td></td>
<td><img src="image1" alt="Valve" /></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) AXT632-66-1 (M4 x 64)</td>
<td>2</td>
<td>Not necessary when mounting the sub-plate.</td>
<td><img src="image2" alt="Spacer" /></td>
</tr>
<tr>
<td></td>
<td>Blanking plate + SUP stop valve (Top)</td>
<td>AXT632-25-4 (M4 x 50)</td>
<td>4</td>
<td>For manifold</td>
<td><img src="image2" alt="Blanking plate" /></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) AXT632-25-10 (M4 x 34)</td>
<td>2</td>
<td></td>
<td><img src="image2" alt="Spacer" /></td>
</tr>
<tr>
<td>2</td>
<td>Valve + Individual SUP + Individual EXH (Top)</td>
<td>AXT632-25-6 (M4 x 114)</td>
<td>4</td>
<td>For manifold</td>
<td><img src="image1" alt="Valve" /></td>
</tr>
<tr>
<td></td>
<td>(Bottom)</td>
<td>1) AXT632-25-11 (M4 x 66)</td>
<td>2</td>
<td></td>
<td><img src="image2" alt="Spacer" /></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) AXT632-25-11 (M4 x 66)</td>
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<td></td>
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<tr>
<td></td>
<td>Valve + Restrictor + Individual SUP or Individual EXH (Top)</td>
<td>AXT632-25-6 (M4 x 114)</td>
<td>4</td>
<td>For manifold</td>
<td><img src="image1" alt="Valve" /></td>
</tr>
<tr>
<td></td>
<td>(Bottom)</td>
<td>1) AXT632-25-11 (M4 x 66)</td>
<td>2</td>
<td></td>
<td><img src="image2" alt="Spacer" /></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) AXT632-25-11 (M4 x 66)</td>
<td>2</td>
<td></td>
<td><img src="image2" alt="Spacer" /></td>
</tr>
<tr>
<td></td>
<td>Valve + SUP stop valve + Individual SUP, Individual EXH or Restrictor (Top)</td>
<td>AXT632-25-6 (M4 x 114)</td>
<td>4</td>
<td>For manifold</td>
<td><img src="image1" alt="Valve" /></td>
</tr>
<tr>
<td></td>
<td>(Bottom)</td>
<td>1) AXT632-25-11 (M4 x 66)</td>
<td>2</td>
<td></td>
<td><img src="image2" alt="Spacer" /></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) AXT632-25-11 (M4 x 66)</td>
<td>2</td>
<td></td>
<td><img src="image2" alt="Spacer" /></td>
</tr>
<tr>
<td></td>
<td>Valve + Double check spacer with residual pressure exhaust + Individual SUP or Individual EXH (Top)</td>
<td>AXT632-25-7 (M4 x 146)</td>
<td>4</td>
<td></td>
<td><img src="image1" alt="Valve" /></td>
</tr>
<tr>
<td></td>
<td>(Bottom)</td>
<td>1) AXT632-25-6-2 (M4 x 96)</td>
<td>2</td>
<td></td>
<td><img src="image2" alt="Spacer" /></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) AXT632-25-6-2 (M4 x 96)</td>
<td>2</td>
<td></td>
<td><img src="image2" alt="Spacer" /></td>
</tr>
<tr>
<td></td>
<td>Valve + Interface regulator + Double check spacer with residual pressure exhaust + Individual SUP or Individual EXH or Restrictor (Top)</td>
<td>AXT632-25-14 (M4 x 178)</td>
<td>4</td>
<td></td>
<td><img src="image1" alt="Valve" /></td>
</tr>
<tr>
<td></td>
<td>(Bottom)</td>
<td>1) AXT632-66-3 (M4 x 128)</td>
<td>2</td>
<td></td>
<td><img src="image2" alt="Spacer" /></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) AXT632-66-3 (M4 x 128)</td>
<td>2</td>
<td></td>
<td><img src="image2" alt="Spacer" /></td>
</tr>
<tr>
<td></td>
<td>Blanking + SUP stop valve + Individual plate valve + Individual SUP (Top)</td>
<td>AXT632-25-5 (M4 x 82)</td>
<td>4</td>
<td>For manifold</td>
<td><img src="image2" alt="Blanking plate" /></td>
</tr>
<tr>
<td></td>
<td>(Bottom)</td>
<td>1) AXT632-25-11 (M4 x 66)</td>
<td>2</td>
<td></td>
<td><img src="image2" alt="Spacer" /></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) AXT632-25-11 (M4 x 66)</td>
<td>2</td>
<td></td>
<td><img src="image2" alt="Spacer" /></td>
</tr>
<tr>
<td>3</td>
<td>Valve + SUP stop valve (Top) + Individual SUP (Middle, Bottom) + Individual EXH (Middle, Bottom)</td>
<td>AXT632-25-7 (M4 x 146)</td>
<td>4</td>
<td>For manifold</td>
<td><img src="image1" alt="Single valve" /></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) AXT632-25-12 (M4 x 98)</td>
<td>2</td>
<td></td>
<td><img src="image2" alt="Spacer" /></td>
</tr>
<tr>
<td></td>
<td>Valve + Double check spacer with residual pressure exhaust (Top) + Individual SUP (Middle, Bottom) + Individual EXH (Middle, Bottom)</td>
<td>AXT632-25-14 (M4 x 178)</td>
<td>4</td>
<td>For manifold</td>
<td><img src="image1" alt="Valve" /></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) AXT632-66-3 (M4 x 128)</td>
<td>2</td>
<td></td>
<td><img src="image2" alt="Spacer" /></td>
</tr>
<tr>
<td></td>
<td>Valve + Spacer (Top): Interface regulator + Individual SUP or Individual EXH or Restrictor (Middle, Bottom)</td>
<td>AXT632-25-14 (M4 x 178)</td>
<td>4</td>
<td>For manifold</td>
<td><img src="image1" alt="Valve" /></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) AXT632-66-3 (M4 x 128)</td>
<td>2</td>
<td></td>
<td><img src="image2" alt="Spacer" /></td>
</tr>
</tbody>
</table>

Note 1) When the SUP stop valve and individual SUP are mounted, the stop valve is mounted on the top of the individual SUP.
VQ4000/5000 Series
Specific Product Precautions 1

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

**Continuous Duty**

⚠️ **Warning**

When the product is continuously energized for a long period of time (10 minutes or longer), select the low wattage type (DC specification). The AC type cannot be continuously energized for 10 minutes or longer. If anything is unclear, please contact SMC.

<table>
<thead>
<tr>
<th>Model</th>
<th>Terminals</th>
<th>Power Supply</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ4000</td>
<td>2</td>
<td>1, 2</td>
<td>Power supply terminals are rated at 0.8 to 1.2 N·m.</td>
</tr>
<tr>
<td>VQ5000</td>
<td>2</td>
<td>1, 2</td>
<td>Power supply terminals are rated at 1 to 1.8 N·m.</td>
</tr>
</tbody>
</table>

**Manual Override**

⚠️ **Warning**

Since connected equipment will operate when the manual override is activated, confirm that conditions are safe prior to activation.

**Push type (Tool required)**

- Bore ø5
- Bore ø6.1

Push down the manual override button with a small screwdriver, etc., until it stops. The manual override will return when released.

**Locking type (Tool required)**

- Bore ø5
- Bore ø6.1

Push down the manual override button with a small flat head screwdriver until it stops, and turn it clockwise 90° to lock it. Turn it counterclockwise to release it.

**Locking type (Manual)**

- Bore ø13 mm
- Bore ø14 mm

Push down the manual override button with a small flat head screwdriver or with your fingers 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)

**Valve Mounting**

⚠️ **Caution**

After confirming that the gasket is installed correctly, securely tighten the mounting screws according to the tightening torque shown below.

- **VQ4000**
  - Proper tightening torque [N·m]: 0.8 to 1.2
- **VQ5000**
  - Proper tightening torque [N·m]: 1 to 1.8

**Replacement of One-touch Fittings/VQ4000**

Cylinder port fittings are available in cassette type and can be replaced easily. Fittings are secured with a retaining clip that is inserted from the top side of the valve. After removing the valve, remove the clip with a flat head screwdriver to replace the fittings. To mount a fitting, insert the fitting assembly until it stops and reinsert the retaining clip to its designated position.

**Lead Wire Connection**

⚠️ **Caution**

- Plug-in sub-plate (With terminal block)
  - If the junction cover ① of the sub-plate is removed, you can see the plug-in type terminal block ② mounted inside the sub-plate.
  - The terminal block is marked as follows. Connect wiring to each of the power supply terminals.

<table>
<thead>
<tr>
<th>Model</th>
<th>Terminal block marking</th>
<th>A</th>
<th>COM</th>
<th>B</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ 1/2</td>
<td>10Ø</td>
<td>A side</td>
<td>COM</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>VQ 4/5</td>
<td>20YØ</td>
<td>A side</td>
<td>COM</td>
<td>B side</td>
<td>—</td>
</tr>
<tr>
<td>VQ 5/6</td>
<td>5Ø</td>
<td>A side</td>
<td>COM</td>
<td>B side</td>
<td>—</td>
</tr>
</tbody>
</table>

Note 1) There is no polarity. It can also be used as –COM.
Note 2) The sub-plate is double wired even for the VQ 1/2.

- Applicable terminal: 1.25-3s, 1.25Y-3, 1.25Y-3N, 1.25Y-3.5
### Caution

**Installation/Removal of light cover (VQ4000)**

- **Removal**
  Open the cover by inserting a small flat head screwdriver into the slot on the side of the pilot assembly (see drawing below), lift the cover out about 1 mm and then pull off. If it is pulled off at an angle, the pilot valve may be damaged or the protective O-ring may be scratched.

- **Installation**
  Place the cover straight over the pilot assembly so that the pilot valve is not touched, and push it until the cover hook locks without twisting the protective O-ring. (When pushed in, the hook opens and locks automatically.)

### Caution

**Installation/Removal of light cover (VQ5000)**

- **Removal**
  To remove the pilot cover pull it straight off. If it is pulled off at an angle, the pilot valve may be damaged or the protective O-ring may be scratched.

- **Installation**
  Place the cover straight over the pilot assembly so that the pilot valve is not touched, and push it until the cover hook locks without twisting the protective O-ring. (When pushed in, the hook opens and locks automatically.)

### Lead Wire Connection

**Plug lead: Grommet type**

<table>
<thead>
<tr>
<th>Lead wire color</th>
<th>Single solenoid</th>
<th>Double solenoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOL A Black</td>
<td>Black: A side solenoid</td>
<td>Black: A side solenoid</td>
</tr>
<tr>
<td>SOL B White</td>
<td>Red: COM</td>
<td>Red: COM</td>
</tr>
<tr>
<td>SOL A Black</td>
<td>Black: A side solenoid</td>
<td>Black: A side solenoid</td>
</tr>
<tr>
<td>SOL B White</td>
<td>Red: COM</td>
<td>Red: COM</td>
</tr>
</tbody>
</table>

**Note:**
There is no polarity. It can also be used as –COM.

### Replacement of Pilot Valve

- **Removal**
  Remove the mounting screw that holds the pilot valve using a small screwdriver.

- **Installation**
  After confirming the gasket is correctly placed under the valve, securely tighten the bolts with the proper torque shown in the table below.

<table>
<thead>
<tr>
<th>Proper tightening torque [N·m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1 to 0.13</td>
</tr>
</tbody>
</table>

**Note:** The light circuit boards: A side is orange and the B side is green. It must be mounted on the pilot valve in accordance with the mounting indicators.
VQ4000/5000 Series
Specific Product Precautions 3

Attaching and detaching connectors
• To attach a connector, hold the lever and connector unit between your fingers and insert straight onto the pins of the solenoid valve so that the lever's pawl is pushed into the groove and locks.
• To detach a connector, remove the pawl from the groove by pushing the lever downward with your thumb, and pull the connector straight out.

Note) Do not pull on the lead wires with excessive force. This can cause faulty and/or broken contacts.

Internal Wiring Specifications

Caution

Wires, cables, connectors, etc. used for models conforming to IP65 should also have enclosures equivalent to or stricter rating than IP65.

How to Calculate the Flow Rate
For obtaining the flow rate, refer to front matter.

Note) For DC, coil surge voltage generated when OFF is about –60 V. Please contact SMC separately for further suppression of the coil surge voltage.

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