Rubber Seal

Offset Type

Power Consumption
0.1W
With Power Saving Circuit

* For details, refer to page 1214.

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

Flow Rate Characteristics

<table>
<thead>
<tr>
<th>Series</th>
<th>Flow rate characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYJ300</td>
<td>C [dm³/(s·bar)]</td>
</tr>
<tr>
<td>SYJ500</td>
<td>1.2</td>
</tr>
<tr>
<td>SYJ700</td>
<td>2.7</td>
</tr>
</tbody>
</table>
## Rubber Seal
### 3 Port Solenoid Valve
**SYJ300/500/700 Series**

<table>
<thead>
<tr>
<th>Series</th>
<th>Port size</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>
<tbody>
<tr>
<td><strong>Body ported</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SYJ300</strong></td>
<td>M3 x 0.5</td>
<td>0.9 mm²</td>
<td>2→3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[2(Å→R)]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SYJ500</strong></td>
<td>M5 x 0.8</td>
<td>0.66</td>
<td>2→3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[2(Å→R)]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SYJ700</strong></td>
<td>1/8</td>
<td>2.5</td>
<td>2→3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[2(Å→R)]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Base mounted</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SYJ300</strong></td>
<td>M5 x 0.8</td>
<td>0.36</td>
<td>2→3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[2(Å→R)]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SYJ500</strong></td>
<td>1/8</td>
<td>1.2</td>
<td>2→3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[2(Å→R)]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SYJ700</strong></td>
<td>1/8, 1/4</td>
<td>2.7</td>
<td>2→3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[2(Å→R)]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Valve series</th>
<th>A port location</th>
<th>P, R ports size</th>
<th>A port 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>Note 1)</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>ø6</td>
</tr>
<tr>
<td>SYJ500</td>
<td>Top</td>
<td>1/8</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>
<td>—</td>
</tr>
<tr>
<td>SYJ300</td>
<td>Bottom</td>
<td>M5 x 0.8</td>
<td>Note 1)</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>ø6</td>
</tr>
<tr>
<td>SYJ500</td>
<td>Bottom</td>
<td>1/8</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>SYJ700</td>
<td>Bottom</td>
<td>1/4</td>
<td>—</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

### Base mounted

<table>
<thead>
<tr>
<th>SYJ300 series</th>
<th>SYJ500 series</th>
<th>SYJ700 series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body ported</td>
<td>Body ported</td>
<td>Body ported</td>
</tr>
</tbody>
</table>

---

SYJ  
VQZ  
VP  
VG  
VP3
Rubber Seal
3 Port Pilot Solenoid Valve

SYJ300 Series

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></td>
<td>0.15 to 0.7</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) (Note 1)</td>
<td>15 or less</td>
</tr>
<tr>
<td>Max. operating frequency (Hz)</td>
<td>10</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>Impact/Vibration resistance (m/s²) (Note 2)</td>
<td>150/30</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Dust proof (+ M8 connector conforms to IP65.)</td>
</tr>
</tbody>
</table>

* Based on IEC60529

Note 1) Based on dynamic performance test, JIS B 8419: 2010. (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.

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.

Solenoid Specifications

<table>
<thead>
<tr>
<th>Electrical entry</th>
<th>Grommet (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</td>
</tr>
<tr>
<td></td>
<td>24, 12, 6, 5, 3</td>
</tr>
<tr>
<td></td>
<td>AC (Note 2)</td>
</tr>
<tr>
<td></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</td>
</tr>
<tr>
<td></td>
<td>Standard</td>
</tr>
<tr>
<td></td>
<td>0.35 (With light: 0.4)</td>
</tr>
<tr>
<td></td>
<td>With power saving circuit</td>
</tr>
<tr>
<td></td>
<td>0.1 (With light only) *</td>
</tr>
<tr>
<td></td>
<td>[Starting 0.4, Holding 0.1]</td>
</tr>
<tr>
<td></td>
<td>AC</td>
</tr>
<tr>
<td></td>
<td>100 V</td>
</tr>
<tr>
<td></td>
<td>0.78 (With light: 0.81)</td>
</tr>
<tr>
<td></td>
<td>110 V [115 V]</td>
</tr>
<tr>
<td></td>
<td>0.86 (With light: 0.89)</td>
</tr>
<tr>
<td></td>
<td>[0.94 (With light: 0.97)]</td>
</tr>
<tr>
<td></td>
<td>200 V</td>
</tr>
<tr>
<td></td>
<td>1.18 (With light: 1.22)</td>
</tr>
<tr>
<td></td>
<td>220 V [230 V]</td>
</tr>
<tr>
<td></td>
<td>1.30 (With light: 1.34)</td>
</tr>
<tr>
<td></td>
<td>[1.42 (With light: 1.46)]</td>
</tr>
<tr>
<td>Surge voltage suppressor</td>
<td>Diode (Varistor when non-polar types)</td>
</tr>
<tr>
<td>Indicator light</td>
<td>LED</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.

* For details, refer to page 1214.
Rubber Seal

3 Port Pilot Solenoid Valve SYJ300 Series

External Pilot

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>Valve model</th>
<th>Type of actuation</th>
<th>Port size</th>
<th>Flow rate characteristics</th>
<th>Effective area (mm²)</th>
<th>Weight (g) (Note)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1→2 (P→A)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>C [dm³/(s bar)] b Cv</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2→3 (A→R)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>C [dm³/(s bar)] b Cv</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Body ported</td>
<td>SYJ312</td>
<td>N.C.</td>
<td>M5 x 0.5</td>
<td>0.41</td>
<td>53 (SYJ314R)</td>
</tr>
<tr>
<td></td>
<td>SYJ322</td>
<td>N.O.</td>
<td>M5 x 0.8</td>
<td>0.36</td>
<td>54 (SYJ324R)</td>
</tr>
<tr>
<td>Base mounted (with sub-plate)</td>
<td>SYJ314</td>
<td>N.C.</td>
<td>M5 x 0.8</td>
<td>0.41</td>
<td>0.18</td>
</tr>
<tr>
<td></td>
<td>SYJ324</td>
<td>N.O.</td>
<td>M5 x 0.8</td>
<td>0.36</td>
<td>58 (SYJ324R)</td>
</tr>
</tbody>
</table>

Note 1) Value for DC. Add 1 g for AC. ( ): Without sub-plate.

SYJ300R

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.

<table>
<thead>
<tr>
<th>Applicable model</th>
<th>Base mounted (SYJ314R, SYJ324R)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating pressure range</td>
<td>Main pressure</td>
</tr>
<tr>
<td>MPa</td>
<td>External pilot pressure</td>
</tr>
</tbody>
</table>

Mark

P, R port
M5 x 0.8

X port (External pilot)
M5 x 0.8

A port
M5 x 0.8

Note 1) For manifold base, refer to page 1166.
Note 2) External pilot type body ported valves (SYJ3☐2R) can only be used on the manifold.
SYJ300 Series

How to Order

Body ported

SYJ3
1
2
5
M
M3

Type of actuation

1
Normally closed
2
Normally open

Rated voltage

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

AC (V/Hz)

100 VAC —
200 VAC —
110 VAC [115 VAC] —
220 VAC [230 VAC] —

Port size

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

(With gasket and screws)

Coil specifications

<table>
<thead>
<tr>
<th>Nil</th>
<th>Standard</th>
<th>T With power saving circuit (24, 12 VDC only)</th>
</tr>
</thead>
</table>

Note) CE-compliant: For DC only.

Light/Surge voltage suppressor

<table>
<thead>
<tr>
<th>Nil</th>
<th>Without light/surge voltage suppressor</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>With surge voltage suppressor</td>
</tr>
<tr>
<td>Z</td>
<td>With light/surge voltage suppressor (Non-polar type)</td>
</tr>
<tr>
<td>U</td>
<td>With light/surge voltage suppressor (Non-polar type)</td>
</tr>
</tbody>
</table>

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

- For type R, U, DC voltage is only available.
- Power saving circuit is only available in the "Z" type.

Bracket

Nil: Without bracket
F: With bracket

- Bracket is mounted.
- Brackets cannot be retrofitted.
- External pilot type is not available.

Electrical entry

<table>
<thead>
<tr>
<th>Grommet</th>
<th>L plug connector</th>
<th>M plug connector</th>
<th>MB 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>MN: Without lead wire</td>
</tr>
<tr>
<td>H: Lead wire length 600 mm</td>
<td>LN: Without lead wire</td>
<td>LO: Without connector</td>
<td>MO: Without connector</td>
</tr>
<tr>
<td>WO: Without connector cable</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| W: With connector cable Note 1 |

Note 1) Enter the cable length symbols in [ ] Please be sure to fill in the blank referring to page 1217.

---

syj3.2 is only for manifold use.

* LN, MN type: with 2 sockets.
* Refer to page 1213 for the lead wire length of L and M plug connectors.
* Refer to page 1216 for the connector assembly with cover for L and M plug connectors.
* For connector cable of MB connector, refer to page 1217.
* A M6 connector conforming to IEC60947-5-2 is also available. Refer to page 1210 for details.

Note 1) Enter the cable length symbols in [ ] Please be sure to fill in the blank referring to page 1217.

---

Body ported

SYJ3
1
4

- 5
M

Base mounted

3 port

R: Common exhaust for the pilot and main valve
P: Pilot valve exhaust is centralized to main valve
R: External pilot type

Nil: Individual pilot exhaust type
M: Common exhaust for the pilot and main valve

Notes:
- 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 1167.)
- For type R, U, DC voltage is only available.
- Power saving circuit is only available in the "Z" type.

---

CE-compliant

<table>
<thead>
<tr>
<th>Nil</th>
<th>Q CE-compliant</th>
</tr>
</thead>
</table>

Note) CE-compliant: For DC only.

---

Manual override

Nil: Non-locking push type
D: Push-turn locking slotted type
E: Push-turn locking lever type
Rubber Seal 3 Port Pilot Solenoid Valve SYJ300 Series

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>Zinc 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>
</tbody>
</table>

How to Order Pilot Valve Assembly

V111 - 5 G

Coil specifications

<table>
<thead>
<tr>
<th>Nil</th>
<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 W type.</td>
<td></td>
</tr>
</tbody>
</table>

Rated voltage

<table>
<thead>
<tr>
<th>24 VDC</th>
<th>12 VDC</th>
<th>6 VDC</th>
<th>5 VDC</th>
<th>3 VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>100 VAC 50/60 Hz</td>
<td>200 VAC 50/60 Hz</td>
<td>110 VAC 50/60 Hz [115 VAC 50/60 Hz]</td>
<td>220 VAC 50/60 Hz [230 VAC 50/60 Hz]</td>
</tr>
</tbody>
</table>

Light/Surge voltage suppressor

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

Note 1) Add suffix “-Q” for the CE-compliant product.

Electrical entry

- Grommet, 300 mm lead wire
- Grommet, 600 mm lead wire
- L plug connector With lead wire
- Without lead wire
- Without connector
- M plug connector With lead wire
- Without lead wire
- Without connector
- WO M8 connector Without connector cable
- With connector cable (Non-polar type)

Note) Since V111 is CE-compliant as standard, the suffix “-Q” is not necessary.

Please be sure to fill in the blank referring to page 1217.

Note) Add suffix “-Q” for the CE-compliant product.
SYJ300 Series

Body Ported

Grommet (G), (H): SYJ3□2-□G□H□M3

With bracket:
SYJ3□2-□G□H□M3-F

L plug connector (L):
SYJ3□2-L□□-M3

M plug connector (M):
SYJ3□2-M□□-M3

M8 connector (WO):
SYJ3□2-WO□□-M3

* Refer to page 1217 for dimensions with connector cable.
Base Mounted (With Sub-plate)

Grommet (G), (H): SYJ3□4-□□□□-M5

(Light/surge voltage suppressor)

L plug connector (L): SYJ3□4-□□L□□□□-M5

M plug connector (M): SYJ3□4-□□M□□□□-M5

M8 connector (WO): SYJ3□4-□□WO□□□□-M5

∗ Refer to page 1217 for dimensions with connector cable.
**SYJ300 Series**

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>For internal pilot</th>
<th>For external pilot</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type 20</td>
<td>Type 41, S41</td>
</tr>
</tbody>
</table>

**Manifold type**  
- Single base/B mount
- Common SUP/Common EXH

**Valve stations**  
- 2 to 20 stations

**A port**  
- Porting specifications
  - Location
  - Direction
  - P, R port
  - M₅ x 0.8
  - M₅ x 0.8

**Port size**  
- Type 20: M₅ x 0.8, M₅ x 0.8
- Type 41, S41: M₃ x 0.5, M₃ x 0.5
- Type 42, S42: M₅ x 0.8, C₄ (One-touch fitting ø4)

**X port**  
- M₅ x 0.8

Note: Only for external pilot

---

**Flow Rate Characteristics**

<table>
<thead>
<tr>
<th>Manifold</th>
<th>Port size</th>
<th>Flow rate characteristics</th>
<th>Effective area (mm²)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1→2 (P→A)</td>
<td>2→3 (A→R)</td>
<td>C [dm³/(s·bar)]</td>
</tr>
<tr>
<td>Body ported for internal pilot</td>
<td>Type SS3YJ3-20/41</td>
<td>M₅ x 0.8</td>
<td>M₃ x 0.5</td>
</tr>
<tr>
<td>Base mounted for internal pilot</td>
<td>Type SS3YJ3-42-M5</td>
<td>M₅ x 0.8</td>
<td>M₅ x 0.8</td>
</tr>
<tr>
<td></td>
<td>Type SS3YJ3-42-C4</td>
<td>M₅ x 0.8</td>
<td>M₅ x 0.8</td>
</tr>
<tr>
<td></td>
<td>Type SS3YJ3-S42-M5</td>
<td>M₅ x 0.8</td>
<td>M₅ x 0.8</td>
</tr>
<tr>
<td></td>
<td>Type SS3YJ3-S42-C4</td>
<td>M₅ x 0.8</td>
<td>M₅ x 0.8</td>
</tr>
<tr>
<td>Body ported for external pilot</td>
<td>Type SS3YJ3-20R</td>
<td>M₅ x 0.8</td>
<td>M₅ x 0.8</td>
</tr>
<tr>
<td>Base mounted for external pilot</td>
<td>Type SS3YJ3-10-7A</td>
<td>M₅ x 0.8</td>
<td>M₅ x 0.8</td>
</tr>
</tbody>
</table>

Note: Value at manifold base mounted, 2 position single acting

---

**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)

- SS3YJ3-20-03 1 set (manifold base)
- SS3YJ3-42R-03-C4 1 set (manifold base)
- SYJ312-SYLZ-M3 2 sets (valve)
- SYJ314R-5G 2 sets (valve)
- SYJ300-10-7A 1 set (blanking plate assembly)

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

**Body ported (Type SYJ3‒2(R)(-Q))**
- Round head combination screw
- Manifold gasket
- SS3YJ3-20(-Q)
- SS3YJ3-20R(-Q)
- Manifold base

**Base mounted (Type SYJ3‒4(R)(-Q))**
- Round head combination screw
- Manifold gasket
- SYJ300-5-6
- SYJ300-5-12

Applicable base
- SS3YJ3-20(-Q)
- SS3YJ3-20R(-Q)
- SS3YJ3-41(-Q)
- SS3YJ3-41R(-Q)
- SS3YJ3-42(-Q)
- SS3YJ3-42R(-Q)
- SS3YJ3-42R(-Q)
- SS3YJ3-S41(-Q)
- SS3YJ3-S42(-Q)
- SS3YJ3-S42R(-Q)
- SS3YJ3-S42R(-Q)

Blanking Plate Assembly

Part no.: SYJ300-10-7A(-Q)
- Round head combination screw
- Blanking plate
- Manifold gasket

Applicable base
- Sub-plate
- SS3YJ3-20(-Q)
- SS3YJ3-20R(-Q)
- SS3YJ3-41(-Q)
- SS3YJ3-41R(-Q)
- SS3YJ3-42(-Q)
- SS3YJ3-42R(-Q)
- SS3YJ3-42R(-Q)
- SS3YJ3-S41(-Q)
- SS3YJ3-S42(-Q)
- SS3YJ3-S42R(-Q)
- SS3YJ3-S42R(-Q)

Note) Add suffix "-Q" for the CE-compliant product.

⚠️ Caution

Mounting screw tightening torques
- M1.7: 0.12 N·m

Use caution to the assembly orientation for solenoid valves, gasket and optional parts.
**SYJ300 Series**

### Manifold for Internal Pilot Type

**Type 20**

- **Valve mounting direction**: Pilot valve is on the A port side.
- **How to Order**: SS3YJ3 - **20** - **05**
- **P, R port thread type**: CE-compliant
- **Applicable solenoid valve**: SYJ314R-M3(-Q)
- **Applicable blanking plate assembly**: Refer to page 1167.

**Type 41**

- **Valve mounting direction**: Pilot valve is on the A port side.
- **How to Order**: SS3YJ3 - **41** - **05** - **M3**
- **P, R port thread type**: CE-compliant
- **Applicable solenoid valve**: SYJ314R-M3(-Q)
- **Applicable blanking plate assembly**: Refer to page 1167.

**Type 42**

- **Valve mounting direction**: Pilot valve is opposite the A port side.
- **How to Order**: SS3YJ3 - **42** - **05**
- **P, R port thread type**: CE-compliant
- **Applicable solenoid valve**: SYJ314R-M3(-Q)
- **Applicable blanking plate assembly**: Refer to page 1167.

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

**Type 20R**

- **Valve mounting direction**: Pilot valve is on the A port side and is of the external pilot type.
- **How to Order**: SS3YJ3 - **20R** - **05**
- **P, R port thread type**: CE-compliant
- **Applicable solenoid valve**: SYJ314R-M3(-Q)
- **Applicable blanking plate assembly**: Refer to page 1167.

**Type 42R**

- **Valve mounting direction**: Pilot valve is opposite the A port side.
- **How to Order**: SS3YJ3 - **42R** - **05**
- **P, R port thread type**: CE-compliant
- **Applicable solenoid valve**: SYJ314R-M3(-Q)
- **Applicable blanking plate assembly**: Refer to page 1167.
Rubber Seal
3 Port Pilot Solenoid Valve SYJ300 Series

Type 20 Manifold: Top Ported/SS3YJ3-20- [ Stations ] -00 □ (-F)

* [ ] for AC

Grommet (G)

M3 x 0.5 (Bracket mounting screw)
M3 x 0.5 (A port)
(Light/surge voltage suppressor)

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

<table>
<thead>
<tr>
<th>Station n</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<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 page 1217 for dimensions with connector cable.
**SYJ300 Series**

**Type 41 Manifold: Side Ported/SS3YJ3-41- Stations-M3**

Grommet (G)

![Grommet Diagram](image)

- **L1**
  - 48.8 [51] (Lead wire length)
  - 12.5

- **L2**
  - 26.1

(Model dimensions)

- **P = 10.5**

- **M3 x 0.5** (A port)

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

- **M3 x 0.5** (A port)

- **2 x ø3.5** (For mounting)

- **Manual override**

- **Light surge voltage suppressor**

**Type S41 Manifold: Side Ported**

*(Pilot valve is on the A port side)*

SS3YJ3-S41- Stations-M3

![Manifold Diagram](image)

- **L1**
  - 48.8 [51] (Pitch)

- **L2**
  - 26.1

- **M5 x 0.8** (P, R port)

- **M3 x 0.5** (A port)

- **2 x ø3.5** (For mounting)

- **Manual override**

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

- **M3 x 0.5** (A port)

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

**Refer to page 1217 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>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>
**Type 42 Manifold: Side Ported/SS3YJ3-42- Stations-M5, C4N3 □**

**Grommet (G)**

For M5

**Type S42 Manifold: Side Ported** (Pilot valve is on the A port side) / SS3YJ3-S42- Stations-M5, C4N3 □

**Grommet (G)**

For M5

### Table: Station Dimensions

<table>
<thead>
<tr>
<th>Station</th>
<th>L1 (41.5)</th>
<th>L2 (33.3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>41.5</td>
<td>33.3</td>
</tr>
<tr>
<td>4</td>
<td>42.5</td>
<td>44</td>
</tr>
<tr>
<td>5</td>
<td>44</td>
<td>54.5</td>
</tr>
<tr>
<td>6</td>
<td>54.5</td>
<td>62.5</td>
</tr>
<tr>
<td>7</td>
<td>65</td>
<td>73</td>
</tr>
<tr>
<td>8</td>
<td>86</td>
<td>96.5</td>
</tr>
<tr>
<td>9</td>
<td>104.5</td>
<td>115</td>
</tr>
<tr>
<td>10</td>
<td>115</td>
<td>125.5</td>
</tr>
<tr>
<td>11</td>
<td>125.5</td>
<td>136</td>
</tr>
<tr>
<td>12</td>
<td>136</td>
<td>146.5</td>
</tr>
<tr>
<td>13</td>
<td>146.5</td>
<td>157</td>
</tr>
<tr>
<td>14</td>
<td>157</td>
<td>167.5</td>
</tr>
<tr>
<td>15</td>
<td>167.5</td>
<td>178</td>
</tr>
<tr>
<td>16</td>
<td>178</td>
<td>188.5</td>
</tr>
<tr>
<td>17</td>
<td>188.5</td>
<td>199</td>
</tr>
<tr>
<td>18</td>
<td>199</td>
<td>209.5</td>
</tr>
<tr>
<td>19</td>
<td>209.5</td>
<td>220</td>
</tr>
<tr>
<td>20</td>
<td>220</td>
<td>230.5</td>
</tr>
</tbody>
</table>
Grommet (G)

SYJ300 Series

Type 20R Manifold: Top Ported (External Pilot Type)/SS3YJ3-20R-[Stations]-00

* Refer to page 1217 for dimensions with connector cable.
Rubber Seal 3 Port Pilot Solenoid Valve **SYJ300 Series**

**Type 42R Manifold: Side Ported (External Pilot Type)**/ SS3YJ3-42R-**Stations**-M5, **C4 N3 □**

**Grommet (G)**
For M5

**L plug connector (L)**
approx. 300 [55.5]

**M plug connector (M)**
Manual override

**M plug connector (M)**

**M8 connector (WO)**

Type S42R Manifold: Side Ported (Pilot valve is on the A port side) / SS3YJ3-S42R-**Stations**-M5, **C4 N3 □**

**Grommet (G)**
For M5

**For C4 N3 □ (Built-in One-touch fitting)**

**Refer to page 1217 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>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>47.5</td>
<td>58</td>
<td>68.5</td>
<td>79</td>
<td>89.5</td>
<td>100</td>
<td>110.5</td>
<td>121</td>
<td>131.5</td>
<td>142</td>
<td>152.5</td>
<td>163</td>
<td>173.5</td>
<td>184</td>
<td>194.5</td>
<td>205</td>
<td>215.5</td>
<td>226</td>
<td>236.5</td>
</tr>
<tr>
<td>L2</td>
<td>39.5</td>
<td>50</td>
<td>60.5</td>
<td>71</td>
<td>81.5</td>
<td>92</td>
<td>102.5</td>
<td>113</td>
<td>123.5</td>
<td>134</td>
<td>144.5</td>
<td>155</td>
<td>165.5</td>
<td>176</td>
<td>186.5</td>
<td>197</td>
<td>207.5</td>
<td>218</td>
<td>228.5</td>
</tr>
</tbody>
</table>
Rubber Seal
3 Port Pilot Solenoid Valve
SYJ500 Series

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></td>
<td>0.15 to 0.7</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) Note 1)</td>
<td>25 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 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>Impact/Vibration resistance (m/s²) Note 2)</td>
<td>150/20</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Dust proof (&gt; DIN terminal, M8 connector conforms to IP65.)</td>
</tr>
</tbody>
</table>

* Based on IEC60529
Note 1) Based on dynamic performance test, JIS B 8419: 2010. (Coil temperature: 20°C, at rated volume, without surge voltage suppressor.)

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

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.

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), M8 connector (W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coil rated voltage (V)</td>
<td>DC 24, 12, 6, 5, 3, 24, 12, AC 46/60 Hz, 100, 110, 200, 220</td>
</tr>
<tr>
<td>Allowable voltage fluctuation</td>
<td>±10% of rated voltage *</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Power consumption (W)</th>
<th>DC 0.35 (With light: 0.4 (DIN terminal with light: 0.45))</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.1 (With light only) *</td>
</tr>
<tr>
<td></td>
<td>[Starting 0.4, Holding 0.1]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Apparent power (VA)</th>
<th>AC 0.18 (With light: 0.18)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>110 V [115 V] 0.86 (With light: 0.89) [0.94 (With light: 0.97)]</td>
</tr>
<tr>
<td></td>
<td>200 V 1.18 (With light: 1.22)</td>
</tr>
<tr>
<td></td>
<td>220 V [230 V] 1.30 (With light: 1.34) [1.42 (With light: 1.46)]</td>
</tr>
<tr>
<td></td>
<td>[0.94 (With light: 0.97)]</td>
</tr>
<tr>
<td></td>
<td>1.82 (With light: 1.82)</td>
</tr>
<tr>
<td></td>
<td>[1.39 (With light: 1.60)]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Surge voltage suppressor</th>
<th>Diode (DIN terminal, varistor when non-polar types)</th>
</tr>
</thead>
<tbody>
<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.
* For details, refer to page 1214.
Rubber Seal
3 Port Pilot Solenoid Valve SYJ500 Series

External Pilot

SYJ500R

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>Flow rate characteristics</th>
<th>Base mounted (SYJ514R, SYJ524R)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1→2 (P→A)</td>
<td>2→3 (A→R)</td>
</tr>
<tr>
<td>SYJ512 N.C.</td>
<td>C [dm³/(s·bar)] b CV C [dm³/(s·bar)] b CV</td>
<td>0.53 0.45 0.14 0.47 0.39 0.12</td>
</tr>
<tr>
<td>SYJ522 N.O.</td>
<td></td>
<td>0.66 0.45 0.18 0.66 0.45 0.18</td>
</tr>
<tr>
<td>SYJ514 N.C. 1/8</td>
<td></td>
<td>1.6 0.41 0.32 1.1 0.46 0.32</td>
</tr>
<tr>
<td>SYJ524 N.O.</td>
<td></td>
<td>1.3 0.37 0.33 1.2 0.48 0.34</td>
</tr>
</tbody>
</table>

Note 1) Value for DC. Add 3 g for AC. ( ) Without sub-plate.

Flow Rate Characteristics/Weight

<table>
<thead>
<tr>
<th>Valve model</th>
<th>Type of actuation</th>
<th>Port size</th>
<th>Flow rate characteristics</th>
<th>Weight (g) Note</th>
<th>L/M plug connector</th>
<th>DIN terminal</th>
<th>M8 connector</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M5 x 0.8</td>
<td>1→2 (P→A)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYJ512 N.C.</td>
<td></td>
<td></td>
<td>0.53 0.45 0.14 0.47 0.39 0.12</td>
<td>46</td>
<td>47</td>
<td>68</td>
<td>51</td>
</tr>
<tr>
<td>SYJ522 N.O.</td>
<td></td>
<td></td>
<td>0.66 0.45 0.18 0.66 0.45 0.18</td>
<td>60 (46)</td>
<td>61 (47)</td>
<td>82 (68)</td>
<td>65 (51)</td>
</tr>
<tr>
<td>SYJ514 N.C.1/8</td>
<td></td>
<td></td>
<td>1.6 0.41 0.32 1.1 0.46 0.32</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYJ524 N.O.</td>
<td></td>
<td></td>
<td>1.3 0.37 0.33 1.2 0.48 0.34</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1) For manifold base, refer to page 1180.
Note 2) External pilot type body ported valves (SYJ522R) can only be used on the manifold. For body ported models with the external pilot option, please refer to page 1211.
**SYJ500 Series**

**How to Order**

**Rated voltage**

- DC specifications of types D, Y, DO and YO are only available with 12 and 24 VDC.
- For type W, DC voltage is only available. Note: AC-type models that are CE-compliant have DIN terminals only.

**Type of actuation**

- Normally closed
- Normally open

**Coil specifications**

- Standard
- With power saving circuit (24, 12 VDC only)
- Power saving circuit is not available in the case of D, Y, DO, YO or W, R type.

**Light/Surge voltage suppressor**

- Electrical entry for G, H, L, M and W
  - S: Without light/surge voltage suppressor
  - Z: With surge voltage suppressor
  - R: With surge voltage suppressor (Non-polar type)
  - U: 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.
  - For type “R” and “U”, DC voltage is only available.
  - Power saving circuit is only available in the “Z” type.

- Electrical entry for D, Y
  - S: Without light/surge voltage suppressor (Non-polar type)
  - Z: With light/surge voltage suppressor (Non-polar type)
  - DO and YOZ are not available.
  - For AC voltage valves there is no “S” option. It is already built-in to the rectifier circuit.

**Bracket**

- Nil: Without bracket
- With bracket

**Made to Order**

(For manifold type 20, 21R)

**Body ported**

- SYJ5 1 2
- 3 port

**Base mounted**

- SYJ5 1 4
- 3 port

**Body option**

- Nil: Individual pilot exhaust type
- M: Common exhaust for the pilot and main valve
- R: External pilot type

- SYJ52R is only for manifold use.

**Port size**

- Nil: Without sub-plate
- 1/8 port: With sub-plate

**Thread type**

- Nil
- CE-compliant

**Electrical entry**

- 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
- Y: Without connector
- DO: Without connector
- MO: Without connector
- WO: Without connector cable

**CE-compliant**

- Note) AC-type models that are CE-compliant have DIN terminals only.

- 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 1211.)

- LN, MN type: with 2 sockets.
- Refer to page 1213 for the lead wire length of L and M plug connectors.
- Refer to page 1216 for the connector assembly with cover for L and M plug connectors.

- Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 1217.

- DIN terminal type “Y” which conforms to EN-175301-803C (former DIN43650C) is also available. For details, refer to page 1215.

- Power saving circuit is not available in the case of D, Y, DO, YO or W type. (With gasket and screws)

- For type W, DC voltage is only available.

- For connector cable of M8 connector, refer to page 1217.

- A M8 connector conforming to IEC60947-5-2 is also available. Refer to page 1210 for details.

- For connector cable of Grommet L plug connector, refer to page 1213.

- Made to Order (page 1211)

- Body ported external pilot

- CE-compliant
**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-cast</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>Aluminum die-cast</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>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>SYJ500-9-1(-Q)</td>
<td>Aluminum die-cast</td>
</tr>
<tr>
<td>8</td>
<td>Pilot valve</td>
<td>V111(T)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>SYJ5000-13-3A</td>
<td></td>
</tr>
</tbody>
</table>

Note: Add suffix “-Q” for the CE-compliant product.

**How to Order Pilot Valve Assembly**

**V111**

- **Coil specifications**
  - **Nil** Standard
  - **T** With power saving circuit (24, 12 VDC only)
  - Power saving circuit is not available in the case of W type.
  - CE-compliant: For DC only.

- **Rated voltage**
  - 5 V: 24 VDC
  - 6 V: 12 VDC
  - 7 V: 6 VDC
  - 8 V: 5 VDC
  - 9 V: 3 VDC
  - 100 VAC 50/60 Hz
  - 200 VAC 50/60 Hz
  - 110 VAC 50/60 Hz
  - 5 VDC
  - 220 VAC 50/60 Hz [230 VAC 50/60 Hz]
  - For type W: DC voltage is only available.
  - CE-compliant: For DC only.

- **Light/Surge voltage suppressor**
  - Nil: Without light/surge voltage suppressor
  - S: With surge voltage suppressor
  - Z: With light/surge voltage suppressor
  - U: With surge voltage suppressor (Non-polar type)
  - For AC voltage valves there is no “S” option. It is already built-in to the rectifier circuit.
  - For “R” and “U”, DC voltage is only available.
  - Power saving circuit is only available in the “Z” 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
  - WO: Without connector cable
  - M8: With connector cable
  - For connector cable of M8 connector, refer to page 1217.
  - Note 1: Enter the cable length symbols in . Please be sure to fill in the blank referring to page 1217.

**V115**

- **Coil specifications**
  - D: DIN terminal (Type D)
  - Y: DIN terminal (Type Y)
  - DO: Without connector
  - YO: Without connector
  - Nil: Without light/surge voltage suppressor
  - S: With surge voltage suppressor (Non-polar type)
  - 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.
  - For “R” and “U”, DC voltage is only available.
  - Power saving circuit is only available in the “Z” type.

- **Electrical entry**
  - D: DIN terminal (Type D)
  - Y: DIN terminal (Type Y)
  - DO: Without connector
  - YO: Without connector
  - Nil: Without light/surge voltage suppressor
  - S: With surge voltage suppressor (Non-polar type)
  - Z: With light/surge voltage suppressor (Non-polar type)
  - For DOZ and YOZ are not available.

- **Rated voltage**
  - 5 V: 24 VDC
  - 6 V: 12 VDC
  - 100 VAC 50/60 Hz
  - 200 VAC 50/60 Hz
  - 110 VAC 50/60 Hz [115 VAC 50/60 Hz]
  - 220 VAC 50/60 Hz [230 VAC 50/60 Hz]
  - For type W, DC voltage is only available.
  - CE-compliant: For DC only.
  - For connector cable of M8 connector, refer to page 1217.
  - DC specifications of type D and DO is only available with 12 and 24 VDC.
  - Power saving circuit is not available in the case of D or DO type.

Note: Since V111 and V115 are CE-compliant as standard, the suffix “-Q” is not necessary.
**Grommet (G), (H): SYJ5□2-□□-M5**

- M5 x 0.8 (A port)
- G: Approx. 300
- H: Approx. 600
- Lead wire length

**2 x ø2.6**  
(For manifold mounting)

**Manual override**

**M5 x 0.8**  
(P, R port)

**ø1.4**  
(PE port)

**L plug connector (L): SYJ5□2-□□-M5 (-F)**

**M plug connector (M): SYJ5□2-□□-M5 (-F)**

**DIN terminal (D,Y): SYJ5□2-□□-M5 (-F)**

**M8 connector (WO): SYJ5□2-□□-M5 (-F)**

**With bracket:**

SYJ5□2-□□-M5-F

- Applicable cable O.D. ø3.5 to ø7
- Max. 10
- Lead wire length

**Refer to page 1217 for dimensions with connector cable.**
Base Mounted (With Sub-plate)

Grommet (G), (H): SYJ5□4-□□□□-01□

Logistics override

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

M5 x 0.8
(X port)

L plug connector (L): SYJ5□4-L□□□-01□

M plug connector (M): SYJ5□4-M□□□-01□

DIN terminal (D, Y): SYJ5□4-D□□□-01□

M8 connector (WO): SYJ5□4-WO□□□-01□

- Refer to page 1217 for dimensions with connector cable.
## Manifold Specifications

### Model

<table>
<thead>
<tr>
<th>Model Type</th>
<th>For internal pilot</th>
<th>Type 20</th>
<th>Type 40</th>
<th>Type 41</th>
<th>For external pilot</th>
<th>Type 21R</th>
<th>Type 40R</th>
<th>Type 41R</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYJ500 Series</td>
<td>P (SUP), R (EXH)</td>
<td></td>
<td></td>
<td></td>
<td>SYJ500 Series</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Type 20</td>
<td>Type 40</td>
<td>Type 41</td>
<td>SYJ500 Series</td>
<td>Type 21R</td>
<td>Type 40R</td>
<td>Type 41R</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>M5 x 0.8</td>
<td>M5 x 0.8</td>
<td>M5 x 0.8</td>
<td></td>
<td>M5 x 0.8</td>
<td>M5 x 0.8</td>
<td>M5 x 0.8</td>
</tr>
</tbody>
</table>

### Valve stations

- 2 to 20 stations

### A port

<table>
<thead>
<tr>
<th>Porting specifications</th>
<th>Location</th>
<th>Valve</th>
<th>Base</th>
</tr>
</thead>
<tbody>
<tr>
<td>P, R port</td>
<td>Top</td>
<td>Bottom</td>
<td>Side</td>
</tr>
</tbody>
</table>

### Port size

<table>
<thead>
<tr>
<th>Port size</th>
<th>For internal pilot</th>
<th>Type 20</th>
<th>Type 40</th>
<th>Type 41</th>
<th>For external pilot</th>
<th>Type 21R</th>
<th>Type 40R</th>
<th>Type 41R</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>M5 x 0.8</td>
<td>M5 x 0.8</td>
<td>M5 x 0.8</td>
<td></td>
<td>M5 x 0.8</td>
<td>M5 x 0.8</td>
<td>M5 x 0.8</td>
</tr>
</tbody>
</table>

### Flow Rate Characteristics

<table>
<thead>
<tr>
<th>Manifold</th>
<th>Port size</th>
<th>Flow rate characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1→2 (P→A)</td>
<td>2→3 (A→R)</td>
</tr>
<tr>
<td></td>
<td>C [dm³/(s•bar)]</td>
<td>b</td>
</tr>
<tr>
<td>SYJ5[2]</td>
<td>1/8</td>
<td>M5 x 0.8</td>
</tr>
<tr>
<td>SYJ5[4]</td>
<td>1/8</td>
<td>M5 x 0.8</td>
</tr>
<tr>
<td>SYJ5[2R]</td>
<td>1/8</td>
<td>M5 x 0.8</td>
</tr>
<tr>
<td>SYJ5[4R]</td>
<td>1/8</td>
<td>M5 x 0.8</td>
</tr>
<tr>
<td></td>
<td>1/8</td>
<td>C4</td>
</tr>
<tr>
<td></td>
<td>1/8</td>
<td>C6</td>
</tr>
</tbody>
</table>

### 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.
- Body ported for internal pilot
- Body ported for external pilot

### Note

- Only for external pilot
- Flow rate characteristics
- Value at manifold base mounted, 2 position single operating
- The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.
Rubber Seal
3 Port Pilot Solenoid Valve

SYJ500 Series

Combinations of Solenoid Valve, Manifold Gasket and Manifold Base

<table>
<thead>
<tr>
<th>Body ported (Type SYJ5□2(R)(-Q))</th>
<th>Base mounted (Type SYJ5□4(R)(-Q))</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Applicable base</strong></td>
<td><strong>Applicable base</strong></td>
</tr>
<tr>
<td>Type SS3YJ5-21R(-Q)</td>
<td>Type SS3YJ5-40(-Q)</td>
</tr>
<tr>
<td>Type SS3YJ5-20(-Q)</td>
<td>Type SS3YJ5-41(-Q)</td>
</tr>
<tr>
<td>Manifold base</td>
<td>Manifold base</td>
</tr>
</tbody>
</table>

**Manifold gasket**
SYJ500-5-4

**Round head combination screw**
AC00068 (M2.5 x 25)

**Caution**

**Mounting screw tightening torques**
M2.5: 0.45 N·m

Use caution to the assembly orientation for solenoid valves (blanking plate) and manifold gasket.

Blanking Plate Assembly

**Part no.: SYJ500-10-3A(-Q)**

- Round head combination screw
- Blanking plate
- Manifold gasket
- Applicable base
  - Sub-plate
    - Type SS3YJ5-40(-Q)
    - Type SS3YJ5-41(-Q)
    - Type SS3YJ5-40R(-Q)
    - Type SS3YJ5-41R(-Q)
- Manifold base

**Part no.: SYJ500-10-1A(-Q)**

- Round head combination screw
- Blanking plate
- Manifold gasket
- Applicable base
  - Type SS3YJ5-20(-Q)
  - Type SS3YJ5-21R(-Q)

Note) Add suffix "-Q" for the CE-compliant product.
SYJ500 Series

Manifold for Internal Pilot Type

**Type 20**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>How to Order</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS3YJ5-20</td>
<td>Manifold for Internal Pilot Type</td>
<td>SS3YJ5-20-05</td>
<td></td>
</tr>
</tbody>
</table>

**Type 40**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>How to Order</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS3YJ5-40</td>
<td>Manifold for Internal Pilot Type</td>
<td>SS3YJ5-40-05</td>
<td></td>
</tr>
</tbody>
</table>

**Type 41**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>How to Order</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS3YJ5-41</td>
<td>Manifold for Internal Pilot Type</td>
<td>SS3YJ5-41-05</td>
<td></td>
</tr>
</tbody>
</table>

**Type 40R**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>How to Order</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS3YJ5-40R</td>
<td>Manifold for Internal Pilot Type</td>
<td>SS3YJ5-40R-05-01</td>
<td></td>
</tr>
</tbody>
</table>

**Type 41R**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>How to Order</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS3YJ5-41R</td>
<td>Manifold for Internal Pilot Type</td>
<td>SS3YJ5-41R-05-M5</td>
<td></td>
</tr>
</tbody>
</table>

---

**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**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>How to Order</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS3YJ5-21R</td>
<td>Manifold for External Pilot Type</td>
<td>SS3YJ5-21R-05</td>
<td></td>
</tr>
</tbody>
</table>

**Type 41**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>How to Order</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS3YJ5-41</td>
<td>Manifold for External Pilot Type</td>
<td>SS3YJ5-41-05-C6</td>
<td></td>
</tr>
</tbody>
</table>

**Type 40**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>How to Order</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS3YJ5-40R</td>
<td>Manifold for External Pilot Type</td>
<td>SS3YJ5-40R-05-01</td>
<td></td>
</tr>
</tbody>
</table>

**Type 41R**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>How to Order</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS3YJ5-41R</td>
<td>Manifold for External Pilot Type</td>
<td>SS3YJ5-41R-05-M5</td>
<td></td>
</tr>
</tbody>
</table>

---

**How to Order**

- **Stations**: Number of stations
- **P, R port thread type**: M5 x 0.8
- **A port size**: M5 x 0.8
- **Bracket**: CE-compliant
- **N, P port thread type**: M5 x 0.8
- **CE-compliant**: Nil
- **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**

- SYJ512R-M5(-Q)
- SYJ514R-M5(-Q)
- SYJ522R-M5(-Q)
- SYJ524R-M5(-Q)

**Applicable blanking plate assembly**

Refer to page 1181.

---

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

**Applicable solenoid valve**

- SYJ514-M5(-Q)
- SYJ514R-M5(-Q)
- SYJ524R-M5(-Q)

**Applicable blanking plate assembly**

Refer to page 1181.

---

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

**Applicable solenoid valve**

- SYJ512R-M5(-Q)
- SYJ514R-M5(-Q)
- SYJ522R-M5(-Q)
- SYJ524R-M5(-Q)

**Applicable blanking plate assembly**

Refer to page 1181.

---

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

**Applicable solenoid valve**

- SYJ514-M5(-Q)
- SYJ514R-M5(-Q)
- SYJ524R-M5(-Q)

**Applicable blanking plate assembly**

Refer to page 1181.

---

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

**Applicable solenoid valve**

- SYJ512R-M5(-Q)
- SYJ514R-M5(-Q)
- SYJ522R-M5(-Q)
- SYJ524R-M5(-Q)

**Applicable blanking plate assembly**

Refer to page 1181.
**SYJ500 Series**

**Type 40 Manifold: Bottom Ported/SS3YJ5-40**

![Diagram of SYJ500 Series]

**Grommet (G)**

For M5

- Dimensions: 57.1 (69.3)
- Pitch: P=16
- Manual override

For 1/8

- Dimensions: 57.1 (59.3)
- Pitch: P=17
- Manual override

**L plug connector (L)**

- Station 1: 52
- Station 2: 68
- Station 3: 84
- Station 4: 100
- Station 5: 116
- Station 6: 132
- Lead wire length: 35

**M plug connector (M)**

- Station 1: 63
- Station 2: 80
- Station 3: 97
- Station 4: 114
- Station 5: 131
- Station 6: 148
- Lead wire length: 35

**DIN terminal (D, Y)**

- Station 1: 54
- Station 2: 71
- Station 3: 88
- Station 4: 105
- Station 5: 122
- Station 6: 139
- Lead wire length: 35

**M8 connector (WO)**

- Station 1: 54
- Station 2: 71
- Station 3: 88
- Station 4: 105
- Station 5: 122
- Station 6: 139
- Lead wire length: 35

---

**Table: Station Positions**

<table>
<thead>
<tr>
<th>Port size</th>
<th>Station 1</th>
<th>Station 2</th>
<th>Station 3</th>
<th>Station 4</th>
<th>Station 5</th>
<th>Station 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>M5</td>
<td>52</td>
<td>68</td>
<td>84</td>
<td>100</td>
<td>116</td>
<td>132</td>
</tr>
<tr>
<td></td>
<td>148</td>
<td>164</td>
<td>180</td>
<td>196</td>
<td>212</td>
<td>228</td>
</tr>
<tr>
<td></td>
<td>244</td>
<td>260</td>
<td>276</td>
<td>292</td>
<td>308</td>
<td>324</td>
</tr>
<tr>
<td></td>
<td>340</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/8</td>
<td>43</td>
<td>59</td>
<td>75</td>
<td>91</td>
<td>107</td>
<td>123</td>
</tr>
<tr>
<td></td>
<td>139</td>
<td>155</td>
<td>171</td>
<td>187</td>
<td>203</td>
<td>219</td>
</tr>
<tr>
<td></td>
<td>235</td>
<td>251</td>
<td>267</td>
<td>284</td>
<td>301</td>
<td>318</td>
</tr>
<tr>
<td></td>
<td>335</td>
<td>352</td>
<td>369</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

* Refer to page 1217 for dimensions with connector cable.

**Note:**
- [   ] for AC
- Manual override
- Station n
- DIN terminal (D, Y)
- M8 connector (WO)
- Maximum number of connectors: 8
- Port size: M5, 1/8
- Applicable cable O.D.: ø3.5 to ø7
- Approx. Lead wire length: 230 (M5), 300 (1/8)
- Station (n): Station 1, Station 2, Station 3, etc.
- DIN terminal (D, Y): DIN terminal 36, Y terminal
- M8 connector (WO): M8 x 1
- SYJ500 Series: Type 40 Manifold: Bottom Ported/SS3YJ5-40
- Stations: M5, 01
Rubber Seal
3 Port Pilot Solenoid Valve SYJ500 Series

Type 41 Manifold: Side Ported/SS3YJ5-41- Stations C4, N3, C6, N7

Grommet (G)

(Light/surge voltage suppressor)

One-touch fitting

(Applicable tubing O.D.: \( \Phi 4, \Phi 5/32" \))

<table>
<thead>
<tr>
<th>Station</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<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>Port 1</td>
<td>L1</td>
<td>49</td>
<td>67</td>
<td>54.1</td>
<td>1185</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Port 2</td>
<td>L2</td>
<td>41</td>
<td>57</td>
<td>73</td>
<td>89</td>
<td>105</td>
<td>121</td>
<td>137</td>
<td>153</td>
<td>169</td>
<td>185</td>
<td>201</td>
<td>217</td>
<td>233</td>
<td>249</td>
<td>265</td>
<td>281</td>
<td>297</td>
<td>313</td>
</tr>
</tbody>
</table>

* Refer to page 1217 for dimensions with connector cable.
### SYJ500 Series

**Type 41 Manifold: Side Ported/SS3YJ5-41-** Stations - M5, 01

**Grommet (G)**

For M5

- Manual override

<table>
<thead>
<tr>
<th>Port size</th>
<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>M5</td>
<td>L1</td>
<td>52</td>
<td>68</td>
<td>84</td>
<td>100</td>
<td>116</td>
<td>132</td>
<td>148</td>
<td>164</td>
<td>180</td>
<td>196</td>
<td>212</td>
<td>223</td>
<td>244</td>
<td>260</td>
<td>276</td>
<td>292</td>
<td>308</td>
<td>324</td>
</tr>
<tr>
<td></td>
<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>
<tr>
<td>1/8</td>
<td>L1</td>
<td>53</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>
</tr>
<tr>
<td></td>
<td>L2</td>
<td>44</td>
<td>61</td>
<td>78</td>
<td>95</td>
<td>112</td>
<td>129</td>
<td>146</td>
<td>163</td>
<td>180</td>
<td>197</td>
<td>214</td>
<td>231</td>
<td>248</td>
<td>265</td>
<td>282</td>
<td>299</td>
<td>316</td>
<td>333</td>
</tr>
</tbody>
</table>

**For 1/8**

- Manual override

**Light/surge voltage suppressor**

<table>
<thead>
<tr>
<th>Port size</th>
<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>M5</td>
<td>L1</td>
<td>53</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>
</tr>
<tr>
<td></td>
<td>L2</td>
<td>44</td>
<td>61</td>
<td>78</td>
<td>95</td>
<td>112</td>
<td>129</td>
<td>146</td>
<td>163</td>
<td>180</td>
<td>197</td>
<td>214</td>
<td>231</td>
<td>248</td>
<td>265</td>
<td>282</td>
<td>299</td>
<td>316</td>
<td>333</td>
</tr>
</tbody>
</table>

**Manual override**

- Pitch: P = 16
- Port size: M5

**Light/surge voltage suppressor**

- For 1/8
- Pitch: P = 17
- Port size: 1/8

Approx. 300 (Lead wire length)
Grommet (G)

(Light/surge voltage suppressor)

<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>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>62</td>
<td>78</td>
<td>94</td>
<td>110</td>
<td>126</td>
<td>142</td>
<td>158</td>
<td>174</td>
<td>190</td>
<td>206</td>
<td>222</td>
<td>238</td>
<td>254</td>
<td>270</td>
<td>286</td>
<td>302</td>
<td>318</td>
</tr>
<tr>
<td>L2</td>
<td>53</td>
<td>69</td>
<td>85</td>
<td>101</td>
<td>117</td>
<td>133</td>
<td>149</td>
<td>165</td>
<td>181</td>
<td>197</td>
<td>213</td>
<td>229</td>
<td>245</td>
<td>261</td>
<td>277</td>
<td>293</td>
<td>309</td>
</tr>
<tr>
<td>L3</td>
<td>47</td>
<td>63</td>
<td>79</td>
<td>95</td>
<td>111</td>
<td>127</td>
<td>143</td>
<td>159</td>
<td>175</td>
<td>191</td>
<td>207</td>
<td>223</td>
<td>239</td>
<td>255</td>
<td>271</td>
<td>287</td>
<td>303</td>
</tr>
</tbody>
</table>

* Refer to page 1217 for dimensions with connector cable.
Type 40R Manifold: Bottom Ported (External Pilot Type)/SS3YJ5-40R- Stations M5, 01

Grommet (G)

For M5

For 1/8

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

<table>
<thead>
<tr>
<th>Port size</th>
<th>Station 1</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>M5</td>
<td>L1</td>
<td>62</td>
<td>78</td>
<td>94</td>
<td>110</td>
<td>126</td>
<td>142</td>
<td>158</td>
<td>174</td>
<td>190</td>
<td>206</td>
<td>222</td>
<td>238</td>
<td>254</td>
<td>270</td>
<td>286</td>
<td>302</td>
<td>318</td>
<td>334</td>
<td>350</td>
</tr>
<tr>
<td></td>
<td>L2</td>
<td>53</td>
<td>69</td>
<td>85</td>
<td>101</td>
<td>117</td>
<td>133</td>
<td>149</td>
<td>165</td>
<td>181</td>
<td>197</td>
<td>213</td>
<td>229</td>
<td>245</td>
<td>261</td>
<td>277</td>
<td>293</td>
<td>309</td>
<td>325</td>
<td>341</td>
</tr>
<tr>
<td></td>
<td>L3</td>
<td>47</td>
<td>63</td>
<td>79</td>
<td>95</td>
<td>111</td>
<td>127</td>
<td>143</td>
<td>159</td>
<td>175</td>
<td>191</td>
<td>207</td>
<td>223</td>
<td>239</td>
<td>255</td>
<td>271</td>
<td>287</td>
<td>303</td>
<td>319</td>
<td>335</td>
</tr>
<tr>
<td>1/8</td>
<td>L1</td>
<td>63</td>
<td>80</td>
<td>97</td>
<td>114</td>
<td>131</td>
<td>148</td>
<td>165</td>
<td>182</td>
<td>199</td>
<td>216</td>
<td>233</td>
<td>250</td>
<td>267</td>
<td>284</td>
<td>301</td>
<td>318</td>
<td>335</td>
<td>352</td>
<td>369</td>
</tr>
<tr>
<td></td>
<td>L2</td>
<td>54</td>
<td>71</td>
<td>88</td>
<td>105</td>
<td>122</td>
<td>139</td>
<td>156</td>
<td>173</td>
<td>190</td>
<td>207</td>
<td>224</td>
<td>241</td>
<td>258</td>
<td>275</td>
<td>292</td>
<td>309</td>
<td>326</td>
<td>343</td>
<td>360</td>
</tr>
<tr>
<td></td>
<td>L3</td>
<td>48</td>
<td>65</td>
<td>82</td>
<td>99</td>
<td>116</td>
<td>133</td>
<td>150</td>
<td>167</td>
<td>184</td>
<td>201</td>
<td>218</td>
<td>235</td>
<td>252</td>
<td>269</td>
<td>286</td>
<td>303</td>
<td>320</td>
<td>337</td>
<td>354</td>
</tr>
</tbody>
</table>

Approx. 300 (Lead wire length)

* Refer to page 1217 for dimensions with connector cable.

SYJ500 Series
Rubber Seal
3 Port Pilot Solenoid Valve SYJ500 Series

Type 41R Manifold: Side Ported (External Pilot Type)/SS3YJ5-41R-

Grommet (G)

Approx. 300

(Station n) ------- (Station 1)
(Light/surge voltage suppressor)

Applicable tubing O.D.: ø4, ø5/32" ø6, ø1/4"

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

<table>
<thead>
<tr>
<th>Port size</th>
<th>Station 1</th>
<th>Station 2</th>
<th>Station 3</th>
<th>Station 4</th>
<th>Station 5</th>
<th>Station 6</th>
<th>Station 7</th>
<th>Station 8</th>
<th>Station 9</th>
<th>Station 10</th>
<th>Station 11</th>
<th>Station 12</th>
<th>Station 13</th>
<th>Station 14</th>
<th>Station 15</th>
<th>Station 16</th>
<th>Station 17</th>
<th>Station 18</th>
<th>Station 19</th>
<th>Station 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>58</td>
<td>74</td>
<td>90</td>
<td>106</td>
<td>122</td>
<td>138</td>
<td>154</td>
<td>157</td>
<td>158</td>
<td>159</td>
<td>160</td>
<td>161</td>
<td>162</td>
<td>163</td>
<td>164</td>
<td>165</td>
<td>166</td>
<td>167</td>
<td>168</td>
<td></td>
</tr>
<tr>
<td>L2</td>
<td>49</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></td>
</tr>
<tr>
<td>L3</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>
<td>331</td>
<td></td>
</tr>
</tbody>
</table>

* Refer to page 1217 for dimensions with connector cable.

SYJ
VQZ
VP
VG
VP3

1189
### SYJ500 Series

**Type 41R Manifold: Side Ported (External Pilot Type)/SS3YJ5-41R**

- **Stations** - M5, 01

For M5

- **Port size**  
  - M5
  - L1: 62, 78, 94, 110, 126, 142, 158, 174, 190, 206, 222, 238, 254, 270, 286, 302, 318, 334, 350

For 1/8

- **Port size**  
  - 1/8
  - L1: 53, 60, 97, 110, 114, 131, 148, 156, 165, 182, 189, 216, 233, 250, 267, 284, 301, 318, 335, 352, 369
  - L2: 54, 71, 88, 105, 122, 139, 156, 173, 190, 207, 224, 241, 258, 275, 292, 309, 326, 343, 360

![Diagram of SYJ500 Series Type 41R Manifold](image)

**Notes:**
- **L1, L2, L3** refer to different stations.
- **M5** and **1/8** denote different port sizes.
- **Manual override** and **Light/surge voltage suppressor** indicated in the diagram.
- **Approx. (A port)** and **Approx. (X port)** lengths are shown.
<table>
<thead>
<tr>
<th>SYJ</th>
<th>VQZ</th>
<th>VP</th>
<th>VG</th>
<th>VP3</th>
</tr>
</thead>
</table>

1191
Rubber Seal
3 Port Pilot Solenoid Valve
SYJ700 Series

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></td>
<td>0.15 to 0.7</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) Note 1)</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 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>Impact/Vibration resistance (m/s²) Note 2)</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 8419: 2010. (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.

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.

Solenoid Specifications

<table>
<thead>
<tr>
<th>Electrical entry</th>
<th>DC</th>
<th>AC 50/60 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coil rated voltage (V)</td>
<td>G, H, L, M, W</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>
<td>0.1 (With light only) * [Starting 0.4, Holding 0.1]</td>
</tr>
<tr>
<td>Allowable voltage fluctuation</td>
<td>±10% of rated voltage *</td>
<td></td>
</tr>
<tr>
<td>Apparent power (VA) *</td>
<td>110 V [115 V]</td>
<td>220 V [230 V]</td>
</tr>
<tr>
<td>Surge voltage suppressor</td>
<td>Grommet (G), (H), L plug connector (L), M plug connector (M), DIN terminal (D), (Y), M8 connector (W)</td>
<td></td>
</tr>
<tr>
<td>Indicator light</td>
<td>LED (DIN terminal, varistor when non-polar types)</td>
<td></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.
* For details, refer to page 1214.

Symbol

Internal pilot

SYJ71

2(A)

(P)1

3(R)

SYJ72

2(A)

(P)1

3(R)

External pilot

SYJ71R

2(A)

(P)1

3(R)

SYJ72R

2(A)

(P)1

3(R)

Made to Order
(For details, refer to pages 1210 and 1211.)
Flow Rate Characteristics/Weight

<table>
<thead>
<tr>
<th>Valve model</th>
<th>Type of actuation</th>
<th>Port size</th>
<th>Flow rate characteristics</th>
<th>Weight (g)</th>
<th>Grommet L/M plug connector</th>
<th>DIN terminal</th>
<th>M8 connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYJ712</td>
<td>N.C.</td>
<td>1/8</td>
<td>2.8</td>
<td>0.43</td>
<td>0.77</td>
<td>2.5</td>
<td>0.51</td>
</tr>
<tr>
<td>SYJ722</td>
<td>N.O.</td>
<td>1/8</td>
<td>2.7</td>
<td>0.38</td>
<td>0.72</td>
<td>2.4</td>
<td>0.42</td>
</tr>
<tr>
<td>SYJ714</td>
<td>N.C.</td>
<td>1/8</td>
<td>2.9</td>
<td>0.32</td>
<td>0.71</td>
<td>2.7</td>
<td>0.34</td>
</tr>
<tr>
<td>SYJ724</td>
<td>N.O.</td>
<td>1/4</td>
<td>3.0</td>
<td>0.31</td>
<td>0.74</td>
<td>2.6</td>
<td>0.33</td>
</tr>
<tr>
<td>SYJ714</td>
<td>N.C.</td>
<td>1/4</td>
<td>2.7</td>
<td>0.31</td>
<td>0.68</td>
<td>2.3</td>
<td>0.48</td>
</tr>
</tbody>
</table>

Note) Value for DC. Add 3 g for AC. ( ): 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.

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Applicable model</th>
<th>Base mounted (SYJ714R, SYJ724R)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating pressure range</td>
<td>Main pressure</td>
<td>–100 kPa to 0.7</td>
</tr>
<tr>
<td>MPa</td>
<td>External pilot pressure</td>
<td>0.15 to 0.7</td>
</tr>
</tbody>
</table>

Note 1) For manifold base, refer to page 1198. Note 2) External pilot type body ported valves (SYJ722R) can only be used on the manifold. For body ported models with the external pilot option, please refer to page 1211.


**How to Order**

<table>
<thead>
<tr>
<th>SYJ700 Series</th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S</td>
<td>24 VDC</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>12 VDC</td>
</tr>
<tr>
<td></td>
<td>V</td>
<td>6 VDC</td>
</tr>
<tr>
<td></td>
<td>S</td>
<td>5 VDC</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>3 VDC</td>
</tr>
</tbody>
</table>

Type of actuation

1. Normally closed
2. Normally open

**SYJ711 2 4**

**Base mounted**

3 port

(For sub-plate type, mainfold type 40, 41, 41R, 42, 42R)

**Body ported**

3 port

(For manifold type 20, 21R)

**Body option**

- NI: Individual pilot exhaust type
- M: Common exhaust for the pilot and main valve
- R: External pilot type

* SYJ700R2 is only for manifold use.

**Rated voltage**

- DC specifications of type D, Y, DO and YO is only available with 12 and 24 VDC.
- For type W, DC voltage is only available.

**Coil specifications**

- NI: With power saving circuit (24, 12 VDC only)
- T: Power saving circuit is not available in the case of D, Y, DO, YO or W.

**Manual override**

- NI: Non-locking push type
- E: Push-turn locking lever type

**Light/Surge voltage suppressor**

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

**Note**

- For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
- For type "R" and "U", DC voltage is only available.
- Power saving circuit is only available in the "Z" type.

**Electrical entry**

- Grommet
- M plug connector
- M8 connector

- DIN terminal

**Thread type**

- NI: Without sub-plate
- 01: 1/8 port
- 02: 1/4 port

**Made to Order** (page 1211)

Body ported external pilot

* Bracket is not mounted.

**CE-compliant**

- NI: CE-compliant
- Q: CE-compliant

**Electrical entry for D, Y**

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

* DOZ and YOZ are not available.

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

**Thread type**

- NI: Without sub-plate
- 01: 1/8 port
- 02: 1/4 port

**Port size**

- NI: Without sub-plate
- 01: 1/8 port
- 02: 1/4 port

**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)

* Power saving circuit is only available in the "Z" type.

**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 1193.)
- LN, MN type: with 2 sockets.
- Refer to page 1213 for the lead wire length of L and M plug connectors.
- Refer to page 1216 for the connector assembly with cover for L and M plug connectors.
- DIN terminal type "Y" which conforms to EN-175301-803C (former DIN4365C) is also available. For details, refer to page 1215.
- For connector cable of M8 connector, refer to page 1217.
- A M8 connector conforming to IEC60947-5-2 is also available. Refer to page 1210 for details.

Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 1217.
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-cast</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>Aluminum die-cast</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)-Q</td>
<td>1/4</td>
</tr>
</tbody>
</table>

Note) Add suffix “-Q” for the CE-compliant product.

How to Order Pilot Valve Assembly

V111 — 5 G

- **Coil specifications**
  - Nil: Standard
  - T: With power saving circuit (24, 12 VDC only)
  - Power saving circuit is not available in the case of W□ type.

- **Rated voltage**
  - 5: 24 VDC
  - 6: 12 VDC
  - V: 6 VDC
  - S: 5 VDC
  - R: 3 VDC
  - 1: 100 VAC 50/60 Hz
  - 2: 200 VAC 50/60 Hz
  - 3: 110 VAC 50/60 Hz [115 VAC 50/60 Hz]
  - 4: 220 VAC 50/60 Hz [230 VAC 50/60 Hz]

- For type W□, DC voltage is available.
- CE-compliant: For DC only.

- **Light/Surge voltage suppressor**
  - Nil: 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)

- For AC voltage valves there is no “S” option. It is already built-in to the rectifier circuit.
- For “R” and “U”, DC voltage is only available.
- Power saving circuit is only available in the “Z” type.

- **Electrical entry**
  - G: Grommet, 300 mm lead wire
  - H: Grommet, 600 mm lead wire
  - L: L plug connector
  - LO: Without connector
  - M: M plug connector
  - MN: Without lead wire
  - MO: Without connector
  - WO: M8 connector
  - With/Without connector cable

V115 — 5 D

- **Rated voltage**
  - 5: 24 VDC
  - 6: 12 VDC
  - 1: 100 VAC 50/60 Hz
  - 2: 200 VAC 50/60 Hz
  - 3: 110 VAC 50/60 Hz [115 VAC 50/60 Hz]
  - 4: 220 VAC 50/60 Hz [230 VAC 50/60 Hz]

- DC specifications of type D and DO is only available with 12 and 24 VDC.
- Power saving circuit is not available in the case of D, Y, DO and YO type.

- **Light/Surge voltage suppressor**
  - Nil: Without light/surge voltage suppressor
  - S: With surge voltage suppressor (Non-polar type)
  - Z: With light/surge voltage suppressor (Non-polar type)
  - DOZ and YOZ are not available.

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

- For “R” and “U”, DC voltage is only available.
- Power saving circuit is only available in the “Z” type.

- For connector cable of M8 connector, refer to page 1217.

Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 1217.

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

**Body Ported**

Grommet (G), (H): SYJ7□2-□□□□01□

With bracket: SYJ7□2-□□□□01□-F

![Diagram of SYJ700 Series Body Ported Grommet and With Bracket]

---

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

**M plug connector (M):** SYJ7□□□□□□□□01□ (-F)

**DIN terminal (D, Y):** SYJ7□□□□□□□□01□ (-F)

**M8 connector (WO):** SYJ7□□□□□□□□01□ (-F)

---

**Dimensions with connector cable:**

- Refer to page 1217 for dimensions with connector cable.

---

1196
Base Mounted (With Sub-plate)

Grommet (G), (H): SYJ7□4-□□-G□□-01□

1/4, 1/8 port
(A port)

Manual override

(Light/surge voltage suppressor)

1/4, 1/8
(P, R port)

M5 x 0.8
(SYJ714R: X port)

Refer to page 1217 for dimensions with connector cable.

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

M plug connector (M):
SYJ7□4-□□-M□□-01□

DIN terminal (D, Y):
SYJ7□4-□□-D□□-01□

M8 connector (WO):
SYJ7□4-□□-WO□□-01□
## Manifold Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>For internal pilot</th>
<th>Type 20 (P, R)</th>
<th>Type 21 (P, R)</th>
<th>Type 40 (P, R)</th>
<th>Type 41 (P, R)</th>
<th>Type 42 (P, R)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>P (SUP), R (EXH)</td>
<td>Common SUP, common EXH</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Valve stations</td>
<td>2 to 20 stations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>A port Porting specifications</td>
<td>Location</td>
<td>Valve</td>
<td>Valve</td>
<td>Base</td>
<td>Base</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P, R port</td>
<td>⅛&quot;</td>
<td>⅛&quot;</td>
<td>½&quot;</td>
<td>½&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A port</td>
<td>⅛&quot;</td>
<td>⅛&quot;</td>
<td>⅛&quot;</td>
<td>½&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>X port</td>
<td>M3 x 0.8</td>
<td>M5 x 0.8</td>
<td>M5 x 0.8</td>
<td>M5 x 0.8</td>
</tr>
</tbody>
</table>

Note) Only for external pilot

### Flow Rate Characteristics

<table>
<thead>
<tr>
<th>Manifold</th>
<th>Port size</th>
<th>Flow rate characteristics 1→2 (P→A)</th>
<th>2→3 (A→R)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1(P), 3(R)</td>
<td>C [dm³/(s·bar)] b Cv</td>
<td>C [dm³/(s·bar)] b Cv</td>
</tr>
<tr>
<td>Body ported for internal pilot</td>
<td>Type SYJ7-20</td>
<td>1/8</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>Type SYJ7-21</td>
<td>1/8</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>Type SYJ7-40</td>
<td>1/8</td>
<td>2.1</td>
</tr>
<tr>
<td></td>
<td>Type SYJ7-41</td>
<td>1/8</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>Type SYJ7-42-01</td>
<td>1/8</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Type SYJ7-42-C6</td>
<td>1/8</td>
<td>1.6</td>
</tr>
<tr>
<td></td>
<td>Type SYJ7-42-C8</td>
<td>1/4</td>
<td>2.1</td>
</tr>
<tr>
<td>Base mounted for internal pilot</td>
<td>Type SYJ7-20</td>
<td>1/8</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>Type SYJ7-21</td>
<td>1/8</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>Type SYJ7-40</td>
<td>1/8</td>
<td>2.1</td>
</tr>
<tr>
<td></td>
<td>Type SYJ7-41</td>
<td>1/8</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>Type SYJ7-42-01</td>
<td>1/8</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Type SYJ7-42-C6</td>
<td>1/8</td>
<td>1.6</td>
</tr>
<tr>
<td></td>
<td>Type SYJ7-42-C8</td>
<td>1/4</td>
<td>2.1</td>
</tr>
</tbody>
</table>

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

Body ported (Type SYJ7□2(-Q))  Base mounted (Type SYJ7□4(-Q))

- Round head combination screw
  - Type SYJ700-10-2A
  - Type SYJ700-10-2A-1

- Gasket
  - SYJ700-5-3
  - SYJ700-5-4

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

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

- Manifold base
  - Type SS3YJ7-40(-Q)
  - Type SS3YJ7-41(-Q)
  - Type SS3YJ7-42(-Q)
  - Type SS3YJ7-41R(-Q)
  - Type SS3YJ7-42R(-Q)

Caution
Mounting screw tightening torques
M3: 0.8 N·m

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

Blanking Plate Assembly

<Standard>

Part no.: SYJ700-10-1A
- For body ported
- For base mounted

Part no.: SYJ700-10-2A
- For base mounted

Note: It can be mounted on a body ported manifold base. However, when mounting a blanking part to a valve, place an order for a separate gasket (SYJ700-5-3) when placing an order for the valve. When using the SYJ700-10-1A, a gasket for this blanking plate assembly can be used as a gasket for the valve as well.

<CE-compliant>

Part no.: SYJ700-10-2A-1-Q

Part no.: SYJ700-10-2A-2-Q
Manifold for Internal Pilot Type

Type 20/Type 21

Manifold type

- Type 20
- Type 21

How to Order

SS3YJ7 - 20 - 05 - 01 - -

Stations

- 2 stations
- 20 stations

P, R port thread type

- Nil
- Rc

A port size

- 1/8

CE-compliant

- Nil
- Q

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.

Type 40/Type 41

Manifold type

- Type 40
- Type 41

How to Order

SS3YJ7 - 40 - 05 - 01 - -

Stations

- 2 stations
- 20 stations

P, R port thread type

- Nil
- Rc

A port size

- 1/8

CE-compliant

- Nil
- Q

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.

Type 42

Manifold type

- Type 42

How to Order

SS3YJ7 - 42 - 05 - C6 - -

Stations

- 2 stations
- 20 stations

P, R port thread type

- Nil
- Rc

A port size

- 1/8

CE-compliant

- Nil
- Q

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

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

- Type 21R

How to Order

SS3YJ7 - 21R - 05 - 01 - -

Stations

- 2 stations
- 20 stations

P, R port thread type

- Nil
- Rc

A port size

- 1/8

CE-compliant

- Nil
- Q

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

Type 41R

Manifold type

- Type 41R

How to Order

SS3YJ7 - 41R - 05 - 01 - -

Stations

- 2 stations
- 20 stations

P, R port thread type

- Nil
- Rc

A port size

- 1/8

CE-compliant

- Nil
- Q

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

Type 42R

Manifold type

- Type 42R

How to Order

SS3YJ7 - 42R - 05 - 01 - -

Stations

- 2 stations
- 20 stations

P, R port thread type

- Nil
- Rc

A port size

- 1/8

CE-compliant

- Nil
- Q

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

Rubber Seal 3 Port Pilot Solenoid Valve SYJ700 Series

Type 20 Manifold: Top Ported/SS3YJ7-20- Stations (00□)

+ [ ] for AC

L plug connector (L)  M plug connector (M)  DIN terminal (D, Y)  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>
<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>
</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>

* Refer to page 1217 for dimensions with connector cable.
**SYJ700 Series**

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

* [ ] for AC

**Grommet (G)**

![Diagram of SYJ700 Series Type 21 Manifold](image)

---

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

| Station n | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>L1</strong></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>
</tr>
<tr>
<td><strong>L2</strong></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>
</tr>
</tbody>
</table>

* Refer to page 1217 for dimensions with connector cable.
Grommet (G)

**SYJ700 Series**

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

* Refer to page 1217 for dimensions with connector cable.

---

<table>
<thead>
<tr>
<th>Station</th>
<th>L plug connector (L)</th>
<th>M plug connector (M)</th>
<th>DIN terminal (D, Y)</th>
<th>M8 connector (WO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>59</td>
<td>78</td>
<td>97</td>
<td>116</td>
</tr>
<tr>
<td>L2</td>
<td>49</td>
<td>68</td>
<td>87</td>
<td>106</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Approx. 300 (Lead wire length)</th>
<th>53.5</th>
<th>3.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>(P, R port)</td>
<td>80.5</td>
<td>82.7</td>
</tr>
<tr>
<td>(Lead wire length)</td>
<td>57 [64]</td>
<td></td>
</tr>
</tbody>
</table>

| Approx. 300 (Lead wire length) | 70.7 | 72.5 |
| (P, R port)                   | 68.1 | [75.1] |

<table>
<thead>
<tr>
<th>Max. 10</th>
<th>80.6</th>
<th>53.5</th>
<th>3.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8 (A port)</td>
<td>71.7</td>
<td>90.5</td>
<td></td>
</tr>
</tbody>
</table>

- **Rubber Seal**
- **3 Port Pilot Solenoid Valve**
- **SYJ700 Series**

<table>
<thead>
<tr>
<th>SYJ</th>
<th>VQZ</th>
<th>VP</th>
<th>VG</th>
<th>VP3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

V8

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

---

- Refer to page 1217 for dimensions with connector cable.

---

Grommet (G)
Grommet (G)  
For C6, N7, C8, N9 (Built-in One-touch fitting)
Grommet (G)

* Other dimensions are the same as type 42. For dimensions, refer to page 1204.
Grommet (G)

**SYJ700 Series**

Type 21R Manifold: Top Ported (External Pilot Type)/SS3YJ7-21R- Stations (-00□)

* [ ] for AC

---

**L plug connector (L)**

<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>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>
<td>403</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>
Rubber Seal
3 Port Pilot Solenoid Valve SYJ700 Series

Type 42R Manifold: Side Ported/SS3YJ7-42R- Stations -01, C6 N7, C8 N9 □

Grommet (G)

For 1/8

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

| Station n | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | Station 20 |
|-----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 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   |

Approx. 300 (Lead wire length)

Refer to page 1217 for dimensions with connector cable.
SYJ700 Series

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

Grommet (G)

* Other dimensions are the same as type 42R.
For dimensions, refer to page 1207.
M8 Connector Conforming to IEC60947-5-2
SYJ300/500/700 Series
Made to Order

How to Order Valve

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

- **Series**
  - SYJ300
  - SYJ500
  - SYJ700

- **Body ported**
  - SYJ 5 1 2
  - SYJ 5 1 4

- **Base mounted**
  - 3 port
    - Sub-plate type, manifold types 20, 20R, 21R
  - 3 port
    - 20, 20R, 21R

- **Body option**
  - Nil
  - M: Pilot valve individual exhaust
  - R: External pilot

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

- **Light/Surge voltage suppressor**
  - Nil: 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: M5 x 0.8
  - 01: 1/8 (SYJ700 only)

- **Electrical entry**
  - WAO: Without connector
  - WA: With connector

- **Made to Order**
  - (page 1211)
  - Body ported external pilot
  - X20 for the SYJ300 series is not available.

- **Rated voltage**
  - Nil
  - Without sub-plate
  - M5: With sub-plate
  - M5 port
  - SYJ300
  - 01: 1/8 port
  - SYJ500
  - 1/4 port
  - SYJ700

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

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

How to Order Pilot Valve Assembly

- **V111**
  - 5 WAO

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

- **Light/Surge voltage suppressor**
  - Nil: 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: Without connector
  - WA: With connector

Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 1217.

Note) Since V111 is CE-compliant as standard, the suffix “-Q” is not necessary.
How to Order

Applicable solenoid valve series/SYJ5□2R, SYJ7□2R

- SYJ 5 □ 
- SYJ 7 □
- X20

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 range</td>
<td>-100 kPa to 0.7</td>
</tr>
<tr>
<td>Pilot range</td>
<td>0.15 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>

Symbol

Body ported

<table>
<thead>
<tr>
<th>N.C.</th>
<th>(P)</th>
<th>2(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>3(R)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>N.O.</th>
<th>(P)</th>
<th>2(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Note) AC-type models that are CE-compliant have DIN terminals only.
SYJ300/500/700 Series
Specific Product Precautions 1

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

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.

⚠️ 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]

- 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 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, 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.

⚠️ 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.

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.

⚠️ Caution
For bracket attached types of SYJ300, do not use it without bracket.
# SYJ300/500/700 Series
## Specific Product Precautions 2

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

## 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.

## Plug Connector Lead Wire Length

### Caution

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

### How to Order Connector Assembly

- **For DC:** SY100-30-4A
  - For 100 VAC: SY100-30-1A
  - For other voltages of AC: SY100-30-3A

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

### How to Order

Include the connector assembly part number together with the part number for the plug connector’s solenoid valve without connector.

**EX.** In case of 2000 mm of lead wire
- **For DC:** SYJ312-5LO-M3
  - SY100-30-4A-20
- **For AC:** SYJ312-1LO-M3
  - SY100-30-1A-20

### Plug Connector Lead Wire Length

<table>
<thead>
<tr>
<th>Lead wire length</th>
<th>Nil</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>300 mm</td>
<td>NIL</td>
<td>6</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>25</td>
<td>30</td>
<td>50</td>
</tr>
</tbody>
</table>
**Caution**

<For DC>
Grommet, L/M Plug Connector

- 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 and 12 VDC do not have diodes for polarity protection, be careful not to make errors in the polarity.
- When wiring is done at the factory, positive (+) is red and negative (−) is black.

**DIN Terminal**

With surge voltage suppressor (DS)

| DIN Terminal has no polarity. |

**M8 Connector**

- 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.
- The WA-type valve cannot be grounded.

**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.

<table>
<thead>
<tr>
<th>Applied voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 V</td>
</tr>
<tr>
<td>0.4 W</td>
</tr>
<tr>
<td>0.1 W</td>
</tr>
<tr>
<td>0 W</td>
</tr>
</tbody>
</table>

**Surge Voltage Suppressor**

- Standard type (with polarity)
  - Surge voltage suppressor (□S):
    - Diode to prevent reverse current
    - Red (+) ——→ LED ——→ Varistor ——→ Coil
    - Black (−) ——→ Varistor ——→ LED ——→ Coil

- Non-polar type
  - Surge voltage suppressor (□R):
    - (+) ——→ LED ——→ Varistor ——→ Coil
    - (−) ——→ Varistor ——→ LED ——→ Coil

- 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.)

**With light/surge voltage suppressor (□Z)**

- Diode to prevent reverse current
- (+) ——→ Varistor ——→ LED ——→ Coil
- (−) ——→ LED ——→ Varistor ——→ Coil

**With surge voltage suppressor (□R)**

- (+) ——→ LED ——→ Varistor ——→ Coil
- (−) ——→ Varistor ——→ LED ——→ Coil

**With light/surge voltage suppressor (□Z)**

- (+) ——→ Varistor ——→ LED ——→ Coil
- (−) ——→ LED ——→ Varistor ——→ Coil

- With surge voltage suppressor (□Z)
  - Diode to prevent reverse current
  - 1(-)(+)(—→ LED ——→ Varistor ——→ 3 (Type WA)
  - 4 (+)(—→ LED ——→ Varistor ——→ Type WA)

- With light/surge voltage suppressor (□U)
  - (+)(—→ Varistor ——→ LED ——→ 3 (Type WA)
  - (−)(+)(—→ Varistor ——→ LED ——→ Type WA)

**With surge voltage suppressor (□S)**

- Diode to prevent reverse current
- (+) ——→ Varistor ——→ LED ——→ 3 (Type WA)
- (−) ——→ LED ——→ Varistor ——→ Type WA

**With light/surge voltage suppressor (□Z)**

- (+) ——→ Varistor ——→ LED ——→ 3 (Type WA)
- (−) ——→ LED ——→ Varistor ——→ Type WA

**With surge voltage suppressor (□R)**

- (+) ——→ LED ——→ Varistor ——→ 3 (Type WA)
- (−) ——→ Varistor ——→ LED ——→ Type WA

**With light/surge voltage suppressor (□U)**

- (+) ——→ Varistor ——→ LED ——→ 3 (Type WA)
- (−) ——→ LED ——→ Varistor ——→ Type WA

**Solenoid valve side pin wiring diagram**

- 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.
- The WA-type valve cannot be grounded.
**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 (□Z)

![Diagram of Grommet, L/M Plug Connector](Diagram)

With light (□DZ)

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 gland nut.

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.

---

**How to Use DIN Terminal**

⚠️ **Caution**

Compatible cable
Cord O.D.: ∅3.5 to ∅7
(Reference) 0.5mm², 2-core or 3-core, equivalent to JIS C 3306

DIN connector type Y is a DIN connector that confirms to the DIN pitch 8-mm standard.

- D type DIN connector with 9.4 mm pitch between terminals is not interchangeable.
- To distinguish from the D type DIN connector, “N” is listed at the end of voltage symbol.
  (For connector parts without lights, “N” is not indicated. Please refer to the name plate to distinguish.)
- Dimensions are completely the same as D type DIN connector.
- When exchanging the pilot valve assembly only, “V115-□D” is interchangeable with “V115-□Y”. Do not replace V111 (G, L, M) to V115-□D/□Y (DIN terminal), and vice versa.

---

![Diagram of DIN Terminal](Diagram)

---

**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.

<table>
<thead>
<tr>
<th>Model</th>
<th>Thread size</th>
<th>Tightening torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYJ300</td>
<td>M1.7</td>
<td>0.12 N·m</td>
</tr>
<tr>
<td>SYJ500</td>
<td>M2.5</td>
<td>0.45 N·m</td>
</tr>
<tr>
<td>SYJ700</td>
<td>M3</td>
<td>0.8 N·m</td>
</tr>
</tbody>
</table>

---
**SYJ300/500/700 Series**

**Specific Product Precautions 5**

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

---

### Caution

**<Type D>**

<table>
<thead>
<tr>
<th>Without light</th>
<th>SY100-61-1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rated voltage</strong></td>
<td><strong>Part no.</strong></td>
</tr>
<tr>
<td>24 VDC</td>
<td>SY100-61-3-05</td>
</tr>
<tr>
<td>12 VDC</td>
<td>SY100-61-3-06</td>
</tr>
<tr>
<td>100 VAC</td>
<td>SY100-61-2-01</td>
</tr>
<tr>
<td>200 VAC</td>
<td>SY100-61-2-02</td>
</tr>
<tr>
<td>110 VAC</td>
<td>SY100-61-2-03</td>
</tr>
<tr>
<td>220 VAC</td>
<td>SY100-61-2-04</td>
</tr>
</tbody>
</table>

**With light**

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

**<Type Y>**

<table>
<thead>
<tr>
<th>Without light</th>
<th>SY100-82-1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rated voltage</strong></td>
<td><strong>Part no.</strong></td>
</tr>
<tr>
<td>DC24 V</td>
<td>SY100-82-3-05</td>
</tr>
<tr>
<td>DC12 V</td>
<td>SY100-82-3-06</td>
</tr>
<tr>
<td>100 VAC</td>
<td>SY100-82-2-01</td>
</tr>
<tr>
<td>200 VAC</td>
<td>SY100-82-2-02</td>
</tr>
<tr>
<td>110 VAC</td>
<td>SY100-82-2-03</td>
</tr>
<tr>
<td>220 VAC</td>
<td>SY100-82-2-04</td>
</tr>
</tbody>
</table>

**With light**

<table>
<thead>
<tr>
<th>Voltage symbol</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 VN</td>
<td>SY100-82-3-05</td>
</tr>
<tr>
<td>12 VN</td>
<td>SY100-82-3-06</td>
</tr>
<tr>
<td>100 VN</td>
<td>SY100-82-2-01</td>
</tr>
<tr>
<td>200 VN</td>
<td>SY100-82-2-02</td>
</tr>
<tr>
<td>110 VN</td>
<td>SY100-82-2-03</td>
</tr>
<tr>
<td>220 VN</td>
<td>SY100-82-2-04</td>
</tr>
</tbody>
</table>

**Circuit Diagram with Light**

- **AC circuit**
  - NL: Neon light
  - R: Resistor
- **DC circuit**
  - LED: Light emitting diode
  - R: Resistor

---

**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**

**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

**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

*In this case, the part number for the connector assembly with cover is not required.*
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 SYJ300 series 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 N·m)

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.

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.)

   SYJ312-5W1ZE-M3

   Ex. 1) Cable length: 300 mm

   SYJ312-5W1ZE-M3

   Symbol for electrical entry

2. To order connector cable only

   SYJ300/500/700 Series

   Specific Product Precautions 6

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

<table>
<thead>
<tr>
<th>New type</th>
<th>Current type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual override</td>
<td>Manual override</td>
</tr>
<tr>
<td>(Blue)</td>
<td>(Orange)</td>
</tr>
</tbody>
</table>

**Interface**
- Pilot valve
  - (V111)
  - (SY114)
- Adapter plate

**Replacement of Pilot Valve**

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