4/5 Port Solenoid Valve

Series SYJ3000/5000/7000

Improved pilot valve
Pilot valve cover is stronger using stainless steel. Mounting thread is also reinforced from size M1.7 to M2.

<table>
<thead>
<tr>
<th>Series</th>
<th>C [(dm³/s·bar)]</th>
<th>b</th>
<th>Cv</th>
<th>Q(μmbr(ANR))</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYJ3000</td>
<td>0.46</td>
<td>0.36</td>
<td>0.12</td>
<td>122</td>
</tr>
<tr>
<td>SYJ5000</td>
<td>0.83</td>
<td>0.32</td>
<td>0.21</td>
<td>214</td>
</tr>
<tr>
<td>SYJ7000</td>
<td>2.9</td>
<td>0.35</td>
<td>0.74</td>
<td>762</td>
</tr>
</tbody>
</table>
# Rubber Seal 4/5 Port Solenoid Valve

**Series SYJ3000/5000/7000**

## Variations

<table>
<thead>
<tr>
<th>Series</th>
<th>Sonic conductance: C [dm³/(s.bar)]</th>
<th>Type of actuation</th>
<th>Voltage</th>
<th>Electrical entry</th>
<th>Option</th>
<th>Manual override</th>
</tr>
</thead>
</table>
| SYJ3000 | 0.9 mm²  
(4/2 → 5/3  
(A/B → EA/EB))  
2 Position  
Single  
Double | For DC  
- 24 VDC  
12 VDC  
6 VDC  
5 VDC  
3 VDC | For DC  
- With surge voltage suppressor |  |
| SYJ5000 | 0.47  
(4/2 → 5/3  
(A/B → EA/EB)) | 2 Position  
- Single  
- Double | For AC  
- 100 VAC %,Hz  
110 VAC %,Hz  
200 VAC %,Hz  
220 VAC %,Hz | L plug connector  
- With light/surge voltage suppressor |  |
| SYJ7000 | 2.4  
(4/2 → 5/3  
(A/B → EA/EB)) | 3 Position  
- Closed center  
- Exhaust center  
- Pressure center | For AC  
- With surge voltage suppressor | M plug connector  
- Non-locking push type |  |
| SYJ3000 | 0.46  
(4/2 → 5/3  
(A/B → EA/EB))  
Closed center  
Exhaust center  
Pressure center | For AC  
Note)  
- With light/surge voltage suppressor |  | DIN terminal  
- Push-turn locking slotted type |  |
| SYJ5000 | 0.83  
(4/2 → 5/3  
(A/B → EA/EB))  
(SYJ5000, 7000 only) |  | For AC  
Note)  
- With light/surge voltage suppressor | M8 connector  
- Push-turn locking lever type |  |
| SYJ7000 | 2.9  
(4/2 → 5/3  
(A/B → EA/EB)) |  |  |  |  |

- **Note:** All AC voltage models have built-in surge voltage suppressor.
### Manifold Variations

<table>
<thead>
<tr>
<th>Valve series</th>
<th>A, B port location</th>
<th>A, B port size</th>
<th>With one-touch fitting</th>
<th>Applicable tubing O.D</th>
<th>Manifold option</th>
<th>Flat ribbon cable manifold</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M3</td>
<td>M5</td>
<td>1/8</td>
<td>ø4</td>
<td>ø6</td>
</tr>
<tr>
<td>SYJ3000</td>
<td>Top</td>
<td>●</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>SYJ5000</td>
<td>Top</td>
<td>—</td>
<td>●</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>SYJ7000</td>
<td>Top</td>
<td>—</td>
<td>—</td>
<td>●</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Side</td>
<td>●</td>
<td>●</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Bottom</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>SYJ3000</td>
<td>Side</td>
<td>—</td>
<td>—</td>
<td>●</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Bottom</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>SYJ5000</td>
<td>Side</td>
<td>—</td>
<td>—</td>
<td>●</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Bottom</td>
<td>—</td>
<td>●</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>SYJ7000</td>
<td>Side</td>
<td>—</td>
<td>—</td>
<td>●</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Bottom</td>
<td>—</td>
<td>●</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

**Body ported**

- A, B port
- P port
- R port

**Base mounted**

- A, B port
- P port
- R port

**Individual SUP spacer assembly**

**Individual EXH spacer assembly**

**Interface regulator**

**Type 21P**

**Type 32P**

**Mixed mounting of 3 port valves and 4, 5 port valves**

For detailed specifications about SYJ3000, refer to page 14. For SYJ5000, refer to page 38, and for SYJ7000, refer to page 61.
Rubber Seal
4/5 Port Solenoid Valve
Series SYJ3000

Specifications

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating pressure range (MPa)</td>
<td>2 position single 0.15 to 0.7</td>
</tr>
<tr>
<td></td>
<td>2 position double 0.1 to 0.7</td>
</tr>
<tr>
<td></td>
<td>3 position 0.2 to 0.7</td>
</tr>
<tr>
<td>Ambient and fluid temperature (°C)</td>
<td>–10 to 50 (No freezing. Refer to back page 3.)</td>
</tr>
<tr>
<td>Response time (ms) (at 0.5 MPa)</td>
<td>2 position single, double 15 or less</td>
</tr>
<tr>
<td></td>
<td>3 position 30 or less</td>
</tr>
<tr>
<td>Max. operating frequency (Hz)</td>
<td>2 position single, double 10</td>
</tr>
<tr>
<td></td>
<td>3 position 3</td>
</tr>
<tr>
<td>Manual override (Manual operation)</td>
<td>Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type</td>
</tr>
<tr>
<td>Pilot exhaust method</td>
<td>Individual exhaust for the pilot valve, Common exhaust for the pilot and main valve</td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not required</td>
</tr>
<tr>
<td>Mounting orientation</td>
<td>Unrestricted</td>
</tr>
<tr>
<td>Shock/Vibration resistance (m/s²)</td>
<td>Dust proof (∗M8 connector conforms to IP65.)</td>
</tr>
</tbody>
</table>

Note 1) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage, without surge voltage suppressor)

Note 2) Impact resistance: No malfunction occurred when it is tested in the axial direction and at the right angles to the main valve and armature in both energised and de-energised states every once for each condition. (Value in the initial state)

Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000 Hz. Test was performed to axis and right angle directions of the main valve when pilot signal is ON and OFF. (Value in the initial state)

Solenoid Specifications

<table>
<thead>
<tr>
<th>Electrical entry</th>
<th>Gromet (G), (H), L plug connector (L), M plug connector (M), M8 connector (W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coil rated voltage (V)</td>
<td>DC 24, 12, 6, 5, 3</td>
</tr>
<tr>
<td>Allowable voltage fluctuation</td>
<td>10% of rated voltage *</td>
</tr>
<tr>
<td>Power consumption (W)</td>
<td>DC Standard 0.35 (With light: 0.4)</td>
</tr>
<tr>
<td></td>
<td>With power saving circuit 0.1 (With light only)</td>
</tr>
<tr>
<td>Surge voltage suppressor</td>
<td>Diode (Non-polarity type: Valistor)</td>
</tr>
<tr>
<td>Indicator light</td>
<td>LED</td>
</tr>
</tbody>
</table>

Note 3) S, Z and T type (with power saving circuit) should be used within the following allowable voltage fluctuation range due to a voltage drop caused by the internal circuit. S and Z type: 24 VDC: –7% to +10%, 12 VDC: –4% to +10%, T type: 24 VDC: –8% to +10%, 12 VDC: –6% to +10%*

Bracket Mounting

1. Insert the lower hook of the mounting bracket into the groove on the bottom of the valve as shown.
2. Press the valve and mounting bracket together until the upper hook of the bracket snaps into place in the groove on top of the valve.

Made to Order
(For details, refer to page 78.)
### Flow Characteristics/Weight

<table>
<thead>
<tr>
<th>Valve model</th>
<th>Type of actuation</th>
<th>Port model</th>
<th>Weight (g)</th>
<th>Effective area (mm²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 port Base mounted (with sub-plate)</td>
<td>Single</td>
<td>SYJ3144</td>
<td>63 (37)</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td>SYJ3244</td>
<td>79 (53)</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Closed center</td>
<td>SYJ3444</td>
<td>82 (56)</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Exhaust center</td>
<td>SYJ3544</td>
<td>84 (58)</td>
<td>—</td>
</tr>
<tr>
<td>5 port Body mounted</td>
<td>Single</td>
<td>M3</td>
<td>36</td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td>M3</td>
<td>53</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Closed center</td>
<td>Pressure center</td>
<td>SYJ3123</td>
<td>36 (37)</td>
</tr>
<tr>
<td></td>
<td>SYJ3223</td>
<td>56</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SYJ3323</td>
<td>56</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SYJ3423</td>
<td>56</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>4 port Base mounted (For manifold base only)</td>
<td>Single</td>
<td>M3</td>
<td>36</td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td>SYJ3313</td>
<td>53 (55)</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SYJ3333</td>
<td>56 (58)</td>
<td>—</td>
<td></td>
</tr>
</tbody>
</table>

Note 1: Dedicated for manifold base. For details, refer to page 11.
Note 3: ( ): Without sub-plate.

* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream of 0.6MPa (relative pressure) and a differential pressure of 0.1MPa.

### Cylinder Speed Chart

#### Body Ported

<table>
<thead>
<tr>
<th>Series</th>
<th>Average speed (mm/s)</th>
<th>Bore size</th>
<th>Series CJ2</th>
<th>Pressure 0.5 MPa</th>
<th>Load rate: 50%</th>
<th>Stroke 60 mm</th>
<th>Series CM2</th>
<th>Pressure 0.5 MPa</th>
<th>Load rate: 50%</th>
<th>Stroke 300 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYJ3120-M3</td>
<td>800</td>
<td>ø6</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>700</td>
<td>ø8</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>600</td>
<td>ø10</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>500</td>
<td>ø12</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>400</td>
<td>ø16</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>300</td>
<td>ø20</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>200</td>
<td>ø25</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>ø32</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>800</td>
<td>ø40</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

#### Base Mounted

<table>
<thead>
<tr>
<th>Series</th>
<th>Average speed (mm/s)</th>
<th>Bore size</th>
<th>Series CJ2</th>
<th>Pressure 0.5 MPa</th>
<th>Load rate: 50%</th>
<th>Stroke 60 mm</th>
<th>Series CM2</th>
<th>Pressure 0.5 MPa</th>
<th>Load rate: 50%</th>
<th>Stroke 300 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYJ3140-M5</td>
<td>800</td>
<td>ø6</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>700</td>
<td>ø8</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>600</td>
<td>ø10</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>500</td>
<td>ø12</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>400</td>
<td>ø16</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>300</td>
<td>ø20</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>200</td>
<td>ø25</td>
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<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>ø32</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>800</td>
<td>ø40</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

* Cylinder is in extending. Speed controller is meter-out, which is directly connected with cylinder and its needle is fully opened.
* Average speed of cylinder is obtained by dividing the full stroke time by the stroke.
* Load factor: ((Load weight x 9.8) / Theoretical force) x 100%

### Conditions

<table>
<thead>
<tr>
<th>Body ported</th>
<th>Series CJ2</th>
<th>Series CM2</th>
<th>Base mounted</th>
<th>Series CJ2</th>
<th>Series CM2</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYJ3120-M3</td>
<td>Tubing bore x Length</td>
<td>ø4 x 1 m</td>
<td>AS1301F-04</td>
<td>AN120-M5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Speed controller</td>
<td>—</td>
<td>AS2301F-06</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Silencer</td>
<td>—</td>
<td>AN120-M5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYJ3140-M5</td>
<td>Tubing bore x Length</td>
<td>ø6 x 1 m</td>
<td>AS2001F-06</td>
<td>AS2301F-06</td>
<td></td>
</tr>
</tbody>
</table>
How to Order

**Type of actuation**

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

**Light/surge voltage suppressor**

- Without light/surge voltage suppressor
- With surge voltage suppressor
- With light/surge voltage suppressor
- With surge voltage suppressor (Non-polar type)
- With light/surge voltage suppressor (Non-polar type)

**Rated voltage**

- DC
  - 5: 24 VDC
  - 6: 12 VDC
  - V: 6 VDC
  - S: 5 VDC
  - R: 3 VDC

**Coil specifications**

- Standard
- T: With power saving circuit (24, 12 VDC only)

**Body option**

- 0: Pilot valve individual exhaust for the pilot valve
- 3: Common exhaust type for main and pilot valve

**Body ported**

- SYJ3
  - 1: 0
  - 2: 5
  - M
  - M3
  - Q

**Base mounted**

- (4 port)
  - SYJ3
  - 2: 3
  - 0: 5
  - M
  - Q (Manifold use only)

- (5 port)
  - SYJ3
  - 2: 4
  - 0: 5
  - M
  - Q

**Coil specifications**

- -: Non-locking push type
- T: Push-turn locking slotted type
- D: Push-turn locking lever type

**Manual override**

- -: Without sub-plate
- M5: With M5 port sub-plate

**Electrical entry**

- 24, 12, 6, 5, 3 VDC
  - G: Lead wire (Length 300 mm)
  - L: With lead wire (Length 300 mm)
  - M: With lead wire (Length 300 mm)
  - MN: Without lead wire
  - WO: Without connector cable
  - LN: Without lead wire
  - LO: Without connector
  - MO: Without connector
  - W: With connector cable

**Note**

- LN, MN type: with 2 sockets.
- For connector cable of M8 connector, refer to back page 10.
- Connector M8 type “KW” conforming to IEC 60947-5-2 standard, is also available.

For details, see page 80.

Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to back page 10.

**Bracket**

- Single
  - -: Without bracket
  - F: With bracket

- Double
  - -: Brackets cannot be retrofitted.

**Port size**

- #: Without sub-plate
- M5: With M5 port sub-plate

**Note**

- The double solenoid mounting bracket is supplied unattached.
- To order the double solenoid bracket for use with a single solenoid valve, order the single solenoid valve without a bracket and order the bracket (VJ3000-13-1) separately.

(Example) SYJ3120-5M-M3 VJ3000-13-1
Construction

2 position single

2 position double

3 position closed center/exhaust center/pressure center

Component Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Zinc die-casted</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Piston plate</td>
<td>Resin</td>
<td>White</td>
</tr>
<tr>
<td>3</td>
<td>End cover</td>
<td>Resin</td>
<td>White</td>
</tr>
<tr>
<td>4</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Spool valve assembly</td>
<td>Aluminium, H-NBR</td>
<td></td>
</tr>
</tbody>
</table>

How to Order Pilot Valve Assembly

V111 — 5 — G

Coil specifications

- Standard
- T

Rated voltage

- T: Power saving circuit is not available in the case of W/L type.

- For type W/L, DC voltage is only available.

Light/surge voltage suppressor

- Without light/surge voltage suppressor
- S: With surge voltage suppressor
- Z: With surge voltage suppressor (Non-polar type)
- R: With light/surge voltage suppressor (Non-polar type)
- U: With light/surge voltage suppressor

Electrical entry

- G: Grommet, 300 mm lead wire
- H: Grommet, 600 mm lead wire
- L: L plug connector
- LN: L plug connector
- LO: L plug connector
- M: M plug connector
- MN: M plug connector
- MO: M plug connector
- WO: M8 connector
- WO: M8 connector

Replacement Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Sub-plate SYJ3000-22-1-Q</td>
<td>Zinc die-casted</td>
</tr>
<tr>
<td>7</td>
<td>Pilot valve V111 (T) —</td>
<td></td>
</tr>
</tbody>
</table>

How to Order Connector Assebmly for L/M Plug Connector

For DC: SY100-30-4A-

Without lead wire (with connector and 2 of sockets only)

SY100-30-A

Lead wire length

- 300 mm
- 600 mm
- 1000 mm
- 1500 mm
- 2000 mm
- 2500 mm
- 3000 mm
- 5000 mm

How to Order M8 Connector Cable

V100-49-1-

Cable length

- 300 mm
- 500 mm
- 1000 mm
- 2000 mm
- 5000 mm

Note 1: Enter the cable length symbols in /L50132. Please be sure to fill in the blank referring to back page 10.
Series SYJ3000

2 Position Single

Grommet (G), (H): SYJ3120-□□□□-M3-Q

With bracket: SYJ3120-□□□□-M3-F-Q

L plug connector (L): SYJ3120-□□□□-M3 (-F)-Q

M plug connector (M): SYJ3120-□□□□-M3 (-F)-Q

M8 connector (WO): SYJ3120-□□□□-M3 (-F)-Q

Refer to back page 11 for dimensions with connector cable.
2 Position Double

Grommet (G), (H): SYJ3220-□□□□-M3 (-F)-Q

L plug connector (L):
SYJ3220-□□□□-M3 (-F)-Q

M plug connector (M):
SYJ3220-□□□□-M3 (-F)-Q

M8 connector (WO):
SYJ3220-□□□□-M3 (-F)-Q

Refer to back page 11 for dimensions with connector cable.
Series SYJ3000

3 Position Closed Center/Exhaust Center/Pressure Center

Grommet (G), (H): SYJ3\(\frac{3}{2}\)20-L□□-M3 (-F)-Q

Refer to back page 11 for dimensions with connector cable.
2 Position Single

Grommet (G), (H): SYJ3140-□□□□□-M5-Q

L plug connector (L):
SYJ3140-□□□□□-M5-Q

M plug connector (M):
SYJ3140-□□□□□-M5-Q

M8 connector (WO):
SYJ3140-□□□□□-M5-Q

Refer to back page 11 for dimensions with connector cable.
Series SYJ3000

2 Position Double

Grommet (G), (H): SYJ3240-□□□□-M5-Q

L plug connector (L): SYJ3240-□L□□-M5-Q
M plug connector (M): SYJ3240-□M□□-M5-Q
M8 connector (WO): SYJ3240-□WO□□-M5-Q

Refer to back page 11 for dimensions with connector cable.
3 Position Closed Center/Exhaust Center/Pressure Center

Grommet (G), (H): SYJ3\(\frac{3}{4}\)40\(-\square\)_\(\frac{3}{4}\)\(-\square\)-M5-Q

(Light/surge voltage suppressor)

Manual override

M5

(P, R1, R2 port)

2-ø3.2
(For mounting)

G: Approx. 300
H: Approx. 600
(Lead wire length)

Refrer to back page 11 for dimensions with connector cable.

L plug connector (L):
SYJ3\(\frac{3}{4}\)40\(-\square\)_\(\frac{3}{4}\)-M5-Q

M plug connector (M):
SYJ3\(\frac{3}{4}\)40\(-\square\)_\(\frac{3}{4}\)-M5-Q

M8 connector (WO):
SYJ3\(\frac{3}{4}\)40(R)\(-\square\)_\(\frac{3}{4}\)-M5\(-\square\)-Q
**Series SYJ3000**

**Manifold Specifications**

**Manifold Standard**

### Manifold Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Type 20</th>
<th>Type 31, S31</th>
<th>Type 32, S32</th>
<th>Type 41, S41</th>
<th>Type 46, S46</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manifold type</td>
<td>Single base/B mount</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P (SUP), R (EXH)</td>
<td>Common SUP/Common EXH</td>
<td>Common SUP Individual EXH</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Valve Specifications

<table>
<thead>
<tr>
<th>Location</th>
<th>Direction</th>
<th>Port size</th>
</tr>
</thead>
<tbody>
<tr>
<td>P, R port</td>
<td>Top</td>
<td>M5, 1/8</td>
</tr>
<tr>
<td>A, B port</td>
<td>Side</td>
<td>M5, C4 (One-touch fitting for ø4)</td>
</tr>
</tbody>
</table>

### Flow Characteristics

<table>
<thead>
<tr>
<th>Manifold</th>
<th>Port size</th>
<th>Flow characteristics</th>
<th>Effective area (mm²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYJ3</td>
<td>2/3</td>
<td>(P→A/B)</td>
<td>(B→A)</td>
</tr>
<tr>
<td>SYJ3</td>
<td>3/4</td>
<td>(P→A/B)</td>
<td>(B→A)</td>
</tr>
</tbody>
</table>

- **Note:** Value at manifold base mounted, 2 position single operating
- *These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream of 0.6MPa (relative pressure) and a differential pressure of 0.1MPa.

### How to Order Manifold (Example)

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

Example:

- **SSSYJ3-20-03-Q** — 1 set (Manifold base)
- **SSSYJ3-31-03-C4-Q** — 1 set (Manifold base)
- **SYJ3120-5G-M3-Q** — 2 sets (Valve)
- **SYJ3140-5LZ-Q** — 2 sets (Valve)
- **SYJ3000-21-1A-Q** — 1 set (Blanking plate assembly)
- **SYJ3000-21-2A-Q** — 1 set (Blanking plate assembly)

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

Use manifold specification sheet.
Flat Ribbon Cable Manifold

- Multiple valve wiring is simplified through the use of the flat cable connector.
- Clean appearance

In the case of a flat ribbon cable type, each valve is wired on the print board of manifold base to allow the external wiring to be piped all together with 26 pins MIL connector.

Type 21P

Flat Ribbon Cable Manifold Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Type 21P</th>
<th>Type 32P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manifold type</td>
<td>Single base/B mount</td>
<td>Single base/B mount</td>
</tr>
<tr>
<td>P (SUP), R (EXH)</td>
<td>Common SUP, Common EXH</td>
<td>Common SUP, Common EXH</td>
</tr>
<tr>
<td>Valve stations</td>
<td>4 to 12 stations</td>
<td>4 to 12 stations</td>
</tr>
<tr>
<td>A, B port</td>
<td>Location</td>
<td>Valve</td>
</tr>
<tr>
<td>Porting specifications</td>
<td>Direction</td>
<td>Base</td>
</tr>
<tr>
<td>P, R port</td>
<td>P, R port</td>
<td>M3</td>
</tr>
<tr>
<td>A, B port</td>
<td>A, B port</td>
<td>M5, C4 (One-touch fitting for Ø4)</td>
</tr>
<tr>
<td>Port size</td>
<td>1/8</td>
<td></td>
</tr>
<tr>
<td>Applicable flat ribbon cable connector</td>
<td>Socket: 26 pins MIL type with strain relief (MIL-C-83503)</td>
<td></td>
</tr>
<tr>
<td>Internal wiring</td>
<td>In common between +COM and –COM (Z type: +COM only)</td>
<td></td>
</tr>
<tr>
<td>Rated voltage</td>
<td>24, 12 VDC</td>
<td>24, 12 VDC</td>
</tr>
</tbody>
</table>

Note) The withstand voltage specification for the wiring unit section conforms to JIS C 0704, Grade 1 or its equivalent.

Flow Characteristics

<table>
<thead>
<tr>
<th>Manifold</th>
<th>Port size</th>
<th>Flow characteristics</th>
<th>Effective area (mm²)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1/8</td>
<td>1/4/2 (P→A/B)</td>
<td>4/2/5/3 (A/B→R)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C</td>
<td>b</td>
</tr>
<tr>
<td>Body ported for internal pilot</td>
<td>Type SS5YJ3-21P</td>
<td>SYJ3-21P</td>
<td>M3</td>
</tr>
<tr>
<td>Base mounted for internal pilot</td>
<td>Type SS5YJ3-32P-M5</td>
<td>SYJ3-32P-M5</td>
<td>M5</td>
</tr>
<tr>
<td></td>
<td>Type SS5YJ3-32P-C4</td>
<td>SYJ3-32P-C4</td>
<td>C4</td>
</tr>
</tbody>
</table>

Note) Value at manifold base mounted, 2 position single operating

* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream of 0.6MPa (relative pressure) and a differential pressure of 0.1MPa.

How to Order Manifold

- SSYJ3-21P-07-C4-0 – 1 pc. (Manifold base)
- SYJ3133-5LOU-Q – 3 pcs. (Valve)
- SYJ3233-5LOU-Q – 3 pcs. (Valve)
- SYJ333-5LOU-Q – 3 pcs. (Blanking plate assembly)
- SY3000-37-29A-Q – 3 pcs. (Connector assembly)

* Use manifold specification sheet.

How to Order Valve

For DC

- SYJ3 1 2 3 5 LO U Q

Type of actuation

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

- Light/surge voltage suppressor
  Z With light/surge voltage suppressor
  U With light/surge voltage suppressor (Non-polar type)

Rated voltage

5 24 VDC
6 12 VDC

Manual override

- Non-locking push type
D Push-turn locking slotted type
E Push-turn locking lever type

How to Order Connector Assembly

For 12, 24 VDC

- Single solenoid
  SY3000-21-4A-Q

- Double solenoid,
  3 position type
  SY3000-37-29A

Symbol

- Port size
  M3

Port size

- Base mounted
  M3

SYJ3For DC
**Series SYJ3000**

**Common SUP/Common EXH**

**Type 20 (5 Port/Body ported)**

- How to Order
  - SS5YJ3-20-05-Q
- Number of stations
  - 02: 2 stations
  - 20: 20 stations

**Applicable solenoid valve**
- SYJ3-20-21-2A-Q
- SYJ3-23-21-2A-Q

**Applicable blanking plate assembly**
- SYJ3000-21-1A-Q

**Type 31 (4 Port/Base mounted)**

- How to Order
  - SS5YJ3-31-05-M3-Q
- Valve mounting direction
  - Single solenoid coil is on opposite side as the A, B port.

**Applicable solenoid valve**
- SYJ3-30-21-2A-Q
- SYJ3-33-21-2A-Q

**Applicable blanking plate assembly**
- SYJ3000-21-2A-Q

**Type 32 (4 Port/Base mounted)**

- How to Order
  - SS5YJ3-32-05-M5-Q
- Station
  - 02: 2 stations
  - 20: 20 stations

**Valve mounting direction**
- Single solenoid coil is on same side as the A, B port.
- Single solenoid coil is on opposite side as the A, B port.

**Applicable solenoid valve**
- SYJ3-32-21-2A-Q
- SYJ3-33-21-2A-Q

**Applicable blanking plate assembly**
- SYJ3000-21-2A-Q

**Common SUP/Individual EXH**

**Type 41 (5 Port/Base mounted)**

- How to Order
  - SS5YJ3-41-05-C4-Q
- Station
  - 02: 2 stations
  - 20: 20 stations

**Valve mounting direction**
- Single solenoid coil is on same side as the A, B port.
- Single solenoid coil is on opposite side as the A, B port.

**Applicable solenoid valve**
- SYJ3-40-21-2A-Q
- SYJ3-43-21-2A-Q

**Applicable blanking plate assembly**
- SYJ3000-21-2A-Q

**Common SUP/Individual EXH**

**Type 46 (5 Port/Base mounted)**

- How to Order
  - SS5YJ3-46-05-M5-Q
- Station
  - 02: 2 stations
  - 20: 20 stations

**Valve mounting direction**
- Single solenoid coil is on same side as the A, B port.
- Single solenoid coil is on opposite side as the A, B port.

**Applicable solenoid valve**
- SYJ3-40-21-2A-Q
- SYJ3-43-21-2A-Q

**Applicable blanking plate assembly**
- SYJ3000-21-2A-Q

**Note**
- For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

**One-touch fitting for ø5/32”**

- Stations
  - 20: 20 stations
  - 2 stations

**Applicable solenoid valve**
- SYJ3000-21-2A-Q

**Applicable blanking plate assembly**
- SYJ3000-21-2A-Q

**Note**
- Applicable solenoid valve
- Applicable blanking plate assembly
**Flat Ribbon Cable Manifold**

### Common SUP/Common EXH

#### Type 21P

<table>
<thead>
<tr>
<th>A, B port</th>
<th>P port</th>
<th>R port</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3</td>
<td>1/8</td>
<td>1/8</td>
</tr>
</tbody>
</table>

How to Order:

**SS5YJ3–21P–07**

- P, R port
- thread type
- 04: 4 stations
- M5

**Applicable solenoid valve**

Refer to page 12.

**Applicable connector assembly**

Refer to page 12.

**Applicable blanking plate assembly**

SYJ3000-21-3A-Q (With dust cap)

#### Type 32P

<table>
<thead>
<tr>
<th>A, B port</th>
<th>P port</th>
<th>R port</th>
</tr>
</thead>
<tbody>
<tr>
<td>M5, C4</td>
<td>1/8</td>
<td>1/8</td>
</tr>
</tbody>
</table>

How to Order:

**SS5YJ3–32P–07**

- C4

**Applicable solenoid valve**

Refer to page 12.

**Applicable connector assembly**

Refer to page 12.

**Applicable blanking plate assembly**

SYJ3000-21-3A-Q (With dust cap)

### Mixed Installation of the SYJ300 and the SYJ3000 Valves on the Same Manifold

Series SYJ300 valves can be mounted on the manifolds for Series SYJ3000.

1. **SS5YJ3-20, SS5YJ3-21P**
   - The 3 port valve can be used by simply sealing off the unused "R" port with rubber plug SYJ3000-33-1.
   - Applicable solenoid valves:
     - Series SYJ312, SYJ312M, SYJ322, SYJ322M

2. **SS5YJ3-31, -S31, SS5YJ3-32, -S32, SS5YJ3-46, -S46, SS5YJ3-32P**
   - The 3 port valve can be used without modification. The A port of the valve will flow out of the B port of the manifold.
   - Applicable solenoid valves:
     - Series SYJ314, SYJ314M, SYJ324, SYJ324M

3. **SS5YJ3-41, -S41**
   - The 3 port valve can be used on the 4 port manifold by simply sealing off the unused "R" port with rubber plug SYJ3000-33-1. The A port of the valve will flow out of the B port of the manifold.
   - Applicable solenoid valves:
     - Series SYJ314, SYJ314M, SYJ324, SYJ324M

---

**Caution**

Mounting screw tightening torques

| M1.7: 0.12 N·m |

Use caution to the assembly orientation for solenoid valves, gasket, and optional parts.
Series SYJ3000

Combinations of Solenoid Valve, Manifold Gasket and Manifold Base

<table>
<thead>
<tr>
<th>5 port body ported (Type SYJ3□2-□-Q)</th>
<th>4 port base mounted (Type SYJ3□3-□-Q)</th>
<th>5 port base mounted (Type SYJ3□4-□-Q)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Applicable manifold base</strong></td>
<td><strong>Applicable manifold base</strong></td>
<td><strong>Applicable manifold base</strong></td>
</tr>
<tr>
<td>Type SSSYJ3-20-Q</td>
<td>Type SSSYJ3-31-Q</td>
<td>Type SSSYJ3-41-Q</td>
</tr>
<tr>
<td>Type SSSYJ3-21P-Q</td>
<td>Type SSSYJ3-32-Q</td>
<td>Type SSSYJ3-46-Q</td>
</tr>
<tr>
<td><strong>Manifold base</strong></td>
<td><strong>Manifold base</strong></td>
<td><strong>Manifold base</strong></td>
</tr>
<tr>
<td><strong>Manifold gasket</strong></td>
<td><strong>Manifold gasket</strong></td>
<td><strong>Manifold gasket</strong></td>
</tr>
<tr>
<td>SYJ3000-14-7</td>
<td>SYJ3000-14-6</td>
<td>SYJ3000-14-2</td>
</tr>
<tr>
<td>A Mark</td>
<td>A Mark</td>
<td>A Mark</td>
</tr>
</tbody>
</table>

Note) Make sure to align the manifold gasket with the groove of the valve body.

Combination of Blanking Plate Assembly and Manifold Base

<table>
<thead>
<tr>
<th>Blanking plate assembly SYJ3000-21-1A-Q</th>
<th>Blanking plate assembly SYJ3000-21-2A-Q</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Blanking plate</strong></td>
<td><strong>Blanking plate</strong></td>
</tr>
<tr>
<td><strong>Manifold gasket</strong></td>
<td><strong>Manifold gasket</strong></td>
</tr>
<tr>
<td>SYJ3000-14-7</td>
<td>SYJ3000-14-6</td>
</tr>
<tr>
<td>A Mark</td>
<td>A Mark</td>
</tr>
</tbody>
</table>

Note) Manifold gasket “SYJ3000-14-2” can be used with the following manifold bases.

Difference between SYJ3□3 and SYJ3□4

<table>
<thead>
<tr>
<th>SYJ3□30, 3□33 (4 port)</th>
<th>SYJ3□40, 3□43 (5 port)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Steel ball is driven in.</strong></td>
<td><strong>Configuration of surface is different.</strong></td>
</tr>
</tbody>
</table>

Caution

**Mounting screw tightening torques**

M1.7: 0.12 N·m

**Use caution to the assembly orientation for solenoid valves, gasket, and optional parts.**

**Note:** Manifold gasket “SYJ3000-14-2” can be used with the following manifold bases.
Type 20 Manifold: Top Ported/SS5YJ3-20- Stations -Q

Grommet (G)

(Light/surge voltage suppressor)

Station 2

<table>
<thead>
<tr>
<th>Station</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>35.5</td>
<td>46</td>
<td>58.5</td>
<td>67</td>
<td>77.5</td>
<td>88</td>
<td>98.5</td>
<td>109</td>
<td>119.5</td>
<td>130</td>
<td>140.5</td>
<td>151</td>
<td>161.5</td>
<td>172</td>
<td>182.5</td>
<td>193</td>
<td>203.5</td>
<td>214</td>
</tr>
<tr>
<td>L2</td>
<td>28.5</td>
<td>39</td>
<td>49.5</td>
<td>60</td>
<td>70.5</td>
<td>81</td>
<td>91.5</td>
<td>102</td>
<td>112.5</td>
<td>123</td>
<td>133.5</td>
<td>144</td>
<td>154.5</td>
<td>165</td>
<td>175.5</td>
<td>186</td>
<td>196.5</td>
<td>207</td>
</tr>
</tbody>
</table>

L plug connector (L)

M plug connector (M)

M8 connector (WO)

Refer to back page 11 for dimensions with connector cable.
**Series SYJ3000**

**Type 31 Manifold: Side Ported/SS5YJ3-31- Stations -M3-Q**

Grommet (G)

![Diagram of Grommet (G)]

**Type S31 Manifold: Side Ported SS5YJ3-S31- Stations -M3-Q**

![Diagram of Type S31 Manifold]

- **L plug connector (L)**
  - Approx. 300 (Lead wire length)
  - 111.5
  - 98.6
  - 43.4
  - 28

- **M plug connector (M)**
  - Approx. 300 (Lead wire length)
  - 91.9
  - 79
  - 54.6

- **M8 connector (WO)**
  - M8 x 1
  - 48
  - 30.5
  - 53

<table>
<thead>
<tr>
<th>Station n</th>
<th>Station 2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>35.5</td>
<td>46</td>
<td>56.5</td>
<td>67</td>
<td>77.5</td>
<td>88</td>
<td>98.5</td>
<td>109</td>
<td>119.5</td>
<td>130</td>
<td>140.5</td>
<td>151</td>
<td>161.5</td>
<td>172</td>
<td>182.5</td>
<td>193</td>
<td>203.5</td>
<td>214</td>
<td>224.5</td>
</tr>
<tr>
<td>L2</td>
<td>28.5</td>
<td>39</td>
<td>49.5</td>
<td>60</td>
<td>70.5</td>
<td>81</td>
<td>91.5</td>
<td>102</td>
<td>112.5</td>
<td>123</td>
<td>133.5</td>
<td>144</td>
<td>154.5</td>
<td>165</td>
<td>175.5</td>
<td>186</td>
<td>196.5</td>
<td>207</td>
<td>217.5</td>
</tr>
</tbody>
</table>

Refer to back page 11 for dimensions with connector cable.
Series SYJ3000

Type 32 Manifold: Side Ported/SS5YJ3-32- Stations -M5, C4 N3 □-Q

Grommet (G)
For M5

For C4 N3 □ (Built-in one-touch fitting)

L plug connector (L)
M plug connector (M)
M8 connector (WO)

Type S32 Manifold: Side Ported/SS5YJ3-S32- Stations -M5, C4 N3 □-Q

Refer to back page 11 for dimensions with connector cable.

SS5YJ3-32, S32- Stations -M5-Q

SS5YJ3-32, S32- Stations -C4-Q
Type 41 Manifold: Side Ported/SS5YJ3-41- Stations -M5, C4 □-Q

Grommet (G)
For M5

For C4 □ (Built-in one-touch fitting)

Type S41 Manifold: Side Ported

Refer to back page 11 for dimensions with connector cable.
Type 46 Manifold: Side Ported/SS5YJ3-46- Stations -M5, C4 N3 □ -Q

Grommet (G)
For M5

(Light/surge voltage suppressor)

M5 (A, B port)

(Pitch) P = 10.5

Manual override

Approx. 300 (Lead wire length)

L plug connector (L)

M plug connector (M)

M8 connector (WO)

Refer to back page 11 for dimensions with connector cable.

Type S46 Manifold: Side Ported/SS5YJ3-S46- Stations -M5, C4 N3 □ -Q

For M5

(Light/surge voltage suppressor)

M5 (A, B port)

(Pitch) P = 10.5

Manual override

Approx. 300 (Lead wire length)

For C4 N3 □ (Built-in one-touch fitting)

(Light/surge voltage suppressor)

One-touch fitting (A, B port)

Applicable tubing O.D.: ø4, ø5/32"
Rubber Seal
5 Port Solenoid Valve
Series SYJ5000

Specifications

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating pressure range (MPa)</td>
<td>2 position single 0.15 to 0.7</td>
</tr>
<tr>
<td></td>
<td>2 position double 0.1 to 0.7</td>
</tr>
<tr>
<td></td>
<td>3 position 0.15 to 0.7</td>
</tr>
<tr>
<td>Ambient and fluid temperature (°C)</td>
<td>–10 to 50 (No freezing. Refer to back page 3.)</td>
</tr>
<tr>
<td>Response time (ms)</td>
<td>2 position single, double 25 or less</td>
</tr>
<tr>
<td></td>
<td>3 position 40 or less</td>
</tr>
<tr>
<td>Max. operating frequency (Hz)</td>
<td>2 position single, double 5</td>
</tr>
<tr>
<td></td>
<td>3 position</td>
</tr>
<tr>
<td>Manual override (Manual operation)</td>
<td>Non-locking push type, Push-turn locking plunger type, Push-turn locking lever type</td>
</tr>
<tr>
<td>Pilot exhaust method</td>
<td>Individual exhaust for the pilot valve. Common exhaust for the pilot and main valve</td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not required</td>
</tr>
<tr>
<td>Mounting orientation</td>
<td>Unrestricted</td>
</tr>
<tr>
<td>Shock/Vibration resistance (m/s²)</td>
<td>150/30</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Dust proof (+ DIN terminal, M8 connector conforms to IP65.)</td>
</tr>
</tbody>
</table>

Note 1) Based on dynamic performance test, JIS B 8375-1981. ( Coil temperature: 20°C at rated voltage, without surge voltage suppressor) |
Note 2) Impact resistance: No malfunction occurred when it is tested in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Value in the initial state) |
Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000 Hz. Test was performed to axial and right angle directions of the main valve when pilot signal is ON and OFF. (Value in the initial state)

Solenoid Specifications

<table>
<thead>
<tr>
<th>Electrical entry</th>
<th>Grommet (G), (H), L plug connector (L) M plug connector: (M), DIN terminal (D) M8 connector (W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coil rated voltage (V)</td>
<td>G, H, L, M, W D</td>
</tr>
<tr>
<td>DC AC 50/60 Hz</td>
<td>24, 12, 6, 5, 3</td>
</tr>
<tr>
<td></td>
<td>24, 12</td>
</tr>
<tr>
<td>Allowable voltage fluctuation</td>
<td>-100, 110, 200, 220</td>
</tr>
<tr>
<td>Power consumption (W)</td>
<td>0.35 (With light: 0.4 (DIN terminal with light: 0.45))</td>
</tr>
<tr>
<td></td>
<td>0.1 (With light only)</td>
</tr>
<tr>
<td>Apparent power VA *</td>
<td>110 V [115 V]</td>
</tr>
<tr>
<td></td>
<td>200 V</td>
</tr>
<tr>
<td></td>
<td>220 V [230 V]</td>
</tr>
<tr>
<td>Surge voltage suppressor</td>
<td>Diode (DIN terminal, Varistor when non-polar types)</td>
</tr>
<tr>
<td>Indicator light</td>
<td>LED (Neon light when AC with DIN terminal)</td>
</tr>
</tbody>
</table>

Built-in Speed Controller

SYJ5-5

- Built-in exhaust flow controls enable simple cylinder speed adjustments.
- When mounted on the manifold, the common exhaust discharges the pilot and main valve exhaust through a common EXH port to enable simple exhausting.

JIS Symbol

<table>
<thead>
<tr>
<th>Type of actuation</th>
<th>Body Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>Lead wire</td>
</tr>
<tr>
<td>Manual override</td>
<td>Light/surge voltage suppressor</td>
</tr>
</tbody>
</table>

How to order valve with built-in speed controller

SYJ5-5

- When using SYJ5-5 model the speed controller must be open more than 1 complete rotation from fully closed in order to function properly.
- Adjust the speed controller with a torque of 0.3 N-m or less.

Note) Do not loosen plate fixing screw.

For more detailed information, see pages 78 through to 80.
Flow Characteristics/Weight

<table>
<thead>
<tr>
<th>Valve model</th>
<th>Type of actuation</th>
<th>Port size</th>
<th>Flow characteristics (Note 1)</th>
<th>Weight (g)</th>
<th>Note 2, 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 position</td>
<td></td>
<td></td>
<td>1, 5, 3 (P, EA, EB)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYJ5120-M5</td>
<td>Single</td>
<td>MS</td>
<td>0.47 0.41 0.13 129 0.47 0.41 0.13 129</td>
<td>46 47 68 51</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td>MS x 0.8</td>
<td>0.49 0.44 0.13 137 0.44 0.40 0.12 120</td>
<td>64 66 108 74</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exhaust center</td>
<td></td>
<td>0.46 0.37 0.12 123 0.47 0.35 0.12 123</td>
<td>75 77 119 85</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pressure center</td>
<td></td>
<td>0.45 0.42 0.12 124 0.45 0.42 0.12 124</td>
<td>75 77 119 85</td>
<td></td>
</tr>
<tr>
<td>2 position</td>
<td></td>
<td></td>
<td>1, 4/2 (P→A/B)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYJ5140-01</td>
<td>Single</td>
<td>MS</td>
<td>0.69 0.39 0.18 186 0.44 0.39 0.12 119</td>
<td>53 54 75 58</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td></td>
<td>0.69 0.40 0.19 188 0.43 0.40 0.12 117</td>
<td>71 73 115 81</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exhaust center</td>
<td></td>
<td>0.56 0.40 0.15 152 0.47 0.37 0.10 109</td>
<td>82 84 126 72</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pressure center</td>
<td></td>
<td>0.41 0.37 0.10 109 0.41 0.37 0.10 109</td>
<td>82 84 126 72</td>
<td></td>
</tr>
<tr>
<td>2 position</td>
<td></td>
<td></td>
<td>4/2 (P→A/B)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYJ5140-01</td>
<td>Single</td>
<td>C4</td>
<td>0.70 0.36 0.19 185 0.47 0.40 0.12 128</td>
<td>53 54 75 58</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td></td>
<td>0.72 0.37 0.19 192 0.44 0.34 0.12 115</td>
<td>71 73 115 81</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exhaust center</td>
<td></td>
<td>0.67 0.54 0.19 204 0.47 0.34 0.11 108</td>
<td>82 84 126 72</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pressure center</td>
<td></td>
<td>0.41 0.36 0.11 108 0.41 0.36 0.11 108</td>
<td>82 84 126 72</td>
<td></td>
</tr>
<tr>
<td>2 position</td>
<td></td>
<td></td>
<td>4/2 (P→A/B)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYJ5140-01</td>
<td>Single</td>
<td>C6</td>
<td>0.80 0.21 0.19 190 0.83 0.32 0.21 214</td>
<td>80 (49) 81 (47) 102 (68) 51</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td></td>
<td>0.80 0.20 0.18 201 0.88 0.34 0.20 224</td>
<td>98 (64) 100 (66) 142 (108) 74</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exhaust center</td>
<td></td>
<td>0.71 0.26 0.16 176 1.00 0.30 0.18 190</td>
<td>109 (76) 111 (77) 153 (119) 85</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pressure center</td>
<td></td>
<td>0.72 0.26 0.16 176 0.72 0.38 0.18 190</td>
<td>109 (76) 111 (77) 153 (119) 85</td>
<td></td>
</tr>
</tbody>
</table>

* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream of 0.6MPa (relative pressure) and a differential pressure of 0.1MPa.

Cylinder Speed Chart

Body Ported

Use as a guide for selection.
Please confirm the actual conditions with SMC Sizing Program.

<table>
<thead>
<tr>
<th>Series</th>
<th>Average speed (mm/s)</th>
<th>Bore size</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYJ5120-M5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>800</td>
<td>ø6 ø10 ø16 ø20 ø25 ø32 ø40</td>
</tr>
<tr>
<td></td>
<td>700</td>
<td></td>
</tr>
<tr>
<td></td>
<td>600</td>
<td></td>
</tr>
<tr>
<td></td>
<td>500</td>
<td></td>
</tr>
<tr>
<td></td>
<td>400</td>
<td></td>
</tr>
<tr>
<td></td>
<td>300</td>
<td></td>
</tr>
<tr>
<td></td>
<td>200</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Base Mounted

<table>
<thead>
<tr>
<th>Series</th>
<th>Average speed (mm/s)</th>
<th>Bore size</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYJ5140-01</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>800</td>
<td>ø6 ø10 ø16 ø20 ø25 ø32 ø40 ø50 ø63 ø80 ø100</td>
</tr>
<tr>
<td></td>
<td>700</td>
<td></td>
</tr>
<tr>
<td></td>
<td>600</td>
<td></td>
</tr>
<tr>
<td></td>
<td>500</td>
<td></td>
</tr>
<tr>
<td></td>
<td>400</td>
<td></td>
</tr>
<tr>
<td></td>
<td>300</td>
<td></td>
</tr>
<tr>
<td></td>
<td>200</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

* Cylinder is in extending. Speed controller is meter-out, which is directly connected with cylinder and its needle is fully opened.

Average speed of cylinder is obtained by dividing the full stroke time by the stroke.

Load factor: (Load weight x 9.8) /Theoretical force x 100%

Conditions

<table>
<thead>
<tr>
<th>Body mounted</th>
<th>Series C2</th>
<th>Series C2</th>
<th>Series MB/CA2</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYJ5120-M5</td>
<td>AS1301F-04</td>
<td>AS3301F-06</td>
<td>AS3301F-08</td>
</tr>
<tr>
<td></td>
<td>AN120-M5</td>
<td>AN110-01</td>
<td></td>
</tr>
</tbody>
</table>

Base mounted

<table>
<thead>
<tr>
<th>Series</th>
<th>Average speed (mm/s)</th>
<th>Bore size</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYJ5140-01</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>800</td>
<td>ø4 x 1 m  ø6 x 1 m</td>
</tr>
<tr>
<td></td>
<td>700</td>
<td></td>
</tr>
<tr>
<td></td>
<td>600</td>
<td></td>
</tr>
<tr>
<td></td>
<td>500</td>
<td></td>
</tr>
<tr>
<td></td>
<td>400</td>
<td></td>
</tr>
<tr>
<td></td>
<td>300</td>
<td></td>
</tr>
<tr>
<td></td>
<td>200</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**Note 1:** ( ) denotes the normal position. Exhaust center: 4/2 → 5/3, Pressure center: 1 → 4/2

**Note 2:** Without sub-plate.

**Note 3:** For DC voltages. For AC voltages add 3 g to the weight of the single solenoid and 6 g to the weight of the double solenoid and 3 position types.
How to Order

Series SYJ5000

Type of actuation
1  2 position single solenoid
2  2 position double solenoid
3  3 position closed center
4  3 position exhaust center
5  3 position pressure center

Light/surge voltage suppressor
- Without light/surge voltage suppressor
S  With surge voltage suppressor
Z  With light/surge voltage suppressor
R  With surge voltage suppressor (Non-polar type)
U  With light/surge voltage suppressor (Non-polar type)
Note 1) Power saving circuit is only available in the "Z" type.

Electrical entry for G, H, L, M, W
- Without light/surge voltage suppressor
S  With surge voltage suppressor
Z  With light/surge voltage suppressor (Non-polar type)

- For AC voltage valves there is no "S" option.
It is already built-in to the rectifier circuit.

Electrical entry for D
- Without light/surge voltage suppressor
S  With surge voltage suppressor (Non-polar type)
Z  With light/surge voltage suppressor (Non-polar type)
Note 1) DOZ is not available.

Bracket
- Without bracket
F: With bracket

Body ported SYJ5  2  0  5 L  M5  - Q
Base mounted SYJ5  2  4  0  5 L  Q

Body option
O: Pilot valve individual exhaust for the pilot valve
P, E port
R port
3: Common exhaust type for main and pilot valve
R port
P, E port

Coil specifications
- Standard
T  With power saving circuit <24 V, 12 VDC only>
Note 2) Power saving circuit is not available in the case of D, DO or W type.

Manual override
- Non-locking push type
F:

Port size
Nil: Without sub-plate
01: 1/8 With sub-plate

Body mounted

Electrical entry
24, 12, 6, 5, 3 VDC

Grommet  L plug connector  M plug connector
G: Lead wire length 300 mm
L: With lead wire (Length 300 mm)
M: With lead wire (Length 300 mm)
MN: Without lead wire

D: With connector
W: Without connector cable
WO:

LN: Without lead wire
LO: Without connector
MO: Without connector

DO: Without connector
W□: With connector cable (less 1)

Note 1) Enter the cable length symbols in □.
Please be sure to fill in the blank referring to back page 10.
**Construction**

### 2 position single

[Diagram of 2 position single]

### 2 position double

[Diagram of 2 position double]

### 3 position closed center/exhaust center/pressure center

3 position closed center

3 position exhaust center

3 position pressure center

(This figure shows a closed center type.)

---

**Component Parts**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Aluminum die-casted</td>
<td>White</td>
</tr>
<tr>
<td>2</td>
<td>Piston plate</td>
<td>Resin</td>
<td>White</td>
</tr>
<tr>
<td>3</td>
<td>End cover</td>
<td>Resin</td>
<td>White</td>
</tr>
<tr>
<td>4</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Spool valve assembly</td>
<td>Aluminum, H-NBR</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Spool spring</td>
<td>Stainless steel</td>
<td></td>
</tr>
</tbody>
</table>

**Replacement Parts**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>No.</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Sub-plate</td>
<td>SYJ5000-22-1-Q</td>
<td>Aluminum die-casted</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Pilot valve</td>
<td>V111(T)-L50132/L50132/L50132</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bracket assembly</td>
<td>SYJ5000-13-3A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Series SYJ5000

How to Order Pilot Valve Assembly

V111 — 5 — G

Coil specifications
- Standard
  - With power saving circuit (24, 12 VDC only)

Rated voltage
5: 24 VDC
6: 12 VDC
V: 6 VDC
S: 5 VDC
R: 3 VDC

Light/surge voltage suppressor
- Without light/surge voltage suppressor
  - With surge voltage suppressor
    Z: With light/surge voltage suppressor (Non-polar type)
    R: With surge voltage suppressor (Non-polar type)
  - With light/surge voltage suppressor (Non-polar type)

Electrical entry
G: Grommet, 300 mm lead wire
H: Grommet, 600 mm lead wire
L: L plug connector
LN: Without lead wire
LO: Without connector
M: M plug connector
MN: Without lead wire
MO: Without connector
WO: M8 connector
W: With connector (Non-polar type)

Note) Do not replace V111 (G, H, L, M, W) to V115 (DIN terminal) and vice versa when replacing pilot valve assembly only.

How to Order Connector Assembly for L/M Plug Connector

For DC: SY100-30-4A-

Without lead wire: SY100-30-A (with connector and 2 of sockets only)

Lead wire length
- 300 mm
6: 600 mm
10: 1000 mm
15: 1500 mm
20: 2000 mm
25: 2500 mm
30: 3000 mm
50: 5000 mm

How to Order M8 Connector Cable

V100-49-1-

Cable length
1: 300 mm
2: 500 mm
3: 1000 mm
4: 2000 mm
7: 5000 mm

Grommet, 300 mm lead wire
Grommet, 600 mm lead wire
L plug connector
With lead wire
Without lead wire
Without connector
With surge voltage suppressor
(Non-polar type)
With light/surge voltage suppressor
(Non-polar type)

For connector cable of M8 connector, refer to back page 10.

Note 1) Enter the cable length symbols in [L50132]. Please be sure to fill in the blank referring to back page 10.

Coil specifications
With power saving circuit is not available in the case of D or DO type.

Rated voltage
5: 24 VDC
6: 12 VDC
V: 6 VDC
S: 5 VDC
R: 3 VDC

Light/surge voltage suppressor
- Without light/surge voltage suppressor
  - With surge voltage suppressor
    Z: With light/surge voltage suppressor (Non-polar type)
    R: With surge voltage suppressor (Non-polar type)
  - With light/surge voltage suppressor (Non-polar type)

Electrical entry
D: DIN terminal
DO: With connector

Note) Do not replace V111 (G, H, L, M, W) to V115 (DIN terminal) and vice versa when replacing pilot valve assembly only.
2 Position Single

Grommet (G), (H): SYJ5120-□□□-□□□-M5-Q

With bracket
SYJ5120-□□□-□□□-M5-F-Q

SYJ5120-□□□-□□□-M5(-F)-Q SYJ5120-□□□-□□□-M5(-F)-Q SYJ5120-□□□-□□□-M5(-F)-Q SYJ5120-□□□-□□□-M5(-F)-Q

Refer to back page 11 for dimensions with connector cable.
Series SYJ5000

2 Position Double

Grommet (G), (H): SYJ5220-□□□□□□□□-M5-Q

Built-in one-touch fitting:
SYJ5220-□□□□□□□□-M5-Q

L plug connector (L):
SYJ5220-□□□□□□□□-M5-Q

M plug connector (M):
SYJ5220-□□□□□□□□-M5-Q

DIN terminal (D):
SYJ5220-□□□□□□□□-M5-Q

M8 connector (WO):
SYJ5220-□□□□□□□□-M5-Q

Refer to back page 11 for dimensions with connector cable.
3 Position Closed Center/Exhaust Center/Pressure Center

Grommet (G), (H): SYJ5₂₁₀-□□□-M5-Q

Built-in one-touch fitting:
SYJ5₂₁₀-□□□-C₄, N₃-Q

L plug connector (L):
SYJ5₂₁₀-L□□-M5-Q

M plug connector (M):
SYJ5₂₁₀-M□□-M5-Q

DIN terminal (D):
SYJ5₂₁₀-D□□-M5-Q

M8 connector (WO):
SYJ5₂₁₀-WO□□-M5-Q

Refer to back page 11 for dimensions with connector cable.
**Series SYJ5000**

**2 Position Single**

Grommet (G), (H): SYJ5140-□□□-01□-Q

Built-in speed controller: SYJ5150-□□□-01□-Q

---

**L plug connector (L):** SYJ5140-□L□□-01□-Q

**M plug connector (M):** SYJ5140-□M□□-01□-Q

**DIN terminal (D):** SYJ5140-□D□□-01□-Q

**M8 connector (WO):** SYJ5140-□WO□□-01□-Q

---

Refer to back page 11 for dimensions with connector cable.
2 Position Double

Grommet (G), (H): SYJ5240-□□□-01□-Q

Built-in speed controller: SYJ5250-□□□-01□-Q

L plug connector (L): SYJ5240-□L□□-01□-Q

M plug connector (M): SYJ5240-□M□□-01□-Q

DIN terminal (D): SYJ5240-□D□□-01□-Q

M8 connector (WO): SYJ5240-□WO□□-01□-Q

(Light/surge voltage suppressor)

G: Approx. 300
H: Approx. 600
(Lead wire length)

1/8 (P, R port)

2-ø4.3
(For mounting)

Manual override

Approx. 300
Approx. 600
(Lead wire length)

Refer to back page 11 for dimensions with connector cable.
3 Position Closed Center/Exhaust Center/Pressure Center

Grommet (G), (H): SYJ5\textsuperscript{5} 40-□□□-01□-Q

Built-in speed controller: SYJ5\textsuperscript{5} 50-□□□-01□-Q

With interface regulator

L plug connector (L): SYJ5\textsuperscript{5} 40-□L□-01□-Q
M plug connector (M): SYJ5\textsuperscript{5} 40-□M□-01□-Q
DIN terminal (D): SYJ5\textsuperscript{5} 40-□D□-01□-Q
M8 connector (WO): SYJ5\textsuperscript{5} 40-□WO□-01□-Q

Refer to back page 11 for dimensions with connector cable.
Series SYJ5000
Manifold Specifications

Manifold Standard

Manifold Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Type 20</th>
<th>Type 40</th>
<th>Type 41</th>
<th>Type 42</th>
<th>Type 43</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manifold type</td>
<td>Single base/B mount</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P (SUP), R (EXH)</td>
<td>Common SUP, Common EXH</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valve stations</td>
<td>2 to 20 stations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A, B port Porting specifications</td>
<td>Location</td>
<td>Valve</td>
<td>Base</td>
<td>Base</td>
<td></td>
</tr>
<tr>
<td>Direction</td>
<td>Top</td>
<td>Bottom</td>
<td>Side</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Port size</td>
<td>P, R port</td>
<td>1/8</td>
<td>1/4</td>
<td>1/8</td>
<td></td>
</tr>
<tr>
<td>A, B port</td>
<td>M5, C4 (One-touch fitting for ø4)</td>
<td></td>
<td>M5</td>
<td>1/8, C6 (One-touch fitting for ø6)</td>
<td>C4 (One-touch fitting for ø4)</td>
</tr>
</tbody>
</table>

Flow Characteristics

<table>
<thead>
<tr>
<th>Manifold</th>
<th>Port size</th>
<th>Flow characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1→4/2 (P→A/B)</td>
<td>4/2→5/3 (A/B→R)</td>
</tr>
<tr>
<td></td>
<td>C [dm³/(s·bar)]</td>
<td>b</td>
</tr>
<tr>
<td>Body ported for internal pilot</td>
<td>SYJ5</td>
<td>Type SSYJ5-20</td>
</tr>
<tr>
<td>1/8</td>
<td>M5</td>
<td>0.46</td>
</tr>
<tr>
<td>1/8</td>
<td>C4</td>
<td>0.62</td>
</tr>
<tr>
<td>1/8</td>
<td>C6</td>
<td>0.79</td>
</tr>
<tr>
<td>1/8</td>
<td>M5</td>
<td>0.55</td>
</tr>
<tr>
<td>1/8</td>
<td>C4</td>
<td>0.74</td>
</tr>
<tr>
<td>1/8</td>
<td>C6</td>
<td>0.71</td>
</tr>
<tr>
<td>1/8</td>
<td>C4</td>
<td>0.55</td>
</tr>
</tbody>
</table>

Note) Value at manifold base mounted, 2 position single operating
* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream of 0.6MPa (relative pressure) and a differential pressure of 0.1MPa.

How to Order Manifold (Example)

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

Example: SSYJ5-20-03-Q 1 pc. (Manifold base)
* SYJ5120-5G-M5-Q 2 pcs. (Valve)
* SYJ5000-21-4A-Q 1 pc. (Blanking plate assembly)

How to Order Manifold (Example)

Example: SSYJ5-43-03-C4-Q 1 pc. (Manifold base)
* SYJ5140-5LZ-Q 1 pc. (Valve)
* SYJ5240-5LZ-Q 1 pc. (Valve)
* SYJ5000-21-4A-Q 1 pc. (Blanking plate assembly)

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

* Use manifold specification sheet.
Flat Ribbon Cable Manifold

- Multiple valve wiring is simplified through the use of the flat cable connector.
- Clean appearance
  In the case of a flat ribbon cable type, each valve is wired on the print board of manifold base to allow the external wiring to be piped all together with 26 pins MIL connector.

Flat Ribbon Cable Manifold Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Type 20</th>
<th>Type 41P</th>
<th>Type 43P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manifold type</td>
<td>Single base/B mount</td>
<td>Common SUP, Common EXH</td>
<td></td>
</tr>
<tr>
<td>I/P (SUP), R (EXH)</td>
<td>3 to 12 stations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td>P, R port</td>
<td>Location</td>
<td>Valve</td>
</tr>
<tr>
<td>Direction</td>
<td>Top</td>
<td>Top</td>
<td>Side</td>
</tr>
<tr>
<td>P, R port</td>
<td>1/8</td>
<td>1/8</td>
<td></td>
</tr>
<tr>
<td>A, B port</td>
<td>C4 (One-touch fitting for ø4)</td>
<td>M5, C6 (One-touch fitting for ø6)</td>
<td>M5, C4 (One-touch fitting for ø4)</td>
</tr>
<tr>
<td>Applicable flat ribbon cable connector</td>
<td>Socket: 26 pins MIL type with strain relief (MIL-C-83503)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal wiring</td>
<td>In common between +COM and –COM (Z type: +COM only).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated voltage</td>
<td>24, 12 VDC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note) The withstand voltage specification for the wiring unit section conforms to JIS C 0704, Grade 1 or its equivalent.

Flow Characteristics

### Flow Characteristics

<table>
<thead>
<tr>
<th>Manifold</th>
<th>Port size</th>
<th>Flow characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type SS5YJ5-20P</td>
<td>SYJ5:23</td>
<td>1 → 4/2 (P → A/B)</td>
</tr>
<tr>
<td>Type SS5YJ5-41P</td>
<td>SYJ5:43</td>
<td>4/2 → 5/3 (A/B → R)</td>
</tr>
<tr>
<td>Body ported for internal pilot</td>
<td>1/8 M5</td>
<td>0.46</td>
</tr>
<tr>
<td></td>
<td>1/8 C4</td>
<td>0.62</td>
</tr>
<tr>
<td></td>
<td>1/8 C6</td>
<td>0.79</td>
</tr>
<tr>
<td>Base mounted for internal pilot</td>
<td>1/8 M5</td>
<td>0.59</td>
</tr>
<tr>
<td></td>
<td>1/8 C4</td>
<td>0.55</td>
</tr>
</tbody>
</table>

Note) Value at manifold base mounted, 2 position single operating

* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream of 0.6MPa (relative pressure) and a differential pressure of 0.1MPa.

How to Order Manifold (Example)

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

Example:

- SSSYJ5-41P-07-C4-Q — 1 pc. (Manifold base)
- + SYJ5143-6LOU-Q — 3 pcs. (Valve)
- + SYJ5243-6LOU-Q — 3 pcs. (Valve)
- + SYJ5000-21-3A-Q — 1 pc. (Blanking plate assembly)
- + SY3000-37-28A-Q — 3 pcs. (Connector assembly)
- + SY3000-37-29A-Q — 3 pcs. (Connector assembly)

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

How to Order Valve

- Rated voltage
  - 5 24 VDC
  - 6 12 VDC
- Light/surge voltage suppressor
  - Z With light/surge voltage suppressor
  - U With light/surge voltage suppressor/non-polar type

For DC

<table>
<thead>
<tr>
<th>Type of actuation</th>
<th>Symbol</th>
<th>Port size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 position single</td>
<td>-</td>
<td>Non-locking push type</td>
</tr>
<tr>
<td>2 2 position double</td>
<td>D</td>
<td>Push-turn locking slotted type</td>
</tr>
<tr>
<td>3 3 position closed center</td>
<td>E</td>
<td>Push-turn locking lever type</td>
</tr>
<tr>
<td>4 3 position exhaust center</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 3 position pressure center</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note) Z. Positive common specifications only.

How to Order Connector Assembly

For 12, 24 VDC

- Single solenoid SY3000-37-28A
- Double solenoid, 3 position type SY3000-37-29A
- Single solenoid, individual SUP, EXH space SY3000-37-3A
- Double solenoid, 3 position interface regulator SY3000-37-3A
- Double solenoid, 3 position interface regulator SY3000-37-6A
- 3 port adaptor plate SY3000-37-3A
Common SUP/Common EXH

**Type 20 (5 Port/Body ported)**

How to Order

SS5YJ5–20–05–Q

<table>
<thead>
<tr>
<th>P, R port thread type</th>
<th>02 2 stations</th>
<th>20 20 stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Rc</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>- 00F G</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>- 00N NPT</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>- 00T NPTF</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

A, B port size

M5

---

**Type 40 (5 Port/Base mounted)**

How to Order

SS5YJ5–40–05–M5–Q

<table>
<thead>
<tr>
<th>P, R port thread type</th>
<th>02 2 stations</th>
<th>20 20 stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Rc</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>- F G</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>- N NPT</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>- T NPTF</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

A, B port size

M5

---

**Type 41 (5 Port/Base mounted)**

How to Order

SS5YJ5–41–05–M5–Q

<table>
<thead>
<tr>
<th>P, R port thread type</th>
<th>02 2 stations</th>
<th>20 20 stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Rc</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>- F G</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>- N NPT</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>- T NPTF</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

A, B port size

M5

---

**Type 42 (5 Port/Base mounted)**

How to Order

SS5YJ5–42–05–C6–Q

<table>
<thead>
<tr>
<th>Thread type</th>
<th>02 2 stations</th>
<th>20 20 stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Rc</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>- F G</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>- N NPT</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>- T NPTF</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

A, B port size

C6, N7

---

**Type 43 (5 Port/Base mounted)**

How to Order

SS5YJ5–43–05–C4–Q

<table>
<thead>
<tr>
<th>P, R port thread type</th>
<th>02 2 stations</th>
<th>20 20 stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Rc</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>- F G</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>- N NPT</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>- T NPTF</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

A, B port size

C4, N3

---

**Note** For more than 8 stations, supply air to both sides of P port and exhaust air from both sides of R port.

---

**How to Order**

01:

C6

N7

1/8

One-touch fitting for ø6

One-touch fitting for ø1/4"

---

**Applicable solenoid valve**

SS5YJ5–20–05–M5–Q

SS5YJ5–23–05–C6–Q

SS5YJ5–21–05–M5–Q

SS5YJ5–24–05–C6–Q

Applicable blanking plate assembly

SS5YJ5000-21-4A-Q

Applicable individual EXH spacer assembly

SS5YJ5000-17-1A-Q

Applicable interface regulator

ARBYJ5000-00-P-Q

---

**M5 C4-Q**

**C6 N3**

One-touch fitting for ø4

One-touch fitting for ø5/32”

---

**Type 40 (5 Port/Base mounted)**

**Applicable blanking plate assembly**

SS5YJ5000-21-1A-2-Q

**Applicable individual EXH spacer assembly**

SS5YJ5000-17-1A-2-Q

---

**Type 41 (5 Port/Base mounted)**

**Applicable interface regulator**

ARBYJ5000-00-P-Q
**Series SYJ5000**

**Flat Ribbon Cable Manifold**

**Common SUP/Common EXH**

Note: For more than 8 stations, supply air to both sides of P port and exhaust air from both sides of R port.

### Type 20 (5 Port/Body ported)

**How to Order**

<table>
<thead>
<tr>
<th>SYJ5000-20P-05-Q</th>
<th>P, R port thread type:</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS5YJ5-20P-05-Q</td>
<td>- Rc</td>
</tr>
</tbody>
</table>

**Applicable solenoid valve**

Refer to page 35.

**Applicable blanking plate assembly**

SYJ5000-21-3A-1-Q

**Applicable connector assembly**

Refer to page 35.

### Type 41P (5 Port/Base mounted)

**How to Order**

<table>
<thead>
<tr>
<th>SYJ5000-41P-05-M5-Q</th>
<th>P, R port thread type:</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS5YJ5-41P-05-M5-Q</td>
<td>- Rc</td>
</tr>
</tbody>
</table>

**Applicable solenoid valve**

Refer to page 35.

**Applicable blanking plate assembly**

SYJ5000-21-3A-2-Q

**Applicable connector assembly**

Refer to page 35.

### Type 43P (5 Port/Base mounted)

**How to Order**

<table>
<thead>
<tr>
<th>SYJ5000-43P-05-C4-Q</th>
<th>P, R port thread type:</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS5YJ5-43P-05-C4-Q</td>
<td>- Rc</td>
</tr>
</tbody>
</table>

**Applicable solenoid valve**

Refer to page 35.

**Applicable blanking plate assembly**

SYJ5000-21-3A-2-Q

**Applicable connector assembly**

Refer to page 35.

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

**Round head combination screw**

M2.5 x 25, Matt nickel plated (with spring washer)

**Manifold Gasket**

DXT192-10-12

**Applicable manifold base**

Type SS5YJ5-20-Q

**Round head combination screw**

M2.5 x 25, Matt nickel plated (with spring washer)

**Manifold Gasket**

DXT192-10-16

**Applicable manifold base**

Sub-plate: SYJ5000-22-1/Q-Q

Type SS5YJ5-40-Q

Type SS5YJ5-41-Q

Type SS5YJ5-42-Q

Type SS5YJ5-43-Q

**Thread type**

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

### Blanking Plate Assembly

**SYJ5000-21-1A-1-Q**

**Applicable manifold base**

Type SS5YJ5-20-Q

**Round head combination screw**

M2.5 x 25, Matt nickel plated (with spring washer)

**Gasket**

(Stainless steel, fine mesh)

**SYJ5000-21-1A-2-Q**

**Applicable manifold base**

Type SS5YJ5-40-Q

**Round head combination screw**

M2.5 x 25, Matt nickel plated (with spring washer)

**Gasket**

(Stainless steel, fine mesh)

**Caution**

Mounting screw tightening torques

M2.5: 0.45 N·m

Use caution to the assembly orientation for solenoid valves, gasket, and optional parts.
Mix Installation of the SYJ500 and the SYJ5000 Valves on the Same Manifold

- Use of an adapter plate makes it possible to mount Series SYJ500 on the manifold bases of series SYJ5000.
- When mounting the SYJ500 valve on the SYJ5000 manifold, the SYJ500 solenoid must be positioned on the same side of the manifold as a single solenoid SYJ500. (Refer to the figure below.)
- For base mounted style, the A port of the 3 port valve flows out the B port of manifold base.

### Adapter Plate Assembly

#### SYJ500-3-1A-1-Q

- Round head combination screw
- Gasket
- Adapter plate
- Adapter gasket

#### SYJ500-3-1A-2-Q

- Round head combination screw
- Gasket
- Adapter plate
- Adapter gasket

**Applicable manifold base**
Type SSSYJ5-20-Q

---

**Interface Regulator (P port regulation)**

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

#### ARBY5000-00-P-Q

- Round head combination screw
- Base mounted
- Gasket
- Applicable manifold base
  - Type SSSYJ5-40-Q
  - Type SSSYJ5-41-Q
  - Type SSSYJ5-42-Q
  - Type SSSYJ5-43-Q

Refer to back page 12 prior to handling.

---

### Individual EXH Spacer Assembly

#### SYJ5000-17-1A-1-Q

- Round head combination screw
- Manifold gasket
- Individual EXH spacer

**Applicable manifold base**
Type SSSYJ5-20-Q

#### SYJ5000-17-1A-2-Q

- Round head combination screw
- Manifold gasket
- Individual EXH spacer

**Applicable manifold base**
Type SSSYJ5-40-Q
Type SSSYJ5-41-Q
Type SSSYJ5-42-Q
Type SSSYJ5-43-Q

---

### Individual SUP Spacer Assembly

#### SYJ5000-16-2

- Round head combination screw
- Thread type
  - \( - \) Rc
  - F G
  - N NPT
  - T NPTF

**Applicable manifold base**
Type SSSYJ5-40-Q
Type SSSYJ5-41-Q
Type SSSYJ5-42-Q
Type SSSYJ5-43-Q

**Caution**

Mounting screw tightening torques

M2.5: 0.45 N·m

Use caution to the assembly orientation for solenoid valves, gasket, and optional parts.
Series SYJ5000

Type 20: Top Ported/SSYJ5-20- [Stations]-00□-Q

Grommet (G)

(Light/surge voltage suppressor)

Built-in one-touch fitting

L plug connector (L)  M plug connector (M)  DIN terminal (D)  M8 connector (WO)

Refer to back page 11 for dimensions with connector cable.

| Station n | Station 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | Station 20 |
|-----------|-----------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|
| L1        | 58        | 74 | 90 | 106| 122| 138|154|170|186|202|218|234|250|266|282|298|314|330|346 |
| L2        | 40        | 56 | 72 | 88 |104|120|136|152|168|184|200|216|232|248|264|280|296|312|328 |

(Station n)---(Station 1)

Approx. 300 (Lead wire length)

P = 16

(Pitch)

Manual override

L1

L2

M5

(A, B port)

0

(DIN 46.8)

67.7

49.6

(DIN 46.2)

61.1 (DIN 6.3)

45.1

(L, R port)

R P R

RPR

A

B

A

B

A

B

A

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a
Type 40: Bottom Ported/SS5YJ5-40- Stations -M5□-Q

Grommet (G)

Built-in speed controller

L plug connector (L)       M plug connector (M)       DIN terminal (D)       M8 connector (WO)

Refer to back page 11 for dimensions with connector cable.
Series SYJ5000

Type 41: Side Ported/SS5YJ5-41- Stations -M5□-Q

Grommet (G)

Built-in speed controller

L plug connector (L)  M plug connector (M)  DIN terminal (D)  M8 connector (WO)

| Station 1 | Station 2 | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | Station 20 |
|-----------|-----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-------|
| L1        | 52        | 68 | 84 | 100| 116| 132| 148| 164| 180| 196| 212| 228| 244| 260| 276| 292| 308| 324| 340   |
| L2        | 43        | 59 | 75 | 91 | 107| 123| 139| 155| 171| 187| 203| 219| 235| 251| 267| 283| 299| 315| 331   |

Refer to back page 11 for dimensions with connector cable.
Type 42: Side Ported/SS5YJ5-42- Stations -01, C6 N7 □-Q

Grommet (G)
For 01 □

Built-in speed controller

Max. 13.5

P = 17

(Pitch)

For C6 □ (Built-in one-touch fitting)

(Light/surge voltage suppressor)

Refer to back page 11 for dimensions with connector cable.

For 1/8

Max. 13.5

P = 17

(Pitch)

For 01 □

Approx. 300

(Approx. 300)

(Approx. 300)

(Approx. 300)

(Approx. 300)

Applicable tubing O.D.: ø6, ø1/4"

Other dimensions are the same as the grommet type.

L plug connector (L)     M plug connector (M)     DIN terminal (D)     M8 connector (WO)

Refer to back page 11 for dimensions with connector cable.

<table>
<thead>
<tr>
<th>Model</th>
<th>Station n</th>
<th>Station 2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>For 1/8</td>
<td>L1</td>
<td>86</td>
<td>83</td>
<td>100</td>
<td>117</td>
<td>134</td>
<td>151</td>
<td>168</td>
<td>185</td>
<td>202</td>
<td>219</td>
<td>236</td>
<td>253</td>
<td>270</td>
<td>287</td>
<td>304</td>
<td>321</td>
<td>333</td>
<td>335</td>
<td>348</td>
</tr>
<tr>
<td></td>
<td>L2</td>
<td>73</td>
<td>70</td>
<td>87</td>
<td>104</td>
<td>121</td>
<td>138</td>
<td>155</td>
<td>172</td>
<td>189</td>
<td>206</td>
<td>223</td>
<td>240</td>
<td>257</td>
<td>274</td>
<td>291</td>
<td>308</td>
<td>325</td>
<td>342</td>
<td>359</td>
</tr>
<tr>
<td>For C6 □ N7</td>
<td>L1</td>
<td>65</td>
<td>81</td>
<td>97</td>
<td>113</td>
<td>129</td>
<td>145</td>
<td>161</td>
<td>177</td>
<td>193</td>
<td>209</td>
<td>225</td>
<td>241</td>
<td>257</td>
<td>273</td>
<td>289</td>
<td>305</td>
<td>321</td>
<td>337</td>
<td>353</td>
</tr>
<tr>
<td></td>
<td>L2</td>
<td>52</td>
<td>68</td>
<td>84</td>
<td>100</td>
<td>116</td>
<td>132</td>
<td>148</td>
<td>164</td>
<td>180</td>
<td>196</td>
<td>212</td>
<td>228</td>
<td>244</td>
<td>260</td>
<td>276</td>
<td>292</td>
<td>308</td>
<td>324</td>
<td>340</td>
</tr>
</tbody>
</table>
Series SYJ5000

Type 43: Side Ported/SS5YJ3-43- Stations -

Grommet (G)

(Light/surge voltage suppressor)

(Applicable tubing O.D.: ø4, ø5/32")

Built-in slottle valve

Max. 13.5

47.5

Approx. 300

(Lead wire length)

L plug connector (L)  M plug connector (M)  DIN terminal (D)  M8 connector (WO)

<table>
<thead>
<tr>
<th>Station n</th>
<th>Station 2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>52</td>
<td>68</td>
<td>84</td>
<td>100</td>
<td>116</td>
<td>132</td>
<td>148</td>
<td>164</td>
<td>180</td>
<td>196</td>
<td>212</td>
<td>228</td>
<td>244</td>
<td>260</td>
<td>276</td>
<td>292</td>
<td>308</td>
<td>324</td>
</tr>
<tr>
<td>L2</td>
<td>43</td>
<td>59</td>
<td>75</td>
<td>91</td>
<td>107</td>
<td>123</td>
<td>139</td>
<td>155</td>
<td>171</td>
<td>187</td>
<td>203</td>
<td>219</td>
<td>235</td>
<td>251</td>
<td>267</td>
<td>283</td>
<td>299</td>
<td>315</td>
</tr>
</tbody>
</table>

Note: Refer to back page 11 for dimensions with connector cable.
Flat Ribbon Cable Manifold

**Series SYJ5000**

**SS5YJ5-20P- Stations-00□-Q**

FoC4 N3 (Built-in one-touch fitting)

One-touch fitting ø6, ø1/4" (A, B port)
Applicable tubing O.D.: ø4, ø5/32", ø6, ø1/4"

<table>
<thead>
<tr>
<th>Station n</th>
<th>Station 3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>Station 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>77</td>
<td>94.5</td>
<td>112</td>
<td>129.5</td>
<td>147</td>
<td>164.5</td>
<td>182</td>
<td>199.5</td>
<td>217</td>
<td>234.5</td>
</tr>
<tr>
<td>L2</td>
<td>59</td>
<td>76.5</td>
<td>94</td>
<td>111.5</td>
<td>129</td>
<td>146.5</td>
<td>164</td>
<td>181.5</td>
<td>199</td>
<td>216.5</td>
</tr>
</tbody>
</table>

**SS5YJ5-41P- Stations-M5□-Q**

Built-in slottie valve

Max. 13.5

<table>
<thead>
<tr>
<th>Station n</th>
<th>Station 3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>Station 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>77</td>
<td>94.5</td>
<td>112</td>
<td>129.5</td>
<td>147</td>
<td>164.5</td>
<td>182</td>
<td>199.5</td>
<td>217</td>
<td>234.5</td>
</tr>
<tr>
<td>L2</td>
<td>62</td>
<td>79.5</td>
<td>97</td>
<td>114.5</td>
<td>132</td>
<td>149.5</td>
<td>167</td>
<td>184.5</td>
<td>202</td>
<td>219.5</td>
</tr>
</tbody>
</table>
Flat Ribbon Cable Manifold

SS5YJ5-43P  Stations  -Q

Station 1
Station 2
Station 3

Built-in speed controller

Applicable connector: 26 pins
With strain relief

(Conforming to MIL-C-83503)

Applicable tubing O.D.: Ø4, Ø5/32"

One-touch fitting (A, B port)

Triangle mark (For mounting)

(Pitch) P = 17.5

Max. 13.5

<table>
<thead>
<tr>
<th>Station n</th>
<th>Station 3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>Station 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>77</td>
<td>94.5</td>
<td>112</td>
<td>129.5</td>
<td>147</td>
<td>164.5</td>
<td>182</td>
<td>199.5</td>
<td>217</td>
<td>234.5</td>
</tr>
<tr>
<td>L2</td>
<td>62</td>
<td>79.5</td>
<td>97</td>
<td>114.5</td>
<td>132</td>
<td>149.5</td>
<td>167</td>
<td>184.5</td>
<td>202</td>
<td>219.5</td>
</tr>
</tbody>
</table>
Rubber Seal
5 Port Solenoid Valve
Series SYJ7000

Specifications

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating pressure range (MPa)</td>
<td>2 position single: 0.15 to 0.7, 2 position double: 0.1 to 0.7, 3 position: 0.15 to 0.7</td>
</tr>
<tr>
<td>Ambient and fluid temperature (°C)</td>
<td>–10 to 50 (No freezing. Refer to back page 3.)</td>
</tr>
<tr>
<td>Response time (ms) (Note 1) (at 0.5 MPa)</td>
<td>2 position single, double: 30 or less, 3 position: 60 or less</td>
</tr>
<tr>
<td>Max. operating frequency (Hz)</td>
<td>2 position single, double: 3, 3 position: 5</td>
</tr>
<tr>
<td>Manual override (Manual operation)</td>
<td>Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type</td>
</tr>
<tr>
<td>Pilot exhaust method</td>
<td>Individual exhaust for the pilot valve, Common exhaust for the pilot and main valve</td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not required</td>
</tr>
<tr>
<td>Mounting orientation</td>
<td>Unrestricted</td>
</tr>
<tr>
<td>Shock/Vibration resistance (m/s²) (Note 2)</td>
<td>150/30</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Dust proof (∗ DIN terminal, M8 connector conforms to IP65.)</td>
</tr>
</tbody>
</table>

JIS Symbol

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body ported</td>
<td>2 position single</td>
</tr>
<tr>
<td>(A) (B)</td>
<td>2 position single</td>
</tr>
<tr>
<td>4 2</td>
<td></td>
</tr>
<tr>
<td>(R1) (R2)</td>
<td></td>
</tr>
<tr>
<td>Base mounted</td>
<td>2 position single, double</td>
</tr>
<tr>
<td>(A) (B)</td>
<td>(B) (A)</td>
</tr>
<tr>
<td>4 2</td>
<td>2 4</td>
</tr>
<tr>
<td>(R1) (R2)</td>
<td>(R2) (R1)</td>
</tr>
</tbody>
</table>

Solenoid Specifications

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coil rated voltage (V)</td>
<td>DC 24, 12, 6, 5, 3</td>
</tr>
<tr>
<td>AC 50/60 Hz</td>
<td>- 100, 110, 200, 220</td>
</tr>
<tr>
<td>Allowable voltage fluctuation</td>
<td>±10% of rated voltage</td>
</tr>
<tr>
<td>Power consumption (W)</td>
<td>DC 0.35 (With light: 0.4 (DIN terminal with light: 0.45))</td>
</tr>
<tr>
<td>AC (With power saving circuit)</td>
<td>0.1 (With light only)</td>
</tr>
<tr>
<td>Apparent power VA*</td>
<td>AC 100 V - 0.78 (With light: 0.87)</td>
</tr>
<tr>
<td>110 V</td>
<td>0.86 (With light: 0.97)</td>
</tr>
<tr>
<td>115 V</td>
<td>(0.94 (With light: 1.07))</td>
</tr>
<tr>
<td>200 V</td>
<td>1.15 (With light: 1.30)</td>
</tr>
<tr>
<td>220 V</td>
<td>1.27 (With light: 1.46)</td>
</tr>
<tr>
<td>230 V</td>
<td>[1.39 (With light: 1.60)]</td>
</tr>
<tr>
<td>Surge voltage suppressor</td>
<td>Diode (DIN terminal, Varistor when non-polar types)</td>
</tr>
<tr>
<td>Indicator light</td>
<td>LED (Neon light when AC with DIN terminal)</td>
</tr>
</tbody>
</table>

Note 1) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage, without surge suppressor)
Note 2) Impact resistance: No malfunction occurred when it is tested in the axial direction and at the right angles to the main valve and armature in both energised and de-energised states every once for each condition. (Value in the initial state)
Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000 Hz. Test was performed to axis and right angle directions of the main valve and armature when pilot signal is ON and OFF. (Value in the initial state)

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

Made to Order
(For details, refer to pages 78 through to 80.)
### Flow Characteristics/Weight

#### Cylinder Speed Chart

<table>
<thead>
<tr>
<th>Valve model</th>
<th>Type of actuation</th>
<th>1-4/2 (P→A-B)</th>
<th>4/2-5/3 (A-B→EA/EB)</th>
<th>Grommet</th>
<th>L/M plug connector</th>
<th>DIN terminal</th>
<th>MB connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYJ7120-01</td>
<td>Single</td>
<td>2.2 0.36 0.58 582 2.4 0.34 0.63 626</td>
<td>85 86 107 90</td>
<td>98 100 142 108</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td>1.8 0.37 0.45 479 2.0 0.35 0.49 525</td>
<td>108 110 152 118</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Center</td>
<td>1.2 0.50 0.34 353 3.0 [1.3] 2.3 [1.8] 786 [599]</td>
<td>1.8 0.37 0.45 479</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pressure center</td>
<td>3.0 [0.63] 2.2 [0.30] 1.8 [1.3] 786 [599]</td>
<td>1.8 0.37 0.45 479</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYJ7120-02</td>
<td>Single</td>
<td>1.6 0.33 0.4 415 2.2 0.32 0.53 567</td>
<td>96 97 98 101</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td>1.4 0.27 0.35 349 1.9 0.33 0.49 493</td>
<td>109 111 153 119</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Center</td>
<td>1.1 0.37 0.27 293 2.5 [1.3] 2.0 [1.3] 644 [595]</td>
<td>1.6 0.30 0.39 407</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pressure center</td>
<td>1.8 [0.78] 1.3 [0.49] 1.3 [0.49] 693 [579]</td>
<td>1.6 0.30 0.39 407</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYJ7120-03</td>
<td>Single</td>
<td>1.9 0.35 0.42 447 2.0 0.29 0.49 500</td>
<td>109 111 153 119</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td>1.6 0.33 0.33 322 2.6 [1.3] 1.9 [1.3] 582 [579]</td>
<td>1.7 0.39 0.42 459</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Center</td>
<td>1.1 0.35 0.33 222 1.9 [1.3] 1.6 [1.3] 582 [579]</td>
<td>1.7 0.39 0.42 459</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pressure center</td>
<td>1.7 [0.48] 1.4 [0.42] 1.1 [0.42] 582 [579]</td>
<td>1.7 0.39 0.42 459</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1) [: denotes the normal position. Exhaust center: 4/2
Note 2) ( ): Without sub-plate.
Note 3) For DC voltages. For AC voltages add 3 g to the weight of the single solenoid and 6 g to the weight of the double solenoid and 3 position types.

### Body Ported

#### Use as a guide for selection.
Please confirm the actual conditions with SMC Sizing Program.

#### Flow characteristics

- **Series CJ2**
  - Pressure 0.5 MPa
  - Load rate: 50%
  - Stroke 60 mm

- **Series MB/CM2**
  - Pressure 0.5 MPa
  - Load rate: 50%
  - Stroke 300 mm

- **Series MB/CA2**
  - Pressure 0.5 MPa
  - Load rate: 50%
  - Stroke 500 mm

#### Bore size

**Series SYJ7120-01**

<table>
<thead>
<tr>
<th>Diameter (mm)</th>
<th>ø6</th>
<th>ø10</th>
<th>ø16</th>
<th>ø20</th>
<th>ø25</th>
<th>ø32</th>
<th>ø40</th>
<th>ø50</th>
<th>ø63</th>
<th>ø80</th>
<th>ø100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average speed (mm/s)</td>
<td>800</td>
<td>700</td>
<td>600</td>
<td>500</td>
<td>400</td>
<td>300</td>
<td>200</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Series SYJ7140-02**

<table>
<thead>
<tr>
<th>Diameter (mm)</th>
<th>ø6</th>
<th>ø10</th>
<th>ø16</th>
<th>ø20</th>
<th>ø25</th>
<th>ø32</th>
<th>ø40</th>
<th>ø50</th>
<th>ø63</th>
<th>ø80</th>
<th>ø100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average speed (mm/s)</td>
<td>800</td>
<td>700</td>
<td>600</td>
<td>500</td>
<td>400</td>
<td>300</td>
<td>200</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Cylinder is in extending. Speed controller is meter-out, which is directly connected with cylinder and its needle is fully opened.
* Load factor: (Load weight x 9.8) / (Theoretical force) x 100%

### Conditions

<table>
<thead>
<tr>
<th>Body ported</th>
<th>Tubing bore x Length</th>
<th>Speed controller</th>
<th>Silencer</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYJ7120-01</td>
<td>ø6 x 1 m</td>
<td>AS2301F-06</td>
<td>AN110-01 AN200-02</td>
</tr>
<tr>
<td>SYJ7140-02</td>
<td>ø6 x 1 m</td>
<td>AS1301F-06</td>
<td>AN110-01 AN200-02 AN3301F-06</td>
</tr>
</tbody>
</table>
How to Order

**Series SYJ7000**

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

**Electrical entry for G, H, L, M, W**
- Without light/surge voltage suppressor
- S: With surge voltage suppressor
- Z: With light/surge voltage suppressor
- R: With surge voltage suppressor (Non-polar type)
- U: With light/surge voltage suppressor (Non-polar type)

**Electrical entry for D**
- Without light/surge voltage suppressor
- S: With surge voltage suppressor (Non-polar type)
- Z: With light/surge voltage suppressor (Non-polar type)

**Rated voltage**
- DC
  - 5: 24 VDC
  - 6: 12 VDC
  - V: 6 VDC
  - S: 5 VDC
  - R: 3 VDC
- AC (±10% Hz)
  - 1: 100 VAC
  - 2: 200 VAC
  - 3: 110 VAC (115 VAC)
  - 4: 220 VAC (230 VAC)

**AC specification is only available with D, DO type.**

**Rated voltage**
- With surge/have suppressor
  - S: With surge voltage suppressor (Non-polar type)

**Coil specifications**
- Standard
- T: With power saving circuit
  - <24 V, 12 VDC only>

**Manual override**
- Non-locking push type
- D: Push-turn locking slotted type
- E: Push-turn locking lever type

**Thread type**
- - F: Without bracket
- - G: With bracket
- - N: NPT
- - T: NPTF

**Body ported**
- SYJ7 1 2 0 5 M 01 Q

**Base mounted**
- SYJ7 2 4 0 5 M

**Electrical entry**

<table>
<thead>
<tr>
<th>Grommet</th>
<th>L plug connector</th>
<th>M plug connector</th>
<th>DIN terminal</th>
<th>M8 connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>G: Lead wire length 300 mm</td>
<td>L: With lead wire (Length 300 mm)</td>
<td>M: With lead wire (Length 300 mm)</td>
<td>D: With connector</td>
<td>WO: Without connector cable</td>
</tr>
<tr>
<td>H: Lead wire length 600 mm</td>
<td>LN: Without lead wire</td>
<td>LO: Without connector</td>
<td>DO: Without connector</td>
<td>WC: With connector cable (Note 1)</td>
</tr>
</tbody>
</table>

**Note**
- LN, MN type: with 2 sockets.
- DIN terminal type “Y” which conforms to EN-175301-803C (former DIN43650C) is also available. For details, refer to page 79.
- For connector cable of M8 connector, refer to back page 10.
- Connector M8 type “WA” conforming to IEC 60947-5-2 standard is also available. For details, see page 80.

**Bracket**
- Without bracket
- F: With bracket

**Body option**
- B: Pilot valve individual exhaust for the pilot valve
- R port: P, E port
- 3: Common exhaust type for main and pilot valve

**Coil specifications**
- Standard
- T: With power saving circuit
  - <24 V, 12 VDC only>

**Manual override**
- Non-locking push type
- D: Push-turn locking slotted type
- E: Push-turn locking lever type

**Thread type**
- - F: Without bracket
- - G: With bracket
- - N: NPT
- - T: NPTF

**Port size**
- Without sub-plate
- 01: 1/8 With sub-plate
- 02: 1/4 With sub-plate

**Brackets**
- Without bracket
- F: With bracket

**Note**
- Do not remove the factory installed bracket from models with the bracket option. Removal of the bracket will cause the valve to leak. Brackets cannot be retrofitted.

**AC specification is only available with D, DO type.**

**Coil specifications**
- Standard
- T: With power saving circuit
  - <24 V, 12 VDC only>
**Construction**

**2 position single**

![Diagram of 2 position single]

**2 position double**

![Diagram of 2 position double]

**3 position closed center/exhaust center/pressure center**

![Diagram of 3 position center]

**Component Parts**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Aluminum die-casted</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Piston plate</td>
<td>Resin</td>
<td>White</td>
</tr>
<tr>
<td>3</td>
<td>End cover</td>
<td>Aluminum die-casted</td>
<td>White</td>
</tr>
<tr>
<td>4</td>
<td>Piston</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Spool valve assembly</td>
<td>Aluminum, H-NBR</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Spool spring</td>
<td>Stainless steel</td>
<td></td>
</tr>
</tbody>
</table>

**Replacement Parts**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>No.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Sub-plate</td>
<td>1/8</td>
<td>Aluminum</td>
</tr>
<tr>
<td>8</td>
<td>Pilot valve</td>
<td>1/4</td>
<td>Die-casted</td>
</tr>
</tbody>
</table>

**How to Order Pilot Valve Assembly**

**V111**

- **Coil specifications**
  - T: Standard
  - Power saving circuit (24, 12 VDC only)
- **Rated voltage**
  - 5: 24 VDC
  - 6: 12 VDC
  - 5: 5 VDC
  - R: 3 VDC

**Light/surge voltage suppressor**

- Without light/surge voltage suppressor
- With surge voltage suppressor
- With light/surge voltage suppressor
- With surge voltage suppressor (Non-polar type)
- With light/surge voltage suppressor (Non-polar type)

**Electrical entry**

- G: Grommet, 300 mm lead wire
- H: Grommet, 600 mm lead wire
- L: With lead wire
- LN: Without lead wire
- LO: Without connector
- M: With lead wire
- MN: Without lead wire
- MO: Without connector
- W: Without connector cable
- MO: Without connector cable

**V115**

- **Coil specifications**
  - S: Standard
  - Power saving circuit is not available in the case of W3 type.
- **Rated voltage**
  - 5: 24 VDC
  - 6: 12 VDC
  - 1: 100 VAC 50/60 Hz
  - 2: 200 VAC 50/60 Hz
  - 3: 110 V AC 50/60 Hz
  - 4: 220 VAC 50/60 Hz
- **Light/surge voltage suppressor**
  - With surge voltage suppressor (Non-polar type)
  - With light/surge voltage suppressor (Non-polar type)

**Electrical entry**

- D: DIN terminal With connector
- DO: Without connector

**Note**

- Do not replace V111 (G, H, L, M, W) to V115 (DIN terminal) and vice versa when replacing pilot valve assembly only.
Series SYJ7000

How to Order Connector Assembly for L/M Plug Connector

For DC: SY100-30-4A-
Without lead wire: SY100-30-A
(with connector and 2 of sockets only)

<table>
<thead>
<tr>
<th>Lead wire length</th>
<th>300 mm</th>
<th>600 mm</th>
<th>1000 mm</th>
<th>1500 mm</th>
<th>2000 mm</th>
<th>2500 mm</th>
<th>3000 mm</th>
<th>5000 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How to Order M8 Connector Cable

V100-49-1-

<table>
<thead>
<tr>
<th>Cable length</th>
<th>300 mm</th>
<th>500 mm</th>
<th>1000 mm</th>
<th>2000 mm</th>
<th>5000 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2 Position Single

Grommet (G), (H): SYJ7120-□□□□□□-01□□-Q

With bracket:
SYJ7120-□□□□□□-01-F-Q

L plug connector (L):
SYJ7120-□□□□□□-01□□-Q

M plug connector (M):
SYJ7120-□□□□□□-01□□-Q

DIN terminal (D):
SYJ7120-□□□□□□-01□□-Q

M8 connector (WO):
SYJ7120-□□□□□□-01□□-Q

Refer to back page 11 for dimensions with connector cable.
Series SYJ7000

2 Position Double

Grommet (G), (H): SYJ7220-G□□-01□-Q

Built-in one-touch fitting:
SYJ7220-G□□□-□□□□□□□□□-Q

One-touch fitting
(A, B port)
Applicable tubing O.D.: ø6, ø1/4" : ø8, ø5/16"

L plug connector (L): SYJ7220-L□□-01□-Q
M plug connector (M): SYJ7220-M□□-01□-Q
DIN terminal (D): SYJ7220-D□□-01□-Q
M8 connector (WO): SYJ7220-□WO□□□□□□□-Q

Refer to back page 11 for dimensions with connector cable.
3 Position Closed Center/Exhaust Center/Pressure Center

Grommet (G), (H): SYJ7 \( \frac{3}{2} \) 20-□□□-01□-Q

Built-in one-touch fitting:
SYJ7 \( \frac{3}{2} \) 20-□□□-□□□, □□□-□□□-□-Q

L plug connector (L): SYJ7 \( \frac{3}{2} \) 20-□□□-01□-Q

M plug connector (M): SYJ7 \( \frac{3}{2} \) 20-□□□-01□-Q

DIN terminal (D): SYJ7 \( \frac{3}{2} \) 20-□□□-01□-Q

M8 connector (WO): SYJ7 \( \frac{3}{2} \) 20-□□□-01□-Q

Refer to back page 11 for dimensions with connector cable.
Series SYJ7000

2 Position Single

Grommet (G), (H): SYJ7140-L□□-□□□□□-Q

With interface regulator

G: Approx. 300
H: Approx. 600
(Lead wire length)

Manual override

2-Ø4.3
(For mounting)

(W1, R1 port)

(B, A port)

(Applicable cable O.D. Ø3.5 to Ø7
Max. 4.3)

Approx. 300
(Lead wire length)

Refer to back page 11 for dimensions with connector cable.
2 Position Double

Grommet (G), (H): SYJ7240-□□□-□□□-Q

With interface regulator

L plug connector (L): SYJ7240-□□□-□□□-Q
M plug connector (M): SYJ7240-□□□-□□□-Q
DIN terminal (D): SYJ7240-□□□-□□□-Q
M8 connector (WO): SYJ7240-□□□-□□□-Q

Refer to back page 11 for dimensions with connector cable.
Series SYJ7000

3 Position Closed Center/Exhaust Center/Pressure Center

Grommet (G), (H): SYJ7\(\frac{3}{5}\) 40-□□□□□□□□□-Q

With interface regulator

L plug connector (L): SYJ7\(\frac{3}{5}\) 40-□L□□□□□□□□□-Q

M plug connector (M): SYJ7\(\frac{3}{5}\) 40-□M□□□□□□□□□-Q

DIN terminal (D): SYJ7\(\frac{3}{5}\) 40-□D□□□□□□□□□-Q

M8 connector (WO): SYJ7\(\frac{3}{5}\) 40-□WO□□□□□□□□□-Q

Refer to back page 11 for dimensions with connector cable.
Series SYJ7000

Manifold Specifications

Manifold Standard

<table>
<thead>
<tr>
<th>Model</th>
<th>Type 20</th>
<th>Type 21</th>
<th>Type 40</th>
<th>Type 20</th>
<th>Type 42</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manifold type</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P (SUP), R (EXH)</td>
<td>Single base/B mount</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valve stations</td>
<td>2 to 15 stations</td>
<td>2 to 20 stations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td>P, R port</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direction</td>
<td>A, B port</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Port size</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Porting specifications</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Port size</td>
<td>1/8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base mounted</td>
<td>C6 (One-touch fitting for ø6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Side</td>
<td>C8 (One-touch fitting for ø8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Flow Characteristics

<table>
<thead>
<tr>
<th>Manifold</th>
<th>Flow characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type SSYJ7-20</td>
<td>1/2→4/2 (P→A/B)</td>
</tr>
<tr>
<td>1/8</td>
<td>1/8</td>
</tr>
<tr>
<td>Type SSYJ7-21</td>
<td>SYJ7/2</td>
</tr>
<tr>
<td>1/8</td>
<td>C6</td>
</tr>
<tr>
<td>1/8</td>
<td>C8</td>
</tr>
<tr>
<td>1/4</td>
<td>1/8</td>
</tr>
<tr>
<td>1/4</td>
<td>C6</td>
</tr>
<tr>
<td>1/4</td>
<td>C8</td>
</tr>
</tbody>
</table>

Note) Value at manifold base mounted, 2 position single operating

* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream of 0.6MPa (relative pressure) and a differential pressure of 0.1MPa.

How to Order Manifold (Example)

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

Example:
* SSYSYJ7-20-03-Q 1 pc. (Manifold base)
  * SYJ7120-5G-01-Q 2 pcs. (Valve)
  * SYJ7000-21-1A-Q 1 pc. (Blanking plate assembly)

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

- Multiple valve wiring is simplified through the use of the flat cable connector.
- Clean appearance

In the case of a flat ribbon cable type, each valve is wired on the print board of manifold base to allow the external wiring to be piped all together with 26 pins MIL connector.

Flat Ribbon Cable Manifold Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Type 21P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manifold type</td>
<td>Single base/B mount</td>
</tr>
<tr>
<td>P (SUP), R (EXH)</td>
<td>Common SUP, Common EXH</td>
</tr>
<tr>
<td>Valve stations</td>
<td>3 to 12 stations</td>
</tr>
<tr>
<td>A, B port location</td>
<td>Valve</td>
</tr>
<tr>
<td>Port size</td>
<td>P, R port 1/4</td>
</tr>
<tr>
<td></td>
<td>A, B port 1/8, C6, C8</td>
</tr>
<tr>
<td>Applicable flat ribbon cable connector</td>
<td>Socket: 26 pins MIL type with strain relief (MIL-C-83503)</td>
</tr>
<tr>
<td>Internal wiring</td>
<td>In common between +COM and -COM (Z type: +COM only).</td>
</tr>
<tr>
<td>Rated voltage</td>
<td>24, 12 VDC</td>
</tr>
</tbody>
</table>

Note 1) The value is for manifold base and individually operated 2 position type.
Note 2) The withstand voltage specification for the wiring unit section is JIS C 0704, Grade 1 or its equivalent.

Flow Characteristics

<table>
<thead>
<tr>
<th>Manifold</th>
<th>Port size</th>
<th>Flow characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type SS5YJ7-21P-01</td>
<td>1/4, 1/8</td>
<td>C = 2.1 b = 0.36 c = 0.55</td>
</tr>
<tr>
<td>Type SS5YJ7-21P-02</td>
<td>1/4, C6</td>
<td>1.4 b = 0.32 c = 0.36</td>
</tr>
<tr>
<td>Type SS5YJ7-21P-03</td>
<td>1/4, C8</td>
<td>1.8 b = 0.37 c = 0.50</td>
</tr>
</tbody>
</table>

Note) Value at manifold base mounted, 2 position single operating
* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream of 0.6MPa (relative pressure) and a differential pressure of 0.1MPa.

How to Order Manifold (Example)

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

Example:
- SS5YJ7-21P-07-Q — 1 pc. (Manifold base)
- SYJ7123-SLOU-C6-Q — 3 pcs. (Valve)
- SYJ7223-SLOU-C8-Q — 3 pcs. (Valve)
- SYJ7000-21-3A-Q — 1 pc. (Blanking plate assembly)
- SY3000-37-3A — 3 pcs. (Connector assembly)
- SY3000-37-4A — 3 pcs. (Connector assembly)

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

How to Order Valve

For DC

- SYJ7
- Type of actuation
  1. 2 position single
  2. 2 position double
  3. 3 position closed center
  4. 3 position exhaust center
  5. 3 position pressure center
- Rated voltage
  5. 24 VDC
  6. 12 VDC
- Light/surge voltage suppressor
  Z With light/surge voltage suppressor
  U With light/surge voltage suppressor (Non-polar type)
- Manual override
  - Non-locking push type
  - Push-turn locking slotted type
  - Push-turn locking lever type

How to Order Connector Assembly

For 12, 24 VDC

- Single solenoid SY3000-37-3A
- Double solenoid, 3 position type SY3000-37-4A
- Single solenoid, individual SUP, EXH spacer SY3000-37-3A
- Double solenoid, 3 position individual SUP/EXH spacer SY3000-37-6A
- Interface regulator for single solenoid SY3000-37-3A
- Double solenoid, 3 position interface regulator SY3000-37-6A
- 3 port adaptor plate SY3000-37-3A

How to Order Manifold (Example)

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

Example:
- SS5YJ7-21P-07-Q — 1 pc. (Manifold base)
- SYJ7123-SLOU-C6-Q — 3 pcs. (Valve)
- SYJ7223-SLOU-C8-Q — 3 pcs. (Valve)
- SYJ7000-21-3A-Q — 1 pc. (Blanking plate assembly)
- SY3000-37-3A — 3 pcs. (Connector assembly)
- SY3000-37-4A — 3 pcs. (Connector assembly)

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

How to Order Valve

For DC

- SYJ7
- Type of actuation
  1. 2 position single
  2. 2 position double
  3. 3 position closed center
  4. 3 position exhaust center
  5. 3 position pressure center
- Rated voltage
  5. 24 VDC
  6. 12 VDC
- Light/surge voltage suppressor
  Z With light/surge voltage suppressor
  U With light/surge voltage suppressor (Non-polar type)
- Manual override
  - Non-locking push type
  - Push-turn locking slotted type
  - Push-turn locking lever type

How to Order Connector Assembly

For 12, 24 VDC

- Single solenoid SY3000-37-3A
- Double solenoid, 3 position type SY3000-37-4A
- Single solenoid, individual SUP, EXH spacer SY3000-37-3A
- Double solenoid, 3 position individual SUP/EXH spacer SY3000-37-6A
- Interface regulator for single solenoid SY3000-37-3A
- Double solenoid, 3 position interface regulator SY3000-37-6A
- 3 port adaptor plate SY3000-37-3A

59
Manifold Standard
/Common SUP/Common EXH

Type 20 (5 Port/Body ported)
A, B port

P port
1/8
R port
1/8

How to Order
SSYJ7–20–05–Q

Stations
02 2 stations
15 15 stations

Note) For more than 6 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Applicable solenoid valve
SYJ7□20–□□□□□□□□□□□

Applicable blanking plate assembly
SYJ7000-21-1A-1-Q

Applicable individual EXH spacer assembly
SYJ7000-17-1A-Q

Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 21 (5 Port/Body ported)
A, B port

P port
1/4
R port
1/4

How to Order
SSYJ7–21–05–Q

Stations
02 2 stations
20 20 stations

Note) For more than 6 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Applicable solenoid valve
SYJ7□21–□□□□□□□□□□□

Applicable blanking plate assembly
SYJ7000-21-1A-1-Q

Applicable individual EXH spacer assembly
SYJ7000-17-1A-Q

Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 40 (5 Port/Base mounted)
A, B port

P port
1/4
R port
1/4

How to Order
SSYJ7–40–05–01–Q

Stations
02 2 stations
01 1/8
20 20 stations

Applicable solenoid valve
SYJ7□40–□□□□□□□□□□□

Applicable blanking plate assembly
SYJ7000-21-1A-2-Q

Applicable individual EXH spacer assembly
SYJ7000-17-2A-Q

Applicable individual SUP spacer assembly
SYJ7000-16-2A-Q

Note) For more than 8 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 41 (5 Port/Base mounted)
A, B port

P port
1/4
R port
1/4

How to Order
SSYJ7–41–05–01–Q

Stations
02 2 stations
01 1/8
20 20 stations

Applicable solenoid valve
SYJ7□43–□□□□□□□□□□□

Applicable blanking plate assembly
SYJ7000-21-1A-2-Q

Applicable individual EXH spacer assembly
SYJ7000-17-2A-Q

Applicable individual SUP spacer assembly
SYJ7000-16-2A-Q

Note) For more than 8 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Type 42 (5 Port/Base mounted)
A, B port

P port
1/4
R port
1/4

How to Order
SSYJ7–42–05–C6–Q

Stations
02 2 stations
01 1/8
20 20 stations

Applicable solenoid valve
SYJ7□42–□□□□□□□□□□□

Applicable blanking plate assembly
SYJ7000-21-1A-2-Q

Applicable individual EXH spacer assembly
SYJ7000-17-2A-Q

Applicable individual SUP spacer assembly
SYJ7000-16-2A-Q

Applicable interface regulator
ARBYJ7000-00-P-Q

Note) For more than 8 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Flat Ribbon Cable Manifold
/Common SUP/Common EXH

Type 21P (5 Port/Body ported)
A, B port

P port
1/4
R port
1/4

How to Order
SSYJ7–21P–05–Q

Stations
03 3 stations
12 12 stations

Note) For more than 10 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Applicable solenoid valve
Refer to page 59.

Applicable blanking plate assembly
SYJ7000-21-3A-Q

Applicable connector assembly
Refer to page 59.
Mix Installation of the SYJ700 and the SYJ7000 Valves on the Same Manifold

- Use of an adapter plate makes it possible to mount Series SYJ700 on the manifold bases of Series SYJ7000.
- When mounting the SYJ700 valve on the SYJ7000 manifold, the SYJ700 solenoid must be positioned on the same side of the manifold as a single solenoid SYJ700. (Refer to the figure below.)
- For base mounted style, the A port of the 3 port valve flows out the B port of manifold base.

Adapter plate assembly
SYJ700-3-1A-Q
Adapter plate assembly
SYJ700-3-2A-Q

Blanking Plate Assembly
SYJ700-21-1A-1-Q
SYJ700-21-1A-2-Q

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

Refer to back page 12 prior to handling.
Type 20: Top Proted/SS5YJ7-20- Stations -00□-Q

Grommet (G)

Built-in one-touch fitting

One-touch fitting
(A, B port)
Applicable tubing O.D.: 
ø6, ø1/4"
ø8, ø5/16"

Station 2
59
47
3
78
66
4
97
85
5
116
104
6
135
123
7
154
142
8
173
161
9
192
180
10
211
199
11
230
218
12
249
237
13
268
256
14
287
275
15
306

Station n
L1
L2

Built-in one-touch fitting

(P, R port)

Manual override

(Pitch)
P = 19

Approx. 300
(Lead wire length)

Applicable cable O.D.
ø3.5 to ø7

Approx. 300
(Lead wire length)

Applicable tubing O.D.:
ø6 , ø1/4"
ø8 , ø5/16"

Approx. 300
(Lead wire length)

Approx. 300
(Lead wire length)

Approx. 300
(Lead wire length)

Refer to back page 11 for dimensions with connector cable.

<table>
<thead>
<tr>
<th>Station n</th>
<th>Station 2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>59</td>
<td>78</td>
<td>97</td>
<td>116</td>
<td>135</td>
<td>154</td>
<td>173</td>
<td>192</td>
<td>211</td>
<td>230</td>
<td>249</td>
<td>268</td>
<td>287</td>
<td>306</td>
</tr>
<tr>
<td>L2</td>
<td>47</td>
<td>66</td>
<td>85</td>
<td>104</td>
<td>123</td>
<td>142</td>
<td>161</td>
<td>180</td>
<td>199</td>
<td>218</td>
<td>237</td>
<td>256</td>
<td>275</td>
<td>294</td>
</tr>
</tbody>
</table>
Series SYJ7000

Type 21: Top Ported/SS5YJ7-21- Stations (-00□)-Q

Grommet (G)

Built-in one-touch fitting

One-touch fitting
(A, B port)
Applicable tubing O.D.:
ø6, ø1/4"
ø8, 5/16"

Manual override
(A, B port)

L plug connector (L)  M plug connector (M)  DIN terminal (D)  M8 connector (WO)

Refer to back page 11 for dimensions with connector cable.

<table>
<thead>
<tr>
<th>Station n</th>
<th>Station 2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>Station 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>66</td>
<td>85</td>
<td>104</td>
<td>123</td>
<td>142</td>
<td>161</td>
<td>180</td>
<td>199</td>
<td>218</td>
<td>237</td>
<td>256</td>
<td>275</td>
<td>294</td>
<td>313</td>
<td>332</td>
<td>351</td>
<td>370</td>
<td>399</td>
<td>408</td>
</tr>
<tr>
<td>L2</td>
<td>46</td>
<td>65</td>
<td>84</td>
<td>103</td>
<td>122</td>
<td>141</td>
<td>160</td>
<td>179</td>
<td>198</td>
<td>217</td>
<td>236</td>
<td>255</td>
<td>274</td>
<td>293</td>
<td>312</td>
<td>331</td>
<td>350</td>
<td>369</td>
<td>388</td>
</tr>
</tbody>
</table>
Type 40: Bottom Ported/SS5YJ7-40- Stations -01 -Q

Grommet (G)

L plug connector (L)  M plug connector (M)  DIN terminal (D)  M8 connector (WO)

Refer to back page 11 for dimensions with connector cable.
Series SYJ7000

Type 41: Side Ported/SS5YJ7-41-Stations-01-Q

Grommet (G)

(Light/surge voltage suppressor)

Station 2

Approx. 300

(Pitch)

1/8

(P, R port)

Approx. 300

(Light wire length)

(Pitch)

For mounting

Manual override

L plug connector (L)  M plug connector (M)  DIN terminal (D)  M8 connector (WO)

Approx. 300

(Lead wire length)

Approx. 300

(Applicable cable O.D. ø3.5 to ø7)

Refer to back page 11 for dimensions with connector cable.

<table>
<thead>
<tr>
<th>Station n</th>
<th>Station 2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>Station 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>78</td>
<td>98</td>
<td>118</td>
<td>138</td>
<td>158</td>
<td>178</td>
<td>198</td>
<td>218</td>
<td>238</td>
<td>258</td>
<td>278</td>
<td>298</td>
<td>318</td>
<td>338</td>
<td>358</td>
<td>378</td>
<td>398</td>
<td>418</td>
<td>438</td>
</tr>
<tr>
<td>L2</td>
<td>50</td>
<td>70</td>
<td>90</td>
<td>110</td>
<td>130</td>
<td>150</td>
<td>170</td>
<td>190</td>
<td>210</td>
<td>230</td>
<td>250</td>
<td>270</td>
<td>290</td>
<td>310</td>
<td>330</td>
<td>350</td>
<td>370</td>
<td>390</td>
<td>410</td>
</tr>
</tbody>
</table>
Type 42: Side Ported/SS5YJ7-42 Stations -

Grommet (G)

(Light/surge voltage suppressor)

One-touch fitting

(Pitch) $P = 19$

(Applicable tubing O.D.: \(\phi 6, \phi 1/4''\), \(\phi 8, \phi 5/16''\))

M8 connector (WO)

Refer to back page 11 for dimensions with connector cable.

<table>
<thead>
<tr>
<th>Station n</th>
<th>Station 2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>Station 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>77</td>
<td>96</td>
<td>115</td>
<td>134</td>
<td>153</td>
<td>172</td>
<td>191</td>
<td>210</td>
<td>229</td>
<td>248</td>
<td>267</td>
<td>286</td>
<td>305</td>
<td>324</td>
<td>343</td>
<td>362</td>
<td>381</td>
<td>400</td>
<td>419</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>
<td>220</td>
<td>239</td>
<td>258</td>
<td>277</td>
<td>296</td>
<td>315</td>
<td>334</td>
<td>353</td>
<td>372</td>
<td>391</td>
</tr>
</tbody>
</table>
**Series SYJ7000**

**Flat Ribbon Cable Manifold**

SS5YJ7-21P-[Stations](-00□)-Q

---

### Table: Dimensions

<table>
<thead>
<tr>
<th>Station</th>
<th>Station 3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>Station 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>88</td>
<td>108.5</td>
<td>129</td>
<td>149.5</td>
<td>170</td>
<td>190.5</td>
<td>211</td>
<td>231.5</td>
<td>252</td>
<td>272.5</td>
</tr>
<tr>
<td>L2</td>
<td>68</td>
<td>88.5</td>
<td>109</td>
<td>129.5</td>
<td>150</td>
<td>170.5</td>
<td>191</td>
<td>211.5</td>
<td>232</td>
<td>252.5</td>
</tr>
</tbody>
</table>

---

- For built-in one-touch fitting
- Applicable connector: 26 pins MIL type
  (Conforming to MIL-C-83503)
- One-touch fitting
  (A, B port)
  Applicable tubing O.D.: ø6, ø1/4”, ø8, ø5/16”

---

For built-in one-touch fitting
How to Order

**Body ported**

SYJA3 1 20 – M3 –

**Base mounted (4 port)**

SYJA3 2 30  (Manifold use only)

**Base mounted (5 port)**

SYJA3 2 40 –

**JIS Symbol**

5 port 4 port

2 position single 2 position single

2 position double 2 position double

3 position closed center 3 position closed center

3 position exhaust center 3 position exhaust center

3 position pressure center 3 position pressure center

**Type of actuation**

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

**Port size**

- Without sub-plate
  - M5 port
- With sub-plate

**How to Order Manifold Base**

Same manifolds as series SYJ3000 are prepared.

SSSYJA3 Fill the same as SSSYJ3

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

(Example)

SSSYJA3-41-03-M5 1 pc.

SYJA3140 1 pc.

SYJA3240 1 pc.

SYJ3000-21-2A 1 pc.

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

**Caution**

Refer to back page 1 through to 5 for Safety Instructions and Common Precautions.
## Specifications

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating pressure range (MPa)</td>
<td>0.15 to 0.7</td>
</tr>
<tr>
<td>2 position single</td>
<td>2 position double</td>
</tr>
<tr>
<td>2 position double</td>
<td>-100 kPa to 0.7</td>
</tr>
<tr>
<td>3 position</td>
<td>3 position</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pilot pressure range (MPa)</th>
<th>Operating pressure to 0.7</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 position single</td>
<td>2 position double</td>
</tr>
<tr>
<td>2 position double</td>
<td>-</td>
</tr>
</tbody>
</table>

### Ambient and fluid temperature (°C)
-10 to 50 (No freezing. Refer to back page 3.)

### Lubrication
Not required

### Mounting orientation
Unrestricted

### Impact/Vibration resistance (m/s²)
300/50

---

**Flow Characteristics/Weight**

### With Bracket
**Air operated valve**
SYJA3×20-M3-F

The mounting bracket for the 2 position double solenoid and 3 position is supplied unattached.

---

### Pilot Pressure Range (Single pilot)

---

### Fluid Characteristics/Weight

<table>
<thead>
<tr>
<th>Valve model</th>
<th>Type of actuation</th>
<th>Port size</th>
<th>Pilot port size</th>
<th>Weight (g)</th>
<th>Effective area [mm²]</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 Port Base mounted (with sub-plate)</td>
<td>2 position</td>
<td>Single</td>
<td>M5</td>
<td>48 (22)</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td>–</td>
<td>51 (25)</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Closed center</td>
<td>M3</td>
<td>54 (28)</td>
<td>0.46</td>
</tr>
<tr>
<td></td>
<td>Exhaust center</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pressure center</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>2 position</td>
<td>Single</td>
<td>–</td>
<td>22</td>
<td>0.32</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td>–</td>
<td>25</td>
<td>0.33</td>
<td></td>
</tr>
<tr>
<td>3 position</td>
<td>Closed center</td>
<td>–</td>
<td>28</td>
<td>0.33</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exhaust center</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pressure center</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
</tbody>
</table>

**Flow characteristics**

<table>
<thead>
<tr>
<th>Fluid</th>
<th>1→4/2 (P→A/B)</th>
<th>4/2→5/3 (A/B→EA/EB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q [l/min (ANR)]</td>
<td>C [dm³/(l•bar)]</td>
<td>b</td>
</tr>
<tr>
<td>[l•bar)]</td>
<td>[l•bar)]</td>
<td>[l•bar)]</td>
</tr>
<tr>
<td>Air</td>
<td>0.46</td>
<td>0.12</td>
</tr>
<tr>
<td></td>
<td>0.47</td>
<td>0.12</td>
</tr>
<tr>
<td></td>
<td>0.36</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>0.58</td>
<td>0.16</td>
</tr>
</tbody>
</table>

Note 1) Value when used on a manifold. Refer to page 69 for details.
Note 2) [ ] denotes normal position.
Note 3) ( ) Without sub-plate.
Note 4) 5 port, base mounted without sub-plate: SYJA3×40

* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream of 0.6MPa (relative pressure) and a differential pressure of 0.1MPa.
4/5 Port Air Operated Valve

Series SYJA5000

How to Order

A, B port size
- M5
- M5
- C4
- One-touch fitting for ø4
- C6
- One-touch fitting for ø6

Bracket
- Without bracket
- F With bracket

Body ported
SYJA5 1 20 - M5 -

Base mounted
SYJA5 2 40 -

Type of actuation
- Without sub-plate
- 01 With sub-plate

Port size
- 1/8

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

JIS Symbol

Body ported

2 position single
- (A)(B)
- (R1)(P)(R2)
- 3 position closed center
- (A)(B)
- (R1)(P)(R2)
- 3 position exhaust center
- (A)(B)
- (R1)(P)(R2)
- 3 position pressure center
- (A)(B)
- (R1)(P)(R2)

Base mounted

2 position single
- (B)(A)
- (R)(P)
- 3 position closed center
- (B)(A)
- (R)(P)
- 3 position exhaust center
- (B)(A)
- (R)(P)
- 3 position pressure center
- (B)(A)
- (R)(P)

How to Order Manifold Base

Same manifolds as series SYJ5000 are prepared.

SS5YJA5 - Fill the same as SSSYJ5.

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

Ex.)
SS5YJA5-42-03-01 - 1 set
* SYJA5140 - 1 set
* SYJA5240 - 1 set
* SYJ5000-21-1A - 1 set

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

Caution
- Refer to back page 1 through to 5 for Safety Instructions and Common Precautions.
### Specifications

<table>
<thead>
<tr>
<th>Valve model</th>
<th>Type of actuation</th>
<th>Port size</th>
<th>Flow characteristics [Note 1]</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYJA5/L50132-20-M5</td>
<td>2 position single</td>
<td>M5</td>
<td>0.47 0.41 0.13 129 0.47 0.41 0.13 129</td>
<td>45</td>
</tr>
<tr>
<td>SYJA5/L50132-20-C4</td>
<td>2 position single</td>
<td>M5</td>
<td>0.69 0.39 0.18 186 0.44 0.39 0.12 119</td>
<td>52</td>
</tr>
<tr>
<td>SYJA5/L50132-20-C6</td>
<td>2 position single</td>
<td>M5</td>
<td>0.70 0.36 0.19 185 0.47 0.40 0.12 128</td>
<td>52</td>
</tr>
<tr>
<td>SYJA5/L50478-01</td>
<td>2 position single</td>
<td>1/8</td>
<td>0.79 0.21 0.19 190 0.83 0.32 0.21 214</td>
<td>79 (45)</td>
</tr>
</tbody>
</table>

[Note 1] In case of single type, be certain that pressure within operating pressure range be supplied to supply port, because return pressure is introduced from supply port (P) for activation.

### Flow Charactersitics/Weight

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Operating pressure range (MPa)</th>
<th>Pilot pressure range (MPa)</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air</td>
<td>0.15 to 0.7</td>
<td>(0.4 x P+0.1) to 0.7</td>
<td>45</td>
</tr>
</tbody>
</table>

### With Bracket

Air operated valve SYJA5120-M5-F

The mounting bracket is supplied unattached.

---

**Flow Characteristics**

<table>
<thead>
<tr>
<th>Valve model</th>
<th>Type of actuation</th>
<th>Port size</th>
<th>Flow characteristics [Note 1]</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYJA5/L50132-20-M5</td>
<td>2 position single</td>
<td>M5</td>
<td>0.47 0.41 0.13 129 0.47 0.41 0.13 129</td>
<td>45</td>
</tr>
<tr>
<td>SYJA5/L50132-20-C4</td>
<td>2 position single</td>
<td>M5</td>
<td>0.69 0.39 0.18 186 0.44 0.39 0.12 119</td>
<td>52</td>
</tr>
<tr>
<td>SYJA5/L50132-20-C6</td>
<td>2 position single</td>
<td>M5</td>
<td>0.70 0.36 0.19 185 0.47 0.40 0.12 128</td>
<td>52</td>
</tr>
<tr>
<td>SYJA5/L50478-01</td>
<td>2 position single</td>
<td>1/8</td>
<td>0.79 0.21 0.19 190 0.83 0.32 0.21 214</td>
<td>79 (45)</td>
</tr>
</tbody>
</table>

[Note 1] [ ] denotes normal position.

[Note 2] ( ) Without sub-plate.

[Note 3] Model No. for 5 port base mounted style without sub-plate is SYJA5/L50478-01.

*These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream of 0.6MPa (relative pressure) and a differential pressure of 0.1MPa.
Dimensions/Body Ported

2 position single: SYJA5120-M5(-F)

Dimensions/Base Mounted

2 position single: SYJA5140-01□

2 position double: SYJA5220-M5

2 position double: SYJA5240-01□

3 position closed center/exhaust center/pressure center SYJA5 20-M5

3 position closed center/exhaust center/pressure center SYJA5 40-01□
4/5 Port Air Operated Valve

Series SYJA7000

How to Order

A, B port size
- 01: 1/8
- C6: One-touch fitting for ø6
- C8: One-touch fitting for ø8

Bracket
- Without bracket
- F: With bracket

Body ported

SYJA7 1 20 - 01 -

Base mounted

SYJA7 2 40 -

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

Port size
- Without sub-plate
- 01: 1/8
- With sub-plate
- 02: 1/4

Thread type
- F: Rc
- G: N
- NPT: T

JIS Symbol

Body ported
2 position single
(A)(B)
- 4 2
(R1)(P)(R2)
3 position closed center
(A)(B)
- 4 2
(R1)(P)(R2)
3 position pressure center
(A)(B)
- 4 2
(R1)(P)(R2)

Base mounted
2 position single
(B)(A)
- 2 4
(R2)(P)(R1)
3 position closed center
(B)(A)
- 2 4
(R2)(P)(R1)
3 position pressure center
(B)(A)
- 2 4
(R2)(P)(R1)

How to Order Manifold Base

Same manifolds as series SYJ7000 are prepared.

SS5YJA7 - Fill the same as SSSYJ7.

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

(Ex.)

SS5YJA7-41-03-01 1 pc.
* SYJA7140 1 pc.
* SYJA7240 1 pc.
* SYJ7000-21-1A 1 pc.

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

Caution

Refer to back page 1 through to 5 for Safety Instructions and Common Precautions.
With Bracket

Air operated valve

Series SYJA7000

Specifications

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating pressure range (MPa)</td>
<td></td>
</tr>
<tr>
<td>2 position single</td>
<td>0.15 to 0.7</td>
</tr>
<tr>
<td>2 position double</td>
<td>-100 kPa to 0.7</td>
</tr>
<tr>
<td>3 position</td>
<td>-100 kPa to 0.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pilot pressure range (MPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 position single</td>
</tr>
<tr>
<td>(0.4 x P+0.1) to 0.7 P: Operating pressure</td>
</tr>
<tr>
<td>2 position double</td>
</tr>
<tr>
<td>3 position</td>
</tr>
</tbody>
</table>

Ambient and fluid temperature (°C) -10 to 50 (No freezing. Refer to back page 3.)

Lubrication

Mounting orientation Unrestricted

Impact/Vibration resistance (m/s²) (Note 2) 300/50

Note 1) In case of single type, be certain that pressure within operating pressure range be supplied to supply port, because return pressure is introduced from supply port (1(P)) for activation.

Note 2) Impact resistance: No malfunction resulted from the impact test using a drop impact tester.

Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000 Hz.

The test was performed on the axis and right angle directions of the main valve, when pilot signal is ON and OFF. (Value in the initial state)

Test was performed to axis and right angle directions of the main valve when pilot signal is ON and OFF. (Value in the initial state)

Pilot Pressure Range (Single pilot)

With Bracket

As a bracket is designed for a body, be sure that a bracket is attached when ordering and operating.
# Flow Characteristics/Weight

<table>
<thead>
<tr>
<th>Valve model</th>
<th>Type of actuation</th>
<th>Port size</th>
<th>Flow characteristics (Note 2)</th>
<th>Pilot port size</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1→4/2 (P→A/B)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>C [dm³/min]</td>
<td>b</td>
<td>A-Cv</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYJA7□20-01</td>
<td>2 position</td>
<td>Single</td>
<td>2.2</td>
<td>0.36</td>
<td>0.58</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Double</td>
<td>1.8</td>
<td>0.37</td>
<td>0.45</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Closed</td>
<td>1.2</td>
<td>0.50</td>
<td>0.34</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Center</td>
<td>3.0</td>
<td>0.37</td>
<td>0.78</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 position</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 position</td>
<td>Single</td>
<td>1.6</td>
<td>0.33</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Double</td>
<td>1.4</td>
<td>0.27</td>
<td>0.35</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Closed</td>
<td>1.1</td>
<td>0.37</td>
<td>0.27</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Center</td>
<td>1.8</td>
<td>0.36</td>
<td>0.45</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 position</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 position</td>
<td>Single</td>
<td>2.0</td>
<td>0.39</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Double</td>
<td>1.7</td>
<td>0.35</td>
<td>0.42</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Closed</td>
<td>1.2</td>
<td>0.38</td>
<td>0.33</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Center</td>
<td>1.9</td>
<td>0.57</td>
<td>0.59</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 position</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 position</td>
<td>Single</td>
<td>2.3</td>
<td>0.45</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Double</td>
<td>1.9</td>
<td>0.36</td>
<td>0.48</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Closed</td>
<td>1.2</td>
<td>0.48</td>
<td>0.35</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Center</td>
<td>3.3</td>
<td>0.43</td>
<td>0.78</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 position</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 position</td>
<td>Single</td>
<td>2.3</td>
<td>0.41</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Double</td>
<td>1.9</td>
<td>0.46</td>
<td>0.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Closed</td>
<td>1.3</td>
<td>0.45</td>
<td>0.35</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Center</td>
<td>3.6</td>
<td>0.23</td>
<td>0.84</td>
</tr>
</tbody>
</table>

Note1) P, A, B port: Rc1/8 is R1, R2 port: Rc (PT) 1/4
Note2) []: for normal position
Note3) (): without sub-plate
Note4) Model No. for base mounted style without sub-plate is SYJA40.

* These values have been calculated according to ISO6358 and represent the flow rate measured in standard conditions at an upstream of 0.6MPa (relative pressure) and a differential pressure of 0.1MPa.

![SMC Logo]
**Dimensions/Body Ported**

2 position single: SYJA7120-01\(\square\)(-F)

2 position double: SYJA7220-01\(\square\)

3 position closed center/exhaust center/pressure center SYJA7\(\square\)20-01\(\square\)

**Dimensions/Base Mounted**

2 position single: SYJA7140-\(\square\)\(\square\)

2 position double: SYJA7240-\(\square\)\(\square\)

3 position closed center/exhaust center/pressure center SYJA7\(\square\)40-\(\square\)\(\square\)
Series SYJ5000/7000
Made to Order
(For detailed specifications, delivery and pricing, please contact SMC.)

Body Ported External Pilot

Applicable solenoid valve series  SYJ5\(\square\)20R, SYJ7\(\square\)20R

| SYJ5 7 | 20R | - | - | - | - | X20 | Q |

Entry is the same as standard products.

Operating Pressure Range MPa

<table>
<thead>
<tr>
<th></th>
<th>Operating pressure range</th>
<th>-100 kPa to 0.7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot pressure range</td>
<td>0.15 to 0.7</td>
<td></td>
</tr>
</tbody>
</table>

External Pilot Port

<table>
<thead>
<tr>
<th>Series</th>
<th>Port size</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYJ5000, SYJ7000</td>
<td>M5</td>
</tr>
</tbody>
</table>

Dimensions
SYJ5000: 8 mm  longer in total length.
SYJ7000: 8 mm

JIS Symbol

Body ported

2 position single

2 position double

3 position closed center

3 position exhaust center

3 position pressure center

For detailed specifications, delivery and pricing, please contact SMC.
Series SYJ5000/7000
Made to Order
DIN Connector Conforming to EN-175301-803C (former DIN 43650C)

DIN connector type that conforms to the 8 mm pitch standards between DIN terminals.

How to Order Valve

Type of actuation
1 2 position single solenoid
2 2 position double solenoid
3 3 position closed center
4 3 position exhaust center
5 3 position pressure center

Light/surge voltage suppressor
- Without light/surge voltage suppressor
S With surge voltage suppressor
Z With light/surge voltage suppressor

- For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Bracket
- Without bracket
F With bracket

Note) Do not remove the factory installed bracket from models with the bracket option. Removal of the bracket will cause the valve to leak.

How to Order Pilot Valve Assembly

V115

How to Order Pilot Valve Assembly

DIN Connector Part No.

With light

<table>
<thead>
<tr>
<th>Rated voltage</th>
<th>Voltage symbol</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC 24 VDC</td>
<td>24 VN</td>
<td>SY100-82-3-05</td>
</tr>
<tr>
<td>DC 12 VDC</td>
<td>12 VN</td>
<td>SY100-82-3-06</td>
</tr>
<tr>
<td>AC (50/60 Hz)</td>
<td>100 VN</td>
<td>SY100-82-3-01</td>
</tr>
<tr>
<td>AC (50/60 Hz)</td>
<td>200 VN</td>
<td>SY100-82-3-02</td>
</tr>
<tr>
<td>AC (50/60 Hz)</td>
<td>110 VAC [115 VAC]</td>
<td>SY100-82-3-03</td>
</tr>
<tr>
<td>AC (50/60 Hz)</td>
<td>220 VAC [230 VAC]</td>
<td>SY100-82-3-04</td>
</tr>
</tbody>
</table>

Caution
1. Use caution in wiring because it won't meet the IP65 (enclosure) standard if you use the other cord than prescribed heavy-duty cord of size (ø3.5 to ø7.5). Also be sure to tighten the ground nut and set screw within the specified range of torque.
2. D type DIN connector with 9.4 mm pitch between DIN terminals is not interchangeable.
3. DIN connector except D type has the “N” indication in the end of voltage symbol. In case of DIN connector without light, “N” is not indicated. Please refer to the name plate to distinguish.
4. Dimensions are completely the same as D type connector.
5. When exchanging the pilot valve assembly only, “V115-CD” is interchangeable with “V115-CDY”. Do not replace V114 (G, H, L, M, W) to V115-CDY (DIN terminal), and vice versa.

Note) Do not remove the factory installed bracket from models with the bracket option. Removal of the bracket will cause the valve to leak.

1. Use caution in wiring because it won't meet the IP65 (enclosure) standard if you use the other cord than prescribed heavy-duty cord of size (ø3.5 to ø7.5). Also be sure to tighten the ground nut and set screw within the specified range of torque.
2. D type DIN connector with 9.4 mm pitch between DIN terminals is not interchangeable.
3. DIN connector except D type has the “N” indication in the end of voltage symbol. In case of DIN connector without light, “N” is not indicated. Please refer to the name plate to distinguish.
4. Dimensions are completely the same as D type connector.
5. When exchanging the pilot valve assembly only, “V115-CD” is interchangeable with “V115-CDY”. Do not replace V114 (G, H, L, M, W) to V115-CDY (DIN terminal), and vice versa.

1. Use caution in wiring because it won't meet the IP65 (enclosure) standard if you use the other cord than prescribed heavy-duty cord of size (ø3.5 to ø7.5). Also be sure to tighten the ground nut and set screw within the specified range of torque.
**Series SYJ3000/5000/7000**

Made to Order

M8 Connector Conforming to IEC60947-5-2

M8 Connector type conforming to IEC60947-5-2 standard.

### How to Order Valve

<table>
<thead>
<tr>
<th>Type of actuation</th>
<th>Light/surge voltage suppressor</th>
<th>Bracket</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Without light/surge voltage suppressor</td>
<td>- Without bracket</td>
</tr>
<tr>
<td>2</td>
<td>With surge voltage suppressor</td>
<td>S</td>
</tr>
<tr>
<td>3</td>
<td>With light/surge voltage suppressor (Non-polar type)</td>
<td>F</td>
</tr>
<tr>
<td>4</td>
<td>With surge voltage suppressor (Non-polar type)</td>
<td>R</td>
</tr>
<tr>
<td>5</td>
<td>Without light/surge voltage suppressor</td>
<td>U</td>
</tr>
</tbody>
</table>

#### Body ported (4 port)

| SYJ | 3 | 1 | 2 | 0 | 5 | WAQ | M3 | Q |

#### Base mounted (4 port)

| SYJ | 3 | 2 | 3 | 0 | 5 | WAQ | Q |

#### Base mounted (5 port)

| SYJ | 3 | 2 | 4 | 0 | 5 | WAQ | Q |

**Electrical entry**

- **WAQ**: Without connector cable

**A, B port size**

- M3 (SYJ3000 only)
- M5
- C4 One-touch fitting for 3/4
- C6 One-touch fitting for 3/8
- N3 One-touch fitting for 1/4
- N7 One-touch fitting for 3/32

**Rated voltage**

<table>
<thead>
<tr>
<th>DC</th>
<th>5</th>
<th>24 VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>12 VDC</td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>6 VDC</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>5 VDC</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>3 VDC</td>
<td></td>
</tr>
</tbody>
</table>

**Body option**

- 0: Pilot valve individual exhaust for the pilot valve
- 3: Common exhaust type for main and pilot valve

**Body ported (5 port)**

**Thread type**

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

**Port size**

- Without sub-plate
- M5 SYJ3000
- M5 SYJ3000 SYJ5000
- M5 SYJ5000 SYJ7000

**Manual override**

- Non-locking push type
- D Push-turn locking slotted type
- E Push-turn locking lever type

### How to Order Pilot Valve Assembly

| V115 | 5 | WAQ |

**Rated voltage**

<table>
<thead>
<tr>
<th>DC</th>
<th>5</th>
<th>24 VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>12 VDC</td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>6 VAC</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>5 VAC</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>3 VAC</td>
<td></td>
</tr>
</tbody>
</table>

**Light/surge voltage suppressor**

- Without light/surge voltage suppressor
- With surge voltage suppressor
- With light/surge voltage suppressor (Non-polar type)
- With surge voltage suppressor (Non-polar type)

**Electrical entry**

- **WAQ**: Without connector cable
- **WA**: With connector cable

*Note: WA is for cable length. Please refer to specific Product Precautions 5.*
These safety instructions are intended to prevent a hazardous situation and/or equipment damage. These instructions indicate the level of potential hazard by labels of "Caution", "Warning" or "Danger". To ensure safety, be sure to observe ISO 4414 Note 1), JIS B 8370 Note 2) and other safety practices.

⚠️ **Caution** : Operator error could result in injury or equipment damage.

⚠️ **Warning** : Operator error could result in serious injury or loss of life.

⚠️ **Danger** : In extreme conditions, there is a possible result of serious injury or loss of life.

---

**Warning**

1. **The compatibility of pneumatic equipment is the responsibility of the person who designs the pneumatic system or decides its specifications.**
   Since the products specified here are used in various operating conditions, their compatibility for the specific pneumatic system must be based on specifications or after analysis and/or tests to meet your specific requirements. The expected performance and safety assurance will be the responsibility of the person who has determined the compatibility of the system. This person should continuously review the suitability of all items specified, referring to the latest catalogue information with a view to giving due consideration to any possibility of equipment failure when configuring a system.

2. **Only trained personnel should operate pneumatically operated machinery and equipment.**
   Compressed air can be dangerous if an operator is unfamiliar with it. Assembly, handling or repair of pneumatic systems should be performed by trained and experienced operators.

3. **Do not service machinery/equipment or attempt to remove components until safety is confirmed.**
   - 1. Inspection and maintenance of machinery/equipment should only be performed once measures to prevent falling or runaway of the driver objects have been confirmed.
   - 2. When equipment is to be removed, confirm the safety process as mentioned above. Cut the supply pressure for this equipment and exhaust all residual compressed air in the system.
   - 3. Before machinery/equipment is restarted, take measures to prevent shooting-out of cylinder piston rod, etc.

4. **Contact SMC if the product is to be used in any of the following conditions:**
   - 1. Conditions and environments beyond the given specifications, or if product is used outdoors.
   - 2. Installation on equipment in conjunction with atomic energy, railway, air navigation, vehicles, medical equipment, food and beverages, recreation equipment, emergency stop circuits, clutch and brake circuits in press applications, or safety equipment.
   - 3. An application which has the possibility of having negative effects on people, property, or animals, requiring special safety analysis.

---

Note 1) ISO 4414: Pneumatic fluid power--General rules relating to systems.
Note 2) JIS B 8370: General Rules for Pneumatic Equipment
### Warning

1. **Actuator drive**
   - When an actuator, such as a cylinder, is to be driven using a valve, take appropriate measures to prevent potential danger caused by actuator operation.

2. **Intermediate stopping**
   - When a 3 position closed center valve is used to stop a cylinder at an intermediate position, accurate stopping of the piston in a predetermined position is not possible due to the compressibility of air. Furthermore, since valves and cylinders are not guaranteed for zero air leakage, it may not be possible to hold a stopped position for an extended length of time. Contact SMC if it is necessary to hold a stopped position for an extended time.

3. **Effect of back pressure when using a manifold**
   - Use caution when valves are used on a manifold, as actuator malfunction due to back-pressure may occur. In case of 3 position closed exhaust center valve or single acting cylinder, take appropriate measures to prevent the malfunction using individual EXH interface assembly or individual exhaust manifold.

4. **Holding of pressure (including vacuum)**
   - Since valves are subject to air leakage, they cannot be used for applications such as holding pressure (including vacuum) in a pressure vessel.

5. **Cannot be used as an emergency shut off valve, etc.**
   - The valves presented in this catalogue are not designed for safety applications such as an emergency shut off valve. If the valves are used in this type of system, other reliable safety assurance measures should also be adopted.

6. **Maintenance space**
   - The installation should allow sufficient space for maintenance activities (removal of valve, etc.).

7. **Release of residual pressure**
   - Provide a residual pressure release function for maintenance purpose. Especially in case of 3 position closed center valve, ensure the release of residual pressure between valve and cylinder.

8. **Vacuum applications**
   - When a valve is used for vacuum switching, etc., take measures against the suction of external dust or other contaminants from vacuum pads and exhaust ports, etc. Moreover, an external pilot type valve should be used in this case. Contact SMC in case of an internal pilot type or air operated valve, etc.

9. **About using the double solenoid type**
   - When using the double solenoid type for the first time, actuators may travel in an unexpected direction depending on the switching position of a valve. Implement countermeasures not to occur any danger by the actuator's operation.

10. **Ventilation**
    - When a valve is used inside a sealed control panel, etc., provide ventilation to prevent a pressure increase caused by exhausted air inside the control panel or temperature rise caused by the heat generated by the valve.

### Selection

1. **Confirm the specification**
   - The products presented in this catalogue are designed only for use in compressed air systems (including vacuum). Do not operate at pressures or temperatures, etc., beyond the range of specifications, as this can cause damage or malfunction. (Refer to specifications.)
   - Contact SMC when using a fluid other than compressed air (including vacuum).

2. **Extended periods of continuous energisation**
   - Continuous energisation of the valve for extended periods of time may have an adverse effect on the solenoid valve performance and the peripheral equipment due to temperature rises caused by the heat generation of the coil. Consult with SMC if valves will be continuously energised for extended periods of time or the energised period per day will be longer than the de-energised period. It is also possible to shorten the energisation period by using valves of the N.O. (normally open) type.
   - When solenoid valves are mounted in a control panel, employ measures to radiate excess heat, so that temperatures remain within the valve specification range. Use special caution when three or more stations sequentially aligned on the manifold are continuously energised since this will cause a drastic temperature rise. (As for AC specifications, since the applicable products are ready to provide separately, contact SMC.)

### Caution

1. **Momentary energisation**
   - If a double solenoid valve will be operated with momentary energisation, it should be energised for at least 0.1 second. However, depending on the secondary load conditions, it should be energised until the cylinder reaches the stroke end position, as there is a possibility of malfunction otherwise.

2. **Leakage voltage**
   - When using a resistor in parallel with the switching element or using a C-R element (surge voltage suppressor) for protection of the switching element, note that leakage voltage will increase due to leakage current flowing through the resistor or C-R element. Limit the amount of residual leakage voltage to the following value:
     - With DC coil: 3% or less of rated voltage
     - With AC coil: 8% or less of rated voltage
1. If air leakage increases or equipment does not operate properly, stop operation. Check mounting conditions when air and power supplies are connected. Initial function and leakage tests should be performed after installation.

2. Instruction manual
Mount and operate the product after reading the manual carefully and understanding its contents. Also keep the manual where it can be referred to as necessary.

3. Painting and coating
Warnings or specifications printed or pasted on the product should not be erased, removed or covered up. Consult with SMC if paint is to be applied to resinous parts, as this may have an adverse effect due to the paint solvent.

Selection

Caution

3. Solenoid valve drive for AC with solid state output (SSR, TRIAC output, etc.)
   1) Current leakage
   When using a snubber circuit (C-R element) for surge protection of the output element, a very small electric current will still continue to flow in spite of the OFF state. This results in the valve not returning. In the cases when exceeding the tolerance as shown above, take measures to install a bleeder resistor.
   2) Minimum load allowable amount (Min. load current)
   When the consumption current of a valve is less than the output element’s minimum load allowable volume or the margin is small, the output element may not be switched normally. Please confirm SMC.

4. Surge voltage suppressor
If a surge protection circuit contains non-ordinary diodes such as Varistor, a residual voltage that is in proportion to the protective elements and the rated voltage will remain. Therefore, give consideration to surge voltage protection of the controller. In the case of diodes, the residual voltage is approximately 1 V.

5. Use in low temperature environments
Unless otherwise indicated in the specifications for each valve, operation is possible to −10°C, but appropriate measures should be taken to avoid solidification or freezing of drainage and moisture, etc.

6. Operation for air blowing
When using a solenoid valve for air blow, use an external pilot type. Take note that when internal pilots and external pilots are used on the same manifold, the pressure drop caused by the air blowing can have an effect on the internal pilot type valves. Moreover, when compressed air within the pressure range of the established specifications is supplied to the external pilot port, and a double solenoid valve is used for air blowing, the solenoids should normally be energised when air is being blown.

7. Mounting orientation
   Rubber seal: Refer to the specifications of each series.

Warning

1. If air leakage increases or equipment does not operate properly, stop operation.
   Check mounting conditions when air and power supplies are connected. Initial function and leakage tests should be performed after installation.

2. Instruction manual
   Mount and operate the product after reading the manual carefully and understanding its contents. Also keep the manual where it can be referred to as necessary.

3. Painting and coating
   Warnings or specifications printed or pasted on the product should not be erased, removed or covered up. Consult with SMC if paint is to be applied to resinous parts, as this may have an adverse effect due to the paint solvent.

Port Direction

Caution

1. Preparation before piping
   Before piping is connected, it should be thoroughly blown out with air (flushing) or washed to remove chips, cutting oil and other debris from inside the pipe.

2. Wrapping of sealant tape
   When connecting pipes and fittings, etc., be sure that chips from the pipe thread and sealing materials do not get inside the valve. Furthermore, when pipe tape is used, leave 1.5 to 2 thread ridges exposed at the end of the threads.

3. Closed center valves
   When using closed center type valves, carefully check to ascertain that there is no air leakage from the piping between the valves and cylinders.

4. Screwing in fittings
   When connecting fittings to valves, tighten as indicated below.
   1) For M3 and M5 type
      (1) When using SMC fittings, follow the guidelines below. After tightening by hand, tighten an additional M3: 1/4, M5: 1/6 turn with a tightening tool. However, if miniature fittings are used, tighten an additional 1/4 turn with a tightening tool after tightening by hand. For fittings with gaskets in 2 locations, e.g., universal elbow or universal tee, tighten an additional 1/2 turn.
      Note) If fittings are over-tightened, air leakage may result due to breaking of fitting threads or deformation of the gaskets. However, if fittings are not tightened sufficiently, loosening of the threads and air leakage may occur.
      (2) When fittings other than SMC fittings are used, follow the instructions of the respective fitting manufacturer.
   2) For Rc (PT)
      When installing fitting, etc., follow the given torque levels below.

<table>
<thead>
<tr>
<th>Connection threads</th>
<th>Applicable tightening torque N·m</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8</td>
<td>7 to 9</td>
</tr>
<tr>
<td>1/4</td>
<td>12 to 14</td>
</tr>
<tr>
<td>3/8</td>
<td>22 to 24</td>
</tr>
<tr>
<td>1/2</td>
<td>28 to 30</td>
</tr>
<tr>
<td>3/4</td>
<td>28 to 30</td>
</tr>
<tr>
<td>1</td>
<td>36 to 38</td>
</tr>
<tr>
<td>1 1/4</td>
<td>40 to 42</td>
</tr>
<tr>
<td>1 1/2</td>
<td>48 to 50</td>
</tr>
<tr>
<td>2</td>
<td>48 to 50</td>
</tr>
</tbody>
</table>

5. Connection of piping to products
When connecting piping to a product, refer to its instruction manual to avoid mistakes regarding the supply port, etc.
4/5 Port Solenoid Valves/Common Precautions 3

Be sure to read before handling.

**Wiring**

**Caution**

1. **Polarity**
   When connecting power to a DC specification solenoid valve equipped with (indicator light) surge voltage suppressor, confirm whether or not there is polarity.
   If there is polarity, take note of the following points.
   Without built-in diode to protect polarity (including any power saving circuit):
   If a mistake is made regarding polarity, the diode in the valve, the control device switching element or power supply equipment, etc., may burn out.
   With diode to protect polarity:
   If a mistake is made regarding polarity, it will not be possible to switch the valve.

2. **Applied voltage**
   When electric power is connected to a solenoid valve, be careful to apply the proper voltage. Improper voltage may cause malfunction or coil damage.

3. **Confirm the connections.**
   After completing the wiring, confirm that the connections are correct.

**Lubrication**

**Caution**

1. **Lubrication**
   [Rubber seal]
   1) The valve has been lubricated for life at the factory, and does not require any further lubrication.
   2) In the event that it is lubricated, use class 1 turbine oil (without additives), ISO VG32.
      However, once lubrication is applied it must be continued, as loss of the original lubricant may lead to malfunction.
      Contact SMC regarding class 2 turbine oil (with additives), ISO VG32.

**Air Supply**

**Caution**

1. **Install air filters.**
   Install air filters close to valves at their upstream side. A filtration degree of 5 μm or less should be selected.

2. **Install an air dryer, after cooler or Drain Catch (water separator), etc.**
   Air that includes excessive drainage may cause malfunction of valves and other pneumatic equipment. To prevent this, install an air dryer, after-cooler or Drain Catch (water separator), etc.

3. **If excessive carbon dust is generated, eliminate it by installing mist separators at the upstream side of valves.**
   If excessive carbon dust is generated by the compressor, it may adhere to the inside of valves and cause malfunction.

   Refer to “SMC Best Pneumatics” catalogue for compressed air quality.

**Operating Environment**

**Warning**

1. **Do not use valves in atmospheres of corrosive gases, chemicals, salt water, water or steam or where there is direct contact with any of these.**

2. **Products with IP65 enclosures (based on IEC60529) are protected against dust and water, however, these products cannot be used in water.**
   Take measures to prevent water and dust from coming from the exhaust port.

3. **Products compliant to IP65 satisfy the specifications by mounting each product properly. Be sure to read the Specific Product Precautions for each product.**

4. **Do not use in an explosive atmosphere.**

5. **Do not use in locations subject to vibration or impact. Confirm the specifications in the main section of the catalogue.**

6. **A protective cover, etc., should be used to shield valves from direct sunlight.**

7. **Shield valves from radiated heat generated by nearby heat sources.**

8. **Employ suitable protective measures in locations where there is contact with water droplets, oil or welding spatter, etc.**

9. **When solenoid valves are mounted in a control panel or are energised for extended periods of time, employ measures to radiate excess heat, so that temperatures remain within the valve specification range.**

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9. **When solenoid valves are mounted in a control panel or are energised for extended periods of time, employ measures to radiate excess heat, so that temperatures remain within the valve specification range.**
Maintenance

⚠️ Warning

1. Perform maintenance procedures as shown in the instruction manual.
   If handled improperly, malfunction or damage of machinery or equipment may occur.

2. Equipment removal and supply/exhaust of compressed air
   When equipment is removed, first confirm that measures are in place to prevent dropping of work pieces and run-away of equipment, etc. Then cut the supply pressure and power, and exhaust all compressed air from the system using its residual pressure release function.
   In the case of 3 position closed center style, exhaust the residual pressure between valve and cylinder.
   When the equipment is to be started again after remounting or replacement, first confirm that measures are in place to prevent lurching of actuators, etc., and then confirm that the equipment is operating normally.

3. Low frequency operation
   Valves should be switched at least once every 30 days to prevent malfunction. (Use caution regarding the air supply.)

4. Manual override operation
   When the manual override is operated, connected equipment will be actuated. Confirm safety before operating.

⚠️ Caution

1. Drain flushing
   Remove drainage from air filters regularly.
Be sure to read before handling.
Refer to back page 1 through to 5 for Safety Instruction and Common Precautions.

### Manual Override Operation

**Warning**
When the manual override is operated, connected equipment will be actuated. Confirm safety before operating.

- **Non-locking push type [Standard]**
  Press in the direction of the arrow

- **Push-turn locking slotted type [Type D]**
  While pressing, turn in the direction of the arrow. If it is not turned, it can be operated the same way as the non-locking type.

- **Push-turn locking lever type [Type E]**
  While pressing, turn in the direction of the arrow. If it is not turned, it can be operated the same way as the non-locking type.

**Caution**
When operating the locking type D with a screw driver, turn it gently using a watchmakers screw driver. [Torque: Less than 0.1 N-m]

**Caution**
When locking the manual override on the push-turn locking types (D, E), be sure to push it down before turning. Turning without first pushing it down can cause damage to the manual override and trouble such as air leakage, etc.

### Solenoid Valve for 200 V, 220 VAC Specifications

**Warning**
Solenoid valves with DIN terminal connector AC specifications have a built-in rectifier circuit in the pilot section to operate the DC coil. With 200 V, 220 VAC specification pilot valves, this built-in rectifier generates heat when energised. The surface may become hot depending on the energised condition; therefore, do not touch the solenoid valves.

**Caution**
Pilot air is exhausted through the main valve body rather than directly to atmosphere.
- Suitable for applications where exhausting the pilot valve to atmosphere would be detrimental to the surrounding working environment.
- For use in extremely dirty environments where there is the possibility that dust could enter the pilot exhaust and damage the valve.

Ensure that the piping of exhaust air is not too restrictive.

### Common Exhaust Type for Main and Pilot Valve

### Series SYJ3000/5000/7000
Mixed Installation of 3 Port and 5 Port Valves on Same Manifold.

**Caution**
Series SYJ3000/5000/7000 and Series SYJ300/500/700 can be mounted on the same manifold. How to mount on the same manifold is shown on the following pages:
- SYJ3000, SYJ300 P. 14
- SYJ5000, SYJ500 P. 38
- SYJ7000, SYJ700 P. 61

If 4 or 5 port valve is used as a 3 port valve
Series SYJ3000, 5000, 7000 may be used as a N.C.or N.O. 3 port valve by plugging one of the A,B ports. Be sure not to plug the exhaust ports (R). Can be used when a double solenoid, 3 port valve is required.

<table>
<thead>
<tr>
<th>Plug position</th>
<th>B port</th>
<th>A port</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of actuation</td>
<td>N.C.</td>
<td>N.O.</td>
</tr>
<tr>
<td>Single</td>
<td>Plug</td>
<td>Plug</td>
</tr>
<tr>
<td>Double</td>
<td>Plug</td>
<td>Plug</td>
</tr>
</tbody>
</table>

(JIS symbols above: Series SYJ5000)
3. Attaching and detaching sockets with lead wires

- **Attaching**
  Insert the sockets into the square holes of the connector (+, – indication), and continue to push the sockets all the way in until they lock by hooking into the seats in the connector. (When they are pushed in, their hooks open and they are locked automatically.) Then confirm that they are locked by pulling lightly on the lead wires.

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

---

**How to Order Connector Assembly**

<table>
<thead>
<tr>
<th>For DC:</th>
<th>SY100 – 30 – 4A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without lead wire:</td>
<td>SY100 – 30 – A</td>
</tr>
</tbody>
</table>

(with connector and 2 of sockets only)

**Plug Connector Lead Wire Length**

<table>
<thead>
<tr>
<th>Lead wire length</th>
<th>300 mm</th>
<th>600 mm</th>
<th>1000 mm</th>
<th>1500 mm</th>
<th>2000 mm</th>
<th>2500 mm</th>
<th>3000 mm</th>
<th>5000 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>25</td>
<td>30</td>
<td>50</td>
<td></td>
</tr>
</tbody>
</table>

**Caution**

- Standard length is 300 mm, but the following lengths are also available.

---

**How to Use Plug Connector**

**Caution**

1. Attaching and detaching connectors

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

2. Crimping of lead wires and sockets

Strip 3.2 to 3.7 mm at the end of the lead wires, insert the ends of the core wires evenly into the sockets, and then crimp with a crimping tool. When this is done, take care that the coverings of the lead wires do not enter the core wire crimping area.

Use an exclusive crimping tool for crimping. (Contact SMC for special crimping tools.)

3. Attaching and detaching sockets with lead wires

- **Attaching**
  Insert the sockets into the square holes of the connector (+, – indication), and continue to push the sockets all the way in until they lock by hooking into the seats in the connector. (When they are pushed in, their hooks open and they are locked automatically.) Then confirm that they are locked by pulling lightly on the lead wires.

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

**Caution**

*For DC*
Grommet, L/M Plug Connector

**Standard type (with polarity)**

Surge voltage suppressor (DS)

- Red (+)
- Black

With light/surge voltage suppressor (DZ)

- Red (+)
- Black

**Non-polar type**

With surge voltage suppressor (R)

- (+) -> (-)
- (-) -> (+)

With light/surge voltage suppressor (Z)

- (+) -> (-)
- (-) -> (+)

**DIN Terminal**

With surge voltage suppressor (DS)

- NO1
- N02

With light/surge voltage suppressor (DZ)

- NO1
- N02

DIN terminal has no polarity.

**M8 Connector**

With surge voltage suppressor (S)

- (+) -> (-)
- (-) -> (+)

**Operating Principle**

With the above circuit, the current consumption when holding is reduced to save energy. Please refer to the electric wave data to the right.

- Please be careful not to reverse the polarity, since a diode to prevent the reversed current is not provided for the power saving circuit.
- Please use caution regarding the allowable voltage fluctuation because there is about a 1 volt drop due to the transistor. (For details, refer to the solenoid specifications for the individual valve.)

- Connect the standard type in accordance with the +, - polarity indication. (The non-polar type can be used with the connections made either way.)
- Since voltage specifications other than standard 24 V and 12 VDC do not have diodes for polarity protection, be careful not to make errors in the polarity.
- Please use caution regarding the allowable voltage fluctuation because there is about a 0.5 volt drop due to the transistor. (For details, refer to the solenoid specifications for the individual valve.)

**With power saving circuit**

Power consumption is decreased by 1/4 by reducing the wattage required to hold the valve in an energized state. (Effective energizing time is over 62 ms at 24 VDC.)

**Electric circuit (with power saving circuit)**

- (+) -> (-)
- (-) -> (+)

**Timer circuit**

1: Starting current
2: Holding current

- Please be careful not to reverse the polarity, since a diode to prevent the reversed current is not provided for the power saving circuit.
- Please use caution regarding the allowable voltage fluctuation because there is about a 0.5 volt drop due to the transistor. (For details, refer to the solenoid specifications for the individual valve.)

**In the case of standard type, connect + to 1 and - to 3 for W type, and connect + to 4 and - to 3 for WA type, according to the polarity.**

**For DC voltages other than 12 V and 24 V, incorrect wiring will case damage to the surge suppressor circuit.**

**Please use caution regarding the allowable voltage fluctuation because there is about a 1 volt drop for a valve with polarity protection. (For details, refer to the solenoid specifications for the individual valve.)**
**Series SYJ3000/5000/7000**  
Specific Product Precautions 4

Be sure to read before handling.  
Refer to back page 1 through to 5 for Safety Instruction and Common Precautions.

---

### Surge Voltage Suppressor

<For AC>  
(There is no “S” type because the generation of surge voltage is prevented by a rectifier.)

### DIN Terminal

**With light (DZ)**

![Diagram](Diagram)

**Note:** Surge voltage suppressor of varistor has residual voltage corresponding to the protective element and rated voltage; therefore, protect the controller side from the surge. The residual voltage of the diode is approximately 1 V.

---

### How to Use DIN Terminal

#### Caution

**Connection**

1. Loosen the holding screw and pull the connector out of the solenoid valve terminal block.
2. After removing the holding screw, insert a flat head screwdriver, etc. into the notch on the bottom of the terminal block and pry it open, separating the terminal block and the housing.
3. Loosen the terminal screws (slotted screws) on the terminal block, insert the cores of the lead wires into the terminals according to the connection method, and fasten them securely with the terminal screws.
4. Secure the cord by fastening the ground nut.

**Caution**

When making connections, take note that using other than the supported size (ø3.5 to ø7) heavy duty cord will not satisfy IP65 (enclosure) standards. Also, be sure to tighten the ground nut and holding screw within their specified torque ranges.

**Caution**

**Changing the entry direction**

After separating the terminal block and housing, the cord entry can be changed by attaching the housing in the desired direction (4 directions at 90° intervals).

* When equipped with a light, be careful not to damage the light with the cord’s lead wires.

**Precautions**

Plug in and pull out the connector vertically without tilting to one side.

**Compatible cable**

Cord O.D.: ø3.5 to ø7  
(Reference) 0.5 mm², 2-core or 3-core, equivalent to JIS C 3306

---

### DIN Connector Part No.

#### Caution

**Without light** | SY100-61-1
---|---
**With light**

<table>
<thead>
<tr>
<th>Rated voltage</th>
<th>Voltage symbol</th>
<th>Model no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 VDC</td>
<td>24 V</td>
<td>SY100-61-3-05</td>
</tr>
<tr>
<td>12 VDC</td>
<td>12 V</td>
<td>SY100-61-3-06</td>
</tr>
<tr>
<td>100 VAC</td>
<td>100 V</td>
<td>SY100-61-2-01</td>
</tr>
<tr>
<td>200 VAC</td>
<td>200 V</td>
<td>SY100-61-2-02</td>
</tr>
<tr>
<td>110 VAC</td>
<td>110 V</td>
<td>SY100-61-2-03</td>
</tr>
<tr>
<td>220 VAC</td>
<td>220 V</td>
<td>SY100-61-2-04</td>
</tr>
</tbody>
</table>

---

### Circuit Diagram with Light

**Note:** Refer to page 80 for DIN connector (Y) conforming to EN-175301-803C (former DIN 43650C).
1. M8 connector types have an IP65 (enclosure) rating, offering protection from dust and water. However please note: these products are not intended for use in water.

Select a SMC connector cable (V100-49-1-L50132) or a FA sensor type connector, with M8 threaded 3 pin specifications conforming to Nippon Electric Control Equipment Association Standard, NECA4202 (IEC60947-5-2). Make sure the connector O.D. is 10.5 mm or less when used with the Series SYJ3000 manifold. If more than 10.5 mm, it cannot be mounted due to the size.

2. Do not use a tool to mount the connector, as this may cause damage. Only tighten by hand. (0.4 to 0.6 Nm)

3. The excessive stress on the cable connector will not be able to satisfy the IP65 rating. Please use caution and do not apply a stress of 30 N or greater.

Connector Assembly with Cover

Caution

Connector assembly with dust proof protective cover. • Effective to prevention of short circuit failure due to the entry of foreign matter into the connector. • Chloroprene rubber for electrical use, which provides outstanding weather resistance and electrical insulation, is used for the cover material. However, do not allow contact with cutting oil, etc. • Simple and unencumbered appearance by adopting round-shaped cord.

How to Order

[Table: Lead wire length]

<table>
<thead>
<tr>
<th>Lead wire length</th>
<th>SY100-68-A-</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>300 mm</td>
<td>300 mm</td>
<td></td>
</tr>
<tr>
<td>600 mm</td>
<td>300 mm</td>
<td></td>
</tr>
<tr>
<td>1000 mm</td>
<td>300 mm</td>
<td></td>
</tr>
<tr>
<td>1500 mm</td>
<td>300 mm</td>
<td></td>
</tr>
<tr>
<td>2000 mm</td>
<td>300 mm</td>
<td></td>
</tr>
<tr>
<td>2500 mm</td>
<td>300 mm</td>
<td></td>
</tr>
<tr>
<td>3000 mm</td>
<td>300 mm</td>
<td></td>
</tr>
<tr>
<td>5000 mm</td>
<td>300 mm</td>
<td></td>
</tr>
</tbody>
</table>

Connector Assembly with Cover: Dimensions

[Diagram: Connector Assembly with Cover]

How to Order

Enter the part number for a plug connector solenoid valve without connector together with the part number for a connector assembly with cover.

Ex. 1) Lead wire length of 2000 mm
SYJ3120-5LOZ-M3-Q
SY100-68-A-20

Ex. 2) Lead wire length of 300 mm (standard)
SYJ3120-5LPZ-M3-Q

Symbol for connector assembly with cover

* In this case, the part number for the connector assembly with cover is not required.

M8 Connector

Caution

1. M8 connector types have an IP65 (enclosure) rating, offering protection from dust and water. However please note: these products are not intended for use in water. Select a SMC connector cable (V100-49-1-) or a FA sensor type connector, with M8 threaded 3 pin specifications conforming to Nippon Electric Control Equipment Association Standard, NECA4202 (IEC60947-5-2). Make sure the connector O.D. is 10.5 mm or less when used with the Series SYJ3000 manifold. If more than 10.5 mm, it cannot be mounted due to the size.

2. Do not use a tool to mount the connector, as this may cause damage. Only tighten by hand. (0.4 to 0.6 Nm)

3. The excessive stress on the cable connector will not be able to satisfy the IP65 rating. Please use caution and do not apply a stress of 30 N or greater.

Caution

Failure to meet IP65 performance may result if using alternative connectors than those shown above, or when insufficiently tightened.

- Connector cable mounting

Note) Connector cable should be mounted in the correct direction. Make sure that the arrow symbol on the connector is facing the triangle symbol on the valve when using SMC connector cable (V100-49-1-). Be careful not to squeeze it in the wrong direction, as problems such as pin damage may occur.

Connector cable

- M8 connector cable for M8 can be ordered as follows:

How to Order

1. To order solenoid valve and connector cable at the same time.
   (Connector cable will be included in the shipment of the solenoid valve.)

SYJ3120-5LOZ-M3-Q
SY100-68-A-20

Symbol for connector assembly with cover

* In this case, the part number for the connector assembly with cover is not required.

Symbol for electrical entry

W1, WA1: Cable length 300 mm
W2, WA2: Cable length 500 mm
W3, WA3: Cable length 1000 mm
W4, WA4: Cable length 2000 mm
W7, WA7: Cable length 5000 mm

Ex. 1) Cable length: 300 mm
SYJ3120-5LOZ-M3-Q
SYJ3120-5L1ZE-M3-Q

Symbol for electrical entry

Back page 10
In the manifold valves, the wiring to the individual valves is provided on a printed circuit board, and the connection to the external wires is consolidated through the use of a flat cable. A single MIL flat cable connects the entire manifold to your power source. This greatly reduces installation time.

**Caution**
- In the manifold valves, the wiring to the individual valves is provided on a printed circuit board, and the connection to the external wires is consolidated through the use of a flat cable.
- A single MIL flat cable connects the entire manifold to your power source. This greatly reduces installation time.

**M8 Connector**

2. To order connector cable only

**Flat Ribbon Cable Manifold**

- For more than 10 stations, both poles of the common should be wired.
- For single solenoid, connect to the solenoid B side.
- The maximum number of stations that can be accommodated is 12. For more stations, contact SMC.
- Only non-polar valves are available for the DC flat cable manifold, therefore negative COM or positive COM wiring of the manifold is possible. The valve does not switch with negative COM if a Z type is used. Be sure to use a positive COM.

**Bracket**

For bracket attached styles of SYJ3000 (Single) and SYJ7000, do not use it without bracket.

**Replacement of Pilot Valve**

Mount it so that there is no slippage or deformation in gaskets, and tighten with the tightening torque as shown below.

<table>
<thead>
<tr>
<th>Model</th>
<th>Thread size</th>
<th>Tightening torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYJ3000</td>
<td>M1.7</td>
<td>0.12 N·m</td>
</tr>
<tr>
<td>SYJ5000</td>
<td>M2.5</td>
<td>0.45 N·m</td>
</tr>
<tr>
<td>SYJ7000</td>
<td>M3</td>
<td>0.8 N·m</td>
</tr>
</tbody>
</table>
Series SYJ3000/5000/7000
Specific Product Precautions 7
Be sure to read before handling.
Refer to back page 1 through to 5 for Safety Instruction and Common Precautions.

Replacement of Pilot Valve

⚠️ Caution

Pilot valves in this series are improved to provide excellent energy saving results. However following this improvement, these new valves are no longer compatible with the conventional pilot valve used at the interface. Consult with SMC when you need to exchange these pilot valves, in the case of manual override (marked in orange) of the adapter plate.

New type

Manual override (Blue)

Interface

Pilot valve (V111)

Adapter plate

Conventional type

Manual override (Orange)

Interface

Pilot valve (SY114)

Adapter plate

Interface Regulator

⚠️ Caution

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

Specifications

<table>
<thead>
<tr>
<th>Interface regulator</th>
<th>ARBYJ5000</th>
<th>ARBYJ7000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable solenoid valve model</td>
<td>SYJ5000</td>
<td>SYJ7000</td>
</tr>
<tr>
<td>Regulating port</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>Proof pressure</td>
<td>1.5 MPa</td>
<td></td>
</tr>
<tr>
<td>Maximum operating pressure</td>
<td>1.0 MPa</td>
<td></td>
</tr>
<tr>
<td>Set pressure range</td>
<td>0.05 to 0.7 MPa (Note 1)</td>
<td></td>
</tr>
<tr>
<td>Ambient and fluid temperature</td>
<td>-5 to 60°C (No freezing) (Note 2)</td>
<td></td>
</tr>
<tr>
<td>Thread size for connection of pressure gauge</td>
<td>M5</td>
<td></td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>0.06</td>
<td>0.09</td>
</tr>
<tr>
<td>Effective area at exhaust side (mm²)</td>
<td>Note 3)</td>
<td></td>
</tr>
<tr>
<td>S at P1 = 0.7 MPa, P2 = 0.5 MPa</td>
<td>P→A 1.9</td>
<td>5.1</td>
</tr>
<tr>
<td>P→B 2.1</td>
<td>5.8</td>
<td></td>
</tr>
<tr>
<td>Effective area at supply side (mm²)</td>
<td>Note 3)</td>
<td></td>
</tr>
<tr>
<td>S at P1 = 0.7 MPa, P2 = 0.5 MPa</td>
<td>A→EA 4.5</td>
<td>12.6</td>
</tr>
<tr>
<td>B→EB 4.5</td>
<td>12.6</td>
<td></td>
</tr>
</tbody>
</table>

Note 1) Set the pressure within the operating pressure range of the solenoid valve.

Note 2) The maximum operating temperature for the solenoid valve is 50°C.

Note 3) The effective area listed is for a single solenoid 2 position valve mounted on a sub-plate.

Note 4) Apply pressure from P port in the base for interface regulator.

Flow Characteristics

(P → A) Condition: Inlet pressure 0.7 MPa

● ARBYJ5000-00-P-Q

![Flow Characteristics Graph](image)

● ARBYJ7000-00-P-Q

![Flow Characteristics Graph](image)
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