<table>
<thead>
<tr>
<th>HELLO</th>
<th>2.a</th>
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<tbody>
<tr>
<td><strong>VALVES</strong></td>
<td></td>
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<tr>
<td><strong>VALVES</strong></td>
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</tr>
<tr>
<td><strong>SERIES</strong></td>
<td><strong>PAGE NUMBER</strong></td>
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<tr>
<td>SX3000 / SX5000</td>
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<tr>
<td><strong>Solenoid Valve</strong></td>
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<tr>
<td>SY100</td>
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<tr>
<td><strong>3/2 Direct Acting / Solenoid Spring Valve M3 Ported</strong></td>
<td></td>
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<tr>
<td>SY3000/5000/7000</td>
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<tr>
<td><strong>Body Ported Solenoid Valve</strong></td>
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<tr>
<td>SY3000/5000/7000</td>
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<tr>
<td><strong>Base Mounted Solenoid Valve</strong></td>
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<tr>
<td>VQ100</td>
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<td><strong>3/2 Direct Acting / Solenoid Spring Valve M3-M5 Ported</strong></td>
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<tr>
<td>VQ0000</td>
<td>2.21</td>
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<tr>
<td><strong>5 Port Metal/Rubber Seal Ultra High Speed Solenoid Valve</strong></td>
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<tr>
<td>VQ1000</td>
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<tr>
<td><strong>5 Port Metal/Rubber Seal Ultra High Speed Solenoid Valve</strong></td>
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<td>VQ2000</td>
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<td><strong>5 Port Metal/Rubber Seal Ultra High Speed Solenoid Valve</strong></td>
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<tr>
<td>VQ4000</td>
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<tr>
<td><strong>5 Port Metal/Rubber Seal Base Mounted Plug In Type</strong></td>
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<tr>
<td>VQ1000</td>
<td>2.46</td>
</tr>
<tr>
<td><strong>5/2, 5/3 Spool &amp; Sleeve, Ultra High Speed Solenoid Valve</strong></td>
<td></td>
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# Valves

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Price</th>
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<tbody>
<tr>
<td>VX21/22/23</td>
<td>2 Port Solenoid Valve Direct Operated Type</td>
<td>2.48</td>
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<tr>
<td>VXD21</td>
<td>2 Port Solenoid Valve Pilot Operated Type</td>
<td>2.50</td>
</tr>
<tr>
<td>VX31/32/33</td>
<td>3 Port Solenoid Valve Direct Operated Type</td>
<td>2.52</td>
</tr>
<tr>
<td>VXZ22</td>
<td>2 Port Solenoid Valve Pilot Operated Type / Differential Pressure Operation Type</td>
<td>2.54</td>
</tr>
<tr>
<td>VZ100</td>
<td>3/2 Direct Acting Solenoid Valve M5 Ported</td>
<td>2.56</td>
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<tr>
<td>VZ300</td>
<td>3/2 Pilot Operated Solenoid Spring Valve M5 Ported</td>
<td>2.58</td>
</tr>
<tr>
<td>VZ500</td>
<td>3/2 Pilot Operated Solenoid Spring Valve</td>
<td>2.62</td>
</tr>
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<td>NVFS</td>
<td>5 Port Pilot Operated Base Mounted Plug In Type</td>
<td>2.66</td>
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<tr>
<td>VQD1000</td>
<td>4 Port Direct Operated Poppet Solenoid Valve</td>
<td>2.79</td>
</tr>
<tr>
<td>VQZ100/200/300</td>
<td>3 Port Solenoid Valve Base Mounted / Plug Lead Type</td>
<td>2.80</td>
</tr>
<tr>
<td>VQZ100/200/300</td>
<td>3 Port Solenoid Valve Body Ported / Plug Lead Type</td>
<td>2.82</td>
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### Valves

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQZ1000/2000/3000 2.84</td>
<td>5 Port Solenoid Valve Base Mounted / Plug Lead Type</td>
<td></td>
</tr>
<tr>
<td>VQZ1000/2000/3000 2.87</td>
<td>5 Port Solenoid Valve Body Ported / Plug Lead Type</td>
<td></td>
</tr>
<tr>
<td>(N)VH 2.90</td>
<td>4/2, 4/3 Hand Valve</td>
<td></td>
</tr>
<tr>
<td>(N)VM400 2.91</td>
<td>3/2 Mechanical Valve</td>
<td></td>
</tr>
<tr>
<td>(N)VM800 2.92</td>
<td>3/2 Mechanical Valve</td>
<td></td>
</tr>
<tr>
<td>(N)VM1000 2.93</td>
<td>3/2 Normally Closed Micro Mechanical Valve</td>
<td></td>
</tr>
<tr>
<td>(N)VZM550 2.94</td>
<td>5/2 Mechanical Valve</td>
<td></td>
</tr>
<tr>
<td>(N)VR2110 2.95</td>
<td>Time Delay Valve</td>
<td></td>
</tr>
<tr>
<td>(N)VR1210/1220 2.95</td>
<td>Shuttle Valve</td>
<td></td>
</tr>
</tbody>
</table>
### Valves

<table>
<thead>
<tr>
<th>Image</th>
<th>Valve Type</th>
<th>Code</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td>(N)AK Check Valve</td>
<td>2.96</td>
<td></td>
</tr>
<tr>
<td><img src="image2.png" alt="Image" /></td>
<td>(N)AQ Quick Exhaust Valve</td>
<td>2.96</td>
<td></td>
</tr>
<tr>
<td><img src="image3.png" alt="Image" /></td>
<td>AQ200/300 Miniature In-Line Quick Exhaust Valve</td>
<td>2.97</td>
<td></td>
</tr>
<tr>
<td><img src="image4.png" alt="Image" /></td>
<td>ASP Speed Controller With Pilot Check Valve</td>
<td>2.98</td>
<td></td>
</tr>
<tr>
<td><img src="image5.png" alt="Image" /></td>
<td>(N)ASV Adjustable Quick Exhaust Valve With Integral Exhaust Restrictor And Silencer</td>
<td>2.100</td>
<td></td>
</tr>
</tbody>
</table>
Series SX3000, 5000
Solenoid Valve

- Sizes Available SX3000 and SX5000
- Compact and Lightweight Design
- Low Power Consumption: 0.6W
- Large Flow Capacity
- Long Life exceeding 50 million cycles

Technical Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>SX3000</th>
<th>SX5000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid</td>
<td>Air</td>
<td>Air</td>
</tr>
<tr>
<td>Internal Pilot</td>
<td>2 Position Single</td>
<td>0.15 – 0.7 (22 – 100)</td>
</tr>
<tr>
<td>Operating Pressure</td>
<td>2 Position Double</td>
<td>0.1 – 0.7 (14.5 – 100)</td>
</tr>
<tr>
<td>Range MPa (PSI)</td>
<td>3 Position</td>
<td>0.2 – 0.7 (30 – 100)</td>
</tr>
<tr>
<td>External Pilot</td>
<td>2 Position Single</td>
<td>0.25 – 0.7 (37 – 100)</td>
</tr>
<tr>
<td>Operating Pressure</td>
<td>2 Position Double</td>
<td>0.25 – 0.7 (37 – 100)</td>
</tr>
<tr>
<td>Range MPa (PSI)</td>
<td>3 Position</td>
<td>0.25 – 0.7 (37 – 100)</td>
</tr>
<tr>
<td>Ambient &amp; Fluid Temperature °C / °F</td>
<td>Max 50°C / 122°F</td>
<td></td>
</tr>
<tr>
<td>Max Operating</td>
<td>2 Position Single</td>
<td>10</td>
</tr>
<tr>
<td>Frequency Hz</td>
<td>3 Position</td>
<td>3</td>
</tr>
<tr>
<td>Manual Override</td>
<td>Non Locking Push Type, Push Locking, Slotted Type</td>
<td></td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not Required</td>
<td></td>
</tr>
<tr>
<td>Mounting Piston</td>
<td>Free</td>
<td></td>
</tr>
<tr>
<td>Impact / Vibration Resistance</td>
<td>150 / 30 (8.3 ~ 2000 Hz)</td>
<td></td>
</tr>
<tr>
<td>Protection Structure</td>
<td>Dust Proof</td>
<td></td>
</tr>
</tbody>
</table>

Series SX3000, 5000
Base Mounted, DIN Rail
Plug-In Stacking Type Manifold

How to Order
Series SX3000/5000 Valve Types 45F, 45P

- SERIES 3 ...... SX3000
- 5 ...... SX5000

Configuration

1 ...... 2 Position Single
2 ...... 2 Position Double
3 ...... 3 Position Closed Center
4 ...... 3 Position Exhaust Center
5 ...... 3 Position Pressure Center

Voltage

- 5 ...... 24VDC
- 6 ...... 12 VDC

Manual Override

- ...... Non Locking Push Type
- D ...... Push Locking Slotted Type

Common Specifications

- Nil ...... Positive Common
- N ...... Negative Common

Base Mounted Type
Stacking Type Manifold
DIN Rail Mounted, Plug-In Type
45F Type (D-Sub Connector)
**Valves Series SX**

**How To Order**

**Series SX Manifold 45F Type / D-Sub Connector**

**SS5X** - 45F

**Manifold Series**
- 3: SX3000
- 5: SX5000

**Common Specifications**
- Nil: Positive Common
- N: Negative Common

**Connector Box Mounting**
- U: U Side
- D: D Side

**Valve Stations**
- 02-10: Double Wiring Specifications
- 11-20: Applicable up to 20 Solenoids

**SUP/EXH Block Assembly Mounting Positions**
- U Side: 2 - 10 Stations
- D Side: 2 - 10 Stations
- Both Sides: 2 - 20 Stations

**A, B Port Size**
- SX3000
  - Metric: Imperial
  - C4: One Touch Fittings for ø4
  - C6: One Touch Fittings for ø6
  - C8: One Touch Fittings for ø8

**Common Specifications**
- Nil: Positive Common
- N: Negative Common

**Connector Poles**
- Symbol: Poles
- C: 26 (2-20)
- B: 20 (2-16)
- H: 10 (2-B)

**Connector Mounting Position**
- U: U Side
- D: D Side

**Valve Stations (Blanking Plate Assembly are included)**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Station</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>2</td>
<td>Double</td>
</tr>
<tr>
<td>08</td>
<td>8</td>
<td>Specs</td>
</tr>
<tr>
<td>09</td>
<td>9</td>
<td>Applicable up to 16 Solenoids</td>
</tr>
<tr>
<td>16</td>
<td>16</td>
<td>Specify wiring</td>
</tr>
</tbody>
</table>

**Option**
- When a longer than Standard DIN Rail is required, enter the number of Manifold Station that corresponds with the length of DIN Rail needed (20 Stations Max)

**Series SX Manifold 45P Type / Flat Cable Type**

**SS5X** - 45P

**Manifold Series**
- 3: SX3000
- 5: SX5000

**Common Specifications**
- Nil: Positive Common
- N: Negative Common

**Connector Box Mounting**
- U: U Side
- D: D Side

**Valve Stations**
- Nil: Positive Common
- N: Negative Common

**SUP/EXH Block Assembly Mounting Positions**
- U Side: 2 - 10 Stations
- D Side: 2 - 10 Stations
- Both Sides: 2 - 20 Stations

**A, B Port Size**
- SX3000
  - Metric: Imperial
  - C4: One Touch Fittings for ø4
  - C6: One Touch Fittings for ø6
  - C8: One Touch Fittings for ø8

**Option**
- When a longer than Standard DIN Rail is required, enter the number of Manifold Station that corresponds with the length of DIN Rail needed (20 Stations Max)

**Voltage**
- 24VDC
- 12VDC

**Courtesy of Steven Engineering, Inc.**

230 Ryan Way, South San Francisco, CA 94080-6370

Main Office: (650) 588-9200

Outside Local Area: (800) 258-9200

www.stevenengineering.com
VALVES

Series SX

Options
Series SX Manifold Options

- Blanking plate ass’y
- SUP block disc
  When supplying manifold with more than one pressure, insert block disc in between stations subjected to different pressures.

- EXH block disc
  When valve exhaust affects the other stations on the circuit or when variability is likely, dual pressure valve is used or a standard manifold, insert EXH block disc in between stations is space instead.

- Block disc indication seal
  These seals are stuck on the block with SUP and EXH block disc inside for confirmation from outside. (3 sheets respectively)

- Silencer for one-touch fitting
  The silencer plugs directly into the one-touch fittings of the manifold.

PORT PLUGS

Inserts easily into unused cylinder ports and/or SUP/EXH Ports. The minimum quantity to order is 10 pieces.

<table>
<thead>
<tr>
<th>Applicable Fitting Size ød</th>
<th>Model</th>
<th>A</th>
<th>L</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø4mm</td>
<td>KQP-04</td>
<td>16</td>
<td>32</td>
<td>6</td>
</tr>
<tr>
<td>ø5/32&quot;</td>
<td>KQP-03</td>
<td>16</td>
<td>32</td>
<td>6</td>
</tr>
<tr>
<td>ø6mm</td>
<td>KQP-06</td>
<td>18</td>
<td>35</td>
<td>8</td>
</tr>
<tr>
<td>ø1/4&quot;</td>
<td>KQP-07</td>
<td>18</td>
<td>35</td>
<td>8</td>
</tr>
<tr>
<td>ø8mm</td>
<td>KQP-08</td>
<td>20.5</td>
<td>39</td>
<td>10</td>
</tr>
<tr>
<td>ø5/16&quot;</td>
<td>KQP-09</td>
<td>20.5</td>
<td>39</td>
<td>10</td>
</tr>
<tr>
<td>ø10mm</td>
<td>KQP-10</td>
<td>22</td>
<td>43</td>
<td>12</td>
</tr>
<tr>
<td>ø8&quot;</td>
<td>KQP-11</td>
<td>22</td>
<td>43</td>
<td>12</td>
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</table>
**Wire color table by terminal number of D-sub connector cable ass'\y**

<table>
<thead>
<tr>
<th>Terminal No.</th>
<th>Last wire color</th>
<th>Dot marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Black</td>
<td>–</td>
</tr>
<tr>
<td>2</td>
<td>Brown</td>
<td>–</td>
</tr>
<tr>
<td>3</td>
<td>Red</td>
<td>–</td>
</tr>
<tr>
<td>4</td>
<td>Orange</td>
<td>–</td>
</tr>
<tr>
<td>5</td>
<td>Yellow</td>
<td>–</td>
</tr>
<tr>
<td>6</td>
<td>Pink</td>
<td>–</td>
</tr>
<tr>
<td>7</td>
<td>Blue</td>
<td>–</td>
</tr>
<tr>
<td>8</td>
<td>Violet</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>
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<td>Red</td>
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<tr>
<td>13</td>
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<td>Red</td>
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<tr>
<td>14</td>
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<tr>
<td>15</td>
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<td>16</td>
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<td>17</td>
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<td>18</td>
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<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>–</td>
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</table>

**D-Sub Connector Cable Assembly**

<table>
<thead>
<tr>
<th>Cable Length</th>
<th>Assembly No.</th>
<th>Note</th>
</tr>
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<tbody>
<tr>
<td>1.5m</td>
<td>VVZS3000-21A-1</td>
<td>Cable 2S</td>
</tr>
<tr>
<td>3m</td>
<td>VVZS3000-21A-2</td>
<td>Core</td>
</tr>
<tr>
<td>5m</td>
<td>VVZS3000-21A-3</td>
<td>x 24AWG</td>
</tr>
</tbody>
</table>

* For other commercial connectors, use a 25-pole female connector made in conformity with MIL-C-24308.

**Electric Characteristics**

- **Conductor Resistance** (km, 20°C)
- **Voltage Limit** (V, 1 min, AC) 1000
- **Insulation Resistance** (M km, 20°C) 5 or more

*Note* The minimum bending radius of D-Sub Connector Cable Assembly is 20mm.

**Flat Cable Connector / Cable Ass'\y**

AXT100-FC\(\square\)-\(\frac{1}{3}\)

**Table: Flat Cable Connector Assembly**

<table>
<thead>
<tr>
<th>Cable Length</th>
<th>10 Pole</th>
<th>20 Pole</th>
<th>26 Pole</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5m</td>
<td>AXT100-FC10-1</td>
<td>AXT100-FC20-1</td>
<td>AXT100-FC26-1</td>
</tr>
<tr>
<td>3m</td>
<td>AXT100-FC10-2</td>
<td>AXT100-FC20-2</td>
<td>AXT100-FC26-2</td>
</tr>
<tr>
<td>5m</td>
<td>AXT100-FC10-3</td>
<td>AXT100-FC20-3</td>
<td>AXT100-FC26-3</td>
</tr>
</tbody>
</table>

**Accessories**

**Flat Cable Connector Assembly**

<table>
<thead>
<tr>
<th>Connector Width</th>
<th>17.2</th>
<th>30</th>
<th>37.5</th>
</tr>
</thead>
</table>
3/2 Direct Acting Solenoid/Spring Valves M3 Ported

- Direct Two-Port Solenoid Valve
- Compact Size
- Power Saving Version

**TECHNICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Type</th>
<th>2 Port Direct Solenoid Valve</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function</td>
<td>Normally Closed, Normally Open</td>
</tr>
<tr>
<td>Fluid</td>
<td>Air</td>
</tr>
<tr>
<td>Operating Pressure</td>
<td>0<del>0.7MPa (0</del>100PSI) Vacuum</td>
</tr>
<tr>
<td>Range</td>
<td>P Port - 100KPa ~ 0.6MPa / -14.5~85PSI</td>
</tr>
<tr>
<td></td>
<td>R Port - 100KPa ~ 0.06MPa / -14.5~85PSI</td>
</tr>
<tr>
<td>Ambient Temperature</td>
<td>Max 50°C / 122°F</td>
</tr>
<tr>
<td>Effective Orifice (Cv)</td>
<td>0.14mm² (0.008) Standard</td>
</tr>
<tr>
<td></td>
<td>0.22mm² (0.012) Large Flow</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>0.75W - ø0.8; 0.52W - ø0.6</td>
</tr>
<tr>
<td>Allowable Voltage Fluctuation</td>
<td>±10%</td>
</tr>
<tr>
<td>Lead Wire Type</td>
<td>M &amp; Grommet</td>
</tr>
<tr>
<td>Lead Wire Specification</td>
<td>HV5F ø0.3mm² ø1.55mm</td>
</tr>
<tr>
<td>Response Time</td>
<td>&lt;10ms</td>
</tr>
</tbody>
</table>

**MODEL SERIES SY100**

<table>
<thead>
<tr>
<th>Type Of Actuation</th>
<th>Model</th>
<th>Operating Pressure Range MPa/PSI</th>
<th>Vacuum Application MPa/PSI</th>
<th>Effective Area mm² (Cv Factor)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NC</td>
<td>SY113</td>
<td>Standard 0<del>0.7 / 0</del>101</td>
<td>-100KPa<del>0.6 / -100KPa</del>0</td>
<td>0.14 (0.008)</td>
</tr>
<tr>
<td>NC</td>
<td>SY114</td>
<td>Standard 0<del>0.7 / 0</del>101</td>
<td>-100KPa<del>0.6 / -100KPa</del>0</td>
<td>0.22 (0.012)</td>
</tr>
<tr>
<td>NC</td>
<td>SY113A</td>
<td>Large Flow Capacity 0<del>0.7 / 0</del>101</td>
<td>-100KPa<del>0.6 / -100KPa</del>0</td>
<td>0.14 (0.008)</td>
</tr>
<tr>
<td>NC</td>
<td>SY114A</td>
<td>Large Flow Capacity 0<del>0.7 / 0</del>101</td>
<td>-100KPa<del>0.6 / -100KPa</del>0</td>
<td>0.22 (0.012)</td>
</tr>
<tr>
<td>NO</td>
<td>SY123</td>
<td>Standard 0<del>0.7 / 0</del>101</td>
<td>-100KPa<del>0.6 / -100KPa</del>0.6</td>
<td>0.14 (0.008)</td>
</tr>
<tr>
<td>NO</td>
<td>SY124</td>
<td>Standard 0<del>0.7 / 0</del>101</td>
<td>-100KPa<del>0.6 / -100KPa</del>0.6</td>
<td>0.22 (0.012)</td>
</tr>
<tr>
<td>NO</td>
<td>SY123A</td>
<td>Large Flow Capacity 0<del>0.7 / 0</del>101</td>
<td>-100KPa<del>0.6 / -100KPa</del>0.6</td>
<td></td>
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<tr>
<td>NO</td>
<td>SY124A</td>
<td>Large Flow Capacity 0<del>0.7 / 0</del>101</td>
<td>-100KPa<del>0.6 / -100KPa</del>0.6</td>
<td></td>
</tr>
</tbody>
</table>

**Note 1)** In case of SY123/4 and SY123/4 A, Supply Air to R Port, P Port will be the Exhaust Port
**Note 2)** Value for DC, add 1g for AC

1KPa = 0.145PSI

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**SYMBOLS**

Observe Operating Pressure Ranges - see Technical Specifications for details
HOW TO ORDER
SY100

SOLENOID VALVES
SERIES SY100

Body Ported
SY1

Base Mounted
SY1

TYPE OF ACTUATION
1 .... Normally Closed
2 .... Normally Open

MODEL TYPE
3 .... Body Ported
4 .... Base Mounted

VOLTAGE
5 .... 24 VDC
6 .... 12 VDC
V .... 6 VDC
5 .... 5 VDC
8 .... 3 VDC
1 .... 100 VAC 50/60 Hz
3 .... 110 VAC 50/60 Hz
15 .... 115 VAC 50/60 Hz
2 .... 200 VAC 50/60 Hz
4 .... 220 VAC 50/60 Hz
25 .... 230 VAC 50/60 Hz

ELECTRICAL ENTRY
G .... Grommet (Lead Wire Length: 300mm)
H .... Grommet (Lead Wire Length: 600mm)
L .... L Type Plug with Lead Wire
LN .... L Type Plug without Lead Wire
LO .... L Type Plug without Connector
M .... M Type Plug with Lead Wire
MN .... M Type Plug without Lead Wire
MO .... M Type Plug without Connector

INDICATOR LIGHT & SURGE SUPPRESSOR
- .... Without
S .... With Surge Voltage Suppressor
Z .... With Indicator Light and Surge Voltage Suppressor
U .... As Option Z above but non Polar Type
• "U" type: 24, 12 VDC only
• For AC types, there is no "S" Specification since it is integral with Converter

MANUAL OVERRIDE
Body Ported
P .... For Manifold
P .... For Body Ported Type to R, A Port

Base Mounted
- .... Without Subplate
M3 .... With Subplate

Piping
- .... Without Bracket
F .... With Bracket

HOW TO ORDER
CONNECTOR ASSEMBLY NUMBER
DC : SY100 - 30 - 4A -
100VAC : SY100 - 30 - 1A -
200VAC : SY100 - 30 - 2A -
Other Voltages Of AC : SY100 - 30 - 3A -

Lead Wire Length
Nil 300mm
6 600mm
10 1000mm
15 1500mm
20 2000mm
25 2500mm
30 3000mm
50 5000mm

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2.7

Solenoid Valves
Series SY100

Common SUP • Common EXH

Type 30

How to Order
SS3Y1 - 30 - 05 - F

Applicable valves
SY113-xxxx-M3
SY113A-xxxx-M3
Applicable blank plate ass’y
SY100-77-1A

Stations
02 2 stations
10 10 stations

Note) Piping to exhaust port is not possible.

Type 31

How to Order
SS3Y1 - 31 - 05

Applicable valves
SY113-xxxx-M3
SY113A-xxxx-M3
SY123-xxxx-M3
SY123A-xxxx-M3
Applicable blank plate ass’y
SY100-77-1A

Stations
02 2 stations
20 20 stations

Note) SY113(A) and SY123(A) cannot be mounted on the same manifold.

Type S41

How to Order
SS3Y1 - S41 - 05 - M3

Applicable valves
SY114-xxxx-M3
SY114A-xxxx-M3
SY124-xxxx-M3
SY124A-xxxx-M3
Applicable blank plate ass’y
SY100-77-1A

Stations
02 2 stations
20 20 stations

Note) SY114(A) and SY124(A) cannot be mounted on the same manifold.

Combination with Solenoid Valve and Gasket Manifold Base

Body ported

Base mounted

Blank Plate Ass’y

Parts no. : SY100-77-1A

Applicable base
- Sub-plate (for body ported)
- SS3Y1-type 30 (Manifold)
- SS3Y1-type 31 (base)

Gasket
VJ100-6-2

Cross round head screw
SY100-33-1
(M1.7×13, Mat nickel plated)

Applicable base
- Sub-plate
- SS3Y1-type 41 (Manifold base)

Gasket
VJ100-6-1

Cross round head screw
SY100-33-2
(M1.7×7, Mat nickel plated)

Blank plate
SY100-77-1

Gasket
VJ100-20-1

Applicable base
- Sub-plate
- SS3Y1-type 30
- SS3Y1-type 31
- SS3Y1-type 41 (Manifold base)
**BODY PORTED VALVE**  
SY3000/5000/7000

- Low Power Consumption: 0.5W
- Compact Design, Large Flow Capacity
- High Life Expectancy: >50 million cycles
- Quick Response Time

---

### TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Series</th>
<th>SY3000</th>
<th>SY5000</th>
<th>SY7000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid</td>
<td>Air, Lubrication Not Required</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal Pilot</td>
<td>2 Position Single</td>
<td>0.15 – 0.7MPa / 22 – 100PSI</td>
<td></td>
</tr>
<tr>
<td>Operating Pressure</td>
<td>2 Position Double</td>
<td>0.1 – 0.7MPa / 15 – 100PSI</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>3 Position</td>
<td>0.2 – 0.7MPa / 30 – 100PSI</td>
<td></td>
</tr>
<tr>
<td>Ambient &amp; Fluid Temperature</td>
<td>-10 – 50ºC / 14 – 122ºF</td>
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<td></td>
</tr>
<tr>
<td>Max Operating</td>
<td>2 Position Single/Double</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Frequency / Hz</td>
<td>3 Position</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Manual Override</td>
<td>3 Position</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Pilot Exhaust</td>
<td>Common Exhaust for Main &amp; Pilot</td>
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<td></td>
</tr>
<tr>
<td>Mounting Position</td>
<td>Free</td>
<td></td>
<td></td>
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<tr>
<td>Cv Factor</td>
<td>0.23</td>
<td></td>
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</table>

### MODEL RESPONSE TIME SERIES SY3/5/7000

<table>
<thead>
<tr>
<th>Model</th>
<th>Configuration</th>
<th>Response Time ms 71 PSI / 0.5MPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>SY3000</td>
<td>2 Position Single</td>
<td>12 or less</td>
</tr>
<tr>
<td></td>
<td>2 Position Double</td>
<td>10 or less</td>
</tr>
<tr>
<td></td>
<td>3 Position</td>
<td>15 or less</td>
</tr>
<tr>
<td>SY5000</td>
<td>2 Position Single</td>
<td>19 or less</td>
</tr>
<tr>
<td></td>
<td>2 Position Double</td>
<td>18 or less</td>
</tr>
<tr>
<td></td>
<td>3 Position</td>
<td>32 or less</td>
</tr>
<tr>
<td>SY7000</td>
<td>2 Position Single</td>
<td>31 or less</td>
</tr>
<tr>
<td></td>
<td>2 Position Double</td>
<td>27 or less</td>
</tr>
<tr>
<td></td>
<td>3 Position</td>
<td>50 or less</td>
</tr>
</tbody>
</table>
# Body Ported/Bar Manifold
## Individual Wiring Type
### Series SY3000/5000/7000

**How To Order**

**Body Ported/Bar Manifold with Individual Lead Wire**

**SS5Y**

**Manifold Series**

- 3 … SY3000
- 5 … SY5000
- 7 … SY7000

**Valve Stations**

- 02 … 2 Stations
- 10 … 10 Stations
- 20 … 20 Stations

**Thread Type**

- ……PT
- … OT
- … NPTF

**Voltage**

- 3 … 110VAC
- 5 … 24 VDC
- 6 … 12 VDC
- *1 … 100VAC
- *2 … 220VAC
- *V … 6 VDC
- *S … 5 VDC
- *R … 3 VDC
- * Special Order

**Electrical Entry**

- D … With Connector (SY5000, 7000 Only)
- DZ … Connector w/ Light & Surge Suppressor (SY5000, 7000 Only)
- LZ … Lead Wire w/ Light & Surge Suppressor
- G … Grommet (Lead Wire Length: 300mm)
- H … Grommet (Lead Wire Length: 600mm)
- L … 1 Type Plug with Lead Wire
- LO … 1 Type Plug without Connector
- LOZ … W/O Lead Wire, w/ Light & Surge Suppressor
- M … M Type Plug with Lead Wire
- MO … M Type Plug without Connector
- MZ … M Type Lead Wire w/ Light & Surge Suppressor

**Configuration**

- 1 … Position Single
- 2 … Position Double
- 3 … Position Closed Center
- 4 … Position Exhaust Center
- 5 … Position Pressure Center

**Series**

- 3 … SY3000
- 5 … SY5000
- 7 … SY7000

**Bracket**

- ………Without Bracket
- F1 … With Foot Bracket
- F2 … With Side Bracket

**A, B Port Size**

<table>
<thead>
<tr>
<th>Symbol Port Size</th>
<th>Applicable Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metric (mm)</td>
<td></td>
</tr>
<tr>
<td>M5 … M5x0.8</td>
<td>SY3000</td>
</tr>
<tr>
<td>C4 … One Touch Fitting ø4</td>
<td>SY3000</td>
</tr>
<tr>
<td>C6 … One Touch Fitting ø6</td>
<td>SY3000, SY5000</td>
</tr>
<tr>
<td>D1 … PT 1/8&quot;</td>
<td>SY5000</td>
</tr>
<tr>
<td>C8 … One Touch Fitting ø8</td>
<td>SY5000, SY7000</td>
</tr>
<tr>
<td>D2 … PT 1/4&quot;</td>
<td>SY7000</td>
</tr>
<tr>
<td>C10 … One Touch Fitting ø10</td>
<td>SY7000</td>
</tr>
<tr>
<td>Imperial (Inch)</td>
<td></td>
</tr>
<tr>
<td>M5 … 10-32Nom</td>
<td>SY3000</td>
</tr>
<tr>
<td>N3 … One Touch Fitting ø5/32&quot;</td>
<td>SY3000</td>
</tr>
<tr>
<td>N7 … One Touch Fitting ø1/4&quot;</td>
<td>SY5000</td>
</tr>
<tr>
<td>N7T … One Touch Fitting ø1/4&quot;</td>
<td>SY5000</td>
</tr>
<tr>
<td>D1T … NPTF 1/8&quot;</td>
<td>SY5000</td>
</tr>
<tr>
<td>N9T … One Touch Fitting ø5/16&quot;</td>
<td>SY5000, SY7000</td>
</tr>
<tr>
<td>N9T … One Touch Fitting ø5/16&quot;</td>
<td>SY5000, SY7000</td>
</tr>
<tr>
<td>D2T … NPTF 1/4&quot;</td>
<td>SY7000</td>
</tr>
<tr>
<td>N1T … One Touch Fitting ø3/8&quot;</td>
<td>SY7000</td>
</tr>
</tbody>
</table>

**Manual Override**

- ………Non-Locking Push Type
- D ………Push-Locking Slotted Type
- E ………Push-Locking Lever Type

Direct Piping to Main Body of Valve
- Up to 20 Valve Stations
- Threaded and Push-In Fittings
- Lightweight Aluminum Construction
- Combination of Fittings possible

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www.stevenengineering.com
**Solenoid Valves**

**Series SY3000/5000/7000**

### Blanking Plate Assembly

- **Ass'y part no.:**
  - SY3000: SY3000-26-1A
  - SY5000: SY5000-26-1A
  - SY7000: SY7000-26-1A

### Individual/EXH Spacer Assembly

- **Series:** SY3000 / SY5000 / SY7000
- **Assembly No.:**
  - SY3000-39-1A
  - SY5000-39-1A
  - SY5000-39-1TA
  - SY7000-39-1A
  - SY7000-39-1TA
- **Port Size:**
  - M5 (10-32Nom)
  - PT 1/8
  - NPTF 1/8
  - PT 1/4
  - NPTF 1/4

### Individual/SUP Spacer Assembly

- **Series:** SY3000 / SY5000 / SY7000
- **Assembly No.:**
  - SY3000-38-1A
  - SY5000-38-1A
  - SY5000-38-1TA
  - SY7000-38-1A
  - SY7000-38-1TA
- **Port Size:**
  - M5 (10-32Nom)
  - PT 1/8
  - NPTF 1/8
  - PT 1/4
  - NPTF 1/4

### Bolt / Gasket

- **Applicable Fitting Size ød:**
  - ø4mm
  - ø5/32" (ø6mm)
  - ø1/4" (ø8mm)
  - ø5/16" (ø10mm)
  - ø3/8" (ø12mm)

### Port Plugs

Inserts easily into unused cylinder ports and/or SUP/EXH Ports. The minimum quantity to order is 10 pieces.

<table>
<thead>
<tr>
<th>Applicable Fitting Size ød</th>
<th>Model</th>
<th>A</th>
<th>L</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø4mm</td>
<td>KQP-04</td>
<td>16</td>
<td>32</td>
<td>6</td>
</tr>
<tr>
<td>ø5/32&quot;</td>
<td>KQP-03</td>
<td>16</td>
<td>32</td>
<td>6</td>
</tr>
<tr>
<td>ø6mm</td>
<td>KQP-06</td>
<td>18</td>
<td>35</td>
<td>8</td>
</tr>
<tr>
<td>ø1/4&quot;</td>
<td>KQP-07</td>
<td>18</td>
<td>35</td>
<td>8</td>
</tr>
<tr>
<td>ø8mm</td>
<td>KQP-08</td>
<td>20.5</td>
<td>39</td>
<td>10</td>
</tr>
<tr>
<td>ø5/16&quot;</td>
<td>KQP-09</td>
<td>20.5</td>
<td>39</td>
<td>10</td>
</tr>
<tr>
<td>ø10mm</td>
<td>KQP-10</td>
<td>22</td>
<td>43</td>
<td>12</td>
</tr>
<tr>
<td>ø3/8&quot;</td>
<td>KQP-11</td>
<td>22</td>
<td>43</td>
<td>12</td>
</tr>
</tbody>
</table>

### Bracket Assembly Number (If Ordered Separately)

- **F1 Type:** SX3/5/7000-16-2A (With Mounting Screw)
- **F2 Type:** SX3/5/7000-16-1A (With Mounting Screw)
SOLENOID VALVES

SERIES SY3000/5000/7000

BODY PORTED/BAR MANIFOLD
FLAT CABLE TYPE
SY3000/5000/7000

- Direct Piping to Main Body of Valve
- Up to 20 Valve Stations
- Threaded and Push-in Fittings
- Lightweight Aluminum Construction
- Combination of Fittings possible

SEE INSIDE FRONT COVER FOR DETAILS OF YOUR LOCAL SALES OFFICE

HOW TO ORDER

BODY PORTED W/FLAT CABLE MANIFOLD
SY3/5/7000

SY 20 LOU

SERIES
3 ...... SY3000
5 ...... SY5000
7 ...... SY7000

CONFIGURATION
1 ...... 2 Position Single
2 ...... 2 Position Double
3 ...... 3 Position Closed Center
4 ...... 3 Position Exhaust Center
5 ...... 3 Position Pressure Center

VOLTAGE
5 ...... 24 VDC
6 ...... 12 VDC

A, B PORT SIZE
Symbol Port Size
Metric (mm)
M5 .... M5x0.8
C4 .... One Touch Fitting ø4
C6 .... One Touch Fitting ø6
D1 .... PT 1/8"
C8 .... One Touch Fitting ø8
D2 .... PT 1/4"
C10 .... One Touch Fitting ø10

Imperial (Inch)
M5 .... 10-32 NPT
N3 .... One Touch Fitting ø5/32" SY3000
N7 .... One Touch Fitting ø1/4" SY3000
N7T .... One Touch Fitting ø1/4" SY5000
N1T .... NPTF 1/8"
N9T .... One Touch Fitting ø5/16" SY5000, SY7000
N2T .... NPTF 1/4"
N11T .... One Touch Fitting ø3/8" SY7000

MANUAL OVERRIDE
- ...... Non-Locking Push Type
D ...... Push-Locking Slotted Type
E ...... Push-Locking Lever Type

HOW TO ORDER

FLAT RIBBON CABLE MANIFOLD
SY3/5/7000

SS5Y 20P

MANIFOLD SERIES
3 ...... SY3000
5 ...... SY5000
7 ...... SY7000

THREAD TYPE
- ...... PT
**T .... NPTF

VALVE STATIONS
03 .... 3 Stations
12 .... 12 Stations
*SS5Y3 has 4 ~ 12 Stations

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SOLENOID VALVES
SERIES SY3000/5000/7000

BLANK PLATE ASSEMBLY

<table>
<thead>
<tr>
<th>Series</th>
<th>Assembly No.</th>
<th>Port Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>SY3000</td>
<td>SY3000-39-1A</td>
<td>M5 (10-32Nom)</td>
</tr>
<tr>
<td>SY5000</td>
<td>SY5000-39-1A</td>
<td>PT 1/8</td>
</tr>
<tr>
<td>SY5000</td>
<td>SY5000-39-1TA</td>
<td>NPTF 1/8</td>
</tr>
<tr>
<td>SY7000</td>
<td>SY7000-39-1A</td>
<td>PT 1/4</td>
</tr>
<tr>
<td>SY7000</td>
<td>SY7000-39-1TA</td>
<td>NPTF 1/4</td>
</tr>
</tbody>
</table>

INDIVIDUAL/EXH SPACER ASSEMBLY

<table>
<thead>
<tr>
<th>Series</th>
<th>Assembly No.</th>
<th>Port Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>SY3000</td>
<td>SY3000-39-1A</td>
<td>M5 (10-32Nom)</td>
</tr>
<tr>
<td>SY5000</td>
<td>SY5000-39-1A</td>
<td>PT 1/8</td>
</tr>
<tr>
<td>SY5000</td>
<td>SY5000-39-1TA</td>
<td>NPTF 1/8</td>
</tr>
<tr>
<td>SY7000</td>
<td>SY7000-39-1A</td>
<td>PT 1/4</td>
</tr>
<tr>
<td>SY7000</td>
<td>SY7000-39-1TA</td>
<td>NPTF 1/4</td>
</tr>
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</table>

INDIVIDUAL/SUP SPACER ASSEMBLY

<table>
<thead>
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<tr>
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<td>SY3000-38-1A</td>
<td>M5 (10-32Nom)</td>
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<td>SY5000</td>
<td>SY5000-38-1A</td>
<td>PT 1/8</td>
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<tr>
<td>SY5000</td>
<td>SY5000-38-1TA</td>
<td>NPTF 1/8</td>
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<tr>
<td>SY7000</td>
<td>SY7000-38-1A</td>
<td>PT 1/4</td>
</tr>
<tr>
<td>SY7000</td>
<td>SY7000-38-1TA</td>
<td>NPTF 1/4</td>
</tr>
</tbody>
</table>

FLAT RIBBON CABLE ASSEMBLY AXT100-FC26(1/2/3)

<table>
<thead>
<tr>
<th>Cable Length (L)</th>
<th>Assembly Number</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5m</td>
<td>AXT100-FC26-1</td>
<td>Cable 26 CoreX28AWG</td>
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<tr>
<td>3m</td>
<td>AXT100-FC26-2</td>
<td>Cable 26 CoreX28AWG</td>
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<tr>
<td>5m</td>
<td>AXT100-FC26-3</td>
<td>Cable 26 CoreX28AWG</td>
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PORT PLUGS

<table>
<thead>
<tr>
<th>Applicable Fitting Size ød</th>
<th>Model</th>
<th>A</th>
<th>L</th>
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<tbody>
<tr>
<td>ø4mm</td>
<td>KQP-04</td>
<td>16</td>
<td>32</td>
<td>6</td>
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<tr>
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<td>KQP-03</td>
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<tr>
<td>ø6mm</td>
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<td>ø1/4&quot;</td>
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<td>10</td>
</tr>
<tr>
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<td>20.5</td>
<td>39</td>
<td>10</td>
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<tr>
<td>ø10mm</td>
<td>KQP-10</td>
<td>22</td>
<td>43</td>
<td>12</td>
</tr>
<tr>
<td>ø3/8&quot;</td>
<td>KQP-11</td>
<td>22</td>
<td>43</td>
<td>12</td>
</tr>
</tbody>
</table>

Inserts easily into unused cylinder ports and/or SUP/EXH Ports. The minimum quantity to order is 10 pieces.
### BASE MOUNTED VALVE
#### SY3000/5000/7000

- **Low Power Consumption**: 0.5W
- **Compact Design, Large Flow Capacity**
- **High Life Expectancy**: >50 million cycles
- **Quick Response Time**
- **Serial Interface Option**

#### T ECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Series</th>
<th>SY3000</th>
<th>SY5000</th>
<th>SY7000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fluid</strong></td>
<td>Air, Lubrication Not Required</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Internal Pilot</strong></td>
<td>2 Position Single</td>
<td>2 Position Double</td>
<td></td>
</tr>
<tr>
<td><strong>Operating Pressure Range</strong></td>
<td>25 ~ 100PSI / 0.1 ~ 0.7MPa</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>External Pilot</strong></td>
<td>Pilot</td>
<td>2 Position Single</td>
<td></td>
</tr>
<tr>
<td><strong>Operating Pressure Range</strong></td>
<td>37 ~ 100PSI / 0.25 ~ 0.7MPa</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ambient &amp; Fluid Temperature</strong></td>
<td>-10 ~ 50°C / 14 ~ 122°F</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Max Operating Frequency / Hz</strong></td>
<td>10</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td><strong>Pilot Exhaust Configuration</strong></td>
<td>Internal Pilot</td>
<td>External Pilot</td>
<td></td>
</tr>
<tr>
<td><strong>Mounting Position</strong></td>
<td>Free</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cv Factor</strong></td>
<td>0.3</td>
<td>0.7</td>
<td>1.2</td>
</tr>
</tbody>
</table>

#### MODEL RESPONSE TIME SERIES SY3/5/7000

<table>
<thead>
<tr>
<th>Model</th>
<th>Configuration</th>
<th>Response Time ms 71 PSI / 0.5MPa</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>W/O Indicator Light</td>
<td>With Indicator Light</td>
</tr>
<tr>
<td></td>
<td>&amp; Surge Suppressor</td>
<td>&amp; Surge Suppressor</td>
</tr>
<tr>
<td>SY3000</td>
<td>2 Position Single</td>
<td>12 or less</td>
</tr>
<tr>
<td></td>
<td>2 Position Double</td>
<td>10 or less</td>
</tr>
<tr>
<td></td>
<td>3 Position</td>
<td>15 or less</td>
</tr>
<tr>
<td>SY5000</td>
<td>2 Position Single</td>
<td>19 or less</td>
</tr>
<tr>
<td></td>
<td>2 Position Double</td>
<td>18 or less</td>
</tr>
<tr>
<td></td>
<td>3 Position</td>
<td>32 or less</td>
</tr>
<tr>
<td>SY7000</td>
<td>2 Position Single</td>
<td>31 or less</td>
</tr>
<tr>
<td></td>
<td>2 Position Double</td>
<td>27 or less</td>
</tr>
<tr>
<td></td>
<td>3 Position</td>
<td>50 or less</td>
</tr>
</tbody>
</table>
**Solenoid Valves**

**Series SY3000/5000/7000**

**Base Mounted/Bar Manifold Individual Wiring Type SY3000/5000/7000**

- Facilitates maintenance when valves are changed
- Up to 20 Valve Stations
- Threaded and Push-In Fittings
- Lightweight Aluminum Construction
- Vacuum Low Pressure Combination System is Available (Type 42 Only)

**How To Order**

**Base Mounted/Bar Manifold w/individual lead wire SY3/5/7000**

**Series SY**

3 ...... SY3000
5 ...... SY5000
7 ...... SY7000

**Configuration**

1 ...... 2 Position Single
2 ...... 2 Position Double
3 ...... 3 Position Closed Center
4 ...... 3 Position Exhaust Center
5 ...... 3 Position Pressure Center

**Pilot Type**

- ...... Internal Pilot
R ...... External Pilot

**Voltage**

*1 ...... 100VAC
*2 ...... 200VAC
3 ...... 110VAC
*4 ...... 220VAC (D, DO Only)
5 ...... 24V DC
6 ...... 12V DC
*2 ...... 200VAC (L, M Only)
*4 ...... 220VAC (L, M Only)
* Special Order

**How To Order**

**Base Mounted Valve w/individual lead wire SY3/5/7000**

**Manifold Series**

3 ...... SY3000
5 ...... SY5000
7 ...... SY7000 (Type 42 Only)
1 ...... Compact Type
2 ...... External Pilot Capable Type

**Valve Stations**

02 ...... 2 Stations to 20 ...... 20 Stations

**A, B Port Size**

**Metric (mm)**

M5 ...... M5x0.8 (SY3000 Type 41 Only)
O1 ...... Rc(PT)1/8 (SY5000 Type 41 & SY3000 Type 42 Only)
O2 ...... Rc(PT)1/4 (SY5000 Type 42 Only)
C4 ...... One Touch Fittings for ø4 (SY3000 Only)
C6 ...... One Touch Fittings for ø6 (SY3000 & SY5000 Only)
C8 ...... One Touch Fittings for ø8 (SY5000 Only)
C10 ...... One Touch Fittings for ø10 (SY7000 Only)

**Imperial (Inch)**

M5T ...... 10~32Nom (SY3000 Type 41 Only)
O1T ...... 1/8NPTF (SY5000 Type 42 Only)
O2T ...... 1/4NPTF (SY5000 Type 42 Only)
N3T ...... One Touch Fittings for ø5/32 (SY3000 Only)
N7T ...... One Touch Fittings for ø7/32 (SY3000 Only)
N9T ...... One Touch Fittings for ø9/32 (SY3000 Only)
N11T ...... One Touch Fittings for ø11/32 (SY5000 Only)

**Individual Light & Surge Voltage Suppressor**

- ...... Without
S ...... With Surge Suppressor
Z ...... With Indicator Light and Surge Voltage Suppressor
U ...... With Indicator Light and Surge Voltage Suppressor (Non-Polar Type)

**Electrical Entry**

D ...... DIN Connector
DO ...... DIN without Connector
G ...... Grommet (300mm)
H ...... Grommet (600mm)
L ...... L Type Plug Connector (300mm)
LM ...... L Type Connector without Lead Wire
LD ...... L Type Plug without Connector
M ...... M Type Plug with Lead Wire
MN ...... M Type Plug without Connector
MD ...... M Type Plug without Connector
**Solenoid Valves**

**Series SY3000/5000/7000**

### Manifold Options

**Blanking Plate Assembly**

- **Series**
  - SY3000
  - SY5000
  - SY7000
- **Assembly Part No.**
  - SY3000-26-2A
  - SY5000-26-2A
  - SY7000-26-2A

**Individual/EXH Spacer Assembly**

- **Series**
  - SY3000
  - SY5000
  - SY7000
- **Assembly No**
  - SY3000-39-2A
  - SY5000-39-2A
  - SY7000-39-2A
- **Port Size**
  - M5x0.8 (10-32Nom)
  - PT 1/8
  - NPTF 1/8
  - PT 1/4
  - NPTF 1/4

**Individual/SUP Spacer Assembly**

- **Series**
  - SY3000
  - SY5000
  - SY7000
- **Assembly No**
  - SY3000-38-2A
  - SY5000-38-2A
  - SY7000-38-2A
- **Port Size**
  - M5x0.8 (10-32Nom)
  - PT 1/8
  - NPTF 1/8
  - PT 1/4
  - NPTF 1/4

**Bolt / Gasket**

- **Applicable Fitting Size ød**
  - ø4mm
  - ø5/32"
  - ø6mm
  - ø1/4"
  - ø8mm
  - ø5/16"
  - ø10mm
  - ø3/8"
- **Model**
  - KQP-04
  - KQP-03
  - KQP-06
  - KQP-07
  - KQP-08
  - KQP-09
  - KQP-10
  - KQP-11
- **A L D**
  - 16 32 6
  - 16 32 6
  - 18 35 8
  - 18 35 8
  - 20.5 39 10
  - 20.5 39 10
  - 22 43 12
  - 22 43 12

**Port Plugs**

Inserts easily into an unused cylinder port and/or SUP/EXH Ports. The minimum quantity to order is 10 pieces.
**Solenoid Valves**  
**Series SY3000/5000/7000**

**How To Order**  
**Base Mounted Manifold 45F Type (D-Sub Connector 25 Pole)**

**SS5Y 45 F**

- **Series**
  - 3: SY3000
  - 5: SY5000

- **Common Specifications**
  - Nil: Positive Common
  - N: Negative Common

- **Connector Box Mounting Position**
  - U: U Side
  - D: D Side

- **Valve Stations**
  - 02 ...2 Stations
  - 10 ...10 Stations
  - 20 ...20 Stations

- **SUP/EXH Block Assembly Mounting Position**
  - U: U Side/2-10 Stations
  - D: D Side/2-10 Stations
  - B: Both Sides/2-20 Stations

- **L Option**
  - Where a longer than Standard DIN Rail is required, enter the number of manifold stations that corresponds with the length of DIN Rail needed (20 Stations max)

- **Voltage**
  - 24 VDC
  - 12 VDC

- **A, B Port Size**

  **Metric (mm)**
  - C4: One Touch Fittings ø4 (SY3000, SY5000)
  - C6: One Touch Fittings ø6 (SY3000, SY5000)
  - C8: One Touch Fittings ø8 (SY5000)

  **Imperial (Inch)**
  - N3: One Touch Fittings ø5/32" (SY3000, SY5000)
  - N7: One Touch Fittings ø1/4" (SY3000, SY5000)
  - N9: One Touch Fittings ø5/16" (SY5000)

- **Note:** Mixed Porting available by Special Order

**How to Order Valve / Manifold Ass’y (Example)**

**Ordering example (45F type / D-connector 25-pole)**

![Ordering example diagram]

**Courtesy of Steven Engineering, Inc.**  
230 Ryan Way, South San Francisco, CA 94080-6370  
Main Office: (650) 588-9200  
Outside Local Area: (800) 258-9200  
www.stevenengineering.com
# SOLENOID VALVES
## SERIES SY3000/5000/7000

## HOW TO ORDER

### SERIES SY Manifold 45P Type / Flat Cable Type

### MANIFOLD SERIES

<table>
<thead>
<tr>
<th>Symbol</th>
<th>3</th>
<th>5</th>
<th>7</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series</td>
<td>SY3000</td>
<td>SY5000</td>
<td>SY7000</td>
<td>SY9000</td>
</tr>
</tbody>
</table>

### COMMON SPECIFICATIONS

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Nil</th>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series</td>
<td>None</td>
<td>Positive</td>
<td>Negative</td>
</tr>
</tbody>
</table>

### CONNECTOR POLES

<table>
<thead>
<tr>
<th>Symbol</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pole</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Station</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

### CONNECTOR MOUNTING POSITION

<table>
<thead>
<tr>
<th>Symbol</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pole</td>
<td>26</td>
<td>20</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Station</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

### VALVE STATIONS (Blanking Plate Assembly are included)

<table>
<thead>
<tr>
<th>Symbol</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pole</td>
<td>26</td>
<td>20</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Station</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

### A, B PORT SIZE

<table>
<thead>
<tr>
<th>Metric (mm)</th>
<th>Imperial (Inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C4</td>
<td>OTF for ø4</td>
</tr>
<tr>
<td>C6</td>
<td>OTF for ø6</td>
</tr>
<tr>
<td>C8</td>
<td>OTF for ø8</td>
</tr>
<tr>
<td>N3</td>
<td>OTF for ø5/32</td>
</tr>
<tr>
<td>N7</td>
<td>OTF for ø1/4</td>
</tr>
<tr>
<td>N9</td>
<td>OTF for ø5/16</td>
</tr>
</tbody>
</table>

### SUP/EXH Block Assembly Mounting Positions

<table>
<thead>
<tr>
<th>Symbol</th>
<th>U</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Station</td>
<td>2</td>
<td>10</td>
</tr>
</tbody>
</table>

### SOCKET PLUGS

<table>
<thead>
<tr>
<th>Applicable Fitting Size ød</th>
<th>Model</th>
<th>A</th>
<th>L</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø4mm</td>
<td>KQP-04</td>
<td>16</td>
<td>32</td>
<td>6</td>
</tr>
<tr>
<td>ø5/32&quot;</td>
<td>KQP-03</td>
<td>16</td>
<td>32</td>
<td>6</td>
</tr>
<tr>
<td>ø6mm</td>
<td>KQP-06</td>
<td>18</td>
<td>35</td>
<td>8</td>
</tr>
<tr>
<td>ø1/4&quot;</td>
<td>KQP-07</td>
<td>18</td>
<td>35</td>
<td>8</td>
</tr>
<tr>
<td>ø8mm</td>
<td>KQP-08</td>
<td>20.5</td>
<td>39</td>
<td>10</td>
</tr>
<tr>
<td>ø5/16&quot;</td>
<td>KQP-09</td>
<td>20.5</td>
<td>39</td>
<td>10</td>
</tr>
<tr>
<td>ø10mm</td>
<td>KQP-10</td>
<td>22</td>
<td>43</td>
<td>12</td>
</tr>
<tr>
<td>ø3/8&quot;</td>
<td>KQP-11</td>
<td>22</td>
<td>43</td>
<td>12</td>
</tr>
</tbody>
</table>

### OPTIONS

- **M** Special Specifications (by Special Order)

### VOLTAGE

<table>
<thead>
<tr>
<th>Voltage</th>
<th>24VDC</th>
<th>12VDC</th>
</tr>
</thead>
</table>

### Block disc indication label

These labels are stick to the block with SUP and EXH block discs inside for confirmation from outside. (3 sheets respectively)

### Block disc indication label

These labels are stick to the block with SUP and EXH block discs inside for confirmation from outside. (3 sheets respectively)

### Silencer for One-touch fitting

The silencer plugs directly into the One-touch fitting (R port) of the manifold.

### PORT PLUGS

Inserts easily into an unused cylinder port and/or SUP/EXH Ports. The minimum quantity to order is 10 pieces.
### Cable Assemblies for Type 45 Pre-wired Manifolds

#### D-Sub Connector Cable Assembly

<table>
<thead>
<tr>
<th>Cable Length (L)</th>
<th>Assembly No.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5m</td>
<td>VVZ30000-21A-1</td>
<td>Cable 25</td>
</tr>
<tr>
<td>3m</td>
<td>VVZ30000-21A-2</td>
<td>Core</td>
</tr>
<tr>
<td>5m</td>
<td>VVZ30000-21A-3</td>
<td>x 24AWG</td>
</tr>
</tbody>
</table>

* For other commercial connectors, use a 25-pole female connector made in conformity with MIL-C-24308.

#### Electric Characteristics

<table>
<thead>
<tr>
<th>Item</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conductor Resistance</td>
<td>65 or less /km, 20ºC</td>
</tr>
<tr>
<td>Voltage Limit</td>
<td>1000 V, 1 min, AC</td>
</tr>
<tr>
<td>Insulation Resistance M km, 20ºC</td>
<td>5 or more</td>
</tr>
</tbody>
</table>

Note: The minimum bending radius of D-Sub Connector Cable Assembly is 20mm.

#### Flat Cable Connector / Cable Ass’y

**AXT100-FC□**

![Triangle mark position](image)

**Accessories**

<table>
<thead>
<tr>
<th>Flat Cable Connector Assembly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable Length</td>
</tr>
<tr>
<td>1.5m</td>
</tr>
<tr>
<td>3m</td>
</tr>
<tr>
<td>5m</td>
</tr>
<tr>
<td>Connector Width</td>
</tr>
</tbody>
</table>
**3/2 Direct Acting Solenoid Valve M3-M5 Port Series VQ100**

- **High Speed Repeatable Response**: on 3.5ms, off 1.5ms
- **Long Life Expectancy**: 200 million cycles
- **Compact Lightweight Construction**: 10mm Body Width
- **Low Power Consumption**: 1 Watt (0.5 Watt Option)
- **Normally Open Version Available**
- **LED Indication and Surge Suppression is Standard**
- **Cv = 0.02 Standard (Cv = 0.04 Option Available)**
- **Locking Manual Override Available (Standard on Latching Version)**

**Technical Specifications**

<table>
<thead>
<tr>
<th>Application</th>
<th>...1 Watt, 0.8MPa (117PSI) / ...5 Watt, 0.7MPa (101PSI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Actuation</td>
<td>Direct Operated 3 Port Poppet Type (Normally Closed)</td>
</tr>
<tr>
<td>Fluid</td>
<td>Air - inert gas</td>
</tr>
<tr>
<td>Max Operating Pressure</td>
<td>...0.8MPa (117PSI) / ...0.7MPa (101PSI)</td>
</tr>
<tr>
<td>Min Operating Pressure</td>
<td>...0MPa (0PSI)</td>
</tr>
<tr>
<td>Effective Area</td>
<td>...A - 0.28mm² (Cv 0.016) / ...0.14mm² (Cv 0.008)</td>
</tr>
<tr>
<td></td>
<td>...P - 0.36mm² (Cv 0.02) / ...0.20mm² (Cv 0.011)</td>
</tr>
<tr>
<td>Response Time</td>
<td>...ON: 3.5ms OFF: 1.5ms</td>
</tr>
<tr>
<td>Ambient and Fluid Temperature</td>
<td>...-10 ~ +50°C (14 ~ 122°F)</td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not Required</td>
</tr>
<tr>
<td>Manual Override</td>
<td>Non Locking Push Type/Locking Optional</td>
</tr>
<tr>
<td>Mounting Position</td>
<td>Free</td>
</tr>
<tr>
<td>Protection Structure</td>
<td>Dust Proof</td>
</tr>
<tr>
<td>Weight</td>
<td>...12.6g (L/M Connector Type without Subplate)</td>
</tr>
<tr>
<td>Allowable Voltage Range</td>
<td>...±10% of Rated Voltage</td>
</tr>
<tr>
<td>Coefficient of Friction</td>
<td>Class B or equivalent</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>...DC 1W / 0.5W</td>
</tr>
<tr>
<td>Electrical Entry</td>
<td>...Plug In Type, L/M Type Connector (With Lamp/Surge Voltage Suppressor), Grommet</td>
</tr>
</tbody>
</table>

**How To Order Solenoid Valve Series VQ100**

**Function**

<table>
<thead>
<tr>
<th>Function</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ10</td>
<td>0</td>
</tr>
</tbody>
</table>

**Specifications**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC100V</td>
<td></td>
</tr>
<tr>
<td>DC 24V</td>
<td></td>
</tr>
<tr>
<td>DC 12V</td>
<td></td>
</tr>
</tbody>
</table>

**Coil Rated Voltage**

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Manual Override</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

**Accessories**

**Cable Assemblies**

<table>
<thead>
<tr>
<th>Negative Common Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single: AXT661-14-AN-*</td>
</tr>
<tr>
<td>Latching: AXT661-13-AN-*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Positive Common (Option Available)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single: AXT661-14-A-**</td>
</tr>
<tr>
<td>Latching: AXT661-13-A-**</td>
</tr>
</tbody>
</table>

* Cable length code
- Nil: 300mm
- 6: 600mm
- 10: 1000mm
- 20: 2000mm
- 30: 3000mm

**Electrical Entry**

<table>
<thead>
<tr>
<th>Electrical Entry</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Plug-in Type with Lamp/Surge Voltage Suppressor: only for Plug-in Type</td>
</tr>
<tr>
<td>LO</td>
<td>Plug Lead Type: L Type Connector with Lamp/Surge Voltage Suppressor without Connector</td>
</tr>
<tr>
<td>L</td>
<td>Plug Lead Type: L Type Connector with Lead Wire, Indicator Light and Surge Voltage Suppressor</td>
</tr>
<tr>
<td>M</td>
<td>Plug Lead Type: M Type Connector with Lead Wire, Indicator Light and Surge Voltage Suppressor</td>
</tr>
<tr>
<td>MO</td>
<td>Plug Lead Type: M Type Connector with Indicator Light and Surge Voltage Suppressor</td>
</tr>
<tr>
<td>G</td>
<td>Grommet Type</td>
</tr>
</tbody>
</table>

**Symbols**

- **Standard**
- **Latching Option**
**Solenoid Valves**

**Series VQ100**

**Series VQ100 Manifolds**

- Plug-In Version available up to 18 Stations for use with VQ110-*F* Valves (VV3Q11)
- Standard Option for Individual Wiring up to 20 Stations for use with VQ110 - *LO* Valves (VV3Q12)

**How To Order Manifolds Series VQ100**

**Manifold Base Type**

1. Plug In Unit
2. Plug Lead Unit

**Number of Stations**

02 → 2 Stations
to
18 → 18 Stations
Available up to 20 Stations for Plug Lead Type

**Electrical Entry**

C → Multi Connector Type

**Option**

- None
- DIN Rail Mount

**Cable Length**

1. With 1.5m Cable
2. With 3m Cable
3. With 5m Cable

**Electrical Entry Position**

U → Upper
S → Side

---

**Accessories Plug Assembly Series VQ100**

**Plug Ass’y**

**VVQ100-12A**

**Components**

1. Plug
2. Female contact
3. Vinyl multi-core cable

**Model**

- VVQ100-12A-1: 1.5m
- VVQ100-12A-2: 3m
- VVQ100-12A-3: 5m

**Includes**

- Fixing screws x2
- Gasket

---

**Blanking Plate Kit for VV3Q1 - VVQ100-10A-1**

- Includes fixing screws x2 and gasket

**Blanking Plate Kit for VV3Q12 - VVQ100-10A-2**

- Includes fixing screws x2 and gasket

---

**Courtesy of Steven Engineering, Inc.**

230 Ryan Way, South San Francisco, CA 94080-6370
Main Office: (650) 588-9200
Outside Local Area: (800) 258-9200
www.stevenengineering.com
5 PORT METAL SEAL/RUBBER SEAL ULTRA HIGH SPEED SOLENOID VALVE SERIES VQ0000

High Speed Response from new Solenoid Design.

Long Life: Over 200 Million Cycles can be achieved with the Special Plunger and Poppet Valve Construction of the Patent Pilot Valve.

Space Saving Design

Four Options for Electrical Connection.

Indicator light and Voltage Surge Suppressor

Ease of Assembly and Maintenance.

Optimum performance from Metal Seal Valves is achieved when used with a Mist Separator.

**Technical Specifications**

<table>
<thead>
<tr>
<th>Type of Seal</th>
<th>Metal</th>
<th>Rubber</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid</td>
<td>Air, Inert Gas</td>
<td>Air, Inert Gas</td>
</tr>
<tr>
<td>Min Operating Pressure</td>
<td>0.75MPa / 109 PSI</td>
<td>0.75MPa / 109 PSI</td>
</tr>
<tr>
<td>Max Operating Pressure (Note 1)</td>
<td>0.1MPa/14.5PSI</td>
<td>0.15MPa/22PSI</td>
</tr>
<tr>
<td>Effective Area (Cv Factor) (mm²)</td>
<td>Single Max 12m sec Max 15m sec</td>
<td>Double Max 10m sec Max 13m sec</td>
</tr>
<tr>
<td>Life</td>
<td>200 million cycles or more</td>
<td></td>
</tr>
<tr>
<td>Ambient and Fluid Temp (Note 2)</td>
<td>-1.0 to +50°C (14~122°F)</td>
<td></td>
</tr>
<tr>
<td>Lubricant</td>
<td>Not required</td>
<td></td>
</tr>
<tr>
<td>Manual Override</td>
<td>Non locking push type</td>
<td></td>
</tr>
<tr>
<td>Protection Structure</td>
<td>Dustproof</td>
<td></td>
</tr>
</tbody>
</table>

(Note 2) Calculated on the basis of JIS B 8375-1981 (Supply pressure 0.5 MPa (5.1 Bar)); the above valve shows response time checked when the valve is equipped with an indicator light and surge voltage suppressor.

Use dry air to prevent dew condensation in the case when temperature is low.

Perfect dry air (dew point equals to -30°C) No grease on main valve.

**Symbols**

1. 2 position single
2. 2 position double
3. 3 position center A B
4. 3 position center A B
5. 3 position center A B

Coil rated voltage: 12 VDC, 24 VDC
Allowable voltage: 100% of rated voltage
Type of coil insulation: Class B
Power consumption (Note 1): 1W

(Note 1) Calculated on the basis of JIS B 8375-1981 (Supply pressure 0.5 MPa (5.1 Bar)); the above valve shows response time checked when the valve is equipped with an indicator light and surge voltage suppressor).

**Wiring Specifications**

- Positive common, Eg Serial Transmission.
- The lead wires are connected to the valve as shown below. Connect each to the power supply side.

---

**C-Kit (Connector) Series VQ0000**

Type which has lead wires in plug connected to each valve individually.

---

**Negative common.**

- The lead wires are connected to the valve as shown below. Connect each to the power supply side.
SOLENOID VALVES
 SERIES VQ0000

F Kit (D-sub connection) Series VQ0000

- The D-sub connector permits simple rationalization and installation labor saving for electrical connection.
- The D-sub connector (25-pin std., 15-pin option) conforms with MIL, permitting use of commercial connectors with wide interchangeability.
- Top or side connector receptacle position can be selected in accordance with the available mounting space.
- Standard max 8 stations (Optional 16 stations possible).

The D-sub connector cable assy can be ordered individually or included with a specific manifold model no. Refer to “How to Order/Manifold”.

D-Sub connector cable assembly (Option)

<table>
<thead>
<tr>
<th>Cable Length (L)</th>
<th>Assembly No.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5m</td>
<td>VVZ31000-21A-1</td>
<td></td>
</tr>
<tr>
<td>3m</td>
<td>VVZ31000-21A-2</td>
<td>Cable 25 core</td>
</tr>
<tr>
<td>5m</td>
<td>VVZ31000-21A-3</td>
<td>x 24AWG</td>
</tr>
</tbody>
</table>

*For other commercial connectors, use a 25-pin female connector made in conformity with MIL-C-24308

Electric Characteristics

<table>
<thead>
<tr>
<th>Item</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conductive resistance90°C, 20ºC</td>
<td>65 or less</td>
</tr>
<tr>
<td>Voltage limit V, 1 min, AC</td>
<td>1000</td>
</tr>
<tr>
<td>Insulation resistance MΩm, 20ºC</td>
<td>5 or more</td>
</tr>
</tbody>
</table>

Note) Type with 15-pin are also available.

D-sub connector

Note) The min. bending radius of D-Sub cable assembly is 20mm.

Where color table by terminal number of D-Sub connector cable assembly:

<table>
<thead>
<tr>
<th>Terminal No.</th>
<th>Lead wire colour</th>
<th>Dot marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Black</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>Brown</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>Red</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>Orange</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>Yellow</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>Pink</td>
<td>-</td>
</tr>
<tr>
<td>7</td>
<td>Blue</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>Violet</td>
<td>White</td>
</tr>
<tr>
<td>9</td>
<td>Grey</td>
<td>Black</td>
</tr>
<tr>
<td>10</td>
<td>White</td>
<td>Red</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>
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<tr>
<td>15</td>
<td>Pink</td>
<td>Red</td>
</tr>
<tr>
<td>16</td>
<td>Blue</td>
<td>White</td>
</tr>
<tr>
<td>17</td>
<td>Violet</td>
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<td>18</td>
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<td>20</td>
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<td>21</td>
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<td>22</td>
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<td>23</td>
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<tr>
<td>24</td>
<td>Black</td>
<td>White</td>
</tr>
<tr>
<td>25</td>
<td>White</td>
<td>-</td>
</tr>
</tbody>
</table>

Electrical Wiring Specifications
## Solenoid Valves

### Series VQ0000

#### How To Order

**Base Mounted Type Valve**

**Single Unit VQ0000**

**Series VQ0000**

**Configuration**

<table>
<thead>
<tr>
<th>Position</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2 Position Single</td>
</tr>
<tr>
<td>2</td>
<td>2 Position Double</td>
</tr>
<tr>
<td>3</td>
<td>3 Position Closed Center</td>
</tr>
<tr>
<td>4</td>
<td>3 Position Exhaust Center</td>
</tr>
</tbody>
</table>

**Type of Seal**

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Metal</td>
</tr>
<tr>
<td>1</td>
<td>Rubber</td>
</tr>
</tbody>
</table>

**Pilot Valve Specifications (Option)**

- **Blank.1W Standard**
- **H** .15W (High speed response)
- **Y** Low wattage type

(Note): Except for 110 VAC type.

**Electrical Entry**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>Grommet (Except for 100/110VAC)</td>
</tr>
<tr>
<td>L</td>
<td>L type plug connector</td>
</tr>
<tr>
<td>LO</td>
<td>L type plug connector without connector</td>
</tr>
<tr>
<td>M</td>
<td>M type plug connector</td>
</tr>
<tr>
<td>MO</td>
<td>M type plug connector without connector</td>
</tr>
</tbody>
</table>

**Coil Rated Voltage**

<table>
<thead>
<tr>
<th>Position</th>
<th>Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>110VAC</td>
</tr>
<tr>
<td>5</td>
<td>24VDC</td>
</tr>
<tr>
<td>6</td>
<td>12VDC</td>
</tr>
</tbody>
</table>

**Subplate SUP•Cylinder ports**

- **-** Without subplate
- **C3** One Touch Fittings for Ø3.2
- **C4** One Touch Fittings for Ø4
- **M5** M5 (10-32Nom)
- **N1** One Touch Fitting ø1/8"
- **N3** One Touch Fitting ø5/32"

(Note): EXH port: M5 thread

**Manual Override**

- **-** Non-locking Recessed type
- **B** Locking Tool type (Optional)

**Subplate SUP•Cylinder ports**

- **-** Without subplate
- **C3** One Touch Fittings for Ø3.2
- **C4** One Touch Fittings for Ø4
- **M5** M5 (10-32Nom)
- **N1** One Touch Fitting ø1/8"
- **N3** One Touch Fitting ø5/32"

(Note): EXH port: M5 thread

**Manual Override**

- **-** Non-locking Recessed type
- **B** Locking Tool type (Optional)
**Solenoid Valves**

**Series VQ0000**

**Body Ported Type**
**Plug Lead Unit/Flip Type**

**How To Order Manifold**

**VQ5Q 0 4 — 08 F S1 — D**

**Series** 0 ......VQ0000

**Type of Manifold**
4 ......Plug lead unit flip type

**Number Of Stations**
01 ......1 Station
••••••••
16 ......16 Stations

The number of stations differs from kit to kit

**Kit** • Electrical entry • Cable length

**Sup/Exh Port**
- ......Metric (mm)
00T ......Imperial (Inch)

**DIN Rail/Option**
- ......None (C Kit only)
D ......DIN Rail Mounted
N ......With Nameplate
S ......Built-in Silencer (Direct Exhaust)

**Note 1)** When more than one option is desired, combine symbols in alphabetical order.
Example) -DNS

**Note 2)** All F, P, and S kits are of DIN rail mounted type, so include suffix “D”.

**Note 3)** All VQ0000 series are provided with a built-in silencer (direct exhaust) so include suffix “S”.

**Note 4)** F, P, and S kits are provided with an exhaust on one side while C kits are with an exhaust on both sides.

**Note 1)** The max. standard stations are 8. With single wiring, arrangement of up to 16 stations is possible.

Specify the arrangement of stations using the manifold specification form for more than 8 stations.

Other than those above, F and P kits with different number of pins are available.
**HOW TO ORDER VALVE**

**Series VQ0000**

**Configuration**

<table>
<thead>
<tr>
<th>Series</th>
<th>Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2 position single port</td>
</tr>
<tr>
<td>1</td>
<td>2 position double port</td>
</tr>
</tbody>
</table>

**Cylinder Ports**

- C3: One Touch Fittings for ø3.2
- C4: One Touch Fittings for ø4
- M5: M5 (10-32Nom)
- N1: One Touch Fittings ø1/8”
- N3: One Touch Fittings ø5/32”

**Type of Seal**

- 0: Metal
- 1: Rubber

**Pilot Valve Specifications**

- 1: 1W (Standard)
- H: 1.5W (High speed response)
- Y: 0.5W (Low Wattage)
- N: Negative Common

**Coil Voltage**

- 3: 110VAC
- 5: 24VDC
- 6: 12VDC

With indicator light and surge voltage suppressor.

**Manual Override**

**Configuration**

- L/L type: Plug connector with lead wire
- LO/L type: Plug connector without connection
- M/M type: Plug connector with lead wire
- MO/M type: Plug connector without connection

**Note**

1. LO and MO valves are used for F, P, and S kits.
2. The plug connector and lead wires are attached to the manifold.
3. The connector direction in the case of L and M types is based on the pilot valve.
4. Grommet type (G) is also available for C-kit, single type of VQ0000/1000/2000.

**Accessories Manifold Options**

- Individual SUP spacer: VVQ0000-P-4-C4
- Individual EXH spacer: VVQ0000-R-4-C4
- DIN rail mounted bracket [-D]: VVQ0000-57A-4

**Nameplate [-N4]**

- VVQ0000-N4-Station

**Blanking plug KQP**

- block valve VQ0000-4-C4

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230 Ryan Way, South San Francisco, CA 94080-6370

Main Office: (650) 588-9200
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www.stevenengineering.com
Solenoid Valves
Series VQ1000

5 Port Metal Seal/Rubber Seal
Ultra High Speed Solenoid Valve
Series VQ1000

- High Speed Response from new Solenoid Design.
- Long Life: Over 200 Million Cycles can be achieved with Patent Pilot Valve design.
- Indicator light and Voltage Surge Suppressor
- Space Saving Design
- Five Options for Manifold Electrical Connection.
- Plug lead and Plug In valve manifold options.
- New cassette type manifold available.

### TECHNICAL SPECIFICATIONS

#### Type of Seal

<table>
<thead>
<tr>
<th>Fluid Type</th>
<th>Seal Type</th>
<th>Minimum Operating Pressure</th>
<th>Maximum Operating Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air, inert gas</td>
<td>Metal</td>
<td>0.1 MPa (14.5 PSI)</td>
<td>0.75 MPa (109 PSI)</td>
</tr>
<tr>
<td>Air, inert gas</td>
<td>Rubber</td>
<td>0.15 MPa (22 PSI)</td>
<td>0.75 MPa (109 PSI)</td>
</tr>
</tbody>
</table>

#### Effective Area

<table>
<thead>
<tr>
<th>CV Factor</th>
<th>Single</th>
<th>Double</th>
<th>3-position</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.6 (0.2)</td>
<td>5.4 (0.3)</td>
<td>5.4 (0.3)</td>
</tr>
</tbody>
</table>

#### Response Time

<table>
<thead>
<tr>
<th>Single</th>
<th>Double</th>
<th>3-position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max 12 ms</td>
<td>Max 10 ms</td>
<td>Max 20 ms</td>
</tr>
</tbody>
</table>

#### Life

- 200 million cycles or more

#### Ambient and Fluid Temperature

- -10 to +50°C (14~122°F) for Single
- -5 to +50°C (23~122°F) for Double

#### Lubricant

- Not required for Single
- Not required for Double
- Dustproof for all types

#### Manual Override

- Non-locking, Push for Single
- Non-locking, Push for Double

#### Protection

- Dustproof for all types

### SOLENOID SPECIFICATIONS

#### Coil Rated Voltage

- 12 VDC, 24 VDC
- 100/110 VAC

#### Allowable Voltage

- ±10% of Rated Voltage

#### Type of Coil Insulation

- Class B

#### Power Consumption

- 1W
- Inrush/Holding: 1.1 VA (11 mA)

#### Electrical Entry

- Plug In or Connector Type

#### Symbol Table

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2 position single</td>
</tr>
<tr>
<td>2</td>
<td>2 position double</td>
</tr>
<tr>
<td>3</td>
<td>3 position closed center</td>
</tr>
<tr>
<td>4</td>
<td>3 position unclosed center</td>
</tr>
<tr>
<td>5</td>
<td>3 position pressure zero center</td>
</tr>
</tbody>
</table>

Special types:
- i Pressure centre function
- ii External pilot
- iii Low power consumption (0.5W)
- iv Positive common wiring

*Note 1:* Calculated on the basis of JIS B 8375-1981 (Supply pressure: 0.5 MPa (5.1 bar); the above valve shows response time checked when the valve is equipped with an indicator light and surge voltage suppressor).

*Note 2:* Use dry air to prevent dew condensation in the case when temperature is low. Perfect dry air (dew point equals to -30°C) No grease on main valve.

*Note 3:* Perfect dry air (dew point equals to -30°C) No grease on main valve.

*Note 4:* Perfect dry air (dew point equals to -30°C) No grease on main valve.
F Kit D-sub connector (25 pin) Series VQ1000

- The D-Sub Connector permits simple rationalization and installation labor saving for Electrical Connection.
- The D-Sub Connector (25-pin std., 15-pin option) conforms with MIL permitting use of commercial connectors with wide interchangeability.
- Top or Side Connector Receptacle Position can be selected in accordance with the available mounting space.
- Standard max 8 stations (Optional 16 stations possible).

The D-sub connector cable easy can be ordered individually or included with a specific manifold model no. Refer to "How to Order/Manifold"

Wire color table by terminal number of D-sub connector cable assy:

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Color 1</th>
<th>Color 2</th>
<th>Color 3</th>
<th>Color 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Black</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>Brown</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>Red</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>Orange</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>Yellow</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>Grey</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>7</td>
<td>Blue</td>
<td>-</td>
<td>-</td>
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<tr>
<td>8</td>
<td>White</td>
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<tr>
<td>9</td>
<td>Grey-Black</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>10</td>
<td>White-Red</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>11</td>
<td>Yellow-Red</td>
<td>-</td>
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</tr>
<tr>
<td>12</td>
<td>Yellow</td>
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<td>15</td>
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<tr>
<td>16</td>
<td>White</td>
<td>-</td>
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</tr>
<tr>
<td>17</td>
<td>Grey</td>
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<td>-</td>
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</tr>
<tr>
<td>18</td>
<td>Orange</td>
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<td>-</td>
</tr>
<tr>
<td>19</td>
<td>White-Red</td>
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</tr>
<tr>
<td>24</td>
<td>White</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>25</td>
<td>Grey</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Note) Types with 15-pin are also available.

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

P Kit (Flat Cable Connection) Series VQ1000

- MIL Flat Cable Connector permits simple rationalization and installation labor savings for Electrical Connection.
- The Connector (26 pin; 10-, 16-, and 20 pin optional) conforms with MIL spec permitting use of widely interchangeable commercial connectors.
- Top or Side Receptacle Position can be selected in accordance with the available mounting space.
- Standard max 8 Stations (Optional 16 Stations optional).

These figures show the standard internal wiring for double solenoid capability provided for each station. Specify the number of stations by the manifold specifications for items with more than 8 stations. Note) Use negative COM type values for negative COM specification manifolds.
2.28  SOLENOID VALVES
SERIES VQ1000

T KIT (TERMINAL BLOCK BOARD)
SERIES VQ1000

This Kit has a small Terminal Block inside a junction box.
The Electrical Entry Port G (PF) 1/2 permits connection of
Conduit Fittings.
Max 12 Stations.

Open the terminal block cover for wire connection.

Sequence 1. How to remove terminal block cover
Loosen the screws on the terminal block cover and open it in the
direction shown by the arrow. The cover can then be removed
from the terminal block.

Sequence 2. Wire connection
The diagram on the right shows the terminal block wiring schematic.
All stations are provided with double solenoid wiring.
Insert each lead wire into the terminal opening and tighten the screw
directly above.

Sequence 3. How to replace terminal block cover
Hook groove “A” on shaft “B” and close the cover. Then tighten the screws.

HOW TO ORDER
BODY PORTED VALVE - SINGLE UNIT

VQ1 1 6 0 N — 5 L — C6

SERIES VQ1000

Configuration
1 ...... 2 Position single
2 ...... 2 Position double (latching)
3 ...... 3 Position closed centre
4 ...... 3 Position exhaust centre
5 ...... 3 Position pressure centre

Type of Seal
0 ...... Metal
1 ...... Rubber

Pilot Valve Specifications (Option)
- ...... 1W Standard
H ...... 1.5W (High speed response)
Y ...... Low wattage type
N ...... Negative common wiring

(Note): Except for 110 VAC type.

Subplate SUP Cylinder Ports
C3 ... One Touch Fittings for Ø3.2
C4 ... One Touch Fittings for Ø4
C6 ... One Touch Fittings for Ø6
M5 ... M5 (10-32 Nom)
N1 ... One Touch Fittings ø1/8"
N3 ... One Touch Fittings ø5/32"
N7 ... One Touch Fittings ø1/4"

(Note) EXH Port is a Direct Exhaust Type (with Built In Silencer)

Manual Override
- - - - - - - Non locking recessed type
* * * B Locking tool type*
* C Locking knob type
Note: Locking type (B) is standard for double (latching) type.
Indicate “B” in model no.
• Option

Electrical Entry
G ... Grommet (Except for latching type and 100/110VAC)
L ... L type plug connector with lead wire
LO ... L type plug connector without connector
M ... M type plug connector with lead wire
MO ... M type plug connector without connector

Coil Rated Voltage
3 ...... 110VAC
5 ...... 24VDC
6 ...... 12VDC

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**Solenoid Valves**

**Series VQ1000**

**Base Mounted Type**

**Plug in Unit**

**VQ1000**

**How To Order Manifold**

**Serial: 1 ... VQ1000**

**Type of Manifold:**

1 ...... Plug in Unit - Base Mounted

**Number of Stations:**

01 ...... 1 Station

• ......

• ......

16 ...... 16 Stations

**Cylinder Ports:**

C3......One Touch Fittings for Ø3.2
C4......One Touch Fittings for Ø4
C6......One Touch Fittings for Ø6
M5......M5 (10-32Nom)
N1......One Touch Fittings ø1/8"
N3......One Touch Fittings ø3/32"
N7......One Touch Fittings ø1/4"
*C Mixed Ports Available

Note 1) Insert code L (upward) or B (downward) for elbow type fittings for all manifold stations. Example) B6: Elbow one touch fittings for downward (bottom) piping.

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

**Option**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Option</th>
<th>VQ1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Blank)</td>
<td>None</td>
<td>*</td>
</tr>
<tr>
<td>B</td>
<td>Check vale for prevention of back pressure</td>
<td>*</td>
</tr>
<tr>
<td>D</td>
<td>DIN Rail Mounted Type</td>
<td>*</td>
</tr>
<tr>
<td>J</td>
<td>With Vacuum Ejector Unit</td>
<td>*</td>
</tr>
<tr>
<td>N</td>
<td>With Nameplate</td>
<td>*</td>
</tr>
<tr>
<td>R</td>
<td>External Pilot capable</td>
<td>*</td>
</tr>
<tr>
<td>S</td>
<td>Built-in Silencer (Direct Exhaust)</td>
<td>*</td>
</tr>
</tbody>
</table>

Note 1) When more than one option is desired Combined symbols in alphabetical order. Example) BRS

Note 2) Models with a suffix “-B” have checked valves for prevention of back pressure at all manifold stations.

Note 3) In the case of the external pilot “-R”, order solenoid valves with the external pilot specification “R”

Note 4) Combination of ejector option “J” and nameplate “N” is not possible.

**T Terminal block board**

**K Kit**

*Electrical entry* *Cable length*

**F Kit**

(D-sub connection)

**P Kit**

(Flat cable connection)

**S Kit**

(Serial transmission unit)

Note 1) Besides the above, the number of pins for F and P kits is different, as well.

Note 2) G and T kits are applicable only to VQ1000.
**Solenoid Valves**

**Series VQ1000**

---

**HOW TO ORDER VALVE**

**VQ 1 1 0 0 N — 5**

**Symbols**

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

**Series**

- 0: VQ1000

**Symbols**

- A: Non-locking released type
- B: Locking tool type
- C: Locking knob type

**Manual Override**

*Option*

- Indicator light and surge voltage suppressor
  - Yes
  - No

**Coil Voltage**

- 3: 110VAC
- 5: 24VDC
- 6: 12VDC

**Pilot Valve Specifications**

- H: 1-W (Standard)
- 1.5-W (High Speed response)
- Y: Low wattage (0.5W)
- N: Negative common (blank is positive common)

**Type of Seal**

- 0: Metal
- 1: Rubber

---

**How To Order**

**Accessories**

**Manifold Options**

- **Blanking plate assembly** VVQ1000-10A-5
- **Sup block plate** VVQ1000-16A-
- **Nameplate [-N]** VVQ1000-N5-Station (1-Max. stations)
- **Built in silencer** Direct exhaust [-S]
- **Individual SUP spacer** VVQ1000-P-1-C6

**Planking Plug**

- **KQP-** 23 04 06 08 10 01 03 07

**2 Stations matching fittings assembly**

- VVQ1000-52A-C8 (VQ1000)

**Individual EXH spacer**

- VVQ1000-R-1-C6

**EXH block base assembly**

- VVQ1000-19A-

**Elbow fittings assembly**

- VVQ1000-F-L-C6

**Silencer (EXH port)**

- VVQ1000-JA (VQ1000)

**Vacuum ejector unit**

- VVQ1000-19M (VQ1000)

**Check valve for prevention of back pressure assembly [-B]**

- VVQ1000-18A

---

**DIN rail mounted bracket [-D]**

- VVQ1000-57A

---

**COIL VOLTAGE**

- 3: 110VAC
- 5: 24VDC
- 6: 12VDC

---

**PILOT VALVE SPECIFICATIONS**

- H: 1-W (Standard)
- 1.5-W (High Speed response)
- Y: Low wattage (0.5W)
- N: Negative common (blank is positive common)

---

**How To Order**

**Symbols**

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

**Series**

- 0: VQ1000

---

**Symbols**

- A: Non-locking released type
- B: Locking tool type
- C: Locking knob type

**Manual Override**

*Option*

- Indicator light and surge voltage suppressor
  - Yes
  - No

---

**Coil Voltage**

- 3: 110VAC
- 5: 24VDC
- 6: 12VDC

---

**Pilot Valve Specifications**

- H: 1-W (Standard)
- 1.5-W (High Speed response)
- Y: Low wattage (0.5W)
- N: Negative common (blank is positive common)

---

**How To Order**

**Symbols**

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

**Series**

- 0: VQ1000

---

**Symbols**

- A: Non-locking released type
- B: Locking tool type
- C: Locking knob type

**Manual Override**

*Option*

- Indicator light and surge voltage suppressor
  - Yes
  - No

---

**Coil Voltage**

- 3: 110VAC
- 5: 24VDC
- 6: 12VDC

---

**Pilot Valve Specifications**

- H: 1-W (Standard)
- 1.5-W (High Speed response)
- Y: Low wattage (0.5W)
- N: Negative common (blank is positive common)
**BODY PORTED TYPE**
**PLUG LEAD UNIT/FLIP TYPE**
**SERIES VQ1000**

**HOW TO ORDER MANIFOLD**

*HOW TO ORDER MANIFOLD*

**VV5Q 14 - 08 F S1 - D**

**Series VQ1000**

**TYPE OF MANIFOLD**

4........Plug in unit/flip type

**NUMBER OF STATIONS**

01 ....1 Station

• • • • • • • •

16 ....16 Stations

The number of stations differs from kit to kit.

**KIT • ELECTRICAL ENTRY CABLE LENGTH**

**F**

kit (D-sub connection)

- Connector Location
  - UC: 90 Without cable
  - U1: K1 With cable (1.5m)
  - U2: F2 With cable (3m)
  - U3: S3 With cable (5m)

**C**

kit (Connector)

**S**

kit (Serial transmission unit)

### DIN RAIL/OPTION

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>None (C kit only)</td>
</tr>
<tr>
<td>N</td>
<td>With Nameplate</td>
</tr>
<tr>
<td>S</td>
<td>Built-in Silencer (Direct Exhaust)</td>
</tr>
</tbody>
</table>

*Note 1)* When more than one option is desired Combined symbols in alphabetical order. Example: DNS

*Note 2)* All F, P, and S kits are of DIN rail mounted type. So include suffix "D".

*Note 3)* F, P, and S kits are provided with an exhaust on one side while C kits are with an exhaust on both sides.

**BODY PORTED TYPE**

**PLUG LEAD UNIT/FLIP TYPE**

**SERIES VQ1000**

**The number of stations differs from kit to kit.**

**Note 1)**

The max. standard stations are 8. With single wiring arrangement of up to 16 stations is possible. Specify the arrangement of stations using the manifold specification form for more than 8 stations.

**Note 2)**

Other than those above, F and P kits with different number of pins are available.
### Solenoid Valves Series VQ1000

**How To Order Valve**

**Series**

<table>
<thead>
<tr>
<th>1</th>
<th>VQ1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>L</td>
</tr>
<tr>
<td>6</td>
<td>C6</td>
</tr>
</tbody>
</table>

**Configuration**

- 2 position single
- 2 position double (stretched)
- 3 position closed center
- 3 position exhaust center
- 3 position pressure center

**Type of Seal**

- 0: Metal
- 1: Rubber

**Pilot Valve Specifications**

- L: Push-locking type
- C: Mini-locking push type

**Cylinder Ports**

- C3: One Touch Fittings for Ø3.2
- C4: One Touch Fittings for Ø4
- C6: One Touch Fittings for Ø6
- M5: One Touch M5 (10-32 Nom)
- N1: One Touch Fittings ø1/8"*
- N3: One Touch Fittings ø5/32"*
- N7: One Touch Fittings ø1/4"*

**Electrical Entry**

- L: L type plug connector with lead wire
- C: C type plug connector with lead wire
- M: M type plug connector with lead wire
- MD: M type plug connector without connector

**Coil Voltage**

- 3: 110VAC (50/60Hz)
- 5: 24VDC
- 6: 12VDC

**Manual Override**

- Standard model of a double (latching) type should be selected for a push-locking type. Clearly write a symbol “B” or “C”. A manual override for pilot valve is provided to the standard model for double type.

**Electrical Entry**

- L: L type plug connector with lead wire
- C: C type plug connector with lead wire
- M: M type plug connector with lead wire
- MD: M type plug connector without connector

**Note**

- 0 and 120VAC valves are used for P, F, and S kits. The plug connector and lead wire are selected on the manifold.

**Accessories Manifold Options**

- Individual SUP Spacer VVQ1000-P-4-C6
- DIN Rail Mounted Bracket [-D] VVQ1000-57A-4
- Individual EXH Spacer VVQ1000-R-4-C6
- Built In Silencer, Direct Exhaust [-S]

**Nameplate [-N4]**

- VVQ1000-N4 Station (1-Max. stations)

**Silencer (EXH Port)**

- AN103-X233 (VQ1000)

**Blanking Plug**

- KQP-

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- www.stevenengineering.com
BODY PORTED TYPE  
PLUG LEAD UNIT/CASSETTE TYPE  
SERIES VQ1000

HOW TO ORDER MANIFOLD

**SUP/EXH PORT**
- Metric (mm)
- Imperial (Inch)

**DIN RAIL/OPTION**
- D: DIN rail mounted type
- N: With Nameplate

**Note 1:** Manifold is of a DIN rail mounted type, and so suffix "D" should be indicated.
**Note 2:** When the "N" option is desired, write as "DN".

**TYPE OF MANIFOLD**
7 Plug Lead unit/cassette type

**NUMBER OF STATIONS**
- 01 ... 1 Station
- 16 ... 16 Stations
The number of stations differs from kit to kit.

**KIT • ELECTRICAL ENTRY CABLE LENGTH**

**F Kit (D-sub connection)**
Max 1 (Stations)
- Without cable
- With cable (1.5m)
- With cable (3m)
- With cable (5m)

**C Kit (Connector)**
Max. 16 (stations)
- A: Without unit
- B: With unit (Mitsubishi, MELSEC-A)
- C: With unit for Omron, SYMAC
- D: With unit for Sharp, New satellite

**S Kit (Serial transmission unit)**
Max. 16 (stations)
- Max. 8 (stations)

**Note 1:** Other than those above, F, C, and S kits can also be ordered.
**Note 2:** The max. standard stations are 16. With single wiring, arrangement of up to 16 stations is possible.
SOLENOID VALVES
SERIES VQ1000

VQ1 1 7 0 N — 5 M — C6

CYLINDER PORTS
C3 ... One Touch Fittings for Ø3.2
C4 ... One Touch Fittings for Ø4
C6 ... One Touch Fittings for Ø6
M5 ... M5 (10-32Nom)
N1 ... One Touch Fittings ø1/8"
N3 ... One Touch Fittings ø5/32"
N7 ... One Touch Fittings ø1/4"

Note 1) The code is L for Elbow Piping for all Manifold Stations.
Example L6: Elbow with One Touch Fittings.

MANUAL OVERRIDE

Note ) Locking type (B) is used for the double (latching) type as standard. Must include “B” suffix.

ELECTRICAL ENTRY

PILOT VALVE SPECIFICATIONS
- ......1W (Standard)
W ......1.5W (High Speed response)
N ......Negative Common
Note) Y Low wattage (0.5W)

Note) Except for 100/110VAC type.

COIL VOLTAGE
3 ......110VAC
5 ......24VDC
6 ......12VDC

With indicator light and surge voltage suppressor

Accessories
MANIFOLD OPTIONS

SUP-EXH BLOCK PUSh ASSEMBLY
VVQ1000-87A-B-50

NAMEPLATE [-N7]
VVQ1000-N7 Station (1- Max. Stations)

ELEwF PIPING ASSEMBLY
VVQ1000-F7-L [4]

BLANKING PLUG
KQP - 04
06
08
10

SILENCER
AN103-X233

Note 1) LO and MO valves are used for F, P, and S kits.
Plug connector and lead wire layers are attached to the manifold.
Note 2) Grommet type (G) is also available for C kit type.
(Except for latching type and 100/110VAC)
**Solenoid Valves**

**Series VQ2000**

5 Port Metal Seal/Rubber Seal
Ultra High Speed Solenoid Valve
Series VQ2000

- High Speed Response from new Solenoid Design.
- Long Life: Over 200 Million Cycles can be achieved with Patent Pilot Valve design.
- Indicator Light and Voltage Surge Suppressor
- Space Saving Design
- Plug Lead and Plug In manifold options.

### Technical Specifications

<table>
<thead>
<tr>
<th>Type of Seal</th>
<th>Metal</th>
<th>Rubber</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid</td>
<td>Air, inert gas</td>
<td>Air, inert gas</td>
</tr>
<tr>
<td>Min Operating Pressure</td>
<td>Single 0.1MPa/14.5PSI 0.15MPa/22PSI</td>
<td>Double 0.1MPa/14.5PSI 0.1MPa/14.5PSI</td>
</tr>
<tr>
<td></td>
<td>3-position 0.1MPa/14.5PSI 0.2MPa/29PSI</td>
<td>Max Operating Pressure 3.5MPa/50PSI 3.5MPa/50PSI</td>
</tr>
<tr>
<td>Effective Area</td>
<td>Single 14.4 (0.8) 16.2 (0.9)</td>
<td>Double 14.4 (0.8) 16.2 (0.9)</td>
</tr>
<tr>
<td>(Cv Factor) mm²</td>
<td>3-position 12.6 (0.7) 14.4 (0.8)</td>
<td></td>
</tr>
<tr>
<td>Response Time</td>
<td>Single Max 18ms Max 23ms</td>
<td>Double Max 18ms Max 23ms</td>
</tr>
<tr>
<td></td>
<td>3-position Max 28ms Max 33ms</td>
<td></td>
</tr>
<tr>
<td>Life Expectancy</td>
<td>200 million cycles or more</td>
<td></td>
</tr>
</tbody>
</table>

| Ambient and Fluid Temperature | Min -10 to +50°C / 14~122°F | Max -5 to +50°C / 23~122°F |
| Lubricant                  | Not required | Not required |
| Manual Override            | Non-locking, momentary | |
| Protection                 | Dustproof    | Dustproof |

**C Kit (Connector) Specifications VQ2000**

- Type which has lead wires in plug connected to each valve individually.
- Max. 16 stations

**Wiring Specifications Negative COM**

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

**Wiring Specifications Positive COM (Option)**

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

### Symbols

1. 2 position single
2. 2 position double
3. 3 position (central)
4. 3 position exhaust
center
5. 3 position exhaust center

---

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www.stevenengineering.com
SOLENOID VALVES
SERIES VQ2000

F Kit (D-sub connection) Series VQ2000

The D-sub connector permits simple rationalization and installation labor savings for electrical connection.

- The D-sub connector (25-pin std., 15-pin option) conforms with MIL permitting use of commercial connectors with wide interchangeability.
- Top or side connector receptacle position can be selected in accordance with the available mounting space.
- Standard max 8 stations (Optional 16 stations possible).

D-sub connector (25-pin)

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

Cable Length (L) | Assembly No. | Note
--- | --- | ---
3m | VVZS3000-21A-2 | Cable 25-core 32A/XG
5m | VVZS3000-21A-3 |

* For other commercial connectors, use a 25-pin female connector made in conformity with MIL-C-24308.

**Electrical Wiring Specifications**

Note: Type with 15 pin are also available.
SOLENOID VALVES
SERIES VQ2000

PKIT (FLAT CABLE CONNECTION)
SERIES VQ2000

- MIL type flat cable connector permits simple rationalization and installation labor savings for electrical connection.
- The connector (26 pin; 10-, 16-, and 20 pin optional) conforms with MIL spec permitting use of widely interchangeable commercial connectors.
- Top or side receptacle position can be selected in accordance with the available mounting space.
- Standard max 8 stations (Optional 16 stations optional).

MIL type flat cable connector permits simple rationalization and installation labor savings for electrical connection.

The connector (26 pin; 10-, 16-, and 20 pin optional) conforms with MIL spec permitting use of widely interchangeable commercial connectors.

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

Standard max 8 stations (Optional 16 stations optional).

Flat cable connector

<table>
<thead>
<tr>
<th>Terminal No.</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 stations</td>
<td>(+)</td>
</tr>
<tr>
<td>2 stations</td>
<td>(+)</td>
</tr>
<tr>
<td>3 stations</td>
<td>(+)</td>
</tr>
<tr>
<td>4 stations</td>
<td>(+)</td>
</tr>
<tr>
<td>5 stations</td>
<td>(+)</td>
</tr>
<tr>
<td>6 stations</td>
<td>(+)</td>
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<td>7 stations</td>
<td>(+)</td>
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<tr>
<td>8 stations</td>
<td>(+)</td>
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<td>9 stations</td>
<td>(+)</td>
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<td>10 stations</td>
<td>(+)</td>
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<td>11 stations</td>
<td>(+)</td>
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<td>24 stations</td>
<td>(+)</td>
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<tr>
<td>25 stations</td>
<td>(+)</td>
</tr>
<tr>
<td>26 stations</td>
<td>(+)</td>
</tr>
</tbody>
</table>

These figures show the standard internal wiring for double solenoid capability provided for each station.

Notes: Use negative COM values for negative COM specification models.

Examples of connector makers
- Hirose Electric Co., Ltd.
- Sumitomo 3-M Ltd.
- Fujitsu Ltd.
- Japan Aviation Electronics Industry, Ltd.
- Japan Solderless Terminal Sales Co., Ltd.

Note) Types with 10-, 16-, or 20-pin are also available.
Solenoid Valves
Series VQ2000

Base Mounted Type
Plug In Unit
VQ2000

How To Order Manifold

Series:
2 ....VQ2000

Type of Manifold
1 ....Plug in unit

Number Of Stations
01 ...1 Station
• • • •
• • • •
16 ...16 Stations
The number of stations differ from kit to kit

Cylinder Ports
C4 ....One Touch Fittings for Ø4
C6 ....One Touch Fittings for Ø6
C8 ....One Touch Fittings for Ø8
M5 ....M5 (10-32Nom)
N3 ....One Touch Fittings ø5/32”
N7 ....One Touch Fittings ø1/4”
N9 ....One Touch Fittings ø5/16”
* Mixed Ports Available

Option
Symbol Option VQ2000
(Blank) None •
B Check valve for prevention of back pressure •
D DIN Rail Mounted Type •
K Special Wiring •
N With Nameplate •
R External Pilot Capable •
S Built-in Silencer (Direct Exhaust) •

Note 1) When more than one option is desired Combined symbols in alphabetical order.
Example) • BRS
Note 2) In the case of the external pilot “-R”, order solenoid valves with the external pilot specification “R”

Kit • Electrical Entry • Cable Length

F kit (D-sub connector)
P kit (Flat cable connector)
S kit (Serial transmission unit)

The kit is equipped with a temperature control module; please refer to the manual for details.

Visitors can be trained to use the system by the manufacturer.

(Courtesy of Steven Engineering, Inc.)

230 Ryan Way, South San Francisco, CA 94080-6370
Main Office: (650) 588-9200
Outside Local Area: (800) 258-9200
www.stevenengineering.com
How to Order Valve

Series VQ2000

Symbols

1 2 position single

2 2 position double

3 3 position closed center

4 3 position exhaust center

5 3 position pressure center

COIL VOLTAGE

3 ... 110VAC

5 ... 24VDC

6 ... 12VDC

TYPE OF SEAL

0 ... Metal

1 ... Rubber

PILOT VALVE SPECIFICATIONS

- ... 1W (Standard)

H ... 1.5W (High Speed response)

Y ... Low wattage (0.5W)

N ... Negative common

R ... External Pilot

Indicaotor light and surge voltage suppressor (Blank). Yes E ... No

*Option

Pilot Valve Specifications

ACCESSORIES

MANIFOLD OPTIONS

BLANKING PLATE ASSEMBLY

VVQ2000-10A-1

SUP BLOCK PLATE

VVQ2000-16A

NAMEPLATE [-N]

VVQ2000-N-Station (1-Max. stations)

EXH BLOCK PLATE

VVQ2000-19A (Q2000)

BLANKING PLUG

KQP-

04

06

03

07

SILENCER (EXH PORT)

AN200-KM10

INDIVIDUAL SUP SPACER

VVQ2000-P-1-C8

EXH BLOCK PLATE

VVQ2000-19A (Q2000)

BLANKING PLUG

KQP-

04

06

03

07

SILENCER (EXH PORT)

AN200-KM10

INDIVIDUAL EXH SPACER

VVQ2000-R-1-C8

DIN RAIL MOUNTED BRACKET [-D]

VVQ2000-57A

Direct Exhaust [-S]

Internal Exhaust [-I]

Metal [M]

Rubber [R]

Choice of material

Low Wattage (0.5W) Y

High Wattage (1.5W) H

Negative Common N

External Pilot R

Built in Silencer

Internal Exhaust [-I]

Built in Quietness

Low Wattage (0.5W) Y

High Wattage (1.5W) H

Negative Common N

External Pilot R

Choice of silencer

Choice of material

Courtesy of Steven Engineering, Inc.

230 Ryan Way, South San Francisco, CA 94080-6370

Main Office: (650) 588-9200

Outside Local Area: (800) 258-9200

www.stevenengineering.com
BODY PORTED TYPE
PLUG LEAD UNIT/FLIP TYPE
VQ2000

HOW TO ORDER MANIFOLD

SERIES
2 .... VQ2000

TYPE OF MANIFOLD
4 .... Plug lead unit/flip type

NUMBER OF STATIONS
01 .... 1 Station
• ....
• ....
16 .... 16 Stations

The number of stations differ from kit to kit

SUP/EXH PORT
- .... Metric (mm)
DOT .... Imperial (Inch)

DIN RAIL/OPTION

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Blank)</td>
<td>None (C Kit only)</td>
</tr>
<tr>
<td>D</td>
<td>DIN Rail Mounted Type</td>
</tr>
<tr>
<td>N</td>
<td>With Nameplate</td>
</tr>
<tr>
<td>S</td>
<td>Built-in Silencer (Direct Exhaust)</td>
</tr>
</tbody>
</table>

Note 1) When more than one option is desired
Combined symbols in alphabetical order.
Example) • DNS

Note 2) All F.P. and S. kits are of DIN rail mounted type, so
include suffix "D".

Note 3) F.P. and S. kits are provided with an exhaust on
one side, while C kits are with an exhaust on both
sides.

Kit • Electrical Entry • Cable Length

F kit (D-sub connection)

C kit (Connector)

S kit (Serial transmission unit)

Compatible only with D/A/D/C valves.
### How To Order Valve

**VQ2 1 4 0 N — 5 L — C6**

**Series**
- 2 ……VQ2000

**Configuration**
- 1
  - 2 position single
  - 2 position double fault

**Type of Seal**
- 0 ……Metal
- 1 ……Rubber

**Pilot Valve Specifications**
- 3 ……110VAC
- 5 ……24VDC
- 6 ……12VDC

**Coil Voltage**
- With indicator light and surge voltage suppressor

**Note**
- Except for double (latching) type.

**Note 1**
- See “Option Specifications” for negative COM specifications.

**Note 2**
- F, P, and S kits need connector assembly when increasing the valve station. See “Option Specifications” for types.

### Cylinder Ports
- C4 …One Touch Fittings Ø4
- C6 …One Touch Fittings Ø6
- C8 …One Touch Fittings Ø8
- N3 …One Touch Fittings ø5/32
- N7 …One Touch Fittings ø1/4
- N9 …One Touch Fittings ø5/16

### Manual Override
- 0
  - Locking knob type
  - Locking type

### Electrical Entry
- L/L: Type plug connector with lead wire
- N/L: Type plug connector without connector
- M/L: Type plug connector with lead wire
- M0/M: Type plug connector without connector

<table>
<thead>
<tr>
<th>G</th>
<th>Grommet C Kit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Type Only</td>
<td></td>
</tr>
</tbody>
</table>

### Pilot Valve Specifications
- L…Low wattage (0.5W)
- H …High speed response (1.5W)
- Y …Low wattage (0.5W)
- N …Negative common

### Preliminary Accessory Specifications
- VVQ2000-57A- 4
- VVQ2000-R-4-C8
- VVQ2000-P-4-C8
- VVQ2000-N4 station
- Nameplate [-N4]
- Silencer (EXH port) AN203-KM8 (VVQ2000)
- Blanking plug KQP-04
- Block valve VQV-4-C0-0-1
- DIN Rail mounted bracket [-D]
- Individual EXH spacer VVQ2000-R-4-C8
- Built in silencer Direct exhaust [-S]

**Accessories**

**Individual SUP spacer**
- VVQ2000-P-4-CB

**DIN Rail mounted bracket [-D]**
- VVQ2000-57A- 4

**Individual EXH spacer**
- VVQ2000-R-4-C8

**Built in silencer**
- Direct exhaust [-S]
## 5 Port Metal Seal/Rubber Seal Base Mounted / Plug In Type Series VQ4000

- **High Speed and Long Life**
- **Compact Design with Large Flow Capacity**
- **Various Centralized Wiring Options**
- **Optional IP65 Available**
- **Dust Proof, Jet Proof**

### Technical Specifications Series VQ4000

<table>
<thead>
<tr>
<th>Model</th>
<th>Series VQ4000</th>
</tr>
</thead>
</table>

#### Valve Specifications

<table>
<thead>
<tr>
<th>Type of Seal Fluid</th>
<th>Maximum Operating Pressure</th>
<th>Minimum Pressure</th>
<th>Operating Pressure</th>
<th>Proof Pressure</th>
<th>Ambient &amp; Fluid Temperature</th>
<th>Lubrication</th>
<th>Manual Override</th>
<th>Shock/Vibration Resistance</th>
<th>Enclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metal Seal Air Inert Gas</td>
<td>1MPa (145PSI)</td>
<td>0.15MPa (22PSI)</td>
<td>0.15MPa (22PSI)</td>
<td>0.15MPa (22PSI)</td>
<td>-10 ~ 50°C / -14 ~ 122°F</td>
<td>Not Required</td>
<td>Pushing Type/Slotted Locking Type (Tool Type) Option</td>
<td>150/30 m/s²</td>
<td>Dust Proof (Available to IP65 Type)</td>
</tr>
<tr>
<td>Rubber Seal Air Inert Gas</td>
<td>0.20MPa (29PSI)</td>
<td>0.20MPa (29PSI)</td>
<td>0.20MPa (29PSI)</td>
<td>0.20MPa (29PSI)</td>
<td>-5 ~ 50°C / 23 ~ 122°F</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Model Specifications

<table>
<thead>
<tr>
<th>Model Type</th>
<th>Number of Solenoids</th>
<th>Note 1) Effective Area mm² (Co)</th>
<th>Response Time ms</th>
<th>Note 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Metal Seal</td>
<td>VQ410/1, 510</td>
<td>36.0 (2.0)</td>
<td>20 or less</td>
<td>22 or less</td>
</tr>
<tr>
<td>Single Rubber Seal</td>
<td>VQ410/1, 510</td>
<td>39.6 (2.2)</td>
<td>25 or less</td>
<td>27 or less</td>
</tr>
<tr>
<td>Double Metal Seal</td>
<td>VQ420/1, 510</td>
<td>36.0 (2.0)</td>
<td>12 or less</td>
<td>12 or less</td>
</tr>
<tr>
<td>Double Rubber Seal</td>
<td>VQ420/1, 510</td>
<td>39.6 (2.2)</td>
<td>15 or less</td>
<td>15 or less</td>
</tr>
<tr>
<td>Closed Metal Seal</td>
<td>VQ430/1, 510</td>
<td>32.4 (1.8)</td>
<td>45 or less</td>
<td>47 or less</td>
</tr>
<tr>
<td>Closed Rubber Seal</td>
<td>VQ430/1, 510</td>
<td>36.0 (2.0)</td>
<td>50 or less</td>
<td>52 or less</td>
</tr>
<tr>
<td>Exhaust Metal Seal</td>
<td>VQ440/1, 510</td>
<td>36.0 (2.0)</td>
<td>45 or less</td>
<td>47 or less</td>
</tr>
<tr>
<td>Exhaust Rubber Seal</td>
<td>VQ440/1, 510</td>
<td>39.6 (2.2)</td>
<td>50 or less</td>
<td>52 or less</td>
</tr>
<tr>
<td>Pressure Metal Seal</td>
<td>VQ450/1, 510</td>
<td>36.0 (2.0)</td>
<td>45 or less</td>
<td>47 or less</td>
</tr>
<tr>
<td>Pressure Rubber Seal</td>
<td>VQ450/1, 510</td>
<td>39.6 (2.2)</td>
<td>50 or less</td>
<td>52 or less</td>
</tr>
</tbody>
</table>

Note 1) Value for Valve on Subplate and Cylinder Port Rc 3/8
Note 2) As per JISB8375-1981 (Supply Pressure: 0.5 MPa (5.1 kgf/cm²); with Indicator Light and Surge Voltage Suppressor; Clean Air)
**SOLENOID VALVES**

**SERIES VQ4000**

**HOW TO ORDER**

**MANIFOLD SERIES VQ4000**

**VQ5Q4**

**MANIFOLD TYPE**
- 1 .... Plug In Unit

**NO OF STATIONS**
- 02 ... 2 Stations
- n ...... n Stations
- Max & Min depends on Kit
- Refer to Section

**PORT SIZE**
- C8 ... One Touch Fitting for ø8
- C10 ... One Touch Fitting for ø10
- C12 ... One Touch Fitting for ø12
- N7 ... One Touch Fitting for ø1/4"
- N9 ... One Touch Fitting for ø5/16"
- N11 ... One Touch Fitting for ø3/8"
- 02 ... 1/4"
- 03 ... 3/8"
- B ...... Bottom Piping 1/4"
- CM ... Mixed Size

**THREAD TYPE**
- 02 ... Rc
- N ... NPT
- T ... NPTF
- F ...... G

**OPTION**
- K ...... Spec. Wiring Spec (Other than Double Wiring) (NOTE 4)
- N ...... Name Plate (Kit Only)
- SD ... Direct Jet with Silencer Box; D Side Exhaust
- SU ... Direct Jet Silencer Box; U Side Exhaust (NOTE 4)
- W ...... Enclosure IP65 (Except F Kit)

**NOTE 1)** WHEN SPECIFYING MORE THAN ONE OPTION, COMBINE SYMBOLS IN ALPHABETICAL ORDER

**NOTE 2)** COMBINATION OF CU/CD AND SU/SD IS NOT POSSIBLE

**NOTE 3)** COMBINATION OF T AND S KITS IS NOT POSSIBLE

**NOTE 4)** SPECIFY THE WIRING SPECIFICATIONS BY MEANS OF THE MANIFOLD SPECIFICATION FORM (EXCEPT L KIT)

**CONTROL UNIT**

**PORT SIZE**
- 02 ... 2 Stations
- n ...... n Stations
- Max & Min depends on Kit
- Refer to Section

**OPTION**
- K ...... Spec. Wiring Spec (Other than Double Wiring) (NOTE 4)
- N ...... Name Plate (Kit Only)
- SD ... Direct Jet with Silencer Box; D Side Exhaust
- SU ... Direct Jet Silencer Box; U Side Exhaust (NOTE 4)
- W ...... Enclosure IP65 (Except F Kit)

**NOTE 1)** WHEN SPECIFYING MORE THAN ONE OPTION, COMBINE SYMBOLS IN ALPHABETICAL ORDER

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**NOTE 4)** SPECIFY THE WIRING SPECIFICATIONS BY MEANS OF THE MANIFOLD SPECIFICATION FORM (EXCEPT L KIT)

**Control Unit**

**Kit/Electrical entry / Cable Length**

<table>
<thead>
<tr>
<th>Kit</th>
<th>Electrical entry</th>
<th>Cable Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>02</td>
<td>U1</td>
</tr>
<tr>
<td></td>
<td>03</td>
<td>U3</td>
</tr>
</tbody>
</table>

**Applicable to IP65**

**Kit (Serial transmission kit)**

The valve is equipped with a lamp/surge voltage suppressor, and the voltage is 24VDC.

**Applicable to IP65**

**Kit (Terminal box kit)**

**Applicable to IP65**

**Electrical entry**

<table>
<thead>
<tr>
<th>Kit</th>
<th>D side</th>
<th>U side</th>
<th>U1</th>
<th>U2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>02</td>
<td>03</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

**Kit (D sub-connector)**

**Applicable to IP65**

**Electrical entry**

<table>
<thead>
<tr>
<th>Kit</th>
<th>D side</th>
<th>U side</th>
<th>U1</th>
<th>U2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>02</td>
<td>03</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

**Kit (Lead wire kit)**

**Applicable to IP65**

**Electrical entry**

<table>
<thead>
<tr>
<th>Kit</th>
<th>D side</th>
<th>U side</th>
<th>U1</th>
<th>U2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>02</td>
<td>03</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

**Applicable to IP65**

- **O** Without SI unit
  - **A** With general type SI unit
  - **B** With 3 wire 100mA, USBIST, USBIST2 (100mA) output system
  - **C** With 2 wire 4-20mA, USBIST, USBIST2 (100mA) output system
  - **D** With SI unit for CFP, USBIST, USBIST2 (100mA) output system
  - **F1** With SI unit for 8 point, 2 point input system
  - **F2** With SI unit for 8 point, 2 point input system
  - **F3** With SI unit for 8 point, 2 point input system
  - **O** With SI unit for relay output (1 point)
  - **R1** With SI unit for CFP, CFP, CFP, CFP (1 point)
  - **R2** With SI unit for CFP, CFP, CFP, CFP (1 point)
  - **RI** With SI unit for relay input (1 point)
  - **BE** With SI unit for relay input (1 point)

**Input unit**

**Kit (Serial transmission kit)**

The valve is equipped with a lamp/surge voltage suppressor, and the voltage is 24VDC.

**Applicable to IP65**

- **O** Without SI unit
  - **A** With general type SI unit
  - **B** With 3 wire 100mA, USBIST, USBIST2 (100mA) output system
  - **C** With 2 wire 4-20mA, USBIST, USBIST2 (100mA) output system
  - **D** With SI unit for CFP, USBIST, USBIST2 (100mA) output system
  - **F1** With SI unit for 8 point, 2 point input system
  - **F2** With SI unit for 8 point, 2 point input system
  - **F3** With SI unit for 8 point, 2 point input system
  - **O** With SI unit for relay output (1 point)
  - **R1** With SI unit for CFP, CFP, CFP, CFP (1 point)
  - **R2** With SI unit for CFP, CFP, CFP, CFP (1 point)
  - **RI** With SI unit for relay input (1 point)
  - **BE** With SI unit for relay input (1 point)
## Options Manifold Series VQ4000

<table>
<thead>
<tr>
<th>Blank plate ass'y</th>
<th>Individual SUP. spacer</th>
<th>Individual EXH. spacer</th>
</tr>
</thead>
<tbody>
<tr>
<td>VVQ4000-10A-1</td>
<td>VVQ4000-P-1-03</td>
<td>VVQ4000-R-1-03</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Speed controller spacer</th>
<th>SUP. stop valve spacer</th>
<th>SUP. EXH. block plate</th>
</tr>
</thead>
<tbody>
<tr>
<td>VVQ4000-20A-1</td>
<td>VVQ4000-37A-1</td>
<td>VVQ4000-16A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Release valve spacer</th>
<th>Built-in silencer (Direct exhaust)</th>
<th>For exhaust cleaner mounting</th>
</tr>
</thead>
<tbody>
<tr>
<td>VVQ4000-24A-1D Note</td>
<td>[-S] Note</td>
<td>[-C] Note</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Applicable exhaust cleaner</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMC 610-10</td>
</tr>
</tbody>
</table>

(Note) Combination of external pilot specification and release valve spacer, built-in silencer box direct exhaust, exhaust cleaner mounting type is not available.
Solenoid Valves

SERIAL TRANSMISSION SERIES VQ1000

5/2, 5/3 Spool & Sleeve, Ultra High Speed Solenoid Valve Series VQ1000

- Choice of Five Supported Protocols
- 512 Points through 32 Transmission Terminals
- 100m Minimum Transmission Distance
- Communication Speeds up to 500K Baud - Protocol Dependent
- "Plug In" System: easy assembly and maintenance
- High Speed Response from new Solenoid Design
- Long Life: Over 200 million cycles can be achieved by means of a special plunger and poppet valve construction within the pilot valve (patented)
- Space Saving Design
- Electrical Connection by D Sub Connector
- Indicator Light (2 Color on Double Solenoid Valve)
- Interface Integral with Manifold

The VQ Valve incorporates a 2 Stage Armature allowing the valve to open before the armature completes its stroke.

TECHNICAL SPECIFICATIONS

| Type of Seal | Metal |
| Fluid        | Air, Inert Gas |
| Min Operating Pressure | (1.0 Bar) 14.5PSI |
| Max Operating Pressure | (8.2 Bar) 119PSI |
| Effective Area (Cv Factor) mm² | 3.6 (0.20) |
| Response Time | Single Max 12m sec 
|               | Double Max 10m sec 
|               | 3-Position Max 20m sec |
| Life         | 100 million cycles or more |
| Ambient and Fluid Temperature | -10 to +50ºC / 14~122ºF |
| Lubricant    | Not required |
| Manual Override | Non-Locking Push Type |
| Protection Structure | Dustproof |

NOTE:
- Calculated on the basis of ISO B 8375-1981 (Supply pressure 0.5MPa=5.1 Bar); the above valve shows response time checked when the valve is equipped with an indicator light and surge voltage suppressor). |
- Use dry air to prevent dew condensation in the case when temperature is low. |
- Perfect dry air (dew point equals to -30ºC). Non grease on main valve. Mist separation required. |

Example: A seven station manifold, complete with Omron Sysmac series including with Diameter 4 one touch fittings and DIN rail mount, with 5 off single solenoid valves and 2 off double solenoid valves is ordered as follows:

VV5Q11-07C4SC-D 1 off
VQ1100-5 5 off
VQ1200-2 2 off

How to Order Manifold

- MANIFOLD BASE TYPE
  - 1 Plug-in type
  - NO OF STATIONS*
    - 02 ……2 stations
    - 16 ……16 stations

- PORTING
  - C3 ……3.2mm fittings for Ø3.2mm tube
  - C4 ……4mm fittings for Ø4mm tube
  - C6 ……6mm fittings for Ø6mm tube
  - M5 ……5.5mm Ø
  - N1 ……Ø1/8" Fittings for Ø1/8" Tube
  - N3 ……Ø5/32” Fittings for Ø5/32” Tube
  - N7 ……Ø1/4” Fittings for Ø1/4” Tube

- INTERFACE
  - B ……Mitsubishi Melsec - A
  - C ……Omron Sysmac
  - D ……Sharp New Satellite
  - E ……Matsushita Mewnet
  - G ……Allen Bradley

- OPTION
  - B ……Back Pressure Prevention Valve
  - D ……DIN Rail Mounting
  - S ……Built-in (TOP) silencer: not piped exhaust

- VOLTAGE
  - 24VDC with indicator light and surge voltage suppressor

*NOTE
2-8 station manifolds are wired for single or double solenoid operation.

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>B</th>
<th>A</th>
<th>P</th>
<th>R1</th>
<th>P2</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 POSITION SINGLE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>B</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 POSITION DOUBLE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>B</td>
<td>P</td>
<td>R1</td>
<td>P2</td>
<td></td>
</tr>
<tr>
<td>3 POSITION CLOSED CENTRE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>B</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 POSITION EXHAUST CENTRE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>B</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dimensions See Next Page
Solenoid Valves

Serial Transmission Series VQ1000

Dimensions

Stations are counted from the D side.
## 2 Port SOLENOID VALVE
### DIRECT OPERATED TYPE
#### SERIES VX21/22/23

- Compact and Lightweight
- Large Flow Capacity
- Can be quickly disassembled and reassembled
- High Reliability Molded Coil
- Proper Selection of Body and Sealing Materials permits Application of a Wide Variety of Fluids

### SYMBOLS

- **Energized Open Type**
- **Energized Closed Type**

### Technical Specifications

#### Energized Open Type  Series VX

<table>
<thead>
<tr>
<th>Port Size (mm)</th>
<th>Orifice (mm)</th>
<th>Flow Rate (mm²)</th>
<th>Model</th>
<th>Maximum Operating Pressure (Differential MPa)</th>
<th>Maximum System Pressure (MPa)</th>
<th>Proof Pressure (MPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8 (6A)</td>
<td>2</td>
<td>0.17 3</td>
<td>VX2110-01</td>
<td>2 2 1.5 1.5 1.5 1 Water</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>0.33 6</td>
<td>VX2120-01</td>
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<td>0.33 6</td>
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</tr>
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<td>1.05 19</td>
<td>VX2260-03</td>
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<td>1.7 31</td>
<td>VX2270-03</td>
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<td>8</td>
<td>1.7 31</td>
<td>VX2350-03</td>
<td>0.17 0.2 0.2 0.2 0.14 0.2 0.2 0.2 Oil</td>
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</tr>
<tr>
<td></td>
<td>10</td>
<td>2.4 43</td>
<td>VX2280-03</td>
<td>0.08 0.03 0.08 0.03 0.05 0.03 0.08</td>
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<td>10</td>
<td>2.4 43</td>
<td>VX2360-03</td>
<td>0.1 0.07 0.1 0.07 0.08 0.07 0.1 Steam</td>
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<tr>
<td></td>
<td>10</td>
<td>2.4 43</td>
<td>VX2280-04</td>
<td>0.08 0.03 0.08 0.03 0.05 0.03 0.08</td>
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<tr>
<td></td>
<td>10</td>
<td>2.4 43</td>
<td>VX2360-04</td>
<td>0.1 0.07 0.1 0.07 0.08 0.07 0.1 Steam 0.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Technical Specifications

**Energized Closed Type Series VX**

#### How To Order Series VX

**Orifice No.**
- 1 .... 2mmø
- 2 .... 3mmø
- 3 .... 4mmø
- 4 .... 5mmø
- 5 .... 6mmø Energized Open Type Only
- 6 .... 8mmø Energized Open Type Only

**Valve Body Type.**
- 0 .... Energized Open Type/Single
- 2 .... Energized Closed Type/Single

**Option.**
- - .... Standard (Air, Water, Oil)

**Port Size.**
- 01 .... 1/8
- 02 .... 1/4
- 03 .... 3/8
- 04 .... 1/2 Energized Open Type Only

---

**Port Size | Orifice Size | Flow Rate (Cv) | Effective Area (mm²) | Model | Maximum Operating Pressure Differential MPa | Maximum System Pressure MPa | Proof Pressure MPa**
---

1/8 (6A):
- 2 | 0.17 | 3 | VX2112-01 | 0.9 | 1.5 | 0.8 | 1
- 3 | 0.33 | 6 | VX2122-01 | 0.45 | 0.7 | 0.45 | 0.7
- 4.5 | 0.61 | 11 | VX2132-01 | 0.2 | 0.3 | 0.2 | 0.3

1/4 (8A):
- 2 | 0.17 | 3 | VX2112-02 | 0.9 | 1.5 | 0.8 | 1
- 3 | 0.33 | 6 | VX2222-02 | 0.45 | 0.7 | 0.45 | 0.7
- 4.5 | 0.61 | 11 | VX2232-02 | 0.2 | 0.3 | 0.2 | 0.3

3/8 (10A):
- 2 | 0.33 | 6 | VX222-03 | 0.8 | 1 | 0.7 | 1
- 3 | 0.33 | 6 | VX2232-03 | 1.2 | 1.6 | 1
- 4.5 | 0.61 | 11 | VX2232-03 | 0.6 | 0.8 | 0.6 | 0.8

**VX21 22 23**

**Accessory Bracket Series VX**

**Type | Part Number**
---

VX2120 VX2120 VX2130
VX2220 VX2230 VX2240
VX2320 VX2330 VX2340
VX2350 VX2360 VX2360

**VoltagE**

- 01 .... 100VAC
- 02 .... 200VAC
- 03 .... 110VAC
- 04 .... 220VAC
- 05 .... 24VDC
- 06 .... 12VDC
- 07 .... 240VAC
- 08 .... 48VAC

---

### Dimensions

**Type Port Size Orifice Series VX21/22/23**

<table>
<thead>
<tr>
<th>Solenoid Valve Type (Port Size)</th>
<th>Orifice Size (Number)</th>
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</thead>
<tbody>
<tr>
<td>VX21</td>
<td>VX22</td>
</tr>
<tr>
<td>01 (1/8)</td>
<td>-</td>
</tr>
<tr>
<td>02 (1/4)</td>
<td>-</td>
</tr>
<tr>
<td>- 02 (1/4)</td>
<td>02 (1/4)</td>
</tr>
<tr>
<td>- 03 (3/8)</td>
<td>03 (3/8)</td>
</tr>
<tr>
<td>- 04 (1/2)</td>
<td>04 (1/2)</td>
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</tbody>
</table>

---

**1MPa = 145PSI**
2.50  

**SOLENOID VALVES**  
**SERIES VX**

---

**2 PORT SOLENOID VALVE**  
**PILOT OPERATED TYPE**  
**SERIES VXD21**

- Compact and Lightweight
- Large Flow Capacity
- Can be quickly disassembled and reassembled
- High Reliability Molded Coil
- Proper Selection of Body and Sealing Materials permits Application of a Wide Variety of Fluid

---

**TECHNICAL SPECIFICATIONS**

**ENERGIZED OPEN TYPE SERIES VXD**

<table>
<thead>
<tr>
<th>Connection</th>
<th>Orifice(mm)</th>
<th>Flow Rate</th>
<th>Model</th>
<th>Minimum Operating Pressure</th>
<th>Maximum Operating Pressure</th>
<th>Maximum System Pressure</th>
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</thead>
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<td></td>
<td></td>
<td>Cv Effective Area (mm²)</td>
<td></td>
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</tr>
<tr>
<td>1/4</td>
<td>10</td>
<td>1.9</td>
<td>34</td>
<td>0.02</td>
<td>0.7 0.5 0.9 0.7 0.5 0.4</td>
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</tr>
<tr>
<td>3/8</td>
<td>10</td>
<td>2.4</td>
<td>43</td>
<td>0.02</td>
<td>0.7 0.5 0.9 0.7 0.5 0.4</td>
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</tr>
<tr>
<td>3/8</td>
<td>15</td>
<td>4.5</td>
<td>80</td>
<td>0.02</td>
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<td>1.5</td>
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<tr>
<td>1/2</td>
<td>10</td>
<td>2.4</td>
<td>43</td>
<td>0.02</td>
<td>0.02 0.5 0.9 0.7 0.5 0.4</td>
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</tr>
<tr>
<td>1/2</td>
<td>15</td>
<td>5.5</td>
<td>100</td>
<td>0.02</td>
<td>1.1 1 1 0.7 0.7</td>
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<tr>
<td>3/4</td>
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<td>9.5</td>
<td>170</td>
<td>0.02</td>
<td>1.1 1 1 0.7 0.7</td>
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**ENERGIZED CLOSED TYPE SERIES VXD**

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<th>Orifice(mm)</th>
<th>Flow Rate</th>
<th>Model</th>
<th>Minimum Operating Pressure</th>
<th>Maximum Operating Pressure</th>
<th>Maximum System Pressure</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Cv Effective Area (mm²)</td>
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<tr>
<td>3/8</td>
<td>15</td>
<td>4.5</td>
<td>80</td>
<td>0.02</td>
<td>0.7 0.6</td>
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<tr>
<td>1/2</td>
<td>15</td>
<td>5.5</td>
<td>100</td>
<td>0.02</td>
<td>0.7 0.6</td>
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<tr>
<td>3/4</td>
<td>20</td>
<td>9.5</td>
<td>170</td>
<td>0.02</td>
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<td>1.5</td>
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---

1MPa = 145PSI

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**SYMBOLS**

---

**OUT**

---

**IN**

---

![Energized Open Type](image1)

---

![Energized Closed Type](image2)

---

1MPa = 145PSI

---

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230 Ryan Way, South San Francisco, CA 94080-6370  
Main Office: (650) 588-9200  
Outside Local Area: (800) 258-9200  
www.stevenengineering.com
## Solenoid Valves
### Series VX

**3 Port Solenoid Valve**
**Direct Operated Type**
**Series VX31/32/33**

- Compact and Lightweight
- Large Flow Capacity
- Can be quickly disassembled and reassembled
- High Reliability Molded Coil
- Proper Selection of Body and Sealing Materials permits Application of a Wide Variety of Fluid

### Technical Specifications Series VX31/32/33

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Orifice mmØ</th>
<th>Flow Rate Cv</th>
<th>Effective Area (mm²)</th>
<th>Model</th>
<th>Maximum Operating Pressure Differential MPa</th>
<th>Maximum System Pressure MPa</th>
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</thead>
<tbody>
<tr>
<td>1/8 (6A)</td>
<td>1.5</td>
<td>0.08</td>
<td>1.4</td>
<td>VX311(0/2/4)-01</td>
<td>1 (AC) 0.6 (CO) 1.0 (AC/DC)</td>
<td>1.0 Water (•)</td>
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<td>2.2</td>
<td>0.16</td>
<td>2.8</td>
<td>VX312(0/2/4)-01</td>
<td>0.5 (AC) 0.3 (CO) 0.8 (AC/DC)</td>
<td>0.8 Oil (•)</td>
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<td>0.24</td>
<td>4.3</td>
<td>VX313(0/2/4)-01</td>
<td>0.3 (AC) 0.2 (CO) 0.5 (AC/DC)</td>
<td>0.5 Air (•)</td>
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<td>0.08</td>
<td>1.4</td>
<td>VX311(0/2/4)-02</td>
<td>1 (AC) 0.6 (CO) 1.0 (AC/DC)</td>
<td>1.0 Steam (•)</td>
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<td>2.2</td>
<td>0.16</td>
<td>2.8</td>
<td>VX312(0/2/4)-02</td>
<td>0.5 (AC) 0.3 (CO) 0.8 (AC/DC)</td>
<td>0.8 Oil (•)</td>
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<td>0.19</td>
<td>3.4</td>
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<td>1.0 Steam (•)</td>
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<td>0.24</td>
<td>4.3</td>
<td>VX3324-02</td>
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<td>2.0 Steam (••)</td>
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<td>0.33</td>
<td>6</td>
<td>VX3334-02</td>
<td>0.6 (AC) 0.4 (CO) 0.9 (AC/DC)</td>
<td>1.0 Steam (•)</td>
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<td>0.33</td>
<td>9</td>
<td>VX3244-02</td>
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<td>1.0 Steam (•)</td>
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<td>0.6 (AC) 0.4 (CO) 0.9 (AC/DC)</td>
<td>1.0 Steam (•)</td>
</tr>
</tbody>
</table>

1MPa = 145PSI

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### How To Order

**Series VX**

#### VX31/32/33

**Orifice No.**

- 1 ... 1.5mm ø
- 2 ... 2.2mm ø
- 3 ... 3mm ø
- 4 ... 4mm ø

#### Valve Body Type**

- 4 ... Commonly Open Type/Single
- 0 ... Valve/Open Type

- 2 ... Valve/Closed Type

*Only VX31 has an Energized Open and Energized Closed Type*

#### Options**

- - ... Standard (Air, Water, Oil)

#### Port Size**

- 01 ... 1/8
- 02 ... 1/4
- 03 ... 3/8

#### Electrical Options**

- Nil ... None
- 5 ... With Surge Voltage Suppressor
- 1 ... With Indicator Light
- 2 ... With Indicator Light and Surge Voltage Suppressor

#### Electrical Entry**

- D ... DIN Connector

#### Voltage**

- 1 ... 100VAC
- 2 ... 200VAC
- 3 ... 110VAC
- 4 ... 220VAC
- 5 ... 24VDC
- 6 ... 12VDC
- 7 ... 240VAC
- 8 ... 48VAC

#### Thread**

- - ... Rc(PT)
- T ... NPTF
- F ... G(PF)
- N ... NPT

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### TECHNICAL SPECIFICATIONS

#### Normally Closed Type Series VXZ

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Orifice Size (mm)</th>
<th>Flow Rate (Cv Effective Orifice (mm²))</th>
<th>Model</th>
<th>Maximum Operating Pressure Differential MPa</th>
<th>Maximum System Pressure MPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4</td>
<td>10</td>
<td>1.9 34</td>
<td>VXZ2230-02</td>
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<td>1.5</td>
</tr>
<tr>
<td>3/8</td>
<td>10</td>
<td>2.4 43</td>
<td>VXZ2230-03</td>
<td>1 AC 0.7 1 DC 0.7 1 DC 0.7 1 DC 0.7</td>
<td>1.5</td>
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<tr>
<td>1/2</td>
<td>15</td>
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<td>VXZ2240-04</td>
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</table>

#### Normally Open Type Series VXZ

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Orifice Size (mm)</th>
<th>Flow Rate (Cv Effective Orifice (mm²))</th>
<th>Model</th>
<th>Maximum Operating Pressure Differential MPa</th>
<th>Maximum System Pressure MPa</th>
</tr>
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<tbody>
<tr>
<td>1/4</td>
<td>10</td>
<td>1.9 34</td>
<td>VXZ2232-02</td>
<td>0.7 AC 0.6 0.7 AC 0.6 0.7 AC 0.6 0.7 AC 0.6</td>
<td>1.5</td>
</tr>
<tr>
<td>3/8</td>
<td>10</td>
<td>2.4 43</td>
<td>VXZ2232-03</td>
<td>0.7 AC 0.6 0.7 AC 0.6 0.7 AC 0.6 0.7 AC 0.6</td>
<td>1.5</td>
</tr>
<tr>
<td>1/2</td>
<td>15</td>
<td>5.3 95</td>
<td>VXZ2242-04</td>
<td>0.7 AC 0.6 0.7 AC 0.6 0.7 AC 0.6 0.7 AC 0.6</td>
<td>1.5</td>
</tr>
</tbody>
</table>
Solenoid Valves
Series VX

How To Order Series VXZ

VXZ22

Orifice No
3  ....... 10mm ø
4  ....... 15mm ø

Valve Body Type
0  ....... Valve/Open Type
2  ....... Valve/Closed Type

Options
- ...... Standard (Air, Water, Oil)

Port Size
02  ....  1/4
03  ....  3/8
04  ....  1/2

Electrical Options
Nil  .... None
5  ....... With Surge Voltage Suppressor
L  ....... With Indicator Light
Z  ....... With Indicator Light and Surge Voltage Suppressor

Electrical Entry
D  ....... DIN Connector

Thread
- ...... Rc(PT)
T  ...... NPTF
F  ...... G(PF)
N  ...... NPT

Voltage
1  ...... 100VAC
2  ...... 200VAC
3  ...... 110VAC
4  ...... 220VAC
5  ...... 24VDC
6  ...... 12VDC
7  ...... 240VAC
8  ...... 48VAC

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SOLENOID VALVES

SERIES (N)VZ100

3/2 DIRECT ACTING SOLENOID VALVE 10-32Nom PORTED

- N/O or N/C Option
- 10-32Nom Body Ported, possible to Manifold Mount
- Cv 0.05
- Optional Lamp and Surge Voltage Suppressor
- Suitable for Pressure or Vacuum

**SOLENOID SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient and Fluid Temperature</td>
<td>Max 50°C / 122°F</td>
</tr>
<tr>
<td>Response Time</td>
<td>15ms or less</td>
</tr>
<tr>
<td>Max Operating Frequency</td>
<td>15c/s</td>
</tr>
<tr>
<td>Manual Override</td>
<td>Non-locking type</td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not required (Use turbine oil ±1 (ISO VG32) if lubrication is provided)</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Dust Proof</td>
</tr>
</tbody>
</table>

**SOLVENT SPECIFICATIONS**

**Electrical Entry**

<table>
<thead>
<tr>
<th>VOLTAGES</th>
<th>DC</th>
<th>12V, 24V</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC</td>
<td>240V, 110V, 24V</td>
<td></td>
</tr>
</tbody>
</table>

**Allowable Voltage**

-15~+10% of rated voltage

**Coil Insulation**

Class E or equivalent (120°C)

**Temperature Rise**

45°C or less / 113°F or less

**Power Consumption**

- **DC**
  - Inrush: 4.5VA/50Hz, 4.2VA/60Hz
  - Holding: 3.5VA/50Hz, 3VA/60Hz
- **AC**
  - 240V: 1.8W/2.1W (W/LED)
  - 110V: 1.5W/1.8W (W/LED)
  - 24V: 0.3W/0.4W (W/LED)

**Surge Voltage Suppressor**

DC: Diode, AC: ZNR

**Indicator Light**

DC: LED (Red), AC: Neon lamp

**FLOW SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Body Type</th>
<th>Model</th>
<th>Type Of Actuation</th>
<th>Operating Pressure Range kgf/cm²</th>
<th>Vacuum Application</th>
<th>Effective Orifice mm² (Cv Factor)</th>
<th>Port Size</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>(N)VZ110</td>
<td>•••••</td>
<td>NC</td>
<td>0 ~ 7MPa 0 ~ 100PSI</td>
<td>P Port R Port</td>
<td>P-&gt;A 0.6 (0.034) A-&gt;R 0.6 (0.034)</td>
<td>10-32Nom (M5±0.8)</td>
<td>0.15g</td>
</tr>
<tr>
<td>(N)VZ120</td>
<td>•••••</td>
<td>NO</td>
<td>0 ~ 5MPa 0 ~ 70PSI</td>
<td>P Port R Port</td>
<td>P-&gt;A 0.6 (0.034) A-&gt;R 0.6 (0.034)</td>
<td>10-32Nom (M5±0.8)</td>
<td>0.15g</td>
</tr>
</tbody>
</table>

**SOLVENT SPECIFICATIONS**

**Flow Specifications**

<table>
<thead>
<tr>
<th>Body Type</th>
<th>Model</th>
<th>Type Of Actuation</th>
<th>Operating Pressure Range kgf/cm²</th>
<th>Vacuum Application</th>
<th>Effective Orifice mm² (Cv Factor)</th>
<th>Port Size</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>(N)VZ110</td>
<td>•••••</td>
<td>NC</td>
<td>0 ~ 7MPa 0 ~ 100PSI</td>
<td>P Port R Port</td>
<td>P-&gt;A 0.6 (0.034) A-&gt;R 0.6 (0.034)</td>
<td>10-32Nom (M5±0.8)</td>
<td>0.15g</td>
</tr>
<tr>
<td>(N)VZ120</td>
<td>•••••</td>
<td>NO</td>
<td>0 ~ 5MPa 0 ~ 70PSI</td>
<td>P Port R Port</td>
<td>P-&gt;A 0.6 (0.034) A-&gt;R 0.6 (0.034)</td>
<td>10-32Nom (M5±0.8)</td>
<td>0.15g</td>
</tr>
</tbody>
</table>

Note: In case of (N)VZ120 Supply Air to ‘R’ Port. “P” Port will be the Exhaust Port.

**HOW TO ORDER (N)VZ100 SOLENOID VALVE**

- **(N)VZ1**
  - **M5**

**BODY OPTION**

- 10 ... 3/2 NC
- 20 ... 3/2 NO

**VOLTAGE**

- 1 ..... 100V AC
- 2 ..... 200V AC
- 3 ..... 110V AC
- 4 ..... 220V AC
- 5 ..... 24V DC
- 6 ..... 12V DC

**LAMP & SURGE VOLTAGE SUPPRESSOR**

- Nil ... Without
- 2 ..... With Indicator Light & Surge Suppressor
- 5 ..... With Surge Suppressor

**ELECTRICAL ENTRY**

- D ..... DIN Connector
- G ..... Grommet (300mm lead)
- H ..... Grommet (600mm Lead)
- L ..... L Type Plug Connector w/Lead Wire (300mm Lead)
- M ..... M Type Plug Connector w/Lead Wire (300mm Lead)
- LO ... L Type Plug Connector w/o Connector
- MO ... M Type Plug Connector w/o Connector

**DIMENSIONS**

SEE NEXT PAGE
**Series (N)VZ100 Manifolds**

2 - 9 station manifold with a common supply and exhaust.

**Accessories**

**Manifold Type 20 Top Ported**

**Blanking Plate Assembly**

**DXT170-25-1A**

<table>
<thead>
<tr>
<th>Stations (n)</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>53</td>
<td>69</td>
<td>85</td>
<td>101</td>
<td>117</td>
<td>133</td>
<td>149</td>
<td>165</td>
<td>181</td>
</tr>
<tr>
<td>L2</td>
<td>40</td>
<td>56</td>
<td>72</td>
<td>88</td>
<td>104</td>
<td>120</td>
<td>136</td>
<td>152</td>
<td>168</td>
</tr>
<tr>
<td>L3</td>
<td>16</td>
<td>32</td>
<td>48</td>
<td>64</td>
<td>80</td>
<td>96</td>
<td>112</td>
<td>128</td>
<td>144</td>
</tr>
<tr>
<td>L4</td>
<td>8</td>
<td>24</td>
<td>40</td>
<td>56</td>
<td>72</td>
<td>88</td>
<td>104</td>
<td>120</td>
<td>136</td>
</tr>
</tbody>
</table>

**How To Order**

**Manifold Type 20 Top Ported**

(N)VV4Z1—20—1

Stations

02 ... 2 Stations to 20 ... 20 Stations

Thread Type

— PT ODT ... NPTF

Option

F ...... Bracket

**Dimensions**

**Manifold Type 20 Top Ported Grommet Type**

**Dimensions**

**Manifold Type 20 Top Ported MN Plug Type**

**Dimensions**

**(N)VZ100 Body Ported Grommet Type**

**Dimensions**

**(N)VZ100 Body Ported MN Plug Type**

**Series (N)VZ100 Manifolds**
SOLENOID VALVES
SERIES (N)VZ300

3/2 PILOT OPERATED
SOLENOID/SPRING VALVE 10-32Nom

N/O or N/C Option
10-32Nom Body Ported or Sub Base Manifold Mounted
Cv 0.2 – 0.25
Optional Lamp and Surge Voltage Suppressor
Solenoid Coils are integral and must not be removed
These valves are supplied without leads which must be ordered separately (see Accessories Section).

<table>
<thead>
<tr>
<th>Model</th>
<th>Type of Actuation</th>
<th>Effective Orifice mm²/(Cv factor)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Ported Type</td>
<td>(N)VZ312</td>
<td>NC</td>
</tr>
<tr>
<td></td>
<td>(N)VZ322</td>
<td>NO</td>
</tr>
<tr>
<td>Base Mounted Type (with Subplate)</td>
<td>(N)VZ314</td>
<td>NC</td>
</tr>
<tr>
<td></td>
<td>(N)VZ324</td>
<td>NO</td>
</tr>
</tbody>
</table>

Fluid: Air and Inert Gases
Operating Pressure Range: 20 - 100PSI (1.5-7kgf/cm²)
Ambient and Fluid Temperature: Max 50°C / 122°F
Response Time: 20ms or less
Max Operating Frequency: 50 Cycles per Second
Manual Override: Non-Locking Push Type
Pilot Exhaust: Individual, Common
Lubrication: Not Required
Enclosure: Dust Proof

Electrical Entry: Grommet (G), Plug Connector (MN)

<table>
<thead>
<tr>
<th>Volumes</th>
<th>AC 24V, 110V, 240V</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DC 12V, 24V</td>
</tr>
<tr>
<td>Allowable voltage</td>
<td>-15+10% of rated voltage</td>
</tr>
<tr>
<td>Coil insulation</td>
<td>Class E or equivalent</td>
</tr>
<tr>
<td>Temperature rise</td>
<td>&lt; 45°C or less / 113°F or less</td>
</tr>
<tr>
<td>Power consumption DC</td>
<td>1.8W/2.1W (W/LED)</td>
</tr>
<tr>
<td>Apparent Power AC</td>
<td>Inrush: 4.5VA/50Hz, 4.2VA/60Hz</td>
</tr>
<tr>
<td></td>
<td>Holding: 3.5VA/50Hz, 3VA/60Hz</td>
</tr>
<tr>
<td>Surge voltage suppressor</td>
<td>DC: Diode, AC: ZNR</td>
</tr>
<tr>
<td>Indicator light</td>
<td>DC: LED (Red), AC: Neon lamp</td>
</tr>
</tbody>
</table>

Fluid: Air and Inert Gases
Operating Pressure Range: 20 - 100PSI (1.5-7kgf/cm²)
Ambient and Fluid Temperature: Max 50°C / 122°F
Response Time: 20ms or less
Max Operating Frequency: 50 Cycles per Second
Manual Override: Non-Locking Push Type
Pilot Exhaust: Individual, Common
Lubrication: Not Required
Enclosure: Dust Proof

Observer Operating Pressure Ranges - see Technical Specifications for details
(N)VZ300 Manifolds

A Single Sub-base and 3 different Manifold Designs.

(i) Side Entry Single Sub-base for use with the Base Mounted Valve (Type 40).
(ii) 2-10 Station Type 20 Mmanifold for use with the Body Ported Valve (Type 20).
(iii) 2-10 Station Type 40 Side Entry Manifold for use with the Base Mounted Valve (Type 40).
(iv) 2 - 10 Station Type 40 Bottom Entry Manifold for use with the Base Mounted Valve (Type 40).
Solenoid Valves

Series (N)VZ300

**HOW TO ORDER**

**MANIFOLD TYPE 20 TOP PORTED**

(N)VZ3Z3 — 20 1

**NUMBER OF STATIONS**

02 ... 2 stations

05 ... 5 stations

10 ... 10 stations

15 ... 15 stations

20 ... 20 stations

**THREAD TYPE**

- .... PT

- OOT ... NPTF

**ACCESSORIES**

DXT170-25-1A ................. Blanking Plate Kit

DXT170-34-1A ................. Foot Mount Kit

**DIMENSIONS**

**MANIFOLD TYPE 20 TOP PORTED**

**ACCESSORIES**

DXT170-25-1A ................. Blanking Plate Kit

DXT170-34-1A ................. Foot Mount Kit

**MANIFOLD TYPE 40 SIDE PORTED**

(N)VZ3Z3 — 40 — 1

**NUMBER OF STATIONS**

02 ... 2 stations

05 ... 5 stations

10 ... 10 stations

15 ... 15 stations

20 ... 20 stations

**SIZE OF A, B PORT**

M5 ... 10-32 Nom (P, R Port PT)

M5T ... 10-32 Nom (P, R Port NPTF)

B3T ... One Touch Fitting 5/32”

B7T ... One Touch Fitting 1/4”

**ACCESSORIES**

DXT200-8-1A ................. Blanking Plate Kit

**DIMENSIONS**

**MANIFOLD TYPE 40 SIDE PORTED**

**ACCESSORIES**

DXT200-8-1A ................. Blanking Plate Kit

**DIAGRAMS**

- Diagram of MANIFOLD TYPE 20 TOP PORTED

- Diagram of MANIFOLD TYPE 40 SIDE PORTED

**TABLES**

- Table of Stations (n) and Dimensions for MANIFOLD TYPE 20 TOP PORTED

- Table of Stations (n) and Dimensions for MANIFOLD TYPE 40 SIDE PORTED

- Table of Threads and Size of Ports

- Table of Accessories

**NOTES**

- Courtesy of Steven Engineering, Inc.

- 230 Ryan Way, South San Francisco, CA 94080-6370

- Main Office: (650) 588-9200

- Outside Local Area: (800) 258-9200

- www.stevenengineering.com
Solenoid Valves
Series (N)VZ300

Dimensions
Manifold Type 40 Bottom Ported

How to Order
Manifold Type 40 Bottom Ported

(N)VZ3Z3 — 40 — 2 —

Number of Stations
02 ... 2 stations
to
20 ... 20 stations

Size of A, B Port
MS ... 10-32Nom (P, R Port PT)
MST ... 10-32Nom (P, R Port NPTF)
01T ... 1/8" NPTF

Accessories
Manifold Type 40 Side Ported
DXT200-8-1A ................. Blanking Plate Kit

<table>
<thead>
<tr>
<th>Stations (n)</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>M5x0.8</td>
<td>L1</td>
<td>52</td>
<td>68</td>
<td>84</td>
<td>100</td>
<td>116</td>
<td>132</td>
<td>148</td>
<td>164</td>
</tr>
<tr>
<td></td>
<td>L2</td>
<td>43</td>
<td>59</td>
<td>75</td>
<td>97</td>
<td>107</td>
<td>123</td>
<td>139</td>
<td>155</td>
</tr>
</tbody>
</table>

Courtesy of Steven Engineering, Inc.
230 Ryan Way, South San Francisco, CA 94080-6370
Main Office: (650) 588-9200
Outside Local Area: (800) 258-9200
www.stevenengineering.com
3/2 PILOT OPERATED SOLENOID / SPRING VALVE

- N/O or N/C Option
- 1/8 Body Ported, Sub Base or Manifold Mounted (1 to 10 Stations)
- Cv 0.5
- Optional Lamp and Surge Voltage Suppressor
- Solenoid Coils are integral and must not be removed
- These valves are supplied without leads which must be ordered separately (see Accessories Section)

**TECHNICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Pressure Range</td>
<td>20 ~ 100PSI (1.5-7kgf/cm²)</td>
</tr>
<tr>
<td>Ambient and Fluid Temperature</td>
<td>Max 50°C / 122°F</td>
</tr>
<tr>
<td>Response Time</td>
<td>20ms or less</td>
</tr>
<tr>
<td>Max Operating Frequency</td>
<td>50 Cycles per Second</td>
</tr>
<tr>
<td>Manual Override</td>
<td>Non-Locking Push Type</td>
</tr>
<tr>
<td>Pilot Exhaust</td>
<td>Individual, Common</td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not Required</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Dust Proof</td>
</tr>
</tbody>
</table>

**SOLENOID SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Electrical Entry</th>
<th>Grommet (G), Plug Connector (M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltages AC</td>
<td>240Hz, 110V50/60Hz, 24V50/60Hz</td>
</tr>
<tr>
<td>DC</td>
<td>12V, 24V</td>
</tr>
<tr>
<td>Allowable Voltage</td>
<td>-15+10% of rated voltage</td>
</tr>
<tr>
<td>Coil Insulation</td>
<td>Class E or equivalent (120°C)</td>
</tr>
<tr>
<td>Temperature Rise</td>
<td>45°C or less / 115°F or less</td>
</tr>
<tr>
<td>Power Consumption DC</td>
<td>1.8W/1.8W (W/LED)</td>
</tr>
<tr>
<td>Apparent Power AC</td>
<td>Inrush: 4.5VA/50Hz, 4.2VA/60Hz</td>
</tr>
<tr>
<td>Holding Power AC</td>
<td>3.5VA/50Hz, 3VA/60Hz</td>
</tr>
<tr>
<td>Surge Voltage Suppressor</td>
<td>DC: Diode, AC: ZNR</td>
</tr>
<tr>
<td>Indicator Light</td>
<td>DC: LED (Red), AC: Neonlamp</td>
</tr>
</tbody>
</table>

**HOW TO ORDER (N)VZ500 SOLENOID VALVE**

- **Body Options**
  - 12 ... 3/2 NC Body Ported
  - 22 ... 3/2 NO Body Ported
  - 14 ... 3/2 NC Base Mounted
  - 24 ... 3/2 NO Base Mounted
- **Body Option**
  - ... Individual Pilot Exhaust
  - M ... Common Exhaust for Main and Pilot Valve
  - R ... External Pilot

- **Voltage**
  - 1 ... 100V AC
  - 3 ... 110V AC
  - 4 ... 220V AC
  - 5 ... 24V DC
  - 6 ... 12V DC

- **Porting**
  - ... Without Sub Plate
  - 01T ... 1/8" Sub Plate
  - 02T ... 1/4" Sub Plate
  - 01T ... 1/8 (Body Ported)

- **Options**
  - ... Without Bracket
  - F ... Foot Bracket

- **Electrical Entry**
  - D ... DIN Connector
  - G ... Grommet (300mm Lead)
  - H ... Grommet (600mm Lead)
  - L ... L Type Plug Connector with Lead Wire (300mm)
  - M ... M Type Plug Connector with Lead Wire (300mm)
  - LB ... L Type Plug Connector w/o Connector
  - MO ... M Type Plug Connector w/o Connector

- **Lamp & Surge Voltage Suppressor**
  - Without
  - Z ... With (Except Grommet Type & 24V AC)
  - S ... With Surge Suppressor

---

**S O LE NO ID V ALVES**

**S E R I E S (N)VZ500**

<table>
<thead>
<tr>
<th>Model</th>
<th>Type of Actuation</th>
<th>Effective Orifice mm² (Cv Factor)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Ported Type</td>
<td>(N)VZ512</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>(N)VZ522</td>
<td>N</td>
</tr>
<tr>
<td>Base Mounted Type (with Subplate)</td>
<td>(N)VZ514</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>(N)VZ524</td>
<td>N</td>
</tr>
</tbody>
</table>

---

**ACCESSORIES (N)VZ500 SOLENOID VALVE**

- X170-123-A-30 ... Plug with 3m lead
- X201-19-1A ... Bracket

---

**S A F E T Y**

Observe operating pressure ranges - see technical specifications for details
**Series (N)VZ500 Manifolds**

A Single Sub Base and 3 Different Manifold Design.

(i) Side Entry Single Sub-base for use with the Base Mounted Valve (Type 40).

(ii) 2-10 Station Type 21 Manifold for use with the Body Ported Valve (Type 20).

(iii) 2-10 Station Type 41 Side Entry Manifold for use with the Base Mounted Valve (Type 40).

(iv) 2-10 Station Type 41 Bottom Entry Manifold for use with the Base Mounted Valve (Type 40).
### Solenoid Valves Series (N)VZ500

#### How To Order

**Manifold Type 20 Top Ported**

(N)VV3Z5 — 20 — 1 — 01T

- **Number of Stations**
  - 02 ... 2 Stations
  - 10 ... 20 Stations

- **Thread Type**
  - 00T ... NPTF

**Accessories**

Manifold Type 20 Top Ported

DXT201-15-1A ………………… Blanking Plate Kit

---

**Manifold Type 41 Side Ported**

(N)VV3Z5 — 41 — 1 — 01T

- **Number of Stations**
  - 02 ... 2 stations
  - 10 ... 20 stations

- **Size Of A, B Port**
  - 01T ... 3/8" NPTF
  - B7T ... One Touch Fitting 1/4"
  - B9T ... One Touch Fitting 5/16"

**Accessories**

Manifold Type 41 Side Ported

DXT201-15-1A ………………… Blanking Plate Pit

---

#### Dimensions

**Manifold Type 20 Top Ported Grommet Type**

<table>
<thead>
<tr>
<th>Stations (n)</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>59</td>
<td>67</td>
<td>76</td>
<td>87</td>
<td>97</td>
<td>106</td>
<td>117</td>
<td>128</td>
<td>135</td>
</tr>
<tr>
<td>L2</td>
<td>49</td>
<td>58</td>
<td>68</td>
<td>77</td>
<td>87</td>
<td>96</td>
<td>105</td>
<td>116</td>
<td>125</td>
</tr>
</tbody>
</table>

---

**Manifold Type 41 Side Ported Grommet Type**

<table>
<thead>
<tr>
<th>Stations (n)</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>61</td>
<td>70</td>
<td>79</td>
<td>88</td>
<td>98</td>
<td>107</td>
<td>117</td>
<td>127</td>
<td>137</td>
</tr>
<tr>
<td>L2</td>
<td>49</td>
<td>58</td>
<td>68</td>
<td>77</td>
<td>87</td>
<td>96</td>
<td>105</td>
<td>116</td>
<td>125</td>
</tr>
</tbody>
</table>
**Solenoid Valves**

**Series (N)VZ500**

**How To Order**

*Manifold Type 41 Bottom Ported*

(N)VZ500 — 41 — 2 — 01

<table>
<thead>
<tr>
<th>Number of Stations</th>
<th>Thread Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>02 ... 2 Stations</td>
<td>T ... NPTF</td>
</tr>
<tr>
<td>to</td>
<td></td>
</tr>
<tr>
<td>20 ... 20 Stations</td>
<td></td>
</tr>
</tbody>
</table>

**Accessories**

*Manifold Type 41 Bottom Ported*

DXT201-15-1A — Blanking Plate Kit

**Dimensions**

**Manifold Type 41 Bottom Ported Grommet Type**

For all other details, refer to Type 41 Side Ported manifold.

<table>
<thead>
<tr>
<th>Stations (n)</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>61</td>
<td>80</td>
<td>99</td>
<td>118</td>
<td>137</td>
<td>156</td>
<td>175</td>
<td>194</td>
<td>213</td>
</tr>
<tr>
<td>L2</td>
<td>49</td>
<td>68</td>
<td>87</td>
<td>106</td>
<td>125</td>
<td>144</td>
<td>163</td>
<td>182</td>
<td>201</td>
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</tbody>
</table>

**Courtesy of Steven Engineering, Inc.**

230 Ryan Way, South San Francisco, CA 94080-6370
Main Office: (650) 588-9200
Outside Local Area: (800) 258-9200
www.stevenengineering.com
### Series NVFS 2000, 3000, 4000, 5000, 6000

5 Port Pilot Operated Base-Mounted / Plug-In Type

- Large Flow Capacity
- Low Power Consumption
- Long Life
- Ease Maintenance
- Many Variations Available

#### Technical Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>NVFS2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Of Solenoid</td>
<td>Plug-In</td>
</tr>
<tr>
<td>Single</td>
<td>NVFS2100</td>
</tr>
<tr>
<td>Double</td>
<td>NVFS2200</td>
</tr>
<tr>
<td>Closed Center</td>
<td>NVFS2300</td>
</tr>
<tr>
<td>Exhaust Center</td>
<td>NVFS2400</td>
</tr>
<tr>
<td>Pressure Center</td>
<td>NVFS2500</td>
</tr>
<tr>
<td>Perfect (Double Check)</td>
<td>NVFS2600</td>
</tr>
<tr>
<td>Port Size (NPTF)</td>
<td>1/8</td>
</tr>
<tr>
<td>Cv Factor</td>
<td>0.7</td>
</tr>
<tr>
<td>Response Time (ms)</td>
<td>15 or less</td>
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</tbody>
</table>

#### Technical Specifications - Optional

<table>
<thead>
<tr>
<th>Pilot Type</th>
<th>Manual Override</th>
<th>Pilot Operator</th>
<th>External Pilot Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage AC</td>
<td>110VAC/50/60Hz, 220V50/60Hz, 24V/50/60Hz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DC</td>
<td>12V, 24V</td>
<td></td>
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</tr>
<tr>
<td>Allowable Voltage Range</td>
<td>-15 ~ 10% Rated Voltage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coil Insulation</td>
<td>Class B or Equivalent</td>
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<tr>
<td>Apparent Power AC InRush</td>
<td>5.0VA/60Hz, 5.6VA/50Hz</td>
<td></td>
<td></td>
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<tr>
<td>Power Consumption DC</td>
<td>2.3VA(1.5W)/60Hz, 3.4VA(2.1W)/50Hz</td>
<td></td>
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</tr>
<tr>
<td>Electrical Entry</td>
<td>Plug In</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protection Construction</td>
<td>Dust Proof</td>
<td></td>
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<tr>
<td>Lubrication</td>
<td>Not Required</td>
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<tr>
<td>Pilot Operator Manual Override</td>
<td>Non Locking Push Type (Flush)</td>
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<tr>
<td>Ambient &amp; Fluid Temperature</td>
<td>14<del>140°F (-10</del>60°C)</td>
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<tr>
<td>Pressure</td>
<td>22 PSI (0.15MPa)</td>
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<td>Fluid</td>
<td>Air and Inert Gas</td>
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<tr>
<td>Min Operating Pressure</td>
<td>15 PSI (0.1MPa)</td>
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<tr>
<td>Max Operating Pressure</td>
<td>150 PSI (1MPa)</td>
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<tr>
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<td>Conduit Terminal (Base Access)</td>
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<tr>
<td>Option</td>
<td>Bottom Ported Subplate</td>
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<td>Porting</td>
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<tr>
<td>Voltage</td>
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<td></td>
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<tr>
<td>Pilot Type</td>
<td>Non Locking Push Type (Extended), Lock Type (Tool), Lock Type (Lever)</td>
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<tr>
<td>Porting</td>
<td>Bottom Ported Subplate</td>
<td></td>
<td></td>
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<tr>
<td>Option</td>
<td>WIndicator Light &amp; Surge</td>
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<td></td>
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<tr>
<td>Voltage</td>
<td>Bottom Ported Subplate</td>
<td></td>
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<tr>
<td>Protection</td>
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<tr>
<td>Pilot Type</td>
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<tr>
<td>Porting</td>
<td>Bottom Ported Subplate</td>
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<td></td>
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<tr>
<td>Option</td>
<td>WIndicator Light &amp; Surge</td>
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<tr>
<td>Voltage</td>
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<td></td>
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<td>Protection</td>
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<tr>
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<td></td>
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<tr>
<td>Option</td>
<td>WIndicator Light &amp; Surge</td>
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<tr>
<td>Voltage</td>
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<tr>
<td>Protection</td>
<td>Dust Proof</td>
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<tr>
<td>Option</td>
<td>WIndicator Light &amp; Surge</td>
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<tr>
<td>Voltage</td>
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<tr>
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<tr>
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</tr>
<tr>
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<td>Bottom Ported Subplate</td>
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<td>Option</td>
<td>WIndicator Light &amp; Surge</td>
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<tr>
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</tr>
<tr>
<td>Pilot Type</td>
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<tr>
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<td></td>
</tr>
<tr>
<td>Option</td>
<td>WIndicator Light &amp; Surge</td>
<td></td>
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<tr>
<td>Voltage</td>
<td>Bottom Ported Subplate</td>
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<tr>
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<td>Bottom Ported Subplate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Option</td>
<td>WIndicator Light &amp; Surge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage</td>
<td>Bottom Ported Subplate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protection</td>
<td>Dust Proof</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Solenoid Valves
Series NVFS

**How to Order**

**NVFS2000**

**Position**
1 ... 2 Position Single
2 ... 2 Position Double
3 ... 2 Position Closed Center
4 ... 3 Position Exhaust Center
5 ... 3 Position Pressure Center
6 ... 3 Position Perfect

**Body Type**
0 ... Plug-In Type

**Pilot Operator**
- ... Internal
R ... External (Special Order)

**Voltage**
1 ... 100VAC (Special Order)
2 ... 200VAC (Special Order)
3 ... 110VAC
4 ... 220VAC
5 ... 24VDC
6 ... 12VDC
9 ... Others (Special Order)

**How to Order**

**NVFS2**

**Port Size**
- ... Without Subplate
01T ... 1/8 NPTF
02T ... 1/4 NPTF
* Bottom Ported
1/8 NPTF Only

**Porting**
- ... Side
* B ... Bottom
Note) * 1/8 NPTF Only

**Manual Override**
- ... Non-Locking Push Type (Flush)
A ... Non-Locking Push Type (Extended)
B ... Lock Type (Screw Type)
C ... Lock Type (Lever)
Note) * Special Order

**Options**
- ... None
Z ... With Indicator Light and Surge Voltage Suppressor

**Electrical Entry**
F ... Through Base

---

**Plug in Type: Connector with Lead Wire ("wire harness")**

- The insert plug is attached to the manifold block and is connected with valve side. Connect leads with corresponding power supply.

**NVV5FS2-01 06 01T**

Series NVFS2000
Manifold valve
Plug-in Type Connector with Lead wire
(AKT024-52A-01-2)

<table>
<thead>
<tr>
<th>Stations</th>
<th>02</th>
<th>15 stations</th>
</tr>
</thead>
</table>

**Plug-in Type: With Terminal Blocks**

- Lead wires of solenoid valve are connected with the terminals on upper surface of terminal block, corresponding load wires from power source can be wired at the bottom of terminal block.

**NVV5FS2-01 08 01T**

Series NVFS2000
Manifold valve
Plug-in type With terminal block

<table>
<thead>
<tr>
<th>Junction cover classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ... One-pc. type cover</td>
</tr>
</tbody>
</table>

Note: Individual cover part no. above

**Port Size**
Symbol P, EA, EB A, B
01T | 02T
01T | 02T

**Porting**
Symbol P, EA, EB A, B
01T | 02T
01T | 02T

**Port size**
Symbol P, EA, EB A, B
01T | 02T
01T | 02T

* Special Order
** Bottom porting specification with "02T" is 1/8" PA,B bottom and 1/4" A,B side.
# MANIFOLD / OPTION PARTS ASSEMBLY

## SUP Relocation spacer
An individual SUP spacer on manifold block can form individual P port for the valve.

<table>
<thead>
<tr>
<th>Body type</th>
<th>Plug-in type</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPTF</td>
<td>NVFS2000-P-0T1</td>
</tr>
<tr>
<td>NPTF</td>
<td>NVFS2000-P-02T1</td>
</tr>
</tbody>
</table>

## EXH Relocation spacer
An individual EXH spacer on manifold block can form individual EXH port for the valve.

<table>
<thead>
<tr>
<th>Body type</th>
<th>Plug-in type</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPTF</td>
<td>NVFS2000-R-0T1</td>
</tr>
<tr>
<td>NPTF</td>
<td>NVFS2000-R-02T1</td>
</tr>
</tbody>
</table>

## SUP gallery block disc
When supplying manifold with more than one pressure, insert block disc in between stations subjected to different pressures.

<table>
<thead>
<tr>
<th>Body type</th>
<th>Plug-in type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AXT625-12A</td>
</tr>
</tbody>
</table>

## EXH gallery block disc
When valve exhaust affects the other stations on the circuit or when externally piloted, dual pressure valve is used on a standard manifold, insert EXH block disc(s) in between stations to isolate valve exhaust.

<table>
<thead>
<tr>
<th>Body type</th>
<th>Plug-in type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AXT625-12A</td>
</tr>
</tbody>
</table>

## Interface speed control
Needle valve on the manifold block can control cylinder speed by throttling exhaust.

<table>
<thead>
<tr>
<th>Body type</th>
<th>Plug-in type</th>
</tr>
</thead>
</table>

## Interface regulator
Spacer type regulator on manifold block controls supply pressure to the valve. With standard gauge.

<table>
<thead>
<tr>
<th>Body type</th>
<th>Plug-in type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure Regulation P</td>
<td>NABF2000-00-P-1</td>
</tr>
</tbody>
</table>

## Air Shutoff valve spacer
The concurrent use of air shutoff valve spacer with NVFS2100 controls supply of air pressure to the manifold (3-way dump valve). Specify location in first (L) or last (R) station of manifold.

<table>
<thead>
<tr>
<th>Body type</th>
<th>Plug-in type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NABF2000-24A-1</td>
</tr>
</tbody>
</table>

Note: L: U side mount  R: D side mount

## Double Check “Perfect” spacer
The concurrent use of perfect spacer with built-in double check valve can stop the cylinder at mid-position and hold for extended time without being affected by the air leakage across spool seals.

<table>
<thead>
<tr>
<th>Body type</th>
<th>Plug-in type</th>
</tr>
</thead>
<tbody>
<tr>
<td>NVFS2000-20A-1</td>
<td></td>
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</tbody>
</table>

## Blank plate
When disassembling valve for maintenance purposes or when spare manifold stations are required, install Blank plate on the manifold block.

<table>
<thead>
<tr>
<th>Body type</th>
<th>Plug-in type</th>
</tr>
</thead>
<tbody>
<tr>
<td>NVFS2000-10A</td>
<td></td>
</tr>
</tbody>
</table>

## Control Unit
Plug-in type.

- Filter/Regulator, Pressure switch, and Air shutoff valve all combine to form one unit.
- Piping work eliminated.

For more information, please refer to catalog N233.
# SOLENOID VALVES
## SERIES NVFS

**MODEL**

<table>
<thead>
<tr>
<th>Position</th>
<th>Solenoid</th>
<th>Type</th>
<th>Port Size (NPTF)</th>
<th>Cv Factor</th>
<th>Response Time (ms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Position</td>
<td>Single</td>
<td>NVFS3100</td>
<td>1/4</td>
<td>1.8</td>
<td>20 or less</td>
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<tr>
<td></td>
<td>Double</td>
<td>NVFS3200</td>
<td>3/8</td>
<td>2</td>
<td>15 or less</td>
</tr>
<tr>
<td></td>
<td>Closed</td>
<td>NVFS3300</td>
<td>1/4</td>
<td>1.8</td>
<td>40 or less</td>
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<td>Exhaust Center</td>
<td>NVFS3400</td>
<td>3/8</td>
<td>2</td>
<td>40 or less</td>
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<tr>
<td></td>
<td>Pressure Center</td>
<td>NVFS3500</td>
<td>1/4</td>
<td>1.8</td>
<td>40 or less</td>
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<tr>
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<td>Perfect (Double Check)</td>
<td>NVFS3600</td>
<td>3/8</td>
<td>1.2</td>
<td>50 or less</td>
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### Technical Specifications

**Valve**

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Air and Inert Gas</th>
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</thead>
<tbody>
<tr>
<td>Max Operating Pressure</td>
<td>150 PSI (1MPa)</td>
</tr>
<tr>
<td>Min Operating Pressure</td>
<td>22 PSI (0.15MPa)</td>
</tr>
<tr>
<td>Ambient &amp; Fluid Temperature</td>
<td>14<del>140ºF (-10</del>60ºC)</td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not Required</td>
</tr>
<tr>
<td>Pilot Operator Manual Override</td>
<td>Non Locking Push Type (Flush)</td>
</tr>
<tr>
<td>Protection Construction</td>
<td>Dust Proof</td>
</tr>
<tr>
<td>Rated Voltage AC</td>
<td>110VAC/50/60Hz, 220V/50/60Hz</td>
</tr>
<tr>
<td>Rated Voltage DC</td>
<td>12V, 24V</td>
</tr>
<tr>
<td>Allowable Voltage Range</td>
<td>-15 ~ 10% Rated Voltage</td>
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<tr>
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<td>Apparent Power AC InRush</td>
<td>5.0VA/60Hz; 5.6VA/50Hz</td>
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<tr>
<td>Power Consumption Holding</td>
<td>2.3VA(1.3W)/60Hz, 3.4VA(2.1W)/50Hz</td>
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<tr>
<td>Power Consumption DC</td>
<td>1.8W</td>
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<tr>
<td>Electrical Entry</td>
<td>Plug In</td>
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</tbody>
</table>

**Electrical**

**External Pilot Type**

- **Pilot Type**: Manual Override
- **Main Valve**: Direct Manual Override Type
- **Pilot Operator**: Non Locking Push Type (Extended), Lock Type (Tool), Lock Type (Lever)
- **Voltage AC**: 100V/50/60Hz, 200V/50/60Hz
- **Voltage DC**: 6V, 48V, 100V
- **Porting**: Bottom Ported Subplate
- **Option**: Windicator Light & Surge Voltage Suppressor

---

**Thanks to Steven Engineering, Inc.**

230 Ryan Way, South San Francisco, CA 94080-6370

Main Office: (650) 588-9200

Outside Local Area: (800) 258-9200

www.stevenengineering.com
### How to Order

**NVFS3000**

<table>
<thead>
<tr>
<th>Position</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>2 Position Single</td>
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<tr>
<td>2</td>
<td>2 Position Double</td>
</tr>
<tr>
<td>3</td>
<td>3 Position Closed Center</td>
</tr>
<tr>
<td>4</td>
<td>3 Position Exhaust Center</td>
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<tr>
<td>5</td>
<td>3 Position Pressure Center</td>
</tr>
<tr>
<td>6</td>
<td>3 Position Perfect</td>
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<table>
<thead>
<tr>
<th>Body Type</th>
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<tbody>
<tr>
<td>0</td>
<td>Plug-In Type</td>
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<table>
<thead>
<tr>
<th>Manual Option</th>
<th>Description</th>
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<tbody>
<tr>
<td>0</td>
<td>Standard</td>
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<tr>
<td>1</td>
<td>Std &amp; Direct Manual (Special Order)</td>
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<table>
<thead>
<tr>
<th>Pilot Operator</th>
<th>Description</th>
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<tbody>
<tr>
<td>0</td>
<td>Internal</td>
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<td>1</td>
<td>External (Special Order)</td>
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<table>
<thead>
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<tr>
<td>1</td>
<td>100VAC (Special Order)</td>
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<td>2</td>
<td>200VAC (Special Order)</td>
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<td>3</td>
<td>110VAC</td>
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<td>4</td>
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<td>12VDC</td>
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<td>Others (Special Order)</td>
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<tr>
<td>F</td>
<td>Through Base</td>
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<table>
<thead>
<tr>
<th>Porting</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>*</td>
<td>Side</td>
</tr>
<tr>
<td>*B</td>
<td>Bottom (Note) *1/8 NPTF Only</td>
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<table>
<thead>
<tr>
<th>Manual Override</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>*</td>
<td>Non Locking Push Type (Flush)</td>
</tr>
<tr>
<td>A</td>
<td>Non Locking Push Type (Extended)</td>
</tr>
<tr>
<td>B</td>
<td>Lock Type (Screw Type)</td>
</tr>
<tr>
<td>C</td>
<td>Lock Type (Lever)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>None</td>
</tr>
<tr>
<td>Z</td>
<td>With Indicator Light and Surge Voltage Suppressor</td>
</tr>
</tbody>
</table>

### How to Order Manifold

**NVFS 3**

<table>
<thead>
<tr>
<th>Body Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Plug-In Type</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pilot Operator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Internal</td>
</tr>
<tr>
<td>1</td>
<td>External (Special Order)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>100VAC (Special Order)</td>
</tr>
<tr>
<td>2</td>
<td>200VAC (Special Order)</td>
</tr>
<tr>
<td>3</td>
<td>110VAC</td>
</tr>
<tr>
<td>4</td>
<td>220VAC</td>
</tr>
<tr>
<td>5</td>
<td>24VDC</td>
</tr>
<tr>
<td>6</td>
<td>12VDC</td>
</tr>
<tr>
<td>9</td>
<td>Others (Special Order)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electrical Entry</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Through Base</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Porting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>Side</td>
</tr>
</tbody>
</table>

### Electrical Entry

**F**...Through Base

### Choosing the Right Solenoid Valve

#### Plug-in Type: With Terminal Blocks

- Lead wires of solenoid valve are connected with the terminals on upper surface of terminal block, corresponding lead wires from power source can be wired at the bottom of terminal block.

![Image of solenoid valve with terminal block](image.png)

**NVV5FS3—01T—061—02T**

- **Series NVFS3000**
- **Manifold valve**
- **Plug-in type**
- **With terminal block**

<table>
<thead>
<tr>
<th>Porting Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>Special Order</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symbol</td>
<td>A, B</td>
</tr>
<tr>
<td>02T</td>
<td>1/4NPTF</td>
</tr>
<tr>
<td>03T</td>
<td>3/8NPTF</td>
</tr>
</tbody>
</table>

- **Bottom ported 1/4NPTF Only**

<table>
<thead>
<tr>
<th>Porting Specifications</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>EA, EB</td>
</tr>
<tr>
<td>Side</td>
<td>Common Side Mixed</td>
</tr>
</tbody>
</table>

- **Porting Specifications (A,B)**

<table>
<thead>
<tr>
<th>Porting Specifications (A,B)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Common Side Mixed</td>
</tr>
<tr>
<td>2</td>
<td>Bottom (Option)</td>
</tr>
</tbody>
</table>

- **Special Order:**

![Image of solenoid valve with terminal block](image.png)
**Manifold/Option Parts**

**SUP Relocation spacer**
An individual SUP spacer on manifold block can form individual P port for the valve.

- **Body type**: Plug-in type
- **Part No.**: NWVS3000-P-027-1

**EXH Relocation spacer**
An individual EXH spacer on the manifold block can form individual R port for the valve.

- **Body type**: Plug-in type
- **Part No.**: NWFS3000-R-071-1

**SUP gallery block disc**
When supplying manifold with more than one pressure, insert block disc in between stations subjected to different pressures.

- **Body type**: Plug-in type
- **Part No.**: AX1636-1A

**EXH gallery block disc**
When valve exhaust affects the other stations on the circuit or when externally piloted, dual pressure valve is used on a standard manifold, insert EXH block disc(a) in between stations to separate valve exhaust.

- **Body type**: Plug-in type
- **Part No.**: AX1636-1A

**Interface Speed Control**
Needle valve on the manifold block can control cylinder speed by throttling exhaust.

- **Body type**: Plug-in type
- **Part No.**: NWFS3000-06A-1

**Double Check “Perfect” spacer**
The concurrent use of perfect spacer with built-in double check valve can stop the cylinder at mid-position and hold for extended time without being affected by normal air leakage across spool seals.

- **Body type**: Plug-in type
- **Part No.**: NWFS3000-07A-1

**Interface regulator**
Spacer type regulating valve on manifold block can regulate the pressure to the valve.

- **Body type**: Plug-in type
- **Part No.**:
  - Pressure regulation p: NARBF3000-N0-P-1
  - Pressure regulation A: NARBF3000-N0-A-1
  - Pressure regulation B: NARBF3000-N0-B-1

**Blank plate**
When disassembling valve for maintenance purposes or when spare manifold stations are required, install Blank plate on the manifold block.

- **Body type**: Plug-in type
- **Part No.**: NWFS3000-10A

---

**Manifold Options**

**Exhaust Cleaner Unit**
Plug-in type
- Valve exhaust noise damping: 35dB or more.
- Oil mist collection: Rate of collection 99.9% or more.
- Piping process reduced.

**Control Unit**
- Filter/Regulator, Pressure switch, and Air shutoff valve all combine to form one unit.
- Piping work eliminated.

For more information, refer to catalog N233.
## Technical Specifications

### Model NVFS4000

<table>
<thead>
<tr>
<th>Position</th>
<th>Number Of Solenoid</th>
<th>Type</th>
<th>Port size (NPTF)</th>
<th>Cv Factor</th>
<th>Response Time (ms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Position</td>
<td>Single</td>
<td>NVFS4100</td>
<td>3/8</td>
<td>3.3</td>
<td>40 or less</td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td>NVFS4200</td>
<td>1/2</td>
<td>6</td>
<td>15 or less</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3/8</td>
<td>3.3</td>
<td></td>
</tr>
<tr>
<td>3 Position</td>
<td>Single</td>
<td>NVFS4300</td>
<td>1/2</td>
<td>3.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td>NVFS4400</td>
<td>1/2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3/8</td>
<td>2.8</td>
<td>50 or less</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1/2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3/8</td>
<td>3.2</td>
<td>50 or less</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1/2</td>
<td>3.4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Perfect (Double Check)</td>
<td>3/8</td>
<td>1.7</td>
<td>55 or less</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1/2</td>
<td>1.8</td>
<td></td>
</tr>
</tbody>
</table>

### Symbols

- 2 position
- 3 position
- Single
- Closed center
- Double
- Exhaust center
- Pressure center
- Perfect (double check)

### Technical Specifications

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Max Operating Pressure</th>
<th>Min Operating Pressure</th>
<th>Ambien &amp; Fluid Temperature</th>
<th>Lubrication</th>
<th>Pilot Operator Manual Override</th>
<th>Pilot Type</th>
<th>Main Valve</th>
<th>Direct Manual Override Type</th>
<th>Voltage</th>
<th>Porting</th>
<th>Option</th>
<th>Electrical Entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve</td>
<td>Air and Inert Gas</td>
<td>150 PSI (1MPa)</td>
<td>15 PSI (0.1MPa)</td>
<td>Note 1: 14<del>140ºF (-10</del>60ºC)</td>
<td>Non Locking Push Type (Flush)</td>
<td>Manual Override</td>
<td>Non Locking Push Type Type (Tool), Lock Type (Lever)</td>
<td>AC</td>
<td>100V50/60Hz, 200V50/60Hz</td>
<td>DC</td>
<td>6V, 48V, 100V</td>
<td>Windicator Light &amp; Surge</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Conduit Terminal (Base Access)</td>
</tr>
</tbody>
</table>

### Optional

- Pilot Type
- Main Valve
- Direct Manual Override Type
- Voltage
- Porting
- Option
- Electrical Entry

**Note 1:** Use Dry Air at Low Temperature

**Note 2:** Use Turbine Oil No 1 (ISOVG32), if lubricated
SOLENOID VALVES
SERIES NVFS

For further technical details on this product, request catalog reference N233.

See inside front cover for details of your local sales office.

HOW TO ORDER
NVFS4000

POSITION
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 Perfect

BODY TYPE
0 ... Plug-in Type

MANUAL OPTION
0 ... Standard
1 ... Std & Direct
Manual (Special Order)

PILOT OPERATOR
- ... Internal
R ... External (Special Order)

VOLTAGE
1 ... 100VAC (Special Order)
2 ... 200VAC (Special Order)
3 ... 110VAC
4 ... 220VAc
5 ... 24VDC
6 ... 12VDC
9 ... Others (Special Order)

ELECTRICAL ENTRY
F ... Through Base

PORT SIZE
* ... Without Subplate
03T ... 3/8 NPTF
*04T ... 1/2 NPTF
* EA, EB: 3/8 NPTF
Bottom Ported: 3/8 Only

PORTING
- ... Side
* B ... Bottom
Note) *1/8 NPTF Only

MANUAL OVERRIDE
- ... Non Locking Push Type (Flush)
*A ... Non Locking Push Type (Extended)
B ... Lock Type (Screw Type)
*C ... Lock Type (Lever)
Note) * Special Order

OPTIONS
- ... None
2 ... With Indicator Light and Surge Voltage Suppressor

HOW TO ORDER MANIFOLD

NVFS 4

BODY TYPE
0 ... Plug-in Type

PILOT OPERATOR
- ... Internal
R ... External (Special Order)

VOLTAGE
1 ... 100VAC (Special Order)
2 ... 200VAC (Special Order)
3 ... 110VAC
4 ... 220VAc
5 ... 24VDC
6 ... 12VDC
9 ... Others (Special Order)

ELECTRICAL ENTRY
F ... Through Base

PORT SIZE
* ... Without Subplate
03T ... 3/8 NPTF
*04T ... 1/2 NPTF
* EA, EB: 3/8 NPTF
Bottom Ported: 3/8 Only

PORTING
- ... Side
* B ... Bottom
Note) *1/8 NPTF Only

MANUAL OVERRIDE
- ... Non Locking Push Type (Flush)
*A ... Non Locking Push Type (Extended)
B ... Lock Type (Screw Type)
*C ... Lock Type (Lever)
Note) * Special Order

OPTIONS
- ... None
2 ... With Indicator Light and Surge Voltage Suppressor

Plug-in Type: With Terminal Block

Lead wires of solenoid valve are connected with the terminals on upper surface of terminal block, corresponding lead wires from power source can be wired at the bottom of terminal block.

NVFS 5 - 01T - O6 1 - 03T

Series NVFS4000 Manifold valve
Plug-in type • With terminal block

Porting

<table>
<thead>
<tr>
<th>Port specifications</th>
<th>Porting specifications (A,B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Side</td>
</tr>
<tr>
<td>2</td>
<td>Bottom</td>
</tr>
</tbody>
</table>

* Special order.
### Manifold / Option Parts

**SUP Relocation spacer**
An individual SUP spacer on manifold block can form individual P port for the valve.

<table>
<thead>
<tr>
<th>Body type</th>
<th>Plug-in type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part No.</td>
<td>NVVFS4000-P-03T-1</td>
</tr>
</tbody>
</table>

**EXH Relocation spacer**
An individual EXH spacer on manifold block can form individual R port for the valve.

<table>
<thead>
<tr>
<th>Body type</th>
<th>Plug-in type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part No.</td>
<td>NVVFS4000-P-04T-1</td>
</tr>
</tbody>
</table>

**SUP gallery block disc**
When supplying manifold with more than one pressure, insert block disc in between stations subjected to different pressures.

<table>
<thead>
<tr>
<th>Body type</th>
<th>Plug-in type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part No.</td>
<td>AXTF634-10A</td>
</tr>
</tbody>
</table>

**EXH gallery block disc**
When valve exhaust affects the other stations on the circuit or when the reverse pressure valve is used on a standard manifold, insert EXH block disc(s) in between stations to separate valve exhaust.

<table>
<thead>
<tr>
<th>Body type</th>
<th>Plug-in type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part No.</td>
<td>AXTF634-11A</td>
</tr>
</tbody>
</table>

### Interface speed control
Needle valve on the manifold block can control cylinder speed by throttling exhaust.

<table>
<thead>
<tr>
<th>Body type</th>
<th>Plug-in type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part No.</td>
<td>NVVFS4000-20A-1</td>
</tr>
</tbody>
</table>

**Double Check “Perfect” spacer**
The concurrent use of perfect spacer with built-in double check valve can stop the cylinder at mid-position and hold for extended time without being affected by normal air leakage across the spool seals.

<table>
<thead>
<tr>
<th>Body type</th>
<th>Plug-in type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part No.</td>
<td>NVVFS4000-22A-1</td>
</tr>
</tbody>
</table>

### Interface regulator
Spacer type regulating valve on manifold block can regulate the pressure to the valve. With std. gauge.

<table>
<thead>
<tr>
<th>Body type</th>
<th>Plug-in type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure Regulation P</td>
<td>NARBF4000-N0-P-1</td>
</tr>
<tr>
<td>Pressure Regulation A</td>
<td>NARBF4000-N0-A-1</td>
</tr>
<tr>
<td>Pressure Regulation B</td>
<td>NARBF4000-N0-B-1</td>
</tr>
</tbody>
</table>

### Blank plate \(\text{VVFS4000-10A}\)
When disassembling valve for maintenance purposes or when spare manifold stations are required, install Blank plate on the manifold block.

<table>
<thead>
<tr>
<th>Body type</th>
<th>Plug-in type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part No.</td>
<td>VVFS4000-10A</td>
</tr>
</tbody>
</table>

### With exhaust cleaner unit
Plug-in type
- Valve exhaust noise damping: 35db or more.
- Oil mist collection: Rate of collection 99.9% or more.
- Piping process reduced.

For more information, refer to catalog N233

### With Control Unit
Plug-in type
- Filter/Regulator, Pressure Switch, and Air shut-off valve all combine to form one unit.
- Piping work eliminated.

For more information, refer to catalog N233
### Technical Specifications

#### Standard

<table>
<thead>
<tr>
<th>Position</th>
<th>2 Position</th>
<th>3 Position</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
<td>NVFS5000</td>
<td>NVFS5100</td>
</tr>
<tr>
<td>Number of Solenoid</td>
<td>Single</td>
<td>Double</td>
</tr>
<tr>
<td>Port Size (NPTF)</td>
<td>3/8</td>
<td>1/2</td>
</tr>
<tr>
<td>Cv Factor</td>
<td>4.4</td>
<td>5.4</td>
</tr>
<tr>
<td>Response Time (ms)</td>
<td>45 or less</td>
<td>25 or less</td>
</tr>
</tbody>
</table>

#### Symbols

2 position

<table>
<thead>
<tr>
<th>2 Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
</tr>
<tr>
<td>Double</td>
</tr>
<tr>
<td>Pressure center</td>
</tr>
<tr>
<td>Perfect (Double check)</td>
</tr>
</tbody>
</table>

3 position

<table>
<thead>
<tr>
<th>3 Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
</tr>
<tr>
<td>Double</td>
</tr>
<tr>
<td>Pressure center</td>
</tr>
<tr>
<td>Perfect (Double check)</td>
</tr>
</tbody>
</table>

#### Technical Specifications

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Air and Inert Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Operating Pressure</td>
<td>150 PSI (1MPa)</td>
</tr>
<tr>
<td>Min Operating Pressure</td>
<td>15 PSI (0.15MPa)</td>
</tr>
<tr>
<td>Ambient &amp; Fluid Temperature</td>
<td>Note 1) 14<del>140ºF (-10</del>60ºC)</td>
</tr>
<tr>
<td>Lubrication</td>
<td>Note 2) Not Required</td>
</tr>
<tr>
<td>Pilot Operator Manual Override</td>
<td>Non Locking Push Type (Flush)</td>
</tr>
<tr>
<td>Protection Construction</td>
<td>Dust Proof</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Port Size (NPTF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/8</td>
</tr>
<tr>
<td>3/8</td>
</tr>
<tr>
<td>3/8</td>
</tr>
<tr>
<td>3/8</td>
</tr>
</tbody>
</table>

| Cv Factor | 4.4 | 5.4 | 5.7 | 4.4 | 5.4 | 5.7 | 5.7 |
| Response Time (ms) | 45 or less | 25 or less | 55 or less | 55 or less | 55 or less | 60 or less | 55 or less |

#### Electrical

| Rated Voltage | AC 110VAC50/60Hz, 220V50/60Hz, 24V50/60Hz | DC 12V, 24V |
| Permit Voltage Range | -15 ~ 10% Rated Voltage |
| Coil Insulation | Class B or Equivalent |
| Apparent Power AC | 5.0VA/60Hz, 5.6VA/50Hz |
| Power Consumption | 2.3VA(1.5W)/60Hz, 3.4VA(2.1W)/50Hz |
| Power Consumption DC | 1.8W |
| Electrical Entry | Plug In |
| Electrical Entry | Conduit Terminal (Base Access) |

### Optional

<table>
<thead>
<tr>
<th>Pilot Type</th>
<th>External Pilot Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual Override</td>
<td>Direct Manual Override Type</td>
</tr>
<tr>
<td>Main Valve</td>
<td>Pilot Operator</td>
</tr>
<tr>
<td>Pilot Type</td>
<td>Lock Type (Tool), Lock Type (Lever)</td>
</tr>
<tr>
<td>Voltage</td>
<td>AC 100V50/60Hz, 200V50/60Hz</td>
</tr>
<tr>
<td>DC 6V, 48V, 100V</td>
<td></td>
</tr>
<tr>
<td>Porting</td>
<td>Bottom Ported Subplate</td>
</tr>
<tr>
<td>Option</td>
<td>W/B indicator Light &amp; Surge Voltage Suppressor</td>
</tr>
</tbody>
</table>

### Notes

1) Use Dry Air at Low Temperature
2) Use Turbine Oil No 1 (ISOVG32), if lubricated

---

**Technical Specifications**

**Standard**

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Air and Inert Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Operating Pressure</td>
<td>150 PSI (1MPa)</td>
</tr>
<tr>
<td>Min Operating Pressure</td>
<td>15 PSI (0.15MPa)</td>
</tr>
<tr>
<td>Ambient &amp; Fluid Temperature</td>
<td>Note 1) 14<del>140ºF (-10</del>60ºC)</td>
</tr>
<tr>
<td>Lubrication</td>
<td>Note 2) Not Required</td>
</tr>
<tr>
<td>Pilot Operator Manual Override</td>
<td>Non Locking Push Type (Flush)</td>
</tr>
<tr>
<td>Protection Construction</td>
<td>Dust Proof</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Port Size (NPTF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/8</td>
</tr>
<tr>
<td>3/8</td>
</tr>
<tr>
<td>3/8</td>
</tr>
<tr>
<td>3/8</td>
</tr>
</tbody>
</table>

| Cv Factor | 4.4 | 5.4 | 5.7 | 4.4 | 5.4 | 5.7 | 5.7 |
| Response Time (ms) | 45 or less | 25 or less | 55 or less | 55 or less | 55 or less | 60 or less | 55 or less |

### Electrical

| Rated Voltage | AC 110VAC50/60Hz, 220V50/60Hz, 24V50/60Hz | DC 12V, 24V |
| Permit Voltage Range | -15 ~ 10% Rated Voltage |
| Coil Insulation | Class B or Equivalent |
| Apparent Power AC | 5.0VA/60Hz, 5.6VA/50Hz |
| Power Consumption | 2.3VA(1.5W)/60Hz, 3.4VA(2.1W)/50Hz |
| Power Consumption DC | 1.8W |
| Electrical Entry | Plug In |
| Electrical Entry | Conduit Terminal (Base Access) |

### Optional

<table>
<thead>
<tr>
<th>Pilot Type</th>
<th>External Pilot Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual Override</td>
<td>Direct Manual Override Type</td>
</tr>
<tr>
<td>Main Valve</td>
<td>Pilot Operator</td>
</tr>
<tr>
<td>Pilot Type</td>
<td>Lock Type (Tool), Lock Type (Lever)</td>
</tr>
<tr>
<td>Voltage</td>
<td>AC 100V50/60Hz, 200V50/60Hz</td>
</tr>
<tr>
<td>DC 6V, 48V, 100V</td>
<td></td>
</tr>
<tr>
<td>Porting</td>
<td>Bottom Ported Subplate</td>
</tr>
<tr>
<td>Option</td>
<td>W/B indicator Light &amp; Surge Voltage Suppressor</td>
</tr>
</tbody>
</table>

---

1) Use Dry Air at Low Temperature
2) Use Turbine Oil No 1 (ISOVG32), if lubricated
**Solenoid Valves**

**Series NVFS**

**How To Order NVFS5000**

**NVFS 5**

**Position**

1. 2 Position Single
2. 2 Position Double
3. 3 Position Centered
4. 3 Position Exhaust Center
5. 3 Position Pressure Center
6. 3 Position Perfect

**Body Type**

0. Plug-In Type

**Manual Option**

0. Standard
1. Std & Direct Manual (Special Order)

**Pilot Operator**

- Internal
- External (Special Order)

**Voltage**

1. 100VAC (Special Order)
2. 200VAC (Special Order)
3. 110VAC
4. 220VAC
5. 24VDC
6. 12VDC
9. Others (Special Order)

**How To Order NVFS Manifold**

**Pilot Operator**

- Internal
- External (Special Order)

**Manual Override**

- Non-Locking Push Type (Flush)
- Non-Locking Push Type (Extended)
- Lock Type (Screw Type)
- Lock Type (Lever)

**Options**

- None
- With Indicator Light and Surge Voltage Suppressor

**Port Size**

- Without Subplate
  - 03T 1/8 NPTF
  - 04T 1/4 NPTF
  - 06T 3/8 NPTF

**Porting**

- Side
- Bottom

**Electrical Entry**

- Through Base

**Plug-in Type: With Terminal Block**

- Lead wires of solenoid valve are connected to the terminals on upper surface of terminal block, corresponding lead wires from power source can be wired at the bottom of terminal block.

**NVVFS5 - 01T 06 1 04T**

**Series NVFS5000**

- Manifold valve
- Plug-in type
- With terminal block

**Symbol**

- Port size:
  - Suffix: P, EA, EB, A, B
  - 04T 1/8 NPTF
  - 06T 3/8 NPTF
  - Bottom ported 1/2 NPTF only

**Port specifications**

- Suffix: P
  - EA, EB

**Porting specifications**

- A, B
  - Side
  - Bottom

**Stations**

- 02: 2 stations
- 10: 10 stations

**Special order**
SUP Relocation spacer
An individual SUP spacer on manifold block can form individual P port for the valve.

<table>
<thead>
<tr>
<th>Body type</th>
<th>Plug-in type</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>NVVFS5000-P-04T-1</td>
</tr>
</tbody>
</table>

EXH Relocation spacer
An individual EXH spacer on manifold block can form individual R port for the valve.

<table>
<thead>
<tr>
<th>Body type</th>
<th>Plug-in type</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>NVVFS5000-R-04T-1</td>
</tr>
</tbody>
</table>

SUP gallery block disc
When supplying manifold with more than one pressure, insert block disc in between stations subjected to different pressures.

<table>
<thead>
<tr>
<th>Body type</th>
<th>Plug-in type</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>AXT628-12A</td>
</tr>
</tbody>
</table>

EXH gallery block disc
When valve exhaust affects the other stations on the circuit or when externally piloted, dual pressure valve is used on a standard manifold, insert EXH block disc(s) in between stations to separate valve exhaust.

<table>
<thead>
<tr>
<th>Body type</th>
<th>Plug-in type</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>AXT512-14-1A</td>
</tr>
</tbody>
</table>

Interface speed control
Needle valve on the manifold block can control cylinder speed by throttling exhaust.

<table>
<thead>
<tr>
<th>Body type</th>
<th>Plug-in type</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>NVVFS5000-20A-1</td>
</tr>
</tbody>
</table>

Double Check “Perfect” spacer
The concurrent use of perfect spacer with built-in double check valve can stop the cylinder at mid-position and hold for extended time without being affected by normal air leakage across the spool seals.

<table>
<thead>
<tr>
<th>Body type</th>
<th>Plug-in type</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>NVVFS5000-22A-1</td>
</tr>
</tbody>
</table>

Interface regulator
Spacer type regulating valve on manifold block can regulate the pressure to the valve.

<table>
<thead>
<tr>
<th>Body type</th>
<th>Plug-in type</th>
<th>Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Regulation P</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NARBF5000-NO-P-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Regulation A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NARBF5000-N/A-A-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Regulation B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NARBF5000-NO-B-1</td>
</tr>
</tbody>
</table>

Blank plate
When disassembling valve for maintenance purposes or when spare manifold stations are required, install Blank plate on the manifold block.

<table>
<thead>
<tr>
<th>Body type</th>
<th>Plug-in type</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>VVFS5000-10A</td>
</tr>
</tbody>
</table>

With Exhaust Cleaner Plug-in type
- Valve exhaust noise damping: 35dB or more.  
- Oil mist collection: Rate of collection 99.9% or more.  
- Piping process reduced.

For more information, Please refer to catalog N233
### Technical Specifications

**Standard**

- **Valve:**
  - Fluid: Air and Inert Gas
  - Max Operating Pressure: 145 PSI (1.2MPa)
  - Min Operating Pressure: 15 PSI (0.1MPa)
  - Proof Pressure: 220PSI (1.5MPa)
  - Ambient & Fluid Temperature: 14~140°F (-10~60°C)
  - Lubrication: Not Required
  - Pilot Operator Manual: Non Locking Push Type (Flush)
  - Override: Dust Proof

- **Protection Construction:** 110VAC50/60Hz, 24VDC, Others
- **Rated Voltage:** -15 ~ 10% Rated Voltage
- **Allowable Voltage Range:** Class B or Equivalent (130°C)
- **Coil Insulation:** 5.0VA/60Hz, 5.0VA/50Hz
- **Apparent Power AC Inrush:** 2.3VA(1.5W)/60Hz, 3.4VA(2.1W)/50Hz
- **Power Consumption:**
  - Holding: 1.8W
  - DC: Conduit Terminal
  - Electrical Entry: With Indicator Light and Surge

**Symbol**

- 2 position
- Single
- Double

**Position**

<table>
<thead>
<tr>
<th>Position</th>
<th>Number Of Solenoid</th>
<th>Type</th>
<th>Port Size (NPTF)</th>
<th>Cv Factor</th>
<th>Response Time (ms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Position</td>
<td>Single</td>
<td>NVFS6100</td>
<td>3/4&quot;</td>
<td>9</td>
<td>60 or less</td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td>NVFS6200</td>
<td>3/4&quot;</td>
<td>9</td>
<td>60 or less</td>
</tr>
</tbody>
</table>

**Order NVFS6000**

- **Position:**
  - 1: 2 Position Single
  - 2: 2 Position Double

- **Body Type:**
  - 0: Plug-In Type

- **Option:**
  - 0: Standard
  - 1: Std & Direct Manual (Special Order)

- **Pilot Operator:**
  - I: Internal
  - E: External (Special Order)

- **Port Size:**
  - Without Subplate
  - OET: 3/4 NPTF
  - 10T: 1" NPTF

- **Porting:**
  - Side: *8* Bottom
  - Note: *1/8 NPTF Only

- **Electrical Entry:**
  - F: Through Base

- **Voltage:**
  - 1: 100VAC (Special Order)
  - 2: 208VAC (Special Order)
  - 3: 110VAC
  - 4: 220VAC
  - 5: 24VDC
  - 6: 12VDC
  - 9: Others (Special Order)
4 Port Direct Operated Poppet Solenoid Valve Series VQD1000

- High Speed Coil with Stable Response Times
- Large Flow Capacity in a Compact Lightweight (34g) Valve
- Vacuum Applications are possible (up to 10 Torr)
- Clean Room Specifications are available as Special
- Copper Free Specifications is Standard

### Valve Specifications

<table>
<thead>
<tr>
<th>Standard Type (2W)</th>
<th>High Flow Capacity (4W Power Saving Type)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve Structure</td>
<td>4 Port Direct Operated Poppet Valve</td>
</tr>
<tr>
<td>Fluid</td>
<td>Air, Inert Gas</td>
</tr>
<tr>
<td>Max Operating Pressure</td>
<td>0.7MPa (7.1kgf/cm²)</td>
</tr>
<tr>
<td>Min Operating Pressure/Vacuum</td>
<td>0MPa / 10 Torr</td>
</tr>
<tr>
<td>Effective Area (Cv Factor)</td>
<td>0.9mm² (Cv 0.05) 1.5mm² (Cv 0.08)</td>
</tr>
<tr>
<td>Response Time</td>
<td>ON: 4ms / OFF: 2ms</td>
</tr>
<tr>
<td>Ambient &amp; Fluid Temperature</td>
<td>-10 ~ 50°C</td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not Required</td>
</tr>
<tr>
<td>Manual Override</td>
<td>Non-Locking Push Type</td>
</tr>
<tr>
<td>Shock Resistance/Vibration Resistance</td>
<td>150 / 30m/s²</td>
</tr>
<tr>
<td>Mounting Orientation</td>
<td>Free</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Dust Proof</td>
</tr>
<tr>
<td>Weight</td>
<td>34g (without Sub-Plate)</td>
</tr>
</tbody>
</table>

### Electrical Specifications

- **Coil Rated Voltage DC**: 24V, 12V
- **Allowable Voltage Fluctuation**: ±10% of Rated Voltage
- **Type of Coil Insulation**: Class B
- **Power Consumption DC**: 2W (4W (Power Saving)
  (Inrush: 4W; Holding: 2W)
- **Electrical Entry**: L Type Plug Connector, M Type Plug Connector
  (With Light and Surge Suppressor)

### NOTES:

- The 4W Power Saving Circuit, has an inrush power demand of 4W for 10ms when first energized. After this, Holding Power falls to 2W.
- A Clean Room version is available to specified order -
- The VQD1000 is used either on a Single Sub-base or Manifold Mounted. Body Ported versions have not been developed.
- Can be used as a 3 Port Valve by plugging either the A or B Port.

### HOW TO ORDER SERIES VQD1000 SOLENOID VALVE

**VQD1151**

- **Valve Option**
  - V**...** Standard (2W)
  - U**...** Vacuum (2W)
  - W**...** High Flow (4W)
  - *Power Saving Type

- **Rated Voltage**
  - 5 ......24VDC
  - 6 ......12VDC

- **Electrical Entry**
  - L ......Plug Lead Type
  - L Type Plug Connector with Lead Wire, w/Light and Surge Suppressor
  - LO ......Plug Lead Type
  - L Type Plug Connector without Lead Wire, w/Light and Surge Suppressor
  - M ......Plug Lead Type
  - M Type Plug Connector with Lead Wire, w/Light and Surge Suppressor
  - MO ......Plug Lead Type
  - M Type Plug Connector without Lead Wire, w/Light and Surge Suppressor

- **Sub-Plate Port Size**
  - -......Without Sun-Plate
  - M5 ......M5 Thread
# Solenoid Valves

## Series VQZ100/200/300

### 3 Port Solenoid Valve

**Base Mounted / Plug Lead Type**

**Series VQZ100/200/300**

## Technical Specifications

### Series VQZ100/200/300

<table>
<thead>
<tr>
<th>Type Of Seal</th>
<th>Metal Seal</th>
<th>Rubber Seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid</td>
<td>Air, Inert Gas</td>
<td>Air, Inert Gas</td>
</tr>
<tr>
<td>Maximum Operating Pressure</td>
<td>0.7MPa / 102PSI (High Pressure Type) / 0.8MPa / 116PSI (Low Pressure Type)</td>
<td></td>
</tr>
<tr>
<td>Minimum Operating Pressure</td>
<td>0.1MPa / 14.5PSI</td>
<td></td>
</tr>
<tr>
<td>Ambient &amp; Fluid Temperature</td>
<td>-10º to 50ºC</td>
<td></td>
</tr>
<tr>
<td>Max Operating Frequency</td>
<td>20Hz</td>
<td></td>
</tr>
<tr>
<td>Proof Pressure</td>
<td>1.5MPa / 218PSI</td>
<td></td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not Required</td>
<td></td>
</tr>
<tr>
<td>Shock/Vibration Resistance</td>
<td>150/30 m/s²</td>
<td></td>
</tr>
<tr>
<td>Enclosure</td>
<td>Dust Proof</td>
<td></td>
</tr>
</tbody>
</table>

| Coil Rated Voltage | 12, 24VDC and 100, 110, 200, 220VAC |
| Allowable Voltage | ±10% of Rated Voltage |

### Coil Insulation

- 24VDC: 1WDC (42mA), 1.5WDC (63mA), 0.5WDC (21mA)
- 12VDC: 1WDC (12mA), 1.5WDC (18mA), 0.5WDC (6mA)
- 100VAC: 1WDC (12mA), 1.5WDC (18mA), 0.5WDC (6mA)
- 220VAC: 1WDC (12mA), 1.5WDC (18mA), 0.5WDC (6mA)

### Manual Override

- 1*: 100VAC (50/60Hz)
- 2*: 200VAC (50/60Hz)
- 3*: 110VAC (50/60Hz)
- 4*: 220VAC (50/60Hz)
- 5*: 24VDC
- 6*: 12VDC
- 9*: Other (Special Voltage)

### Port Size

**Series VQZ100/200/300**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Port Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP</td>
<td>Without Sub-Plate</td>
</tr>
<tr>
<td>Q1</td>
<td>Rc(P)1/8</td>
</tr>
</tbody>
</table>

**Series VQZ200/300**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Port Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP</td>
<td>Without Sub-Plate (VQZ1000/2000/3000)</td>
</tr>
<tr>
<td>Q1</td>
<td>Rc(P)1/8 (VQZ1000/2000)</td>
</tr>
<tr>
<td>Q2</td>
<td>Rc(P)1/4 (VQZ1000)</td>
</tr>
<tr>
<td>Q3</td>
<td>Rc(P)3/8 (VQZ1000/2000)</td>
</tr>
</tbody>
</table>

### Electrical Entry

- L: L-Type Plug Connector with Lead Wire
- LD: L-Type Plug Terminal without Connector
- M: M-Type Plug Connector with Lead Wire
- MO: M-Type Plug Terminal without Connector
- Y: DIN Connector (VQZ2200/300)
- YO: Terminal without Connector (VQZ2200/300)
- YZ: DIN Connector (VQZ2200/300)
- YOS: DIN Terminal without Connector (VQZ2200/300)

## How to Order

**Series VQZ100/200/300 Base Mounted Plug Lead Type**

### Symbol

- 1: Normally Closed Metal Seal
- 2: Normally Open Metal Seal (VQZ200/300 Only)
- 3: Normally Closed Rubber Seal (VQZ2200/300 Only)
- 4: Normally Open Rubber Seal (VQZ2200/300 Only)

### Series

- 1: VQZ100 Body Width 10mm
- 2: VQZ200 Body Width 15mm
- 3: VQZ300 Body Width 18mm

### Body Type

- 5: Base Mounted

---

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1 230 Ryan Way, South San Francisco, CA 94080-6370

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Outside Local Area: (800) 258-9200
www.stevenengineering.com
**Solenoid Valves**

**Series VQZ100/200/300**

**ORDER**

**Series VQZ100/200/300**

**Base Mounted Plug Lead Type Manifold**

**Symbol**

- **C3** One Touch Fitting for ø3.2
- **C4** One Touch Fitting for ø4
- **C6** One Touch Fitting for ø6
- **M5** M5 Thread (VQZ100)
- **C10** One Touch Fitting for ø10
- **CM** Mixture of Port Size (VQZ100/200/300)

**Port Size (2A Port)**

- **C3** One Touch Fitting for ø3.2
- **C4** One Touch Fitting for ø4
- **C6** One Touch Fitting for ø6
- **M5** M5 Thread (VQZ100)
- **C10** One Touch Fitting for ø10
- **CM** Mixture of Port Size (VQZ100/200/300)

**Manual Override**

- **L** Non Locking Push Type (Tool Type)
- **B** Slotted Locking Type (Tool Type)

**Electrical Entry**

- **L** Type Plug Connector with Lead Wire
- **LO** Type Plug Terminal without Connector
- **M** M Type Plug Connector with Lead Wire
- **MO** M Type Plug Terminal without Connector
- **YO** Terminal without Connector (VQZ200/300)
- **YO** Terminal without Connector (VQZ200/300)
- **YO** Terminal without Connector (VQZ200/300)

**Coil Voltage**

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

---

**Series VQZ100/200/300**

**Valve Construction**

- Normally Closed
- Normally Open
- Normally Closed
- Normally Open

**Type**

- Poppet
- Metal
- Rubber
- Metal
- Metal
- Rubber
- Metal
- Rubber

**Effective Area** mm² (Cv)**

- 5.4 (0.3)
- 10.8 (0.6)
- 12.6 (0.7)
- 10.0 (0.55)
- 16.2 (0.9)
- 21.6 (1.2)
- 15.3 (0.85)
- 21.6 (1.2)

**Weight** kg

- 25
- 53
- 53
- 53
- 77
- 77

**Note 1)** Value for Sub-Plate and Maximum Diameter

---

**Note 2)** Weight without Sub-Plate

---

**Note 1)** Order DIN Rail Separately

---

**Courtesy of Steven Engineering, Inc. 230 Ryan Way, South San Francisco, CA 94080-6370 Main Office: (650) 588-9200 Outside Local Area: (800) 258-9200 www.stevenengineering.com**
## 3 Port Solenoid Valve
### Body Ported / Plug Lead Type
#### Series VQZ100/200/300

### How to Order
**Series VQZ100/200/300**

- **Symbol**
  - 1: Normally Closed Metal Seal
  - 2: Normally Open Metal Seal (VQZ200/300 Only)
  - 3: Normally Closed Rubber Seal (VQZ200/300 Only)
  - 4: Normally Open Rubber Seal (VQZ200/300 Only)

- **Body Type**
  - 2: Body Ported

- **Function**
  - Standard Type (1W)
  - High Pressure Type (1.5W)
  - Low Wattage Type (0.5W)
  - External Pilot

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

- **Manual Override**
  - A: Non-Locking Push Type
  - B: Slotted Locking Type

- **Electrical Entry**
  - L: Type Plug Connector with Lead Wire
  - LO: L Type Plug Terminal without Connector
  - M: Type Plug Connector with Lead Wire
  - MO: M Type Plug Terminal without Connector
  - Y: DIN Connector (VQZ200/300)
  - YO: Terminal without Connector (VQZ200/300)
  - YOS: DIN Terminal without Connector (VQZ200/300)
  - Y2: DIN Connector (VQZ200/300)

### Technical Specifications
#### Series VQZ100/200/300

- **Type of Seal**
  - Metal Seal
  - Rubber Seal

- **Fluid**
  - Air, Inert Gas

- **Maximum Operating Pressure**
  - 0.7MPa / 102PSI (High Pressure Type)
  - 0.5MPa / 73PSI

- **Minimum Operating Pressure**
  - 0.1MPa / 14.5PSI

- **Ambient & Fluid Temperature**
  - 0°C to 50°C

- **Max Operating Frequency**
  - 20Hz

### Manual Override
- Non-Locking Push Type
- Slotted Locking Type

### Coil Rated Voltage
- 12, 24VDC and 100, 110, 200, 220VAC

### Allowable Voltage
- ±10% of Rated Voltage

### Coil Insulation
- Class B

### Power Consumption
- 100VAC: 1WDC (42mA), 1.5WDC (63mA), 0.5WDC (21mA)
- 200VAC: 1WDC (83mA), 1.5WDC (125mA), 0.5WDC (42mA)
- 220VAC: 1.5WDC (218PSI)

### Manual Override
- 1*: 100VAC (50/60Hz)
- 2*: 200VAC (50/60Hz)
- 3*: 110VAC (50/60Hz)
- 4*: 220VAC (50/60Hz)
- 5: 24VDC
- 6: 12VDC
- 9*: Other (Special Voltage)

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- www.stevenengineering.com
## SOLENOID VALVES

### SERIES VQZ100/200/300 BODY PORTED

#### HOW TO ORDER

**SERIES VQZ100/200/300 BODY PORTED PLUG LEAD TYPE MANIFOLD**

**VV3QZ**

- **Series**
  - 1 ... VQZ100
  - 2 ... VQZ200
  - 3 ... VQZ300

- **Manifold Type**
  - 2 ... Body Ported

- **No. Of Stations**
  - 02 ... 2 Stations
  - 20 ... 20 Stations

**DIN Rail Mount**

- **Kit**
  - C ... Connector

**Note 1)** Order DIN Rail Separately

#### HOW TO ORDER

**SERIES VQZ100/200/300 BODY PORTED PLUG LEAD TYPE VALVE**

**VQZ**

- **Series**
  - 1 ... VQZ100
  - 2 ... VQZ200
  - 3 ... VQZ300

- **Body Type**
  - 2 ... Body Ported

- **Function**
  - - ... Standard Type (1W)
  - H ... High Pressure Type (1.5W)
  - Y ... Low Wattage Type (0.5W)
  - R ... External Pilot

- **Coil Voltage**
  - 1* ... 100VAC (50/60Hz)
  - 2* ... 200VAC (50/60Hz)
  - 3* ... 110VAC (50/60Hz)
  - 4* ... 220VAC (50/60Hz)
  - 5 ... 24VDC
  - 6 ... 12VDC
  - 9* ... Others

- **Manual Override**
  - - ... Non-Locking Push Type (Tool Type)
  - 8 ... Slotted Locking Type (Tool Type)

- **Electrical Entry**
  - L ... L Type Plug Connector with Lead Wire
  - LO ... L Type Plug Terminal without Connector
  - M ... M Type Plug Connector with Lead Wire
  - MO ... M Type Plug Terminal without Connector
  - Y ... DIN Connector (VQZ2200/300)
  - YO ... Terminal without Connector (VQZ2200/300)
  - YOS ... DIN Terminal without Connector (VQZ2200/300)

### Table

<table>
<thead>
<tr>
<th>Series</th>
<th>Valve Construction</th>
<th>Type</th>
<th>Effective Area (mm²)</th>
<th>Pressure (W)</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQZ100</td>
<td>Normally Closed</td>
<td>Poppet</td>
<td>VQZ115</td>
<td>5.4 (0.3)</td>
<td>20</td>
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<tr>
<td>VQZ200</td>
<td>Normally Closed</td>
<td>Metal</td>
<td>VQZ215</td>
<td>10.8 (0.6)</td>
<td>25</td>
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<tr>
<td></td>
<td>Normally Closed</td>
<td>Rubber</td>
<td>VQZ235</td>
<td>12.6 (0.7)</td>
<td>25</td>
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<tr>
<td>VQZ300</td>
<td>Normally Open</td>
<td>Metal</td>
<td>VQZ325</td>
<td>15.3 (0.85)</td>
<td>25</td>
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<tr>
<td></td>
<td>Normally Open</td>
<td>Rubber</td>
<td>VQZ345</td>
<td>21.6 (1.2)</td>
<td>25</td>
</tr>
</tbody>
</table>

**Note 1)** Value for Sub-Plate and Maximum Diameter

**Note 2)** Weight without Sub-Plate

---

Courtesy of Steven Engineering, Inc.

230 Ryan Way, South San Francisco, CA 94080-6370

Main Office: (650) 588-9200

Outside Local Area: (800) 258-9200

www.stevenengineering.com
## Series VQZ

**5 Port Solenoid Valve**

**Base Mounted / Plug Lead Type**

**Series VQZ1000/2000/3000**

- High Speed and Long Life
- Compact Design with Large Flow Capacity
- Metal or Rubber Seal Main Valve Construction Options
- Optional IP65 Rated DIN Connector Type Available
- DIN Rail Mounting Available
- Built-in One Touch Fitting for Easier Piping
- Piping Direction can be changed on VQZ100
- Both 3 and 5 Port Valves can be mounted on the same manifold
- Possible to have all Solenoids on same side of Manifold

### Technical Specifications

<table>
<thead>
<tr>
<th>Type Of Seal</th>
<th>Metal Seal</th>
<th>Rubber Seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid</td>
<td>Air, Inert Gas</td>
<td>Air, Inert Gas</td>
</tr>
<tr>
<td>Maximum Operating Pressure</td>
<td>0.7MPa / 102PSI (High Pressure Type) 0.8MPa / 116PSI</td>
<td></td>
</tr>
<tr>
<td>Minimum Single (2 Pos)</td>
<td>0.10MPa / 14.5PSI</td>
<td>0.15MPa / 22PSI</td>
</tr>
<tr>
<td>Operating Double (2 Pos)</td>
<td>Only for VQZ3000 / 3 Pos</td>
<td>0.10MPa / 14.5PSI</td>
</tr>
<tr>
<td>Pressure 3 Position</td>
<td>0.15MPa / 22PSI</td>
<td>0.20MPa / 29PSI</td>
</tr>
<tr>
<td>Ambient &amp; Fluid Temperature</td>
<td>-10º to 50ºC / -14 to 122ºF</td>
<td>-10º to 50ºC / -14 to 122ºF</td>
</tr>
<tr>
<td>Max Operating 2 Position S &amp; D</td>
<td>20Hz</td>
<td>5Hz</td>
</tr>
<tr>
<td>Pressure 3 Position</td>
<td>10Hz</td>
<td>3Hz</td>
</tr>
<tr>
<td>Proof Pressure</td>
<td>1.5MPa / 218PSI</td>
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<tr>
<td>Lubrication</td>
<td>Not Required</td>
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</tr>
<tr>
<td>Manual Override</td>
<td>Non-Locking Push Type/Slotted Locking Type</td>
<td></td>
</tr>
<tr>
<td>Shock/Vibration Resistance</td>
<td>150/30 m/s²</td>
<td></td>
</tr>
<tr>
<td>Enclosure</td>
<td>Dust Proof</td>
<td></td>
</tr>
<tr>
<td>Coil Rated Voltage</td>
<td>12, 24VDC and 100, 110, 200, 220VAC</td>
<td></td>
</tr>
<tr>
<td>Allowable Voltage</td>
<td>≤ 10% of Rated Voltage</td>
<td></td>
</tr>
<tr>
<td>Coil Insulation</td>
<td>Class B</td>
<td></td>
</tr>
</tbody>
</table>

### Operation

- **Port Size (4(A), 2(B) Port)**
  - Symbol: Port Size
    - 0: Without Sub-Plate (VQZ1000/2000/3000)
    - 01: Rc(PT)1/8 (VQZ1000/2000)
    - 02: Rc(PT)1/4 (VQZ1000)
    - 03: Rc(PT)3/8 (VQZ1000/2000)

- **Manual Override**
  - 0: Non-Locking Push Type (Tool Type)
  - B: Slotted Locking Type (Tool Type)

### Electrical Entry

- **Coil Voltage**
  - 1* ... 100VAC (50/60Hz)
  - 2* ... 200VAC (50/60Hz)
  - 3* ... 110VAC (50/60Hz)
  - 4* ... 220VAC (50/60Hz)
  - 5* ... 24VDC
  - 6* ... 12VDC
  - 9* ... Other (Special Voltage)

### Series VQZ1000/2000/3000

<table>
<thead>
<tr>
<th>Base Mounted Cv Factor</th>
<th>1</th>
<th>2</th>
<th>3</th>
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<tr>
<td>Metal Spool</td>
<td>0.2</td>
<td>0.6</td>
<td>0.9</td>
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<tr>
<td>Rubber Spool</td>
<td>0.35</td>
<td>0.7</td>
<td>1.2</td>
</tr>
</tbody>
</table>

### How To Order

**Series VQZ** Base Mounted Plug Lead Type

**Symbol**

- Port Size
  - 0: Without Sub-Plate (VQZ1000/2000/3000)
  - 01: Rc(PT)1/8 (VQZ1000/2000)
  - 02: Rc(PT)1/4 (VQZ1000)
  - 03: Rc(PT)3/8 (VQZ1000/2000)

**Manual Override**

- 0: Non-Locking Push Type (Tool Type)
- B: Slotted Locking Type (Tool Type)

**Electrical Entry**

- **Coil Voltage**
  - 1* ... 100VAC (50/60Hz)
  - 2* ... 200VAC (50/60Hz)
  - 3* ... 110VAC (50/60Hz)
  - 4* ... 220VAC (50/60Hz)
  - 5* ... 24VDC
  - 6* ... 12VDC
  - 9* ... Other (Special Voltage)

**Function**

- ... Standard Type (1W)
- H ... High Pressure Type (1.5W) [Note 1] [Note 2]
- Y ... Low Wattage Type (0.5W) [Note 3]
- R ... External Pilot

Note 1: Applicable to DC Specification
Note 2: Optional Specification
Note 3: When specifying more than one option, combine symbols in alphabetical order.
SOLENOID VALVES

SERIES VQZ

COMPACT BODY TYPE
WITH BUILT-IN SPEED CONTROLLER - FOR VQZ2000 ONLY

• Speed Controllers are built into the valve body (Rubber Seal Models only), making it easier to adjust cylinder speed.
• Needle valve is equipped with a mechanism to prevent it from being pulled out.

Note) Compact body type valves and standard valves are not interchangeable. Compact valves cannot be mounted on a standard manifolds and vice versa.

HOW TO ORDER
SERIES VQZ COMPACT BODY TYPE MANIFOLD

VV5QZ 2 5 C - C

PORT SIZE {4(A), 2 (B) PORT}
C3 . . . One Touch Fitting ø3.2
C4 . . . One Touch Fitting ø4
C6 . . . One Touch Fitting ø6

01 . . . .Rc(PT)1/8

Note) The One Touch Fittings on the compact manifold are pressed in and therefore cannot be changed out.

HOW TO ORDER
SERIES VQZ VALVE

VQZ2 5 C - C

SYMBOL
1 . . . .2 Position Single
2 . . . .2 Position Double
3 . . . .3 Position Closed Center
4 . . . .3 Position Exhaust Center
5 . . . .3 Position Pressure Center

BODY TYPE
5 . . . .Base Mounted

SEAL TYPE
0 . . . .Metal Seal
1 . . . .Rubber Seal

SPEED CONTROLLER
- . . . .Without
5 . . . .With Speed C
Available with Rubber Seal/Valve Only

COMPACT BODY TYPE
MANUAL OVERRIDE
B . . . .Slotted Locking Type (Tool Type)

ELECTRICAL ENTRY
L* . . . .L Type Plug Connector with Lead Wire
LO* . . .L Type Plug Terminal without Connector
M* . . . .M Type Plug Connector with Lead Wire
MQ* . . .M Type Plug Terminal without Connector
*With Light and Surge Voltage Suppressor

COIL VOLTAGE
1 . . . .100VAC (50/60Hz)
2 . . . .200VAC (50/60Hz)
3 . . . .110VAC (50/60Hz)
4 . . . .220VAC (50/60Hz)
5 . . . .24VDC
6 . . . .12VDC
9 . . . .Others

PILOT VALVE SPECIFICATIONS
- . . . .Standard type (1W)
H* . . . .High Pressure type (1.5W)
Y* . . . .Low Wattage Type (0.5W)
*Option for DC Coil Voltage Only
**Solenoid Valves**

**Series VQZ - Body Ported Type**

**5 Port Solenoid Valve**

**Body Ported / Plug Lead Type**

**Series VQZ1000/2000/3000**

- High Speed and Long Life
- Compact Design with Large Flow Capacity
- Metal or Rubber Seal Main Valve Construction Options
- Optional IP65 Rated DIN Connector Type Available
- DIN Rail Mounting Available
- Built-In One Touch Fitting for Easier Piping
- Both 3 and 5 Port Valves can be mounted on the same manifold
- Possible to have all Solenoids on same side of Manifold

**Technical Specifications**

<table>
<thead>
<tr>
<th>Type of Seal</th>
<th>Metal Seal</th>
<th>Rubber Seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid</td>
<td>Air, Inert Gas</td>
<td>Air, Inert Gas</td>
</tr>
<tr>
<td>Maximum Operating Pressure</td>
<td>0.7MPa (High Pressure Type 0.8MPa)</td>
<td></td>
</tr>
<tr>
<td>Minimum Pressure</td>
<td>0.10MPa</td>
<td>0.15MPa (22PSI)</td>
</tr>
<tr>
<td>Operating Pressure</td>
<td>0.15MPa (22PSI)</td>
<td>0.20MPa (29PSI)</td>
</tr>
<tr>
<td>Ambient &amp; Fluid Temp</td>
<td>-10º to 50ºC</td>
<td>-10º to 50ºC</td>
</tr>
<tr>
<td>Max Operating Pressure</td>
<td>20Hz</td>
<td>5Hz</td>
</tr>
<tr>
<td>Structure</td>
<td>Not Required</td>
<td></td>
</tr>
<tr>
<td>Shock/Vibration Resis</td>
<td>1500 m/s</td>
<td></td>
</tr>
<tr>
<td>Enclosure</td>
<td>Dust Proof</td>
<td></td>
</tr>
</tbody>
</table>

**Coil Rated Voltage**

- 24VDC
- 12VDC
- 100VAC
- 110VAC
- 200VAC
- 220VAC

**Allowable Voltage**

- ±10% of Rated Voltage

**Coil Insulation**

- Class B

**Port Size (4A), (2B) Port**

Symbol: Port Size

- C3 One Touch Fitting ø3.2 (VQZ1000)
- C4 One Touch Fitting ø4 (VQZ1000/3000)
- C6 One Touch Fitting ø6 (VQZ1000/2000/3000)
- C8 One Touch Fitting ø8 (VQZ3000)
- C10 One Touch Fitting ø10 (VQZ3000)

**Manual Override**

- Non-Locking Push Type
- Slotted Locking Type

**Bracket**

- None
- With Bracket (Applicable to Single)

**Coil Voltage**

- 1* ... 100VAC (50/60HZ)
- 2* ... 200VAC (50/60HZ)
- 3* ... 110VAC (50/60HZ)
- 4* ... 220VAC (50/60HZ)
- 5 ... 24VDC
- 6 ... 12VDC
- 9* ... Other (Special Voltage)

**How To Order**

Series VQZ Body Ported Plug Lead Type

- 1 ... VQZ1000 Body Width 10mm
- 2 ... VQZ2000 Body Width 15mm
- 3 ... VQZ3000 Body Width 18mm

**Positions**

- 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 Port Normally Closed
- 7 ... 3 Port Normally Open
- 8 ... Body Ported

**Body Type**

- 0 ... Metal Seal
- 1 ... Rubber Seal

**Function**

- Standard Type (1W)
- High Pressure Type (1.5W) Note 1
- Low Wattage Type (0.5W) Note 2
- External Pilot Note 3

Note 1: Applicable to DC Specification
Note 2: Optional Specification
Note 3: When specifying more than one option, combine symbols in alphabetical order.
**Solenoid Valves**

**SERIES VQZ - BODY PORTED TYPE**

### 5 Port Solenoid Valve  
**BODY PORTED / PLUG LEAD TYPE**  
**SERIES VQZ1000/2000/3000 MANIFOLD / CONNECTOR KIT**

#### TECHNICAL SPECIFICATIONS  
**SERIES VQZ1000/2000/3000 MANIFOLD**

<table>
<thead>
<tr>
<th>Series</th>
<th>Base Model</th>
<th>Piping Applications</th>
<th>Applicable Valve</th>
<th>Applicable Stations</th>
<th>Manifold Base</th>
<th>Weight g</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQZ1000</td>
<td>VV5QZ12-***</td>
<td>Top Rc(PT) 1/8</td>
<td>C(3)/2</td>
<td>2 Station: 64</td>
<td>Addition per Station: 18</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>C(4)/6</td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td></td>
<td>C(4)/6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>C(4)/6</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>C(4)/6</td>
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<td></td>
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<td>VQZ2000</td>
<td>VV5QZ22-***</td>
<td>Top Rc(PT) 1/8</td>
<td>C(4)/6</td>
<td>2 Station: 86</td>
<td>Addition per Station: 26</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>C(4)/6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>C(6)/6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>C(6)/6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>C(6)/6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQZ3000</td>
<td>VV5QZ32-***</td>
<td>Top Rc(PT)1/4</td>
<td>C(6)/6</td>
<td>2 Station: 181</td>
<td>Addition per Station: 53</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>C(6)/6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>C(6)/6</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### HOW TO ORDER  
**SERIES VQZ BODY PORTED PLUG LEAD TYPE MANIFOLD**

<table>
<thead>
<tr>
<th>VV5QZ</th>
<th>2</th>
<th>C</th>
<th></th>
</tr>
</thead>
</table>

#### SERIES VQZ BODY PORTED PLUG LEAD TYPE VALVE

- **Series**  
  1 ... VQZ1000 Body Width 10mm  
  2 ... VQZ2000 Body Width 15mm  
  3 ... VQZ3000 Body Width 18mm  

- **Positions**  
  1 ... Single  
  2 ... Double  
  3 ... Closed Center  
  4 ... Port for Exhaust Center  
  5 ... Port for Pressure Center  
  6 ... Port for Mixture Mounting NC  
  7 ... Port for Mixture Mounting NO  
  * Except for VQZ1000 and Metal Seal Type  

- **Body Type**  
  2 ... Body Ported  
  0 ... Metal Seal  
  1 ... Rubber Seal  

- **Function**  
  - Standard (1W)  
  - High Pressure (1.5 SW)  
  - Low Wattage (0.5 SW)  
  - External Pilot  
  Note 1) Applicable to DC Specification  
  Note 2) Optional Specification  
  Note 3) When specifying more than one option, combine symbols in alphabetical order.

- **Port Size** (4(A), 2(B) Port)  
  - C(3) ... Touch Fitting for ø3.2 (VQZ1000)  
  - C(4) ... Touch Fitting for ø4 (VQZ1000/2000)  
  - C(6) ... Touch Fitting for ø6 (VQZ1000/2000/3000)  
  - C(8) ... Touch Fitting for ø8 (VQZ3000)  
  - C(10) ... Touch Fitting for ø10 (VQZ3000)  
  - C(16) ... Touch Fitting for ø16 (VQZ3000)  
  - M(5) ... Thread (VQZ1000/2000)  
  - M(8) ... Thread (VQZ1000/2000/3000)  
  - M(10) ... Thread (VQZ1000/2000/3000)  
  - M(14) ... Thread (VQZ1000/2000/3000)  

- **Manual Override**  
  - Non-Locking Push Type (Tool Type)  
  - Slotted Locking Type (Tool Type)  

- **Electrical Entry**  
  - L ... L Type Plug Connector with Lead Wire  
  - LD ... L Type Plug Terminal without Connector  
  - M ... M Type Plug Connector with Lead Wire  
  - MD ... M Type Plug Terminal without Connector  
  - Y ... DIN Connector (VQZ2000/3000)  
  - YO ... DIN Connector without Mating (VQZ2000/3000)  
  - YOS ... DIN Connector without Mating (VQZ2000/3000)  

- **Coil Voltage**  
  1* ... 100VAC (50/60Hz)  
  2* ... 200VAC (50/60Hz)  
  3* ... 110VAC (50/60Hz)  
  4* ... 220VAC (50/60Hz)  
  5 ... 24VDC  
  6 ... 12VDC  
  9* ... Other (Special Voltage)  

- **DIN Rail Mount**  
  - None  
  - O ... DIN Rail Mounting Type (With DIN Rail Standard Length)  
  - DD ... DIN Rail Mounting Type (Without DIN Rail)  

Note 1) Order DIN Rail Separately.
**M an ifold O ption**

**S eries V QZ1000/2000/3000 B lank P late A ssembly**

- **Blank Plate Assembly**
  - VVQZ1000-10A-2
  - VVQZ2000-10A-2
  - VVQZ3000-10A-2

  - Used to reserve a valve mounting space on the manifold for future use.

**M an ifold O ption**

**S eries V QZ1000/2000/3000 D IN R AI L**

- **DIN Rail**
  - AXT100 - DR -

  - Suffix number into \( \square \) from the Dimension Table below.

  - To order a manifold with DIN Rail already attached, insert ‘D’ at the end of the manifold part number. The DIN Rail is approximately 30mm longer than the length of the manifold.

<table>
<thead>
<tr>
<th>Number</th>
<th>L Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>23</td>
</tr>
<tr>
<td>2</td>
<td>35.5</td>
</tr>
<tr>
<td>3</td>
<td>48</td>
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<tr>
<td>4</td>
<td>60.5</td>
</tr>
<tr>
<td>5</td>
<td>73</td>
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<tr>
<td>6</td>
<td>85.5</td>
</tr>
<tr>
<td>7</td>
<td>98</td>
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<tr>
<td>8</td>
<td>110.5</td>
</tr>
<tr>
<td>9</td>
<td>123</td>
</tr>
<tr>
<td>10</td>
<td>135.5</td>
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<td>11</td>
<td>148</td>
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<tr>
<td>12</td>
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<td>173</td>
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<td>185.5</td>
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<td>15</td>
<td>198</td>
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<tr>
<td>16</td>
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<td>17</td>
<td>223</td>
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<td>248</td>
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<tr>
<td>20</td>
<td>260.5</td>
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<table>
<thead>
<tr>
<th>Number</th>
<th>L Dimension</th>
</tr>
</thead>
<tbody>
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<td>33</td>
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<td>34</td>
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<td>37</td>
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<tr>
<td>38</td>
<td>39</td>
</tr>
<tr>
<td>39</td>
<td>40</td>
</tr>
</tbody>
</table>

**M an ifold O ption**

**S eries V QZ1000/2000/3000 F itting B lank P lug**

- **Fitting Blank Plug**
  - KQP-23-X19
  - KQP-04-X19
  - KQP-06-X19
  - KQP-08-X19
  - KQP-10-X19

  - Color: White

**M an ifold O ption**

**S eries V QZ1000/2000/3000 E XH P ort S ilencer**

- Silencer is installed in the EXH Port

**O ther M an ifold O ptions:**

- Latching Solenoid Type
- Latching Type Valve
- Latching Type Valve with Manual Override

---

**Dimensions**

<table>
<thead>
<tr>
<th>Applicable Fitting Size</th>
<th>Part Number</th>
<th>A</th>
<th>L</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2</td>
<td>KQP-23-X19</td>
<td>16</td>
<td>31.5</td>
<td>3.2</td>
</tr>
<tr>
<td>4</td>
<td>KQP-04-X19</td>
<td>16</td>
<td>32</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>KQP-06-X19</td>
<td>18</td>
<td>35</td>
<td>8</td>
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<tr>
<td>8</td>
<td>KQP-08-X19</td>
<td>20.5</td>
<td>39</td>
<td>10</td>
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<tr>
<td>10</td>
<td>KQP-10-X19</td>
<td>22</td>
<td>43</td>
<td>12</td>
</tr>
</tbody>
</table>

**Other Manifold Options:**

- **Performance Check Block**
- **Performance Check Block with Valve or Manifold**
**Mechanical Valves**

**Series (N)VH**

**4/2, 4/3 Hand Valve Series (N)VH**

- Durable High Flow Rotary Panel Mounting Hand Valves
- Three Body Sizes with Ports from 1/4 – 3/4
- Having 4 Ports, this valve is available in 2 position or 3 Position Closed or Exhaust Center
- White Color to match Bright Operating Environments

**Technical Specifications**

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Operating Pressure</td>
<td>1MPa / 145PSI (VH2/3/400) / 0.7MPa / 100PSI (VH600)</td>
</tr>
<tr>
<td>Ambient &amp; Fluid Temperature</td>
<td>-5 – 60°C / 23 – 140°F</td>
</tr>
<tr>
<td>Operation Angle</td>
<td>90°C / 194°F</td>
</tr>
</tbody>
</table>

**How to Order (N)VH Series**

- **Body Size**
  - 2 …… 1/4 Port
  - 3 …… 3/8 Port
  - 4 …… 1/2 Port
  - 6 …… 1 Port

- **Position Symbol**
  - 0 …… 3 Position/Closed Center
  - 1 …… 3 Position/Exhaust Center
  - 2 …… 2 Position

- **Piping/Mounting**
  - …… Side / Body
  - …… Side / Panel
  - …… Bottom / Body
  - …… Bottom / Panel

- **Thread**
  - …… Rc* Remove (N) when ordering
  - N …… NPT
  - F …… G* Remove (N) when ordering

**Dimensions**

- **(N)VH Series Body Size 200**
- **(N)VH Series Body Size 300**
- **(N)VH Series Body Size 400**
3/2 MECHANICAL VALVE 1/8
(N)VM400 SERIES

- 3/2 Normally Open or Normally Closed Valve
- Many Different Actuators
- Cv 0.38 Flow

TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Pressure</td>
<td>0 ~ 1MPa / 0 ~ 145PSI</td>
</tr>
<tr>
<td>Ambient &amp; Fluid Temperature</td>
<td>5 ~ 60°C / 41 ~ 140°F</td>
</tr>
<tr>
<td>Effective Orifice (Cv Factor)</td>
<td>7mm/(0.38)</td>
</tr>
<tr>
<td>Recommended Lubricant</td>
<td>Lubricant (ISO VG32)</td>
</tr>
<tr>
<td>Port Size</td>
<td>1/8</td>
</tr>
</tbody>
</table>

HOW TO ORDER (N)VM400 VALVE

(N)VM430 01

THREAD
- ……PT
N ……NPT* when ordering

PORT SIZE
01 …1/8"

ACTUATOR
00 … Basic Type
01 … Roller Lever
02 … One Way Trip
05 … Straight Plunger
06 … Roller Plunger
07 … Cross Roller Plunger
08 … Toggle
30 … Push Button–Mushroom
……… Push Button–Mushroom Lock Down
(Red only) order Valve VM430-01-00 plus Actuator Type XT34
32 … Push Button–Extended
33 … Push Button–Flush
34 … Twist Selector
36 … Key Selector

HOW TO ORDER (N)VM400 ACTUATOR ONLY

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>…………</td>
<td>…………</td>
</tr>
</tbody>
</table>

MECHANICAL OPERATION

Basic
Roller Lever ………… VM-01A ………… Polyacetal roller
Roller Lever ………… VM-01AS ………… Hardened Steel Roller
One Way Trip ………… VM-02A ………… Polyacetal roller
One Way Trip ………… VM-02AS ………… Hardened Steel Roller
Straight Plunger ………… VM-05A
Roller Plunger ………… VM-06A ………… Polyacetal roller
Roller Plunger ………… VM-06AS ………… Hardened Steel Roller
Cross Roller Plunger ………… VM-07A ………… Polyacetal roller
Cross Roller Plunger ………… VM-07AS ………… Hardened Steel Roller

MANUAL OPERATION

Toggle ………… VM-08A …………
Push Button–Mushroom … VM-30AR ………… Red
Push Button–Mushroom … VM-30AB ………… Black
Push Button–Mushroom … VM-30AG ………… Green
Push Button–Mushroom Lock down ………… XT34-11-21R Red
Push Button–Extended … VM-32AR ………… Red
Push Button–Extended … VM-32AB ………… Black
Push Button–Extended … VM-32AG ………… Green
Push Button–Flush ………… VM-33A …………
Twist Selector ………… VM-34AR ………… Red
Twist Selector ………… VM-34AB ………… Black
Twist Selector ………… VM-34AG ………… Green
Key Selector ………… VM-36A …………

S A F E T Y

If these valves are used for guarding or safety interlock systems, installation and application should be as per BS5304: 1988. Careful note should be taken of the operating principles and design of different ranges of mechanical valves when specifying valves for safety related systems.

Courtesy of Steven Engineering

Main Office: (650) 588-9200
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www.stevenengineering.com
3/2 MECHANICAL VALVE 1/8
(N)VM800 SERIES

- 3/2 Normally Open or Normally Closed Valve
- A Variety Of Actuator Types Available
- Robust Design

TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Pressure</td>
<td>0 ~ 9.9 Bar / 0 ~ 144 PSI</td>
</tr>
<tr>
<td>Ambient and Fluid Temperature</td>
<td>5 ~ 60°C / 41 ~ 140°F</td>
</tr>
<tr>
<td>Effective Orifice (Cv Factor)</td>
<td>6mm(0.33)</td>
</tr>
<tr>
<td>Recommended Lubricant</td>
<td>Turbine Oil #1 (ISO VG32)</td>
</tr>
<tr>
<td>Port Size</td>
<td>1/8</td>
</tr>
</tbody>
</table>

APPLICATIONS

MOVEMENT IS CHANGEABLE

Roller can be mounted to inside of lever

Lever location can be changed

Head direction can be changed

Lever length adjustment

How To Order (N)VM800 Valve

<table>
<thead>
<tr>
<th>No Of Ports</th>
<th>00 ...Basic Type</th>
<th>01 ...Roller Lever</th>
<th>13 ...Adjustable Roller Lever</th>
<th>14 ...Adjustable Rod Lever</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>PT</td>
<td>N ...NPT</td>
<td>* Remove (N) when ordering</td>
<td></td>
</tr>
</tbody>
</table>

How To Order NVM800 Actuator Only

Roller lever ................. VM-01F
Adjustable roller lever ...... VM-13F
Adjustable rod lever ........ VM14F
## 3/2 N.C. Micro Mechanical Valve (N)VM1000 Series

- 3/2 Normally Closed Valve
- 5 Different Actuators
- Cv 0.055 Flow
- Built-in Hose Nipple Connection
- Suitable for Ø4mm OD, 2.5mm ID Nylon Tube
- Over travel after Actuation (Mechanical Operation Type)
- Interchangeable with V3 Electrical Switches

### Technical Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Valve</td>
<td>NC Poppet Type</td>
</tr>
<tr>
<td>Number of Ports</td>
<td>3</td>
</tr>
<tr>
<td>Total Travel</td>
<td>4.8mm (Basic)</td>
</tr>
<tr>
<td>Piping</td>
<td>Side</td>
</tr>
<tr>
<td>Fluid</td>
<td>Air</td>
</tr>
<tr>
<td>Operating Pressure</td>
<td>0 ~ 8 Bar / 10 ~ 116PSI</td>
</tr>
<tr>
<td>Ambient and Fluid Temperature</td>
<td>5 ~ 60°C / 41 ~ 140°F</td>
</tr>
<tr>
<td>Effective Orifice (Cv Factor)</td>
<td>1mm²(0.055)</td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not Required Use Turbine Oil #1 (ISO VG32) if lubrication is provided</td>
</tr>
<tr>
<td>Fitting</td>
<td>w/Hose Nipple</td>
</tr>
<tr>
<td>Weight (Basic)</td>
<td>20gf</td>
</tr>
</tbody>
</table>

### Dimensions

- **(N)VM1000 Basic Valve**
- **(N)VM1000 Roller Lever**
- **(N)VM1000 One Way Trip**
- **(N)VM1000 Toggle**
- **(N)VM1000 Push Button**

### Symbols

- **(N)VM1000 Basic Valve**
- **(N)VM1000 Roller Lever**
- **(N)VM1000 One Way Trip**
- **(N)VM1000 Toggle**
- **(N)VM1000 Push Button**

**Symbols**

- PT: Pre-travel
- OT: Over travel
- TT: Total travel

---

**How To Order (N)VM1000**

- **No Of Ports**
  - 0 ....... 3 Ports
  - 1 ....... 2 Ports

- **Actuator**
  - 00 ...Basic Type
  - 01 ...Roller Lever
  - 02 ...One way Trip
  - 08 ...Toggle
  - 32 ...Push Button

- **Push Button Color**
  - R ......Red
  - G ......Green
  - B ......Black

---

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5/2 Mechanical Valve 1/8 Port Series (N)VZM550

Many Different Actuators
High Flow Cv 0.6
High Cycle Rate
Long Life
Interfaces with VZ5000 2–10 Station Type 21 Manifold

How To Order (N)VZM550 Valve

(N)VZM550 — 01 —

Body Option
0 …… Standard
1 …… External Pilot

Thread
- …… PT
N …… NPT
* Remove (N) when ordering

Port Size
01 … 1/8"

How To Order (N)VZM550 Actuator Only

PART NO APPLICATION

Mechanical Operation

Basic
Roller Lever ……………………… VM-01C …… Polyacetal roller
Roller Lever ……………………… VM-01CS … Hard steel roller
One Way Trip ……………………… VM-02C …… Polyacetal roller
One Way Trip ……………………… VM-02CS … Hard steel roller
Straight Plunger ………………… VM-05C ……
Roller Plunger ………………… VM-06C …… Polyacetal roller
Roller Plunger ………………… VM-06CS … Hard steel roller

Manual Operation

Toggle …………………………… VM-08C ……
Push Button–Mushroom … VM-30CR … Red
Push Button–Mushroom … VM-30CB … Black
Push Button–Mushroom … VM-30CG … Green
Push Button–Extended ……… VM-32CR … Red
Push Button–Extended ……… VM-32CB … Black
Push Button–Extended ……… VM-32CG … Green
Push Button–Flush ………… VM-33C ……
Twist Selector ………………… VM-34CR … Red
Twist Selector ………………… VM-34CB … Black
Twist Selector ………………… VM-34CG … Green
Key Selector ………………… VM-36C ……
Push-Pull ……………………… VM-36CR … Red
Push-Pull ……………………… VM-36CB … Black

Accessories

Manifold Type 21 Top Ported
DXT199-22-1A ………… Blanking plate kit

Fluid
Air, Inert gas

Operating Pressure
1.5~7 Bar / 22~101PSI

Ambient & Fluid Temperature
5 ~ 60°C / 41 ~ 140ºF

Effective Orifice (Cv Factor)
10.8mm²(0.6)

Maximum Frequency
300c.p.m.

Spray
Not Required

Port Size
Main Valve 1/4
Pilot Valve (EXH) M5x0.8

Safety
If these valves are used for guarding or safety interlock systems, installation and application should be as per BS5304: 1988. Careful note should be taken of the operating principles and design of different ranges of mechanical valves when specifying valves for safety related systems.

Caution
Valves with certain operators cannot be mounted side by side. Check valve dimensions.
**Time Delay Valve**

Series (N)VR2110

A combination of adjustable orifice and fixed flow allows transmission of a pneumatic signal after a fixed time period.

**Specifications**

- **Supply Pressure**: 0 - 1MPa / 0 - 145 PSI
- **Signal Pressure**: 0.25 - 0.8MPa / 32 - 116 PSI
- **Time Delay**: 0.5 - 60 Sec
- **Effective Orifice (Cv Factor)**: 2.5mm² (0.14)
- **Port Size**: 1/8 PT / NPT

**Dimensions**

- Supply Pressure: 0 ~ 1MPa / 0 ~ 145 PSI
- Signal Pressure: 0.25 ~ 0.8MPa / 32 ~ 116PSI
- Time Delay: 0.5 ~ 60 Sec
- Effective Orifice (Cv Factor): 2.5mm² (0.14)
- Port Size: 1/8 PT / NPT

**How To Order**

NVR2110-N01 (1/8 NPT)
VR2110-01 (1/8 PT)

---

**Shuttle Valve**

Series (N)VR1210, (N)VR1220

3 Ported Check Valve with one output and 2 pneumatic signal input ports

**Specifications**

- **Max Operating Pressure**: 1MPa / 145 PSI
- **Min Operating Pressure**: 0.05MPa / 8 PSI
- **Effective Orifice (Cv Factor)**: 7mm²(0.38) / 15mm²(0.81)
- **Port Size**: 1/8 PT / NPT

**Dimensions**

- **Series**: (N)VR1210-01 (N)VR1220-02
- **Max Operating Pressure**: 1MPa / 145 PSI
- **Min Operating Pressure**: 0.05MPa / 8 PSI
- **Effective Orifice (Cv Factor)**: 7mm²(0.38) / 15mm²(0.81)
- **Port Size**: 1/8 PT / NPT

**How To Order**

NVR1210-N01 (1/8 NPT)
NVR1220-N02 (1/4 NPT)
VR1210-01 (1/8 PT)
VR1220-02 (1/4 PT)
ANCILLARY VALVES
SERIES (N)AK AND (N)AQ

CHECK VALVE SERIES (N)AK

- High Flow Capacity
- Low Cracking
- Pressure: 0.2 Bar
- Port Sizes from ¼ to 1 PT, NPT

QUICK EXHAUST VALVE SERIES (N)AQ

- High Exhaust Characteristics
- Port Sizes from M5 to ¼ PT, NPT
- High Flow Capacity

How To Order Series (N)AK

**Body Size**……………. **Port**……………. **Effective Size NPT**……………. **Orifice**

- NAK2000-N01..¾………… 25
- NAK2000-N02..¼………… 27.5
- NAK4000-N02..¼………… 47
- NAK4000-N03..¾………… 85
- NAK4000-N04..¾………… 95
- NAK6000-N06..¾………… 200
- NAK6000-N10..½………… 230

Note: When ordering PT Ports, remove 'N' from the model number.
Eg: AK2000-01
* S (mm²) is Effective Orifice
Figure given for A-R Direction (Exhaust Flow)

How To Order Series (N)AQ

**Body Size**……………. **Port**……………. **Effective Size NPT**……………. **Orifice**

- NAQ1500-M5….M5…… 2.8
- NAQ1500-N01..¾………… 5.8
- NAQ2000-N01..¼………… 25
- NAQ2000-N02..¼………… 40
- NAQ3000-N02..¼………… 42
- NAQ3000-N03..¾………… 70
- NAQ5000-N04..¾………… 115
- NAQ5000-N06..¾………… 180

Note: When ordering PT Ports, remove 'N' from the model number.
Eg: AQ1510-01
* S (mm²) is Effective Orifice
Figure given for A-R Direction (Exhaust Flow)
**MINIATURE IN-LINE QUICK EXHAUST VALVES**

**SERIES AQ200/300**

- Option of Built-in Silencer or Facility to pipe Exhaust away
- Minimizes Installation Time and Cost
- Integral One Touch fittings
- Accepts Nylon and Polyurethane Tubing
- Compact Lightweight Design

**TECHNICAL SPECIFICATIONS**

- **Proof Pressure** …………………1.5MPa (218 PSI)
- **Max Operating Pressure** ……………1MPa (145 PSI)
- **Min Operating Pressure** ……………0.1MPa (14.5 PSI)
- **Ambient and Fluid Temperatures** ………0~60°C / 32~140ºF
- **Applicable Tube Materials** ………Nylon, Soft Nylon, Polyurethane

**NOTE:** observe maximum recommended operating pressures for tube when using Soft Nylon or Polyurethane

**DIMENSIONS**

**Series AQ240F/340F with Silencer**

- **Models**
  - AQ240F-04-00
  - AQ240F-06-00
  - AQ340F-06-00

**Models**

- **O.D size**
- **D1**
- **D2**
- **D3**
- **L1**
- **L2**
- **L3**
- **M1**
- **Weight**

**Models**

- **O.D size**
- **D1**
- **D2**
- **D3**
- **L1**
- **L2**
- **L3**
- **M1**
- **Weight**

**FLOW COMPARISON**

- **Models**
  - AQ240F-04-1
  - AQ240F-06-1
  - AQ340F-06-1

**TUBE CONNECTION**

- **Metric**
  - 04 …Ø4mm
  - 06 …Ø6mm
- **Imperial**
  - 07 …1/4"

**EXHAUST PORT**

- **Metric**
  - 00 …Built-in Silencer
  - 04 …Ø4mm
  - 06 …Ø6mm
- **Imperial**
  - 07 …1/4"
### Technical Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Proof Pressure</td>
<td>1.5MPa (218 PSI)</td>
</tr>
<tr>
<td>Max Operating Pressure</td>
<td>1MPa (145 PSI)</td>
</tr>
<tr>
<td>Min Operating Pressure</td>
<td>0.1MPa (14.5 PSI)</td>
</tr>
<tr>
<td>Pilot Check Valve Actuation Pressure</td>
<td>50% of Operating Pressure</td>
</tr>
<tr>
<td>Ambient and Fluid Temperatures</td>
<td>-5<del>60°C (W/O Freezing) 23</del>140°F</td>
</tr>
<tr>
<td>Number Of needle Rotations</td>
<td>10</td>
</tr>
<tr>
<td>Applicable Tube Material</td>
<td>Nylon, Soft Nylon, Polyurethane</td>
</tr>
</tbody>
</table>

### Flow Rate and Effective Sectional Area

<table>
<thead>
<tr>
<th>Model</th>
<th>ASP330F</th>
<th>ASP430F</th>
<th>ASP530F</th>
<th>ASP630F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tube (mm)</td>
<td>ø6</td>
<td>ø6</td>
<td>ø8</td>
<td>ø8</td>
</tr>
<tr>
<td>Outside Diameter (inch)</td>
<td>ø1/4&quot;</td>
<td>ø1/4&quot;</td>
<td>ø5/16&quot;</td>
<td>ø5/16&quot;</td>
</tr>
<tr>
<td>Controlled Flow Rate (l/min)</td>
<td>180</td>
<td>330</td>
<td>350</td>
<td>600</td>
</tr>
<tr>
<td>Flow Rate (ANR/lnm)</td>
<td>110</td>
<td>110</td>
<td>110</td>
<td>1190</td>
</tr>
<tr>
<td>Free Flow Effective Sectional Area (mm²)</td>
<td>2.9</td>
<td>5.2</td>
<td>5.4</td>
<td>9.3</td>
</tr>
</tbody>
</table>

### How To Order

**Series ASP**

- **Body Size**
  - 3 ... 1/8 Standard
  - 4 ... 1/4 Standard
  - 5 ... 3/8 Standard
  - 6 ... 1/2 Standard

- **Type**
  - 3 ... Universal

- **With One Touch Fittings**

### Symbols

- Symbol Cylinder Side Pilot Port
  - 01 ... R(PT)1/8 M5x0.8
  - 02 ... R(PT)1/4 R(PT)1/8
  - 03 ... R(PT)3/8 R(PT)1/8
  - 04 ... R(PT)1/2 R(PT)1/4
  - F02 ... R(PT)1/4 G(PF)1/8
  - F03 ... R(PT)3/8 G(PF)1/8
  - F04 ... R(PT)1/2 G(PF)1/4
  - N01 ... NPT1/8 1/8-32UNF
  - N02 ... NPT1/4 NPT1/8
  - N03 ... NPT3/8 NPT1/8
  - N04 ... NPT1/2 NPT1/4

### With Seals

- Applicable Tube Outside Diameter
  - Metric (mm): ø6 ... ø6, ø8 ... ø8, ø10 ... ø10
  - Imperial (inch): 07 ... ø1/4", 09 ... ø5/16", 11 ... ø3/8", 13 ... ø1/2"

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- Outside Local Area: (800) 258-9200
- www.stevenengineering.com
### ANCILLARY VALVES
**SERIES ASP**

#### Dimensions (MM)

<table>
<thead>
<tr>
<th>Model</th>
<th>d</th>
<th>T1</th>
<th>T2</th>
<th>H1</th>
<th>H2</th>
<th>D1</th>
<th>D2</th>
<th>D3</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>Max</th>
<th>Min</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASP330F-01-00S</td>
<td>6</td>
<td>12</td>
<td></td>
<td>12</td>
<td>12</td>
<td>14</td>
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<td>12</td>
<td>12</td>
<td>14</td>
<td>14</td>
<td>14</td>
<td>22.9</td>
<td>39.6</td>
<td>39.5</td>
<td>35.2</td>
<td>10.5</td>
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<tr>
<td>ASP430F-02-00S</td>
<td>6</td>
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<td>12</td>
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#### Dimensions (INCH)

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ANCILLARY VALVES

SERIES (N)ASV

ADJUSTABLE QUICK EXHAUST VALVE WITH INTEGRAL EXHAUST RESTRICTOR AND SILENCER SERIES (N)ASV

Three Functions from a Single Component
Minimizes Installation Time and Cost
Accepts Nylon and Polyurethane Tubing
Wide Variety of Sizes M3 to ½
Excellent Control Characteristics
Compact Design

Flow Comparison

<table>
<thead>
<tr>
<th>Model</th>
<th>Port thread</th>
<th>Tube O.D (mm)</th>
<th>Effective area</th>
<th>In-Out</th>
<th>Out-Exh</th>
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<td>ASV120F-M3-M4</td>
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<td>5.5 9.5 7</td>
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<td>ASV220F-M5-M4</td>
<td>4 M5x0.8</td>
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<td>ASV310F-01-06S</td>
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<td>23.9 28.7 11.1 31.4 28.6 27.7 24.9 14 9</td>
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SYMBOLS WITH BUILT-IN SILENCER

How to Order Series (N)ASV

Body Size
1:M3 2:M5 3:¼" 4:½" 5:¾"

Body Type
1: Tee 2: Elbow

Port Thread
M3...M3x0.5 M5...M5x0.8 01...1/8 02...1/4 03...3/8 04...1/2

Tubing Diameter
Metric (mm) Imperial (inch)
04...Ø4mm 07...½" 06...Ø6mm 09...5/16" 08...Ø8mm 11...3/8"
10...Ø10mm 13...¼"
12...Ø12mm

Thread
- ...PT* Remove (N) when ordering N ...NPT

Height to centre based on nominal thread engagement

Note: observe maximum recommended operating pressures for tube when using soft nylon or polyurethane

<table>
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<tr>
<th>Dimension Series (N)ASV Elbow Type</th>
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<tbody>
<tr>
<td>Model</td>
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<td>ASV510F-01-08S</td>
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Proof Pressure: 1.5 MPa (222 PSI)
Gas Operating Pressure: 0.1 MPa (14.5 PSI)
Ambient & Fluid Temperature: 0~60ºC / 32~140ºF

Three Functions from a Single Component
Minimizes Installation Time and Cost
Accepts Nylon and Polyurethane Tubing
Wide Variety of Sizes M3 to ½
Excellent Control Characteristics
Compact Design

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<th>SYMBOLS</th>
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<td>Proof Pressure ... 1.5 MPa (222 PSI)</td>
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<tr>
<td>Max Operating Pressure ... 1 MPa (148 PSI)</td>
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<tr>
<td>Min Operating Pressure ... 0.1 MPa (14.5 PSI)</td>
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<td>Ambient &amp; Fluid Temperature: 0<del>60ºC / 32</del>140ºF</td>
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<td>Suitable Tube Material: Nylon, soft nylon, polyurethane</td>
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<th>TECHNICAL SPECIFICATIONS</th>
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<th>Flow Comparison</th>
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<th>Tubing Diameter</th>
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<td>06...Ø6mm</td>
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<td>08...Ø8mm</td>
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<td>10...Ø10mm</td>
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<th>Height to centre based on nominal thread engagement</th>
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TUBE RELEASING TOOL TG–1, TG–2

- Switchable for all manifolds with integral ø4mm and 6mm One-touch fittings (TG-1) or ø1/8" and 1/4" One-touch fittings (TG-2)
- Easy change between 4mm and 6mm tube size fittings or 1/8" and 1/4" tube size fittings
- Simplifies removal of tubing by simultaneously depressing collet and gripping tube
- Can be used one handed in confined spaces

**Operation**

1. Insert the tool straight along the tube in the fittings mounting direction until the leading end of the tool reaches the leading end of the release bush.

2. After inserting the tool into the leading end of the release bush, firmly grip the handle of the tool and push it in until the tube holding section strikes against the stroke end.
   
   *Note: Insufficient insertion may not release tubing.*

3. After inserting the tube holding section up to the stroke end, release the force. The returning force of the spring releases the tube held with the tool.

**Usage**

**TG-1 Tube Releasing Tool**
Available in Blue
For 4mm and 6mm Tube Size Fittings

**TG-2 Tube Releasing Tool**
Available in Red
For 1/8" and 1/4" Tube Size Fittings

**Size change**

Push and turn the nose of the tool in the directions of arrows simultaneously to release it from the fixed state. Turn the nose by 180° and fix it. The applicable tube size is shown on the back side.