3 Port Solenoid Valve

Series SYJ300/500/700

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

Flow Characteristics

<table>
<thead>
<tr>
<th>Series</th>
<th>Flow characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C [dm³/(s·bar)]</td>
</tr>
<tr>
<td>SYJ300</td>
<td>0.36</td>
</tr>
<tr>
<td>SYJ500</td>
<td>1.2</td>
</tr>
<tr>
<td>SYJ700</td>
<td>2.7</td>
</tr>
</tbody>
</table>

Cover (stainless steel)
# Rubber Seal

## 3 Port Solenoid Valve

**Series** SYJ300/500/700

### Variations

<table>
<thead>
<tr>
<th>Series</th>
<th>Port size</th>
<th>Type of actuation</th>
<th>Voltage</th>
<th>Electrical entry</th>
<th>Option</th>
<th>Manual override</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYJ300</td>
<td>M3 x 0.5</td>
<td>0.9 mm²</td>
<td>For DC</td>
<td>Light/surge</td>
<td>Non-locking push type</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>suppressor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYJ500</td>
<td>M5 x 0.8</td>
<td>0.66</td>
<td>For DC</td>
<td>Light/surge</td>
<td>Push-turn locking type</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>suppressor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYJ700</td>
<td>1/8</td>
<td>2.5</td>
<td>For DC</td>
<td>Light/surge</td>
<td>Push-turn locking type</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>suppressor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYJ300</td>
<td>M5 x 0.8</td>
<td>0.36</td>
<td>For AC</td>
<td>With surge</td>
<td>Push-turn locking type</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>voltage suppressor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYJ500</td>
<td>1/8</td>
<td>1.2</td>
<td>For AC</td>
<td>With surge</td>
<td>Push-turn locking</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>voltage suppressor</td>
<td>lever type</td>
<td></td>
</tr>
<tr>
<td>SYJ700</td>
<td>1/8, 1/4</td>
<td>2.7</td>
<td>For AC</td>
<td>With surge</td>
<td>Push-turn locking</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>voltage suppressor</td>
<td>lever type</td>
<td></td>
</tr>
</tbody>
</table>

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

---

**For DC:**
- 24 VDC
- 12 VDC
- 6 VDC
- 5 VDC
- 3 VDC

**For AC:**
- 100 VAC
- 110 VAC
- 200 VAC
- 220 VAC

---

**Options:**
- Light/surge voltage suppressor
- Non-locking push type
- Push-turn locking slotted type
- Push-turn locking lever type
## Manifold Variations

<table>
<thead>
<tr>
<th>Valve series</th>
<th>A port location</th>
<th>P, R ports size</th>
<th>M3</th>
<th>M5</th>
<th>1/8</th>
<th>With one-touch fitting</th>
<th>Applicable tubing O.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYJ300</td>
<td>Top</td>
<td>M5 x 0.8</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>P.1378</td>
<td></td>
<td>1/8</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>SYJ500</td>
<td>Top</td>
<td>1/8</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>P.1392</td>
<td></td>
<td></td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>SYJ700</td>
<td>Top</td>
<td>1/8</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>P.1410</td>
<td></td>
<td>1/4</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>SYJ300</td>
<td>Side</td>
<td>M5 x 0.8</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>P.1378</td>
<td></td>
<td>1/8</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>SYJ500</td>
<td>Bottom</td>
<td>1/8</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>P.1392</td>
<td></td>
<td></td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>SYJ700</td>
<td>Bottom</td>
<td>1/8</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>P.1410</td>
<td></td>
<td>1/4</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

**Note 1)** Only for internal pilot  
**Note 2)** Only for external pilot  

### Diagrams

- **Base mounted**
  - Series SYJ300
  - Series SYJ500
  - Series SYJ700

- **Body ported**
  - Series SYJ300
  - Series SYJ500
  - Series SYJ700
Rubber Seal
3 Port Pilot Solenoid Valve

Series SYJ700

Specifications

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating pressure range (MPa)</td>
<td>Internal pilot</td>
</tr>
<tr>
<td>Ambient and fluid temperature (°C)</td>
<td>-10 to 50 (No freezing.)</td>
</tr>
<tr>
<td>Response time ms (at 0.5 MPa)</td>
<td>30 or less</td>
</tr>
<tr>
<td>Max. operating frequency (Hz)</td>
<td>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 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: IP65)</td>
</tr>
</tbody>
</table>

Note 1) Based on dynamic performance test, JIS B 8374-1981. (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 at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (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), (Y), MB connector (W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coil rated voltage (V)</td>
<td>DC 24, 12, 6, 5, 3, 24, 12</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)); 0.78 (With light: 0.8); 1.18 (With light: 1.22); 1.5 (With light: 1.36); 1.7 (With light: 1.46)</td>
</tr>
<tr>
<td>Apparent power (VA) *</td>
<td>AC 0.86 (With light: 0.97); 0.86 (With light: 0.97); 1.15 (With light: 1.36); 1.27 (With light: 1.46); 1.39 (With light: 1.60)</td>
</tr>
<tr>
<td>Surge voltage suppressor</td>
<td>Diode (DIN terminal, variator when non-polar types)</td>
</tr>
<tr>
<td>Indicator light</td>
<td>LED (Neon light when AC with DIN terminal)</td>
</tr>
</tbody>
</table>

* In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.
* For 115 VAC and 230 VAC, the allowable voltage is ~15% to +5% of rated voltage.
* 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.

Made to Order
(For details, refer to pages 1422 to 1423.)
Rubber Seal
3 Port Pilot Solenoid Valve Series SYJ700

Flow Characteristics/Mass

<table>
<thead>
<tr>
<th>Valve model</th>
<th>Type of actuation</th>
<th>Port size</th>
<th>1→2 (P→A)</th>
<th>2→3 (A→R)</th>
<th>Mass (g) (^{Note})</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body ported</td>
<td>N.C.</td>
<td>1/8</td>
<td>2.8</td>
<td>0.43</td>
<td>0.77</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2.7</td>
<td>0.38</td>
<td>0.72</td>
</tr>
<tr>
<td></td>
<td>N.O.</td>
<td>1/8</td>
<td>2.9</td>
<td>0.32</td>
<td>0.71</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1/4</td>
<td>3.0</td>
<td>0.31</td>
<td>0.74</td>
</tr>
<tr>
<td>SYJ712</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYJ722</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYJ714</td>
<td>Base mounted</td>
<td>1/8</td>
<td>2.6</td>
<td>0.21</td>
<td>0.70</td>
</tr>
<tr>
<td></td>
<td>with sub-plate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1/4</td>
<td>2.7</td>
<td>0.31</td>
<td>0.68</td>
</tr>
<tr>
<td>SYJ714</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYJ716</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYJ724</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^{Note}\) Value for DC. Add 3 g for AC. \(\quad\) Without sub-plate.

External Pilot

SYJ700R

Pilot valve pressure is supplied separately from the main valve pressure through the use of a separate supply port. It can be used in the vacuum (up to –100 kPa) or low pressure line with 0.15 MPa or less.

Specifications

<table>
<thead>
<tr>
<th>Applicable model</th>
<th>Base mounted (SYJ714R, SYJ724R)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating pressure range MPa</td>
<td>Main pressure</td>
</tr>
</tbody>
</table>

\(-100\) kPa to 0.7 | 0.15 to 0.7

Note 1) For manifold base, refer to page 1410.
Note 2) External pilot type body ported valves (SYJ7\(\square\)2R) can only be used on the manifold. For body ported models with the external pilot option, please refer to page 1423.
Series SYJ700

How to Order

Light/surge voltage suppressor
Electrical entry for G, H, L, M and W

<table>
<thead>
<tr>
<th>Rated voltage</th>
<th>DC</th>
<th>5</th>
<th>24 VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6</td>
<td>12 VDC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>6 VDC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>5 VDC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>3 VDC</td>
<td></td>
</tr>
</tbody>
</table>

Electrical entry for D, Y

| Without light/surge voltage suppressor | Nil |
| Without light/surge voltage suppressor | S |
| With surge voltage suppressor (Non-polar type) | U |

Thread type

| Without bracket | Nil |
| With bracket | F |

Port size

| 01 | 1/8 port |
| 02 | 1/4 port |

Coil specifications

<table>
<thead>
<tr>
<th>Standard</th>
<th>With power saving circuit (24, 12 VDC only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>Power saving circuit is not available in the case of D, Y, DO, YO or W type</td>
</tr>
</tbody>
</table>

Manual override

| Non-locking push type | Nil |
| Push-turn locking lever type | T |

Made to Order

| CE-complaint | Nil |

Body option

| Individual pilot exhaust type | Nil |
| Exhaust type | R |

Body ported

| SYJ7 | 1 | 2 |

Base mounted

| SYJ7 | 4 |

Electrical entry

| G | Lead wire length 300 mm |
| L | With lead wire (Length 300 mm) |
| N | Lead wire length 600 mm |
| M | Without connector |

Note: When placing an order for body ported solenoid valve as a single unit, mounting screws for manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to page 1411.)

| G | Lead wire length 300 mm |
| L | With lead wire (Length 300 mm) |
| N | Lead wire length 600 mm |
| M | Without connector |
| Q | Made to Order specifications |

For connector cable of M8 connector, refer to page 1429.

For connector cable conforming to IEC60947-5-2 is also available. For details, refer to page 1427.

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

For “R” and “U” type, DC voltage is only available.

Power saving circuit is only available in the “Z” type.

For type W, there is no “S” option. It is already built-in to the rectifier circuit.

* For AC voltage valves there is only “Z” type.

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

SYJ7 2R is only for manifold use.
Rubber Seal
3 Port Pilot Solenoid Valve Series SYJ700

Construction

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></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>Resin</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Spool valve assembly</td>
<td></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>Part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Sub-plate</td>
<td>SYJ700-9-1(-Q)</td>
<td>1/8</td>
</tr>
<tr>
<td>8</td>
<td>Pilot valve</td>
<td>V111(T)/L50132</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bracket assembly</td>
<td>SYJ700-9-2-1A</td>
<td></td>
</tr>
</tbody>
</table>

Electrical entry

- G: Grommet, 300 mm lead wire
- H: Grommet, 600 mm lead wire
- L: With lead wire
- M: With lead wire
- MS: Without connector cable
- WP: With connector cable

How to Order Pilot Valve Assembly

V111 - 5 G

- Coils specifications
  - S: Standard
  - N: Nil

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

- Width: With light/surge voltage suppressor (Non-polar type)

- Rated voltage
  - 5 V DC
  - 6 V DC
  - 115 V AC 50/60 Hz
  - 230 V AC 50/60 Hz
  - 100 V AC 50/60 Hz
  - 200 V AC 50/60 Hz

- Electrical entry
  - G: Grommet, 300 mm lead wire
  - H: Grommet, 600 mm lead wire
  - L: With lead wire
  - M: With lead wire
  - MS: Without connector cable
  - WP: With connector cable

V115 - 5 D

- Coils specifications
  - S: With surge voltage suppressor (Non-polar type)
  - Z: With light/surge voltage suppressor (Non-polar type)

- Rated voltage
  - 5 V DC
  - 6 V DC
  - 115 V AC 50/60 Hz
  - 230 V AC 50/60 Hz
  - 200 V AC 50/60 Hz

- Electrical entry
  - D: DIN terminal: Without connector
  - DO: (Type D) Without connector
  - Y: DIN terminal: Without connector
  - YO: (Type Y) Without connector

Note) Since V111 and V115 are CE-compliant as standard, the suffix "-Q" is not necessary.
Series SYJ700

Body Ported

Grommet (G), (H): SYJ7□2□□□01□

With bracket: SYJ7□2□□□01□-F

L plug connector (L): SYJ7□2□□□01□ (-F)
M plug connector (M): SYJ7□2□□□01□ (-F)
DIN terminal (D, Y): SYJ7□2□□□01□ (-F)
M8 connector (WO): SYJ7□2□□□01□ (-F)

Refer to page 1429 for dimensions with connector cable.
Rubber Seal
3 Port Pilot Solenoid Valve Series SYJ700

Base Mounted (With Sub-plate)

Grommet (G), (H): SYJ7□4-L□□□01□□  
M plug connector (M): SYJ7□4-M□□□02□□  
DIN terminal (D, Y): SYJ7□4-D□□□01□□  
M8 connector (WO): SYJ7□4-WO□□□02□□  

*L plug connector (L): SYJ7□4-L□□□01□□

M8 x 1
(M5 x 0.8) (SYJ714R: X port)

(Applicable cable O.D. ø3.5 to ø7)

* Refer to page 1429 for dimensions with connector cable.
## Manifold Specifications

### Flow Characteristics

<table>
<thead>
<tr>
<th>Manifold</th>
<th>Port size</th>
<th>Flow characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYJ700-20</td>
<td>1/8</td>
<td>C = 2.2, b = 0.34, Cv = 0.55</td>
</tr>
<tr>
<td>SYJ700-21</td>
<td>1/8</td>
<td>C = 2.2, b = 0.39, Cv = 0.43</td>
</tr>
<tr>
<td>SYJ700-40</td>
<td>1/8</td>
<td>C = 2.1, b = 0.35, Cv = 0.59</td>
</tr>
<tr>
<td>SYJ700-41</td>
<td>1/8</td>
<td>C = 2.2, b = 0.35, Cv = 0.59</td>
</tr>
<tr>
<td>SYJ700-42-01</td>
<td>1/8</td>
<td>C = 2.0, b = 0.27, Cv = 0.47</td>
</tr>
<tr>
<td>SYJ700-42-C6</td>
<td>1/4</td>
<td>C = 1.6, b = 0.32, Cv = 0.39</td>
</tr>
<tr>
<td>SYJ700-42-C8</td>
<td>1/4</td>
<td>C = 2.1, b = 0.24, Cv = 0.51</td>
</tr>
</tbody>
</table>

**Note:** Value at manifold base mounted, 2 position single operating.

### 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)

- SS3YJ7-20-03: 1 set (manifold base)
- SS3YJ7-42R-03-01: 1 set (manifold base)
- SYJ712-5LZ-01: 2 sets (valve)
- SYJ714R-5G: 2 sets (valve)
- SYJ700-10-1A: 1 set (blanking plate assembly)
- SYJ700-10-2A: 1 set (blanking plate assembly)

The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.
Combination of Solenoid Valve, Manifold Gasket and Manifold Base

**Body ported (Type SYJ7-2(-Q))**
- Round head combination screw
  - M3 x 31, Matt nickel plated

**Base mounted (Type SYJ7-4(-Q))**
- Round head combination screw
  - M3 x 31, Matt nickel plated

**Applicable base**
- Type SS3YJ7-20(-Q)
- Type SS3YJ7-21(-Q)
- Type SS3YJ7-21R(-Q)

**Manifold**
- Gasket SYJ700-5-3
- Gasket SYJ700-5-4

**<Caution>**
- Mounting screw tightening torques
  - M3: 0.8 N·m

**Blanking Plate Assembly**

**<Standard>**
- Part no.: SYJ700-10-2A
  - In common for body ported type and base mounted type

**<CE-complaint>**
- Part no.: SYJ700-10-2A-1-Q

**Part no.: SYJ700-10-2A-2-Q**

**Applicable base**
- Sub-plate
  - Type SS3YJ7-40(-Q)
  - Type SS3YJ7-41(-Q)
  - Type SS3YJ7-42(-Q)
  - Type SS3YJ7-41R(-Q)
  - Type SS3YJ7-42R(-Q)

- Manifold gasket
  - Manifold base
  - Type SS3YJ7-20(-Q)
  - Type SS3YJ7-21(-Q)
  - Type SS3YJ7-21R(-Q)

**Manifold base**
- Gasket
Series SYJ700

Manifold for Internal Pilot Type

Type 20/Type 21

Manifold type

<table>
<thead>
<tr>
<th>Stations</th>
<th>A port size</th>
<th>P, R port thread type</th>
<th>CE-compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>1/8</td>
<td>Nil</td>
<td>—</td>
</tr>
<tr>
<td>21</td>
<td>1/8</td>
<td>Rc</td>
<td>—</td>
</tr>
</tbody>
</table>

Note: If there are more than 6 stations for type 20, or more than 9 stations for type 21, supply air to both sides of P port and exhaust air from both sides of R port.

How to Order

SS3YJ7 - 20 - 05 -

Applicable solenoid valve

SYJ712○○○○○○-01(-Q)
SYJ712M○○○○○○-01(-Q)
SYJ722M○○○○○○-01(-Q)

Applicable blanking plate assembly

Refer to page 1411.

Type 40/Type 41

Manifold type

<table>
<thead>
<tr>
<th>Stations</th>
<th>A port size</th>
<th>P, R port thread type</th>
<th>CE-compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>1/8</td>
<td>Nil</td>
<td>—</td>
</tr>
<tr>
<td>21</td>
<td>1/8</td>
<td>Rc</td>
<td>—</td>
</tr>
</tbody>
</table>

Note: If there are more than 6 stations for type 40, or more than 9 stations for type 41, supply air to both sides of P port and exhaust air from both sides of R port.

How to Order

SS3YJ7 - 40 - 05 - 01 -

Applicable solenoid valve

SYJ714○○○○○○-01(-Q)
SYJ714M○○○○○○-01(-Q)
SYJ724○○○○○○-01(-Q)
SYJ724M○○○○○○-01(-Q)

Applicable blanking plate assembly

Refer to page 1411.

Type 42

Manifold type

<table>
<thead>
<tr>
<th>Stations</th>
<th>A port size</th>
<th>P, R port thread type</th>
<th>CE-compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>1/8</td>
<td>Nil</td>
<td>—</td>
</tr>
<tr>
<td>01</td>
<td>1/8</td>
<td>Rc</td>
<td>—</td>
</tr>
</tbody>
</table>

Note: If there are more than 6 stations for type 40, or more than 9 stations for type 41, supply air to both sides of P port and exhaust air from both sides of R port.

How to Order

SS3YJ7 - 42 - 05 - C6 -

Applicable solenoid valve

SYJ714○○○○○○-01(-Q)
SYJ714M○○○○○○-01(-Q)
SYJ724○○○○○○-01(-Q)
SYJ724M○○○○○○-01(-Q)

Applicable blanking plate assembly

Refer to page 1411.

Manifold for External Pilot Type

Pilot valve pressure is supplied separately from the main valve pressure through the use of a separate supply port.

It can be used in the vacuum (up to –100 kPa) or low pressure line with 0.15 MPa or less.

Type 21R

Manifold type

<table>
<thead>
<tr>
<th>Stations</th>
<th>A port size</th>
<th>P, R port thread type</th>
<th>CE-compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>1/8</td>
<td>Nil</td>
<td>—</td>
</tr>
<tr>
<td>20</td>
<td>1/8</td>
<td>Rc</td>
<td>—</td>
</tr>
</tbody>
</table>

Note: For more than 9 stations, supply air to both sides of P port and exhaust air from both sides of R port.

How to Order

SS3YJ7 - 21R - 05 -

Applicable solenoid valve

SYJ712R○○○○○○-01(-Q)
SYJ712R○○○○○-01(-Q)
SYJ722R○○○○○-01(-Q)

Applicable blanking plate assembly

Refer to page 1411.

Type 41R

Manifold type

<table>
<thead>
<tr>
<th>Stations</th>
<th>A port size</th>
<th>P, R port thread type</th>
<th>CE-compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>1/8</td>
<td>Nil</td>
<td>—</td>
</tr>
<tr>
<td>20</td>
<td>1/8</td>
<td>Rc</td>
<td>—</td>
</tr>
</tbody>
</table>

Note: For more than 9 stations, supply/exhaust air to/from both sides of P and R port.

How to Order

SS3YJ7 - 41R - 05 - 01 -

Applicable solenoid valve

SYJ714R○○○○○○-01(-Q)
SYJ714R○○○○-01(-Q)
SYJ724R○○○○○-01(-Q)
SYJ724R○○○-01(-Q)

Applicable blanking plate assembly

Refer to page 1411.

Type 42R

Manifold type

<table>
<thead>
<tr>
<th>Stations</th>
<th>A port size</th>
<th>P, R port thread type</th>
<th>CE-compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>1/8</td>
<td>Nil</td>
<td>—</td>
</tr>
<tr>
<td>01</td>
<td>1/8</td>
<td>Rc</td>
<td>—</td>
</tr>
</tbody>
</table>

Note: For more than 9 stations, supply/exhaust air to/from both sides of P and R port.

How to Order

SS3YJ7 - 42R - 05 - 01 -

Applicable solenoid valve

SYJ714R○○○○○○-01(-Q)
SYJ714R○○○○-01(-Q)
SYJ724R○○○○○-01(-Q)
SYJ724R○○○-01(-Q)

Applicable blanking plate assembly

Refer to page 1411.

Note) For more than 9 stations, supply air to both sides of P port and exhaust air from both sides of R port.

Refer to page 1411.
Rubber Seal
3 Port Pilot Solenoid Valve *Series SYJ700*

**Type 20 Manifold: Top Ported/SS3YJ7-20- Stations (-00沙漠) for AC**

Grommet (G)

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

<table>
<thead>
<tr>
<th>Station n</th>
<th>Station 1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>Station 20</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>
<td>325</td>
<td>344</td>
<td>363</td>
<td>382</td>
<td>401</td>
<td></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>
<td></td>
</tr>
</tbody>
</table>

(Approx. 300 (Lead wire length))

Approx. 57 [64]

(Approx. 300 (Lead wire length))

(Approx. 300 (Lead wire length))

(Approx. 300 (Lead wire length))

(Approx. 300 (Lead wire length))

(Applicable cable O.D.
ø3.5 to ø7)

* Refer to page 1429 for dimensions with connector cable.
**Series SYJ700**

**Type 21 Manifold: Top Ported/SS3YJ7-21- Stations (-00□)**

Grommet (G)

---

**L plug connector (L)  M plug connector (M)  DIN terminal (D, Y)  M8 connector (WO)**

---

<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>Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>61</td>
<td>80</td>
<td>99</td>
<td>118</td>
<td>137</td>
<td>156</td>
<td>175</td>
<td>194</td>
<td>213</td>
<td>232</td>
<td>251</td>
<td>270</td>
<td>289</td>
<td>308</td>
<td>327</td>
<td>346</td>
<td>365</td>
<td>384</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>
</tr>
</tbody>
</table>
Rubber Seal
3 Port Pilot Solenoid Valve Series SYJ700

Type 40 Manifold: Top Ported/SS3YJ7-40- Stations-01

Grommet (G)

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

<table>
<thead>
<tr>
<th>Station n</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</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>
<td>325</td>
<td>344</td>
<td>363</td>
<td>382</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>
</tr>
</tbody>
</table>

* Refer to page 1429 for dimensions with connector cable.

Approx. 300 (Lead wire length)

Approx. 300 (Pressure)

Approx. 300 (Lead wire length)

Approx. 300 (Lead wire length)

Approx. 300 (Pressure)

Approx. 300 (Lead wire length)

Approx. 300 (Pressure)

Approx. 300 (Lead wire length)

Approx. 300 (Pressure)
Series SYJ700

Type 42 Manifold: Top Ported/SS3YJ7-42-Stations-01, C6 N7 □ for AC

Grommet (G)
For C6, N7 □ (Built-in one-touch fitting)

For 1/8

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

One-touch fitting
(Pitch) P=19

Manual override

Approx. 300
(Lead wire length)

Approx. 300
(Lead wire length)

For Mounting

Approx. 300
(Lead wire length)

Approx. 300
(Lead wire length)

L plug connector (L)

M plug connector (M)

DIN terminal (D, Y)

M8 connector (WO)

Station n Station 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 Station 30
L1 61 80 99 118 137 156 175 194 213 232 251 270 289 308 327 346 365 384 403
L2 49 68 87 106 125 144 163 182 201 220 239 258 277 296 315 334 353 372 391

* Refer to page 1429 for dimensions with connector cable.
Rubber Seal
3 Port Pilot Solenoid Valve Series SYJ700

Type 41 Manifold: Top Ported/SS3YJ7-41- Stations -01

Grommet (G)

(Light/surge voltage suppressor)

(Pitch) P=19

(Pitch) P=19

(A port)
**Series SYJ700**

Type 21R Manifold: Top Ported (External Pilot Type)/SS3YJ7-21R-[Stations (-00)](0x0) for AC

Grommet (G)

---

**L plug connector (L)**

**M plug connector (M)**

**DIN terminal (D)**

**M8 connector (WO)**

---

<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>61</td>
<td>80</td>
<td>99</td>
<td>118</td>
<td>137</td>
<td>156</td>
<td>175</td>
<td>194</td>
<td>213</td>
<td>232</td>
<td>251</td>
<td>270</td>
<td>289</td>
<td>308</td>
<td>327</td>
<td>346</td>
<td>365</td>
<td>384</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>
</tr>
</tbody>
</table>

---

* Refer to page 1429 for dimensions with connector cable.

**Approx. 300 (Lead wire length)**

**Approx. 300 (Lead wire length)**

**Approx. 300 (Lead wire length)**

**Approx. 300 (Lead wire length)**

---

**Approx. 300 (Lead wire length)**

**Approx. 300 (Lead wire length)**

**Approx. 300 (Lead wire length)**

**Approx. 300 (Lead wire length)**

---

Courtesy of Steven Engineering, Inc.-230 Ryan Way, South San Francisco, CA 94080-6370-Main Office: (650) 588-9200-Outside Local Area: (800) 258-9200-www.stevenengineering.com
Rubber Seal
3 Port Pilot Solenoid Valve Series SYJ700

Type 42R Manifold: Side Ported/SS3YJ7-42R

Grommet (G)

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

Station n  |  Station 1  |  Station 2  |  Station 3  |  Station 4  |  Station 5  |  Station 6  |  Station 7  |  Station 8  |  Station 9  |  Station 10  |  Station 11  |  Station 12  |  Station 13  |  Station 14  |  Station 15  |  Station 16  |  Station 17  |  Station 18  |  Station 19  |  Station 20
L1 | 61 | 80 | 99 | 118 | 137 | 156 | 175 | 194 | 213 | 232 | 251 | 270 | 289 | 308 | 327 | 346 | 365 | 384 | 403 | 422 | 441 | 460 | 479 | 498 | 517 | 536
L2 | 49 | 68 | 87 | 106 | 125 | 144 | 163 | 182 | 201 | 220 | 239 | 258 | 277 | 296 | 315 | 334 | 353 | 372 | 391 | 410 | 429 | 448 | 467 | 486 | 505 | 524

Refer to page 1429 for dimensions with connector cable.

Courtesy of Steven Engineering, Inc.-230 Ryan Way, South San Francisco, CA 94080-6370-Main Office: (650) 588-9200-Outside Local Area: (800) 258-9200-www.stevenengineering.com
**Series SYJ700**

Type 41R Manifold: Bottom Ported (External Pilot Type)/SS3YJ7-41R-S[Stations-01□] for AC

Grommet (G)

![Diagram of Grommet (G)](image)

Light/surge voltage suppressor

(A port) P=19

21

22

Pitch

Courtesy of Steven Engineering, Inc.-230 Ryan Way, South San Francisco, CA 94080-6370-Main Office: (650) 588-9200-Outside Local Area: (800) 258-9200-www.stevenengineering.com
M8 Connector Conforming to IEC60947-5-2

Series SYJ300/500/700

Made to Order

How to Order Valve

- Type of actuation
  1. Normally closed
  2. Normally open

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

- Light/surge voltage suppressor
  N: 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)

- Port size
  M5
  01: 1/8 (SYJ700 only)

- Made to Order
  Nil
  X20: Body ported external pilot (Refer to page 1423.)

- Bracket
  Nil
  F: With bracket

- CE-complaint
  Nil
  Q: CE-compliant

- Electrical entry
  WAO: Without connector

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

- Thread type
  Nil
  M: M5 port
  F: G
  N: NPT
  T: NPTF

How to Order Pilot Valve Assembly

V111—5 WAO

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

- Light/surge voltage suppressor
  N: 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
  WAO: M8 connector
  WA: Without connector

- Note) Enter the cable length symbols in /L50132. Please be sure to fill in the blank referring to page 1429.

Since V111 is CE-compliant as standard, the suffix "-Q" is not necessary.
Series SYJ500/700
Made to Order
For detailed specifications, delivery and pricing, please contact SMC.

Body Ported External Pilot

How to Order     Applicable solenoid valve series/SYJ5□2R, SYJ7□2R

\[
\text{SYJ} \quad \frac{5}{7} \quad 2R \quad - \quad - \quad - \quad - \quad - \quad X20 \quad -
\]

Entry is the same as standard products.

Operating Pressure Range MPa

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating pressure range</td>
<td>$-100 \text{ kPa to } 0.7$</td>
</tr>
<tr>
<td>Pilot pressure range</td>
<td>$0.15 \text{ to } 0.7$</td>
</tr>
</tbody>
</table>

Dimensions
SYJ500: 8 mm longer in total length
SYJ700: 8 mm longer in total length

External Pilot Port

<table>
<thead>
<tr>
<th>Series</th>
<th>Port size</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYJ500, SYJ700</td>
<td>M5 x 0.8</td>
</tr>
</tbody>
</table>

JIS Symbol

[Diagram of JIS symbols for N.C. and N.O.]
Series SYJ300/500/700
Specific Product Precautions 1

Be sure to read before handling. Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve 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 slotted locking 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]

- **Solenoid Valve for 200, 220 VAC Specifications**

  **Warning**

  Solenoid valves with grommet and L/M type plug connector AC specifications have a built-in rectifier circuit in the pilot section to operate the DC coil. With 200, 220 VAC specification pilot valves, this built-in rectifier generates heat when energized. The surface may become hot depending on the energized condition; therefore, do not touch the solenoid valves.

**Common Exhaust Type for Main and Pilot Valve**

**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.

**Bracket**

**Caution**

For bracket attached styles of SYJ300, do not use it without bracket.

---
1. 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.

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.

How to Order Plug Connector Assembly
For DC: SY100-30-4A
For 100 VAC: SY100-30-1A
For 200 VAC: SY100-30-2A
For other voltages of AC: SY100-30-3A
Without lead wire: SY100-30-A

How to Order Plug Connector Lead Wire Length
Standard length is 300 mm, but the following lengths are also available.

How to Order Plug Connector Lead Wire Length
<table>
<thead>
<tr>
<th>Lead wire length</th>
<th>Lengths</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>600 mm</td>
</tr>
<tr>
<td>10</td>
<td>1000 mm</td>
</tr>
<tr>
<td>15</td>
<td>1500 mm</td>
</tr>
<tr>
<td>20</td>
<td>2000 mm</td>
</tr>
<tr>
<td>25</td>
<td>2500 mm</td>
</tr>
<tr>
<td>30</td>
<td>3000 mm</td>
</tr>
<tr>
<td>50</td>
<td>5000 mm</td>
</tr>
</tbody>
</table>
**Series SYJ300/500/700 Specific Product Precautions 3**

Be sure to read before handling. Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

---

**Surge Voltage Suppressor**

### Caution

<For DC>
Grommet, L/M Plug Connector

- **Standard type (with polarity)**
  - Surge voltage suppressor (S)
  - Diode to prevent reverse current
  - Red (+)  Black (-)
  - With light/surge voltage suppressor (Z)
  - Diode to prevent reverse current
  - Red (+)  Black (-)

- **Non-polar type**
  - Surge voltage suppressor (R)
  - Diode to prevent reverse current
  - (+) (-)
  - With light/surge voltage suppressor (U)
  - Diode to prevent reverse current
  - (+) (-)

- **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.)

**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 0.5 volt drop due to the transistor. (For details, refer to the solenoid specifications for the individual valve.)

---

**DIN Terminal**

- **With surge voltage suppressor (DS)**
  - Red (+)  Black (-)
  - With light/surge voltage suppressor (DZ)

- **DIN terminal has no polarity.**

**M8 Connector**

- **Standard type (with polarity)**
  - Surge voltage suppressor (S)
  - (+) (-)
  - With light/surge voltage suppressor (U)
  - (+) (-)

- **Non-polar type**
  - Surge voltage suppressor (R)
  - (+) (-)
  - With light/surge voltage suppressor (Z)
  - (+) (-)

**Solenoid valve side pin wiring diagram**

- **Type W**
  - (+) (-)
  - Type WA
  - (+) (-)

- **For the standard type, connect + to 1 and – to 3 for Type W according to polarity, while + to 4 and – to 3 for Type WA.**
- **Please be careful not to reverse the polarity, since a diode to prevent the reversed current is not provided for DC voltages other than 24 and 12 VDC.**
- **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.)**
- **The WA-type valve cannot be grounded.**
Series SYJ300/500/700
Specific Product Precautions 4

Get ready to read before handling. Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

Surge Voltage Suppressor

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

Caution

Grommet, L/M Plug Connector
With light (L50132)

DIN Terminal
With light (DZ)

Caution

DIN Terminal Type Y
A type Y DIN connector is a DIN connector conforming to the 8-mm standard pitch between DIN terminals.

How to Use DIN Terminal

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.

How to Use DIN Terminal

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).

Precautions

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

Solenoid Valve Mounting

Caution

Mount it so that there is no slippage or deformation in gaskets, and tighten with the tightening torque as shown below.
Series SYJ300/500/700
Specific Product Precautions 5

Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

DIN Connector Part No.

<table>
<thead>
<tr>
<th>Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>&lt;Type D&gt;</strong></td>
</tr>
<tr>
<td><strong>Without light</strong></td>
</tr>
<tr>
<td><strong>With light</strong></td>
</tr>
<tr>
<td><strong>Rated voltage</strong></td>
</tr>
<tr>
<td>24 VDC</td>
</tr>
<tr>
<td>12 VDC</td>
</tr>
<tr>
<td>100 VAC</td>
</tr>
<tr>
<td>200 VAC</td>
</tr>
<tr>
<td>110 VAC</td>
</tr>
<tr>
<td>220 VAC</td>
</tr>
</tbody>
</table>

**<Type Y>**
| **Without light** | SY100-82-1 |
| **With light** | |
| **Rated voltage** | **Voltage symbol** | **Part no.** |
| DC24 V | 24 VN | SY100-82-3-05 |
| DC12 V | 12 VN | SY100-82-3-06 |
| 100 VAC | 100 VN | SY100-82-2-01 |
| 200 VAC | 200 VN | SY100-82-2-02 |
| 110 VAC(115 VAC) | 110 VN | SY100-82-2-03 |
| 220 VAC(230 VAC) | 220 VN | SY100-82-2-04 |

## Connector Assembly with Cover

<table>
<thead>
<tr>
<th>Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connector assembly with dust proof protective cover.</td>
</tr>
<tr>
<td>• Effective to prevention of short circuit failure due to the entry of foreign matter into the connector.</td>
</tr>
<tr>
<td>• 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.</td>
</tr>
<tr>
<td>• Simple and unencumbered appearance by adopting round-shaped cord.</td>
</tr>
</tbody>
</table>

### How to Order

**SY100–68–A**

**Lead wire length**

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

**SY100–68–A–20**

**SY100–68–A–30**

### Connector Assembly with Cover: Dimensions

**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

SYJ312-5LOZ-M3
SY100-68-A-20

Ex. 2) Lead wire length of 300 mm (standard)

SYJ312-5LPZ-M3
SY100-68-A-30

Symbol for connector assembly with cover

* In this case, the part number for the connector assembly with cover is not required.
**Series SYJ300/500/700**

**Specific Product Precautions 6**

Be sure to read before handling. Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

---

**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 SYJ300 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 cable mounting**

*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.)

   Ex. 1) Cable length: 300 mm
   
   SYJ312-5W1ZE-M3

   Symbol for electrical entry

2. To order connector cable only

   **Connector dimensions**

   - 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

   **Part no.**
   
   - 300 mm: V100-49-1-1
   - 500 mm: V100-49-1-2
   - 1000 mm: V100-49-1-3
   - 2000 mm: V100-49-1-4
   - 5000 mm: V100-49-1-7

---

**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.
Series SYJ300/500/700
Specific Product Precautions 7

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