4 Port Solenoid Valve Cassette Type Manifold

- Non-plug-in type
  Individual wiring manifold

- Vacuum release valve with restrictor
  Suction and release can be controlled with a single unit.

Series SJ2000/3000

One-touch fitting connection is possible.

- ø27.5mm (SJ2000)
- 10mm (SJ3000)
- 7.5mm (SJ3000)
- Can be mounted together.

Vacuum release valve with restrictor
Suction and release can be controlled with a single unit.

New

New
**Power consumption**

0.15 W (SJ3000 with power saving circuit)
0.23 W (SJ2000 with power saving circuit)

**Service life of 50 million times or more**

(Based on SMC life test conditions)

**Connector type (Card edge type)**

- Can easily increase or decrease stations and replace valves.
- 34 pins connector allows up to 16 stations with double solenoids, 32 stations with single solenoids.

**Non-plug-in individual wiring compliant, too**

**PC wiring compliant**

**Piping variations**

With one-touch fittings

Threaded type

Threaded type is not available for 1(P), 3/5(E) port.

**Fittings are replaceable.**

Fittings (including type and size) can be easily changed by removing a clip.

**Light indication**

SOL A: ON Orange
SOL B: ON Green

**With switch**

- Possible to shut the signal of each valves individually.
- Manual operation is possible by switching OFF, even when the valve is in the energized state.

**Valve connection mechanism**

Connection between valves can be fixed by the valve lock switch. Connection can be confirmed with the connection hook inserted into the connection groove of the adjacent valve.

**Manual locking**

Prevents wrong operation by sliding the switch to avoid a manual button from being pressed.

**Type of manual override**

Non-locking push type

Push-turn locking slotted type

**Connector mounting direction**

Connector mounting direction can be changed by sliding the switch.

*FREE* characters can be seen when connection is unlocked.

*NEW*
EX180 Serial wiring
- CC-Link (32 outputs), DeviceNet (32, 16 outputs)
- Easy attaching/detaching of the SI unit and wiring by the connector
  - Separated valve power unit and transmission power unit / Ensuring safety at maintenance
  - Selectable between T-branch and straight type of communication connector

EX510 Gateway system Serial transmission system
- Max. 128 points (Input 64 points/Output 64 points)
- All wires can be plugged into the connector units.
- CC-Link, DeviceNet, PROFIBUS-DP compliant

System Configuration
- PLC (Programmable Logic Controller)
- GW (Gateway) Serial Transmission EX510
  - Input unit, Input unit
  - Including SI unit manifold valve
  - Including SI unit manifold valve
  - Output unit

Features 2
- Flat ribbon cable

Actual size
4 Position Dual 3 Port Valve
- Integrated to a single valve from 3-port valve
- Possible to control 4(A), 2(B) port individually.
- Can be mounted on the same manifold with a 4-port valve.
- Prepared 3 types of combination
- Label with the same colors of the manual override is attached to show the functions of A side and B side.

<table>
<thead>
<tr>
<th>A side</th>
<th>B side</th>
<th>JIS symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>N.C. valve</td>
<td>N.C. valve</td>
<td>4(A) 2(B)</td>
</tr>
<tr>
<td>N.O. valve</td>
<td>N.O. valve</td>
<td>1(P) 3(EB)</td>
</tr>
<tr>
<td>N.C. valve</td>
<td>N.O. valve</td>
<td>3(A) 2(B)</td>
</tr>
</tbody>
</table>

Regulator Block
This is a regulator block with the same width (10 mm) as the SJ3000. Pressure supplied from the D side is used to reduce pressure in the manifold. The U side valves are all depressurized from the regulator block.

Pneumatic circuit (example of regulator block installation)

Both the pressure gauge mounting position and the method of operating the pressure adjustment screw can be selected.

Intermediate Connector Block Assembly
This connector block can be used by inserting it into the middle of the manifold. This can be used, for example, when you wish to separate electrical control of valves in the same manifold, or when the number of control points is insufficient. The assembly is also compatible with PC wiring with the power supply terminal. (Consult SMC separately.)

Intermediate connector block assembly wiring example

* The U side solenoid valves can be controlled from the position where the intermediate connector block assembly is mounted.
Vacuum Release Valve with Restrictor

Two spool valves are built-in. Vacuum suction and release can be controlled with a single valve.

- Flow rate adjustment of release air
- Prevents workpiece blow-off.

PS port: Pressure detection port (M5 x 0.8)

- Eliminates foreign matter on vacuum and release side.
- Replaceable

Series SJ3A6

- Power consumption 0.15 W (with power saving circuit)
- Width: 10 mm (same size as SJ3000 series)
- Equipped with restrictor to enable flow rate adjustment of release air.
- Replaceable filters are built-in on the vacuum and release sides.
- Equipped with a pressure detection port enabling connection of a pressure switch, etc.
- Can be combined with 4 port solenoid valve, SJ2000/3000 series (Made to Order). (Consult SMC for details.)
- Enables 2-system pressure switching where the 1(P) port and 3/5(E) are set to different positive pressures. (In this case, flow can be adjusted on the P-port side only.)

Wiring variations
- D-sub connector
- Flat ribbon cable
- PC wiring
- Serial (EX180)
- Serial (EX510)

Filter
- Restrictor

Adsorbing and Transferring System Circuit Example

Features 4
**4 Port Solenoid Valve**  *Series SJ2000/3000*

- **Common Specifications**: P.1
- **Connector Wiring Diagram**: P.3
- **Construction**: P.4

**D-sub Connector / Flat Ribbon Cable / PC Wiring**
- **How to Order**: P.10
- **Manifold Electrical Wiring**: P.12
- **Dimensions**: P.13

**PC Wiring System with Power Supply Terminal**
- **How to Order**: P.26
- **Manifold Electrical Wiring**: P.28
- **Dimensions**: P.29

**EX180 Serial Wiring**
- **How to Order**: P.34
- **Dimensions**: P.36

**EX510 Gateway System Serial Transmission System**
- **How to Order Manifold**: P.42
- **Dimensions**: P.44
- **Manifold Exploded View**: P.49
- **How to Add Manifold Stations**: P.50

**Vacuum Release Valve with Restrictor**  *Series SJ3A6*

- **Common Specifications**: P.68
- **Construction**: P.69

**D-sub Connector / Flat Ribbon Cable / PC Wiring / Serial Wiring (EX180/EX510)**
- **How to Order**: P.70
- **Dimensions**: P.72

**Individual Wiring**
- **How to Order**: P.52
- **Dimensions**: P.54
- **Manifold Exploded View**: P.59
- **Manifold Options**: P.60
- **Made to Order**: P.65

**Safety Instructions**
- **Back page 1**

**Specific Product Precautions**
- **Back page 3**
## Manifold Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>D-sub connector</th>
<th>Flat ribbon cable</th>
<th>Serial wiring</th>
<th>Individual wiring</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type 60F</td>
<td>Type 60P</td>
<td>Type 60PG</td>
<td>Type 60J</td>
</tr>
<tr>
<td>Manifold type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1(P: SUP), 3/5(E: EXH)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valve stations</td>
<td>2 to 24 stations</td>
<td>2 to 18 stations (Type PG)</td>
<td>2 to 8 stations</td>
<td>2 to 32 stations</td>
</tr>
<tr>
<td>Applicable connector</td>
<td>D-sub connector</td>
<td>Flat ribbon cable connector Socket: 26 pins MIL type with strain relief Conforming to MIL-C-83503</td>
<td>Flat ribbon cable connector Socket: 20 pins MIL type with strain relief Conforming to MIL-C-83503</td>
<td>Flat ribbon cable connector Socket: 10 pins MIL type with strain relief Conforming to MIL-C-83503</td>
</tr>
<tr>
<td>Internal wiring</td>
<td>Non-polar, +COM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4(A), 2(B) port piping spec.</td>
<td>Location</td>
<td>Valve</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Direction</td>
<td>Horizontal, Upward, Downward (Using elbow fittings for upward or downward)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Port size</td>
<td>1(P), 3/5(E) port</td>
<td>C6, C8, N7, N9 (Inch size elbow fitting is not available.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4(A), 2(B) port</td>
<td>SJ2000</td>
<td>C2, C4, N1, N3, M3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>SJ3000</td>
<td>C2, C4, C6, N1, N3, N7, M5</td>
<td></td>
</tr>
<tr>
<td>Weight W (g)</td>
<td>(Note 2)</td>
<td>W = 51n + m + 133</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note 1:** When many valves are operated simultaneously, use B type (SUP/EXH both sides), applying pressure to the 1(P) ports on both sides and exhaust from the 3/5(E) ports on both sides.

**Note 2:** The weight W is the value for the D-sub connector manifold only with internal pilot, SUP/EXH block straight fittings specifications. To obtain the weight with solenoid valves attached, add the solenoid valve weights given on page 3 for the appropriate number of stations. Refer to page 61 for the weight of DIN rail. (Please contact SMC for the weight of external pilot specifications, elbow fittings.)

## Flow Characteristics

### SJ2000

<table>
<thead>
<tr>
<th>Port size</th>
<th>Flow characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(P) 3/5(E)</td>
<td></td>
</tr>
<tr>
<td>4, 2 (A, B)</td>
<td></td>
</tr>
<tr>
<td>1→2/4 (P→A/B)</td>
<td>C [dm³/(s·bar)]</td>
</tr>
<tr>
<td></td>
<td>C [dm³/(s·bar)]</td>
</tr>
<tr>
<td>C8</td>
<td>0.13</td>
</tr>
<tr>
<td>C4</td>
<td>0.33</td>
</tr>
<tr>
<td>M3</td>
<td>0.18</td>
</tr>
</tbody>
</table>

### SJ3000

<table>
<thead>
<tr>
<th>Port size</th>
<th>Flow characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(P) 3/5(E)</td>
<td></td>
</tr>
<tr>
<td>4, 2 (A, B)</td>
<td></td>
</tr>
<tr>
<td>1→2/4 (P→A/B)</td>
<td>C [dm³/(s·bar)]</td>
</tr>
<tr>
<td></td>
<td>C [dm³/(s·bar)]</td>
</tr>
<tr>
<td>C8</td>
<td>0.13</td>
</tr>
<tr>
<td>C4</td>
<td>0.42</td>
</tr>
<tr>
<td>C6</td>
<td>0.55</td>
</tr>
<tr>
<td>M5</td>
<td>0.40</td>
</tr>
</tbody>
</table>

**Note:** The value is for manifold base with 5 stations and individually operated 2 position type. Please contact SMC for 4 position dual 3 port valves.
## Solenoid Valve Specifications

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal pilot operating pressure range (MPa)</td>
<td>2 position single</td>
</tr>
<tr>
<td></td>
<td>4 position dual 3 port valve</td>
</tr>
<tr>
<td></td>
<td>2 position double</td>
</tr>
<tr>
<td></td>
<td>3 position</td>
</tr>
<tr>
<td>External pilot operating pressure range (MPa)</td>
<td>Operating pressure range</td>
</tr>
<tr>
<td></td>
<td>Pilot pressure range</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient and fluid temperature (°C)</td>
<td>-10 to 50 (No freezing)</td>
</tr>
<tr>
<td>Maximum operating frequency (Hz)</td>
<td>2 position single, double</td>
</tr>
<tr>
<td></td>
<td>4 position dual 3 port valve</td>
</tr>
<tr>
<td>Manual override (Manual operation)</td>
<td>Non-locking push type</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Pilot exhaust method</td>
<td>Internal pilot</td>
</tr>
<tr>
<td></td>
<td>External pilot</td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not required</td>
</tr>
<tr>
<td>Mounting orientation</td>
<td>Unrestricted</td>
</tr>
<tr>
<td>Shock/Vibration resistance (m/s²)</td>
<td>150/30</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Dustproof</td>
</tr>
</tbody>
</table>

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

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

## Solenoid Specifications

<table>
<thead>
<tr>
<th>Coil rated voltage</th>
<th>24 VDC, 12 VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allowable voltage fluctuation</td>
<td>±10% of rated voltage&lt;sup&gt;*&lt;/sup&gt;</td>
</tr>
<tr>
<td>Power consumption (W)</td>
<td>Standard</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>With power saving circuit (Continuous duty type)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Surge voltage suppressor</td>
<td>Diode</td>
</tr>
<tr>
<td>Indicator light</td>
<td>LED</td>
</tr>
</tbody>
</table>

<sup>*</sup> For the allowable voltage fluctuation for Z and T types (with power saving circuit), please observe the following range because they have voltage drop due to internal circuit.

- Z type
  - 24 VDC: −7% to +10%
  - 12 VDC: −4% to +10%
- T type
  - 24 VDC: −5% to +10%
  - 12 VDC: −6% to +10%

## Response Time

<table>
<thead>
<tr>
<th>Type of actuation</th>
<th>Response time ms (at 0.5 MPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SJ2000</td>
<td>SJ3000</td>
</tr>
<tr>
<td>2 position single</td>
<td>16 or less</td>
</tr>
<tr>
<td>2 position double</td>
<td>10 or less</td>
</tr>
<tr>
<td>3 position</td>
<td>34 or less</td>
</tr>
<tr>
<td>4 position dual 3 port valve</td>
<td>30 or less</td>
</tr>
</tbody>
</table>

Note) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage)
**Connector Wiring Diagram**

For both serial and parallel wiring, additional valves are sequentially assigned pins on the connector. This makes it completely unnecessary to disassemble the connector unit.

### Single solenoid and double solenoid

![Diagram of single and double solenoid configurations](image1)

### Single solenoid with double wiring spec.

![Diagram of single solenoid with double wiring spec](image2)

### Mounting a valve with individual wiring

![Diagram of individual wiring](image3)

---

**Weight**

<table>
<thead>
<tr>
<th>Model/SJ2000</th>
<th>Valve model</th>
<th>Type of actuation</th>
<th>Port size</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SJ2□60-C2</td>
<td>2 position</td>
<td>Single</td>
<td>4(A), 2(B)</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>2 position</td>
<td>Double</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Closed center</td>
<td>C2</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Exhaust center</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Pressure center</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 position</td>
<td>Dual 3 port valve</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>SJ2□60-C4</td>
<td>2 position</td>
<td>Single</td>
<td>41</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 position</td>
<td>Double</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Closed center</td>
<td>C4</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Exhaust center</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Pressure center</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 position</td>
<td>Dual 3 port valve</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>SJ2□60-M3</td>
<td>2 position</td>
<td>Single</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 position</td>
<td>Double</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Closed center</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Exhaust center</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Pressure center</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 position</td>
<td>Dual 3 port valve</td>
<td>42</td>
<td></td>
</tr>
</tbody>
</table>

Note: Please contact SMC for the weight of elbow fittings.

---

<table>
<thead>
<tr>
<th>Model/SJ3000</th>
<th>Valve model</th>
<th>Type of actuation</th>
<th>Port size</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SJ3□60-C2</td>
<td>2 position</td>
<td>Single</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 position</td>
<td>Double</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Closed center</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Exhaust center</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Pressure center</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 position</td>
<td>Dual 3 port valve</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>SJ3□60-C4</td>
<td>2 position</td>
<td>Single</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 position</td>
<td>Double</td>
<td>73</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Closed center</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Exhaust center</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Pressure center</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 position</td>
<td>Dual 3 port valve</td>
<td>73</td>
<td></td>
</tr>
<tr>
<td>SJ3□60-C6</td>
<td>2 position</td>
<td>Single</td>
<td>61</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 position</td>
<td>Double</td>
<td>69</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Closed center</td>
<td>73</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Exhaust center</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Pressure center</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 position</td>
<td>Dual 3 port valve</td>
<td>69</td>
<td></td>
</tr>
<tr>
<td>SJ3□60-M5</td>
<td>2 position</td>
<td>Single</td>
<td>57</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 position</td>
<td>Double</td>
<td>65</td>
<td></td>
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<tr>
<td></td>
<td>3 position</td>
<td>Closed center</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Exhaust center</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Pressure center</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 position</td>
<td>Dual 3 port valve</td>
<td>65</td>
<td></td>
</tr>
</tbody>
</table>

Note: Please contact SMC for the weight of elbow fittings.
Construction: SJ2000

JIS symbol

2 position single
(A) (B) 4 2
5 1 3
(EA) (P) (EB)

2 position single with back pressure check valve
(A) (B) 4 2
5 1 3
(EA) (P) (EB)

2 position double
(A) (B) 4 2
5 1 3
(EA) (P) (EB)

2 position double with back pressure check valve
(A) (B) 4 2
5 1 3
(EA) (P) (EB)

3 position closed center
(A) (B) 4 2
5 1 3
(EA) (P) (EB)

3 position exhaust center
(A) (B) 4 2
5 1 3
(EA) (P) (EB)

3 position pressure center
(A) (B) 4 2
5 1 3
(EA) (P) (EB)

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>Spool valve assembly</td>
<td>Resin/H-NBR</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>(3 position solenoid valve)</td>
<td>Aluminum/H-NBR</td>
<td>—</td>
</tr>
<tr>
<td>2</td>
<td>Body</td>
<td>Zinc die-cast</td>
<td>—</td>
</tr>
<tr>
<td>3</td>
<td>Adaptor plate</td>
<td>Resin</td>
<td>White</td>
</tr>
<tr>
<td>4</td>
<td>Pilot adaptor</td>
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</tr>
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<td>5</td>
<td>Pilot valve assembly</td>
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</tr>
<tr>
<td>9</td>
<td>Light cover</td>
<td>Resin</td>
<td>Light blue</td>
</tr>
</tbody>
</table>

Replacement Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>One-touch fitting</td>
<td>Refer to the one-touch fitting part no. on back page 6</td>
</tr>
<tr>
<td>11</td>
<td>Clip</td>
<td>SJ2000-CL-1 (10 pcs.)</td>
</tr>
</tbody>
</table>
**Construction: SJ2000**

**JIS symbol**
4 position dual 3 port valve
SJ2A60 [N.C. valve x 2]

**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>Spool valve assembly</td>
<td>Resin/H-NBR</td>
<td>N.C. (Normally closed)</td>
</tr>
<tr>
<td>2</td>
<td>Spool valve assembly</td>
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<td>N.O. (Normally open)</td>
</tr>
<tr>
<td>3</td>
<td>Body</td>
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</tbody>
</table>
**Series SJ2000/3000**

**Construction: SJ3000**

### JIS symbol

**2 position single**

- 2 position single with back pressure check valve
  - (A) (B)
  - 42
  - 513
  - (EA) (P) (EB)

**2 position double**

- 2 position double with back pressure check valve
  - (A) (B)
  - 42
  - 513
  - (EA) (P) (EB)

### Component Parts

<table>
<thead>
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Construction: SJ3000

JIS symbol

4 position dual 3 port valve
SJ3A60 [N.C. valve x 2]

SJ3B60 [N.O. valve x 2]

SJ3B60K with back pressure □ check valve

SJ3A60K with back pressure check valve

Component Parts

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Plug-in Connector Type Manifold

Series **SJ2000/3000**

- **P.10** D-sub Connector / Flat Ribbon Cable / PC Wiring
- **P.26** PC Wiring System with Power Supply Terminal
- **P.34** Serial Wiring: EX180
- **P.42** Gateway System Serial Transmission System: EX510
**Plug-in Connector Type**

**D-sub Connector / Flat Ribbon Cable / PC Wiring**

**Series SJ2000/3000**

---

**How to Order**

- **Connector type manifold**
  - **SS5J**
    - 3 **Series**
    - 60 **F**
    - D 1 **- 05 U**
  - **Nil**
  - **M**
    - Mixed mounting (Note 1)
    - Note 1) There is no need to enter anything when you operate either the SJ2000 or SJ3000 series alone.
    - Note 2) Enter “M” when the SJ2000 or SJ3000 series will be mounted on the same manifold base together.

- **Connector type**
  - **F**: D-sub connector (25 pins)
  - **P**: Flat ribbon cable (26 pins)
  - **PG**: Flat ribbon cable (20 pins)
  - **PH**: Flat ribbon cable (10 pins)
  - **J**: PC wiring (20 pins)

- **Connection mounting position**
  - Symbol: D
  - Mounting position: D side
  - Connector entry direction:
    - 1: Upward
    - 2: Lateral

---

**How to Order Valve Manifold Assembly**

- Ordering example (SS5J3-60PD2-□)
  - Double solenoid, individual wiring/lead wire length 300 mm (24 VDC)
    - SJ3260-5SMZ-C6 (1 set)
  - Double solenoid, with switch (24 VDC)
    - SJ3260-5SCZJ-C6 (1 set)
  - Single solenoid (24 VDC)
    - SJ3160-5SCU-C6 (2 sets)

- **SUP/EXH block fitting spec.**
  - **Nil**
  - **Straight fitting**
  - **L**
    - Elbow fitting (Upward)
    - With external pilot spec.
    - X, PE port
  - **B**
    - Elbow fitting (Downward)
    - With external pilot spec.
    - X, PE port

- **Pilot spec.**
  - **Nil**
  - **Internal pilot**
  - **S**
    - Internal pilot / Built-in silencer
  - **R**
    - External pilot
  - **RS**
    - External pilot / Built-in silencer
  - Note 1) There is no need to enter anything when the SUP/EXH block mounting position “M” is selected.
  - For built-in silencers, the 3/5(E) ports are plugged.

- **SUP/EXH block mounting position**
  - **U**
    - U side (2 to 10 stations)
  - **D**
    - D side (2 to 10 stations)
  - **B**
    - Both sides (2 to 24 stations)
  - **M**
    - Special specifications

- **Valve stations**
  - **F**: D-sub connector (25 pins)
    - Symbol: 02
    - Stations: 2 stations
    - Note: Up to 24 solenoids possible.
    - 24 24 stations possible.
  - **PG**: Flat ribbon cable (20 pins)
    - Symbol: 02
    - Stations: 2 stations
    - Note: Up to 18 solenoids possible.
    - 18 18 stations possible.
  - **PH**: Flat ribbon cable (10 pins)
    - Symbol: 08
    - Stations: 8 stations possible.
  - **J**: PC wiring (20 pins)
    - Symbol: 02
    - Stations: 2 stations
    - Note: Up to 16 solenoids possible.

---

- The number of the blanking block assembly is also included. Since single and double wiring are available with the blanking block assembly, select a model compatible with the valve wiring spec. planned for the future. (Refer to page 61.)
- Refer to page 26 through to 33 for PCW type with power supply terminal.
- The asterisk denotes the symbol for assembly.
- Prefix to the part no. of the solenoid valve, etc.
How to Order Solenoid Valves

**Standard**

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

- **Pilot spec.**
  - Nil: Internal pilot
  - R: External pilot
  
- **Coil spec.**
  - Nil: Standard
  - T: With power saving circuit (Continuous duty type)

- **Rated voltage**
  - 24 VDC
  - 12 VDC

**With switch**

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

- **Pilot spec.**
  - Nil: Internal pilot
  - R: External pilot

- **Coil spec.**
  - Nil: Standard
  - T: With power saving circuit (Continuous duty type)

- **Rated voltage**
  - 24 VDC
  - 12 VDC

**Individual wiring**

- **Series**
  - SJ2000
  - SJ3000

**Single solenoid**

- **Wiring spec.**
  - Nil: Single wiring
  - D: Double wiring

- **Back pressure check valve**
  - Nil: Internal pilot
  - K: Built-in

- **With switch**
  - Standard

**Connector entry**

- **C**: Dedicated for centralized wiring
- **M**: Individual wiring, With lead wire
  - Length 300 mm
  
- **MN**: Individual wiring, Without lead wire
  - (With connector, socket)

- **MO**: Individual wiring, Without connector

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

- **Z**: With light/surge voltage suppressor
  - (Polar type)

**Manual override**

- **Nil**: Non-locking push type
- **D**: Push-turn locking slotted type

**Light/surge voltage suppressor**

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

- **Z**: With light/surge voltage suppressor
  - (Polar type)

**Coaxial fitting assembly**

- **C**: Dedicated for centralized wiring
- **M**: Individual wiring, With lead wire
  - Length 300 mm

**Connector entry**

- **C**: Dedicated for centralized wiring
- **M**: Individual wiring, With lead wire
  - Length 300 mm

- **MN**: Individual wiring, Without lead wire
  - (With connector, socket)

- **MO**: Individual wiring, Without connector

**Manual override**

- **Nil**: Non-locking push type
- **D**: Push-turn locking slotted type

**Light/surge voltage suppressor**

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

- **Z**: With light/surge voltage suppressor
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**Connector entry**

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  - Length 300 mm

- **MN**: Individual wiring, Without lead wire
  - (With connector, socket)

- **MO**: Individual wiring, Without connector

**Manual override**

- **Nil**: Non-locking push type
- **D**: Push-turn locking slotted type

**Light/surge voltage suppressor**

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**Manual override**

- **Nil**: Non-locking push type
- **D**: Push-turn locking slotted type

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  - (Polar type)

**Connector entry**

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- **D**: Push-turn locking slotted type

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- **MO**: Individual wiring, Without connector

**Manual override**

- **Nil**: Non-locking push type
- **D**: Push-turn locking slotted type

**Light/surge voltage suppressor**

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

- **Z**: With light/surge voltage suppressor
  - (Polar type)
Manifold Electrical Wiring (Non-polar type)

Type 60F: D-sub connector (25 pins)

Type 60P: Flat ribbon cable (26 pins)

Type 60PG: Flat ribbon cable (20 pins)

Type 60PH: Flat ribbon cable (10 pins)

Type 60J: Flat ribbon cable (20 pins, PC wiring)

Note) This circuits are for the specifications with up to 12 stations of 2 position double, 3 position and 4 position dual 3 port valve. There should be wired in order 1→14→2→15 without skipping or leaving any connectors remaining.

Note) This circuits are for the specifications with up to 9 stations of 2 position double, 3 position and 4 position dual 3 port valve. There should be wired in order 1→2→3→4 without skipping or leaving any connectors remaining.

Note) This circuits are for the specifications with up to 4 stations of 2 position double, 3 position and 4 position dual 3 port valve. There should be wired in order 1→2→3→4 without skipping or leaving any connectors remaining.

Note) This circuits are for the specifications with up to 8 stations of 2 position double, 3 position and 4 position dual 3 port valve. There should be wired in order 20→18→16→14 without skipping or leaving any connectors remaining.

Caution

When the non-polar U type valves are used, either negative COM or positive COM wiring of the manifold is possible. However, the valve does not switch with negative COM if a Z type is used. Be sure to use positive COM.
Dimensions: SJ2000 for D-sub Connector

SS5J2-60FD-[Stations]U (S, R, RS)

<table>
<thead>
<tr>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>110.5</td>
<td>100</td>
<td>72.8</td>
<td>22</td>
<td>110.5</td>
</tr>
</tbody>
</table>

(Pitch) \( P = 7.5 \)

One-touch fitting
- (1P), 3/5(E) port
- Applicable tubing O.D: ø8, ø5/16"

One-touch fitting
- (4(A), 2(B) port)
- Applicable tubing O.D: ø2, 1/8"
- ø4, ø3/32"

M3 x 0.5
- (4(A), 2(B) port)

[External pilot spec.]

One-touch fitting
- (PE: Pilot EXH port)
- Applicable tubing O.D: ø4, ø5/32"

Switch for locking a connector

(DIN rail mounting hole pitch: 12.5)

Manual override
- (Locking type: Press, then rotate.)
- 4(A) port side: Blue
- 2(B) port side: Yellow

Silencer (Air discharge port)
- (Built-in silencer spec.)
- DIN rail holding screw

Valve lock switch

Light/surge voltage suppressor
- SOL a: Orange
- SOL b: Green

40 Locking pipe

Note) For manifold dimensions including elbow fitting, refer to page 23.

<table>
<thead>
<tr>
<th>L: Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>n: Stations</td>
</tr>
<tr>
<td>L1</td>
</tr>
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<tr>
<td>L3</td>
</tr>
<tr>
<td>L4</td>
</tr>
<tr>
<td>L4</td>
</tr>
</tbody>
</table>
Series **SJ2000/3000**

**Dimensions: SJ2000 for D-sub Connector**

**SS5J2-60FD** - Stations B (S, R, RS)

---

**L: Dimensions**

| n  | 0  | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| L1 | 123 | 135.5 | 135.5 | 148 | 148 | 160.5 | 173 | 173 | 185.5 | 185.5 | 198 | 210.5 | 210.5 | 223 | 223 | 235.5 | 248 | 248 | 260.5 | 260.5 | 273 | 265.5 | 285.5 | 285.5 |
| L2 | 112.5 | 125 | 125 | 137.5 | 137.5 | 150 | 162.5 | 162.5 | 175 | 175 | 187.5 | 200 | 200 | 212.5 | 212.5 | 225 | 237.5 | 237.5 | 250 | 250 | 262.5 | 275 | 275 |
| L3 | 88.3 | 95.8 | 103.3 | 110.8 | 118.3 | 125.8 | 133.3 | 140.8 | 148.3 | 155.8 | 163.3 | 170.8 | 178.3 | 185.8 | 193.3 | 200.8 | 208.3 | 215.8 | 223.3 | 230.8 | 238.3 | 245.8 | 253.3 |
| L4 | 20.5 | 23 | 19 | 21.5 | 18 | 20.5 | 23 | 19 | 21.5 | 18 | 20.5 | 23 | 19 | 21.5 | 18 | 20.5 | 23 | 19 | 21.5 | 18 | 20.5 | 23 | 19 |

---

**Note:** For manifold dimensions including elbow fitting, refer to page 23.
Dimensions: SJ3000 for D-sub Connector

SS5J3-60FD-[Stations]U (S, R, RS)

Note) For manifold dimensions including elbow fitting, refer to page 24.
**Series SJ2000/3000**

**Dimensions: SJ3000 for D-sub Connector**

SS5J3-60FD|- [Stations] B (S, R, RS)

---

### L: Dimensions

<table>
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<tr>
<th>n</th>
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<tr>
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<td>123 135.5 148 160.5 173 185.5 185.5 198 210.5 223 235.5 235.5 248 260.5 273 285.5 298 298 310.5 323 335.5 348 348</td>
</tr>
<tr>
<td>L2</td>
<td>112.5 125 137.5 150 162.5 175 175 187.5 200 212.5 225 225 237.5 250 262.5 275 287.5 287.5 300 312.5 325 337.5 337.5</td>
</tr>
<tr>
<td>L3</td>
<td>93.3 103.3 113.3 123.3 133.3 143.3 153.3 163.3 173.3 183.3 193.3 203.3 213.3 223.3 233.3 243.3 253.3 263.3 273.3 283.3 293.3 303.3 313.3</td>
</tr>
<tr>
<td>L4</td>
<td>17.5 19 20 21 22 23.5 18.5 19.5 20.5 21.5 23 18 19 20 21 22.5 23.5 18.5 19.5 20.5 22 23 18</td>
</tr>
</tbody>
</table>

---

**Note:** For manifold dimensions including elbow fitting, refer to page 24.
### Dimensions: SJ2000 for Flat Ribbon Cable / PC Wiring

**SS5J2-60J**

#### Stations U (S, R, RS)

<table>
<thead>
<tr>
<th>Station</th>
<th>L1 (Pitch)</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Pitch)</td>
<td>P = 7.5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### One-touch fitting

- [P], 3/5 (E) port
- Applicable tubing O.D.: ø8, ø5/16"
- [4(A), 2(B) port]
- Applicable tubing O.D.: ø2, ø1/8", ø4, ø5/32"

#### Switch for locking a connector

- (Connector entry direction upward)
- Applicable tubing O.D.: ø4, ø5/32"

#### Applicable connector: 26 pin MIL type

- With strain relief (MIL-C-83503 compliant)

#### Manual override switch

- (Locking type: Press, then rotate.)
- Blue
- Yellow

#### Light/surge voltage suppressor

- SOLa: Orange
- SOLb: Green

#### Triangle mark location

#### DIN rail holding screw

#### Silencer

- (Air discharge port)
- (Built-in silencer spec.)

#### Valve lock switch

- (DIN rail mounting hole pitch: 12.5)

#### In case of 60PG (10 pins)

- Switch for locking a connector

#### Valve lock switch

- Manual override: 40.5

### Note

1. Type 60PG, 60PH and 60J differ only in their connectors, and the L1 through L4 dimensions are the same as type 60P.

2. For manifold dimensions including elbow fitting, refer to page 23.

---

**L: Dimensions**

<table>
<thead>
<tr>
<th>Station</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>L1</td>
<td>110.5</td>
<td>110.5</td>
<td>123</td>
<td>135.5</td>
</tr>
<tr>
<td>L2</td>
<td>100</td>
<td>100</td>
<td>112.5</td>
<td>125</td>
</tr>
<tr>
<td>L3</td>
<td>72.8</td>
<td>80.3</td>
<td>87.8</td>
<td>95.3</td>
</tr>
<tr>
<td>L4</td>
<td>22</td>
<td>18.5</td>
<td>21</td>
<td>23.5</td>
</tr>
</tbody>
</table>

**Note**

1. When equipped with switch

---

**In case of 60PG (20 pins)**

**In case of 60PH (10 pins)**

---

**Series SJ2000/3000**

---

**Dimensions:** SJ2000 for Flat Ribbon Cable / PC Wiring
Dimensions: SJ2000 for Flat Ribbon Cable / PC Wiring

SS5J2-60[D1] - Stations B (S, R, RS)

In case of 60PG, 60PH and 60J differ only in their connectors, and the L1 through L4 dimensions are the same as type 60P.

Note 2) For manifold dimensions including elbow fitting, refer to page 23.

| L | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| L1 | 123 | 135.5 | 135.5 | 148 | 148 | 160.5 | 173 | 173 | 185.5 | 185.5 | 186 | 210.5 | 210.5 | 223 | 223 | 235.5 | 248 | 248 | 260.5 | 260.5 | 273 | 285.5 | 285.5 |
| L2 | 112.5 | 125 | 125 | 137.5 | 137.5 | 150 | 162.5 | 162.5 | 175 | 175 | 187.5 | 200 | 200 | 200 | 200 | 212.5 | 212.5 | 225 | 225 | 237.5 | 250 | 250 | 262.5 | 275 |
| L3 | 88.3 | 95.8 | 103.3 | 110.8 | 118.3 | 125.8 | 133.3 | 140.8 | 148.3 | 155.8 | 163.3 | 170.8 | 178.3 | 185.8 | 193.8 | 200.8 | 208.3 | 215.8 | 223.3 | 230.8 | 238.3 | 245.8 | 253.3 |
| L4 | 20.5 | 23 | 19.5 | 22 | 18 | 20.5 | 23 | 19.5 | 22 | 18 | 20.5 | 23 | 19.5 | 22 | 18 | 20.5 | 23 | 19.5 | 22 | 18 | 20.5 | 23 | 19.5 | 23 | 19.5 |

Note 1) Type 60PG, 60PH and 60J differ only in their connectors, and the L1 through L4 dimensions are the same as type 60P.
Series SJ2000/3000

Dimensions: SJ3000 for Flat Ribbon Cable / PC Wiring


1. One-touch fitting
2. (Pitch) P = 10
3. One-touch fitting
4. MS x 0.8
5. [4(A), 2(B) port]
6. Applicable tubing O.D: ø8, ø5/16"
7. Applicable tubing O.D: ø2, ø1/8" ø4, ø5/32" ø6, ø1/4"

8. Manual override (Locking type: Press, then rotate.)
   4(A) port side: Blue
   2(B) port side: Yellow

9. DIN rail holding screw
10. Silencer (Air discharge port)
    (Built-in silencer spec.)

11. Valve lock switch
12. Switch for locking a connector
13. Switch (When equipped with switch)
14. Switch for locking a connector
15. (Connector entry direction upward)
16. Valve lock switch
17. Switch for locking a connector
18. Switch (When equipped with switch)
19. Switch for locking a connector
20. (Connector entry direction upward)

L: Dimensions
n: Stations

<table>
<thead>
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<th>7</th>
<th>8</th>
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<th>10</th>
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<tr>
<td>L1</td>
<td>110.5</td>
<td>123</td>
<td>135.5</td>
<td>148</td>
<td>160.5</td>
<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
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<tr>
<td>L2</td>
<td>100</td>
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<td>125</td>
<td>137.5</td>
<td>150</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
</tr>
<tr>
<td>L3</td>
<td>77.8</td>
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<tr>
<td>L4</td>
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<td>20.5</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>19</td>
<td>20</td>
<td>21.5</td>
<td>22.5</td>
</tr>
</tbody>
</table>

In case of 60PH (20 pins)

1. Type 60PG, 60PH and 60J differ only in their connectors, and the L1 through L4 dimensions are the same as type 60P.
2. For manifold dimensions including elbow fitting, refer to page 24.
Dimensions: SJ3000 for Flat Ribbon Cable / PC Wiring

SS5J3-60D□- Stations B (S, R, RS)

P = 10

Dimensions: SJ3000 for Flat Ribbon Cable / PC Wiring

Dimensions:

L1: Dimensions

<table>
<thead>
<tr>
<th>L</th>
<th>2</th>
<th>3</th>
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<tbody>
<tr>
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<td>185.5</td>
<td>186</td>
<td>210.5</td>
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<td>348</td>
</tr>
<tr>
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<td>125</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>175</td>
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<tr>
<td>L4</td>
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<td>24</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
</tr>
</tbody>
</table>

Note 1) Type 60PG, 60PH and 60J differ only in their connectors, and the L1 through L4 dimensions are the same as type 60P.

Note 2) For manifold dimensions including elbow fitting, refer to page 24.

In case of 60J□ (20 pins) In case of 60PH (10 pins)

In case of 60J□ (20 pins) In case of 60PH (10 pins)
### Dimensions: SJ2000/3000 Mixed Manifold

**SS5J3-M60□D□ Stations U (S, R, RS)**

- **n1:** Piece of the SJ2000
- **n2:** Piece of the SJ3000

**Dimension Formulas:**

$L_3 = 7.5 \times n_1 + 10 \times n_2 + 57.8$

$M = (L_3 + 10.6) / 12.5 + 1$

Remove all numbers after the decimal.

$L_1 = M \times 12.5 + 23$

$L_2 = L_1 - 10.5$

$L_4 = (L_1 - L_3)/2 + 1.3$

#### U side

- **L3 Switch for locking a connector**
- **DIN rail**
- **DIN rail holding screw**

#### D side

- **L4 One-touch fitting**
- **Applicable tubing O.D.: ø2, ø1/8" ø4, ø5/32"**

**Notes:**

- The dimensions of L1 to L4 for SS5J3-M60PD□□ Stations U are the same as those of SS5J3-M60PD□□ Stations U.

**Applicable connector:** 26 pin MIL type with strain relief (MIL-C-83503)

**Applicable tubing O.D.:** ø8, ø5/16" ø4, ø5/32" ø6, ø1/4"

**Applicable connector:** 26 pin MIL type with strain relief (MIL-C-83503)

**Applicable tubing O.D.:** ø2, ø1/8" ø4, ø5/32"

---

**SS5J3-M60□D□ Stations B (S, R, RS)**

- **n1:** Piece of the SJ2000
- **n2:** Piece of the SJ3000

**Dimension Formulas:**

$L_3 = 7.5 \times n_1 + 10 \times n_2 + 73.3$

$M = (L_3 + 10.6) / 12.5 + 1$

Remove all numbers after the decimal.

$L_1 = M \times 12.5 + 23$

$L_2 = L_1 - 10.5$

$L_4 = (L_1 - L_3)/2 + 1.3$

#### U side

- **L3 Switch for locking a connector**
- **DIN rail**
- **DIN rail holding screw**

#### D side

- **L4 One-touch fitting**
- **Applicable tubing O.D.: ø2, ø1/8" ø4, ø5/32"**

**Notes:**

- The dimensions of L1 to L4 for SS5J3-M60PD□□ Stations B are the same as those of SS5J3-M60PD□□ Stations U.

**Applicable connector:** 26 pin MIL type with strain relief (MIL-C-83503)

**Applicable tubing O.D.:** ø8, ø5/16" ø4, ø5/32" ø6, ø1/4"
Dimensions: SJ2000 with Elbow Fittings

SS5J2-60FD

[Stations] U\(^{\text{8}}\)

Dimensions: SJ2000 with Elbow Fittings

One-touch fitting

[PE: Pilot EXH port]
Applicable tubing O.D: ø4

[External pilot spec.]

One-touch fitting

[X: External pilot port]
Applicable tubing O.D: ø4

Inch sizes for elbow fittings are not available.

Valve

[Valve]

SUP/EXH block (External pilot spec.)

Downward (B type)

[Station n] → (Station 1)
Series SJ2000/3000

Dimensions: SJ3000 with Elbow Fittings

SS5J3-60FD

- Stations

U12LB

Stations

(Station 1) → → → (Station n)

Uside

Dside

* Inch sizes are for elbow fittings rate not available.

24 Series SJ2000/3000

Dimensions: SJ3000 with Elbow Fittings

Port configurations:

- One-touch fitting (P) □ 1(P)
- One-touch fitting (A) □ 4(A)
- One-touch fitting (B) □ 2(B)
- One-touch fitting (E) □ 3/5(E)

Applicable tubing O.D: ø8

- [Valve]
- [External pilot spec.]

[External pilot spec.] (X: External pilot port) Applicable tubing O.D: ø4

[External pilot spec.] (PE: Pilot EXH port) Applicable tubing O.D: ø4

One-touch fitting Applicable tubing O.D: ø8

(Pitch)
P = 10

Dimensions:

- BN7: 9 □ B6: ...
- Port
- (Pitch)
- 23.6 12.8

- LN7: 39.8 16.6 37.6 6.6 34.4 6.6 39.8 16.6 37.6
- LN7: 54.5 5.6 54.5 5.6
- LN7: 10.6 10.6
- LN7: 7.7 7.7
- BN7: 6.1 6.1
- BN7: 6.5 6.5
- BN7: 6.5 6.5

[External pilot spec.]
Plug-in Connector Type
PC Wiring System with Power Supply Terminal
Series SJ2000/3000

How to Order

Connector type manifold

SS5J3 - 60GD - 05U

Mixed mounting type

- Nil (Standard)
- M (Mixed mounting)

Connector mounting position

Symbol: D
Mounting position: D side

Flat ribbon cable (20 pins)

DIN rail length specified

- Nil (Standard length)
- 3 (3 stations): Specify a longer rail than the standard length.
- 16 (16 stations): Specify the valve stations not exceeding the maximum stations.

SUP/EXH block fitting spec.

- Nil: Straight fitting
- L: Elbow fitting (Upward)
- B: Elbow fitting (Downward)

Pilot spec.

- Nil: Internal pilot
- S: Internal pilot / Built-in silencer
- R: External pilot
- RS: External pilot / Built-in silencer

SUP/EXH block mounting position

- U: U side (2 to 10 stations)
- D: D side (2 to 10 stations)
- B: Both sides (2 to 16 stations)
- M: Special specifications

Valve stations

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Stations</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>2 stations</td>
<td>Up to 16 solenoids possible.</td>
</tr>
<tr>
<td>16</td>
<td>16 stations</td>
<td></td>
</tr>
</tbody>
</table>

- The number of the blanking block assembly is also included. Since single and double wiring are available with the blanking block assembly, select a model compatible with the valve wiring spec. planned for the future. (Refer to page 61.)
- For the wiring to power supply terminal, refer to back page 9.
How to Order Solenoid Valves

Standard

With switch

Individual wiring
[For plug-in mixed mounting]

Type of actuation

- 2 position single solenoid
- 2 position double solenoid
- 3 position closed center
- 3 position pressure center

Pilot spec.

- Nil: Internal pilot
- R: External pilot

- Back pressure check valve is not applicable for 4 position dual 3 port valves.

Coil spec.

- Nil: Standard
- T: With power saving circuit (Continuous duty type)

- When selecting "with power saving circuit" when the solenoid valve will be energized continuously for long period.

Rated voltage

- 5 V DC
- 24 V DC

Connector entry

- C: Dedicated for centralized wiring
- M: Individual wiring, With lead wire
  - Length: 300 mm
- MN: Individual wiring, Without lead wire
  With printed circuit board
- MO: Individual wiring, Without connector
  With printed circuit board

Light/surge voltage suppressor

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

- When selecting "with light/surge voltage suppressor" when polar type is used.

Manual override

- Nil: Non-locking push type
- D: Push-turn locking slotted type

Note) Refer to pages 52 and 53 for the dedicated non-plug-in individual wiring.

Series

- SJ2000
- SJ3000

SeriesSJ31U60C6SJ3

Single solenoid wiring spec.

- Nil: Single wiring
- D: Double wiring

- There is no need to enter anything for 2 position double, 3 position and 4 position solenoid valves. Select this when the unused numbers to wiring are set. Refer to page 3 for details.

A, B port size

- Straight (Metric size)
  - C2: ø2 one-touch fitting
  - C4: ø4 one-touch fitting
  - C6: ø6 one-touch fitting

- (SJ3000 only)

- (Inch size)
  - N1: ø1/8" fitting
  - N3: ø5/32" fitting
  - N7: ø1/4" fitting

- (SJ3000 only)

- Metric size
  - M3: M3 x 0.5 (SJ2000 only)
  - M5: M5 x 0.8 (SJ3000 only)

- Elbow fitting assembly (Upward entry)
  - L2: ø2 elbow fitting assembly
  - L4: ø4 elbow fitting assembly
  - L6: ø6 elbow fitting assembly

- (SJ3000 only)

- (Inch size)
  - LN1: ø1/8" elbow fitting assembly
  - LN3: ø5/32" elbow fitting assembly
  - LN7: ø1/4" elbow fitting assembly

- (SJ3000 only)

- Elbow fitting assembly (Downward entry)
  - B2: ø2 elbow fitting assembly
  - B4: ø4 elbow fitting assembly
  - B6: ø6 elbow fitting assembly

- (SJ3000 only)

- (Inch size)
  - BN1: ø1/8" elbow fitting assembly
  - BN3: ø5/32" elbow fitting assembly
  - BN7: ø1/4" elbow fitting assembly

- (SJ3000 only)

- Connector entries with the symbol "M," can not use the switch signal from the common wiring on the manifold. For details, refer to "Connector Wiring Diagram" on page 3.

- When ordering a connector assembly separately, refer to back page 8.

Note 2) The electrical connection to the manifold will be +COM. spec. when light/surge voltage suppressor is "Z" (Polar type).
Manifold Electrical Wiring

Type 60G: Flat ribbon cable (20 pins, PC wiring with power supply terminal)

<table>
<thead>
<tr>
<th>Terminal no.</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>
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<tbody>
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</tbody>
</table>

Note 1) This circuits are for the specifications with up to 8 stations of 2 position double, 3 position and 4 position dual 3 port valves. These should be wired in order 20→18→16→14 without skipping or leaving any connectors remaining.

Note 2) For details on PC wiring systems, refer to "PC Wiring System" catalog (CAT.ES02-20B).
Dimensions

SS5J2-60GD- [Stations] U (S, R, RS)

L: Dimensions

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Note) For manifold dimensions including elbow fitting, refer to page 23.
### Dimensions

**SS5J2-60GD-**

**B (S, R, RS)**

#### L: Dimensions

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**Note:** For manifold dimensions including elbow fitting, refer to page 23.
Dimensions

SS5J3-60GD- Stations U (S, R, RS)

### Power Supply Terminal
- **U side**
  - Valve lock switch
  - Manual override
    - (Locking type: Press, then rotate.)
  - Applicable connector: 20 pin MIL type with strain relief (MIL-C-83503 compliant)
- **D side**
  - Triangle mark location
  - (When equipped with switch)

### Triangle mark location
- **L1**
  - DIN rail mounting hole pitch: 12.5
- **L2**
  - (DIN rail mounting hole pitch: 12.5)
- **L3**
  - Valve lock switch
- **L4**
  - Power supply terminal

### Manual override
- (A) port side: Blue
- (B) port side: Yellow

### Light/surge voltage suppressor
- SOL a: Orange
- SOL b: Green

### Dimensions

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Note: For manifold dimensions including elbow fitting, refer to page 24.

---

For manifold dimensions including elbow fitting, refer to page 24.
Series SJ2000/3000

Dimensions

SS5J3-60GD-[Stations] B (S, R, RS)

[External pilot spec.]
(There is a piping of X, PE port in the both sides.)

- One-touch fitting
- Applicable tubing O.D: ø4, ø5/32"

[Stations]
(S, R, RS)

Dimensions

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</table>

Note: For manifold dimensions including elbow fitting, refer to page 24.
The valve arrangement is numbered as the 1st station from Dside.

Indicate the valves to be attached below the manifold ... from station 1 as shown in the drawing. In the case of complex arrangement, specify them in the manifold specification sheet.

The asterisk denotes the symbol for assembly. □Prefix to the part no. of the solenoid valve, etc.

SS5J3-60SV-05U

**Sup/EXH** block fitting spec.

- Nil: Straight fitting
- L: Elbow fitting (Upward)
- B: Elbow fitting (Downward)

**Pilot spec.**

- Nil: Internal pilot
- S: Internal pilot / Built-in silencer
- R: External pilot
- RS: External pilot / Built-in silencer

* There is no need to enter anything when the SUP/EXH block mounting position "M" is selected.

**SUP/EXH block mounting position**

- U: U side (2 to 10 stations)
- D: D side (2 to 10 stations)
- B: Both sides (2 to 32 stations)
- M*: Special specifications

* Specify the required specifications (including port sizes other than ø8) by means of the manifold specification sheet.

**Valve stations**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Stations</th>
<th>Note</th>
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<td>O2</td>
<td>2 stations</td>
<td>Up to 32 solenoids possible.</td>
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<tr>
<td></td>
<td>32 stations</td>
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</table>

* The number of the blanking block assembly is also included. Since single and double wiring are available with the blanking block assembly, select a model compatible with the valve wiring spec. planned for the future. (Refer to page 61.)

**SI Unit Part No.**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Component module/Communication connector specifications</th>
<th>For SS5J3-60SV</th>
</tr>
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<tbody>
<tr>
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<td>Mitsubishi Electric Corp. CC-Link compliant (32 points), T-branch type</td>
<td>EX180-SMJ1</td>
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<td>VA</td>
<td>Mitsubishi Electric Corp. CC-Link compliant (32 points), Straight type</td>
<td>EX180-SMJ1A</td>
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<td>Q</td>
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<td>EX180-SDN1</td>
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<td>EX180-SDN2</td>
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<td>DeviceNet compliant (16 points), Straight type</td>
<td>EX180-SDN2A</td>
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**Item** | Specifications
---|-----------------|
Power source for driving valve | Non-polar: 24 VDC ±10% ~ ±5% |
With energy saving circuit (Continuous duty) | 24 VDC ±10% ~ ±0% |
# How to Order Solenoid Valves

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<th>Type of actuation</th>
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<th>- 5 C U</th>
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<tr>
<td>Internal pilot</td>
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<td>External pilot</td>
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<td>Pilot spec.</td>
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**Back pressure check valve**
- Nil
- Internal pilot
- External pilot

**Coil spec.**
- Nil
- Standard
- With power saving circuit (Continuous duty type)

**Rated voltage**
- 5V 24 VDC

**Light/surge voltage suppressor**
- With light/surge voltage suppressor (Non-polar type)
- With light/surge voltage suppressor (Polar type)

**Connector entry**
- C: Dedicated for centralized wiring
- M: Individual wiring, With lead wire (Length 300 mm)
- MN: Individual wiring, Without lead wire (With connector, socket)
- MO: Individual wiring, Without connector

**With switch**
- Manual override
  - Nil: Non-locking push type
  - D: Push-turn locking slotted type

**Series SJ2000/3000**
- EX180 Serial Wiring
- Plug-in Connector Type

**A, B port size**
- Straight (Metric size)
  - C2: ø2 one-touch fitting
  - C4: ø4 one-touch fitting
  - C6: ø6 one-touch fitting
- (Inch size)
  - N1: 1/8" one-touch fitting
  - N3: 5/32" one-touch fitting
  - N7: 1/4" one-touch fitting

**Elbow fitting assembly (Upward entry) (Metric size)**
- L2: ø2 elbow fitting assembly
- L4: ø4 elbow fitting assembly
- L6: ø6 elbow fitting assembly

**Elbow fitting assembly (Downward entry) (Metric size)**
- B2: ø2 elbow fitting assembly
- B4: ø4 elbow fitting assembly
- B6: ø6 elbow fitting assembly

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

**Note 2** The electrical connection to the manifold will be +COM. spec. when light/surge voltage suppressor is "Z" (Polar type).
Series SJ2000/3000

Dimensions: SJ2000 for EX180 Serial Wiring

SS5J2-60S □ □ □ Stations U (S, R, RS)

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Note: For manifold dimensions including elbow fitting, refer to page 23. Please contact SMC regarding the SI unit.
Dimensions: SJ2000 for EX180 Serial Wiring

SS5J2-60□□□□-Stations B (S, R, RS)

L1 □ L2 □ L3 □ L4

nL

273 □ 262.5 □ 238.7 □ 17 273 □ 262.5 □ 246.2 □ 13.5

285.5 □ 275 □ 261.2 □ 12 298 □ 287.5 □ 275.7 □ 11 310 □ 300 □ 287.5 □ 10.5

325 □ 312.5 □ 287.5 □ 9.5 337.5 □ 325 □ 281.2 □ 9 350 □ 337.5 □ 273.7 □ 8.5

362.5 □ 350 □ 266.2 □ 8 375 □ 362.5 □ 258.7 □ 7.5 387.5 □ 375 □ 251.2 □ 7

400 □ 387.5 □ 243.7 □ 6.5 412.5 □ 400 □ 236.2 □ 6 425 □ 412.5 □ 228.7 □ 5.5

437.5 □ 425 □ 221.2 □ 5 450 □ 437.5 □ 213.7 □ 4.5 462.5 □ 450 □ 206.2 □ 4

475 □ 462.5 □ 198.7 □ 3.5 487.5 □ 475 □ 191.2 □ 3 500 □ 487.5 □ 183.7 □ 2.5

512.5 □ 500 □ 176.2 □ 2 525 □ 512.5 □ 168.7 □ 1.5 537.5 □ 525 □ 161.2 □ 1

550 □ 537.5 □ 153.7 □ 0.5 562.5 □ 550 □ 146.2 □ 0 575 □ 562.5 □ 138.7 □ -1

L3 □ L4

587.5 □ 575 □ 131.2 □ -2 600 □ 587.5 □ 123.7 □ -2.5 612.5 □ 600 □ 116.2 □ -3

625 □ 612.5 □ 108.7 □ -3.5 637.5 □ 625 □ 101.2 □ -4 650 □ 637.5 □ 93.7 □ -4.5

662.5 □ 650 □ 86.2 □ -5 675 □ 662.5 □ 78.7 □ -5.5 687.5 □ 675 □ 71.2 □ -6

700 □ 687.5 □ 63.7 □ -6.5 712.5 □ 700 □ 56.2 □ -7 725 □ 712.5 □ 48.7 □ -7.5

737.5 □ 725 □ 41.2 □ -8 750 □ 737.5 □ 33.7 □ -8.5 762.5 □ 750 □ 26.2 □ -9

775 □ 762.5 □ 18.7 □ -9.5 787.5 □ 775 □ 11.2 □ -10 800 □ 787.5 □ 4.2 □ -10.5

812.5 □ 800 □ -1.2 □ -11 825 □ 812.5 □ -4.2 □ -11.5 837.5 □ 825 □ -7.2 □ -12

850 □ 837.5 □ -10.2 □ -12.5 862.5 □ 850 □ -13.2 □ -13 875 □ 862.5 □ -16.2 □ -13.5

887.5 □ 875 □ -19.2 □ -14 900 □ 887.5 □ -22.2 □ -14.5 912.5 □ 900 □ -25.2 □ -15

925 □ 912.5 □ -28.2 □ -15.5 937.5 □ 925 □ -31.2 □ -16 950 □ 937.5 □ -34.2 □ -16.5

962.5 □ 950 □ -37.2 □ -17 975 □ 962.5 □ -40.2 □ -17.5 987.5 □ 975 □ -43.2 □ -18

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L: Dimensions

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n: Stations

Note: For manifold dimensions including elbow fitting, refer to page 23. Please contact SMC regarding the SI unit.
Dimensions: SJ3000 for EX180 Serial Wiring

**SS5J3-60S**

| Stations | U (S, R, RS) |

**Dimensions**

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<thead>
<tr>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
</tr>
</thead>
<tbody>
<tr>
<td>135.5</td>
<td>125</td>
<td>108.2</td>
<td>13.5</td>
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<tr>
<td>15.4</td>
<td>14.8</td>
<td>13.5</td>
<td>12.8</td>
</tr>
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<td>154</td>
<td>148</td>
<td>143.5</td>
<td>137.5</td>
</tr>
<tr>
<td>32.1</td>
<td>29.8</td>
<td>27.2</td>
<td>24.5</td>
</tr>
</tbody>
</table>

**Power source connector**

(Shipped together with manifold)

**Ground terminal**

**One-touch fitting**

(1P, 3/5(E) port)

**Applicable tubing O.D:** ø8, ø5/16"

(4A), (2B) port

**M5 x 0.8**

**Communication connector**

(Shipped together with manifold)

**Note:** For manifold dimensions including elbow fitting, refer to page 24. Please contact SMC regarding the SI unit.

**One-touch fitting**

(PE: Pilot EXH port)

**Applicable tubing O.D:** ø4, ø5/32"

**Straight type:**

(38.6) 12.8 32.1 23.6 15.4 12.8 23.6 15.4 12.8 23.6 15.4 12.8

**SI unit**

**Manual override**

(40.5) 38

**Silencer**

(Air discharge port)

(Built-in silencer spec.)

**Switch**

(L: Dimensions)

<table>
<thead>
<tr>
<th>n</th>
<th>Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>L1</td>
<td>135.5</td>
</tr>
<tr>
<td>L2</td>
<td>125</td>
</tr>
<tr>
<td>L3</td>
<td>108.2</td>
</tr>
<tr>
<td>L4</td>
<td>135.5</td>
</tr>
</tbody>
</table>
Dimensions: SJ2000/3000 Mixed Manifold

SS5J3-M60S□□-Stations U (S, R, RS)

L dimension: Formula, L1 to L4
L3 = 7.5 x n1 + 10 x n2 + 88.2
M = (L3 + 4)/12.5 + 1
Remove all numbers after the decimal.
L1 = M x 12.5 + 23
L2 = L1 – 10.5
L4 = (L1 – L3)/2 – 2

n1: Piece of the SJ2000
n2: Piece of the SJ3000

SS5J3-M60S□□-Stations B (S, R, RS)

L dimension: Formula, L1 to L4
L3 = 7.5 x n1 + 10 x n2 + 103.7
M = (L3 + 4)/12.5 + 1
Remove all numbers after the decimal.
L1 = M x 12.5 + 23
L2 = L1 – 10.5
L4 = (L1 – L3)/2 – 2

n1: Piece of the SJ2000
n2: Piece of the SJ3000

* The dimensions of L1 to L4 for SS5J3-M60S□□-Stations D are the same as those of SS5J3-M60S□□-Stations U.
How to Order Manifold

SS5J 3 - 60S6B D - 05 D

Manifold series

- SJ2000
- SJ3000
- SJ2000/3000 mixed

Mixed mounting type

- Nil: Standard
- M: Mixed mounting

SI unit COM. spec.

- +COM.
- -COM.

Unit mounting position

- D side

Valve stations

<table>
<thead>
<tr>
<th>Symbol</th>
<th>No. of stations</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>2 stations</td>
<td>Up to 16 solenoids possible.</td>
</tr>
<tr>
<td>16</td>
<td>16 stations</td>
<td>Up to 16 solenoids possible.</td>
</tr>
</tbody>
</table>

- The number of the blanking block assembly is also included. Since single and double wiring are available with the blanking block assembly, select a model compatible with the valve wiring spec. planned for the future.

How to Order Valve Manifold Assembly

Ordering example (SS5J3-60S6BD-□)

SUP/EXH block (U side mounting)

Double solenoid (24 VDC)
- SJ3260-5CU-C6 (3 sets)

Single solenoid (24 VDC)
- SJ3160-5CU-C6 (2 sets)

Manifold base (5 stations)
- SS5J3-60S6BD-05U

SS5J3-60S6BD-05U —— 1 set (Type 60S6B, 5 station manifold base part no.)
- SJ3160-5CU-C6 —— 2 sets (Single solenoid part no.)
- SJ3260-5CU-C6 —— 3 sets (Double solenoid part no.)

- The asterisk denotes the symbol for assembly.

- Prefix to the part no. of the solenoid valve, etc.

- The valve arrangement is numbered as the 1st station from D side.

- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. In the case of complex arrangement, specify them in the manifold specification sheet.

- For built-in silencers, the 3/5(E) ports are plugged.

- There is no need to enter anything when the SUP/EXH block mounting position “M” is selected.

- There is no need to enter anything when the SUP/EXH block mounting position “M” is selected.

Pilot spec.

- Nil: Internal pilot
- S: Internal pilot / Built-in silencer
- R: External pilot
- RS: External pilot / Built-in silencer

- There is no need to enter anything when the SUP/EXH block mounting position “M” is selected.

- For built-in silencers, the 3/5(E) ports are plugged.

SUP/EXH block mounting position

- U: U side (2 to 10 stations)
- D: D side (2 to 10 stations)
- B: Both sides (2 to 16 stations)
- M*: Special specifications

- Specify the required specifications (including port sizes other than ø8) by means of the manifold specification sheet.

For details on “Gateway System Serial Transmission System Series EX510,” refer to CAT.E02-22B catalog.
**How to Order Solenoid Valves**

<table>
<thead>
<tr>
<th>Type of actuation</th>
<th>Nil</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2 position single solenoid</td>
<td>Internal pilot</td>
</tr>
<tr>
<td>2</td>
<td>2 position double solenoid</td>
<td>External pilot</td>
</tr>
<tr>
<td>3</td>
<td>3 position closed center</td>
<td>(Non-polar type)</td>
</tr>
<tr>
<td>4</td>
<td>3 position exhaust center</td>
<td>(Polar type)</td>
</tr>
<tr>
<td>5</td>
<td>3 position pressure center</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Dual 3 port valve: N.C./N.C.</td>
<td>External pilot is not applicable for 4 position dual 3 port valves.</td>
</tr>
<tr>
<td>B</td>
<td>Dual 3 port valve: N.O./N.O.</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Dual 3 port valve: N.C./N.O.</td>
<td></td>
</tr>
</tbody>
</table>

**Pilot spec.**

<table>
<thead>
<tr>
<th>Nil</th>
<th>External pilot</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>Built-in</td>
</tr>
</tbody>
</table>

**Coil spec.**

<table>
<thead>
<tr>
<th>Nil</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>With power saving circuit (Continuous duty type)</td>
</tr>
</tbody>
</table>

**Light/surge voltage suppressor**

<table>
<thead>
<tr>
<th>U</th>
<th>With light/surge voltage suppressor (Non-polar type)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>With light/surge voltage suppressor (Polar type)</td>
</tr>
</tbody>
</table>

**Connector entry**

- **C**: Dedicated for centralized wiring
- **M**: Individual wiring, with lead wire Length 300 mm
- **MN**: Individual wiring, without lead wire
- **MO**: Individual wiring, without connector

**With switch**

- **Nil**: Non-locking push type
- **D**: Push-turn locking slotted type

**Manual override**

- **With switch**
- **Individual wiring**

**Single solenoid wiring spec.**

<table>
<thead>
<tr>
<th>Nil</th>
<th>Single wiring</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>Double wiring</td>
</tr>
</tbody>
</table>

- Back pressure check valve
  - Nil
  - R: Built-in
  - K: Built-in

- **A, B port size**
  - **straight**
    - (Metric size)
    - C2: ø2 one-touch fitting
    - C4: ø4 one-touch fitting
    - C6: ø6 one-touch fitting (SJ3000 only)
  - (Inch size)
    - N1: ø1/8” one-touch fitting
    - N3: ø5/32” one-touch fitting
    - N7: ø1/4” one-touch fitting (SJ3000 only)
  - M3: M3 x 0.5 (SJ2000 only)
  - M5: M5 x 0.8 (SJ3000 only)

- **Elbow fitting assembly**
  - (Upward entry)
    - (Metric size)
    - L2: ø2 elbow fitting assembly
    - L4: ø4 elbow fitting assembly
    - L6: ø6 elbow fitting assembly (SJ3000 only)
  - (Inch size)
    - LN1: ø1/8” elbow fitting assembly
    - LN3: ø5/32” elbow fitting assembly
    - LN7: ø1/4” elbow fitting assembly (SJ3000 only)
  - MN1: ø1/8” elbow fitting assembly
  - MN3: ø5/32” elbow fitting assembly
  - MN7: ø1/4” elbow fitting assembly (SJ3000 only)

**Connect to Mansion**

- **C**: Dedicated for centralized wiring
- **M**: Individual wiring, with lead wire Length 300 mm

**Coil spec.**

- **How to Order Solenoid Valves**

**Series SJ2000/3000**

**EX510 Gateway System Serial Transmission System**

**Plug-in Connector Type**

**Series SJ2000/3000**

**How to Order Solenoid Valves**

**Standard**

**With switch**

**Individual wiring**

**[For plug-in mixed mounting]**

**Note)** Refer to pages 52 and 53 for the dedicated non-plug-in individual wiring.

**Series**

2 SJ2000
3 SJ3000

**Type of actuation**

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

**A** Dual 3 port valve: N.C./N.C.
**B** Dual 3 port valve: N.O./N.O.
**C** Dual 3 port valve: N.C./N.O.

**Pilot spec.**

**Back pressure check valve**

- Nil
- R: Built-in
- K: Built-in

- Back pressure check valve is not applicable for 3 position valve.

**Rated voltage**

| 5 | 12 VDC |

**Light/surge voltage suppressor**

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

- When the types with power saving circuit, with switches, and individual wiring are used, the non-polar type cannot be selected.
- The "Z" is +COM. spec.
- When –COM of SI unit common specifications is used, select the non-polar type.

**Connector entry**

- **C**: Dedicated for centralized wiring
- **M**: Individual wiring, with lead wire Length 300 mm
- **MN**: Individual wiring, without lead wire
- **MO**: Individual wiring, without connector

- **With switch**
- **Individual wiring**

**With switch**

- **Internal pilot**
- **External pilot**

- Be sure to select "with power saving circuit" when the solenoid valve will be energized continuously for long periods.

**With light/surge voltage suppressor**

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

- Connector entries with the symbol "M" cannot use the switch signal from the common wiring on the manifold. For details, refer to "Connector Wiring Diagram" on page 3.
- When ordering a connector assembly separately, refer to back page 6.

**With light/surge voltage suppressor**

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

- Be sure to select "with power saving circuit" when the solenoid valve will be energized continuously for long periods.

**Rated voltage**

| 5 | 12 VDC |

**Connector entry**

- **C**: Dedicated for centralized wiring
- **M**: Individual wiring, with lead wire Length 300 mm
- **MN**: Individual wiring, without lead wire
- **MO**: Individual wiring, without connector

- **With switch**
- **Individual wiring**

**Light/surge voltage suppressor**

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

- Be sure to select "with power saving circuit" when the solenoid valve will be energized continuously for long periods.

- Connector entries with the symbol "M" cannot use the switch signal from the common wiring on the manifold. For details, refer to "Connector Wiring Diagram" on page 3.
- When ordering a connector assembly separately, refer to back page 6.

**Coil spec.**

- **Nil** Standard
- **T** With power saving circuit (Continuous duty type)

**Connector entry**

- **C**: Dedicated for centralized wiring
- **M**: Individual wiring, with lead wire Length 300 mm
- **MN**: Individual wiring, without lead wire
- **MO**: Individual wiring, without connector

- **With switch**
- **Individual wiring**

**With switch**

- **Internal pilot**
- **External pilot**

- Be sure to select "with power saving circuit" when the solenoid valve will be energized continuously for long periods.

- Connector entries with the symbol "M" cannot use the switch signal from the common wiring on the manifold. For details, refer to "Connector Wiring Diagram" on page 3.
- When ordering a connector assembly separately, refer to back page 6.

**Coil spec.**

- **Nil** Standard
- **T** With power saving circuit (Continuous duty type)

**Connector entry**

- **C**: Dedicated for centralized wiring
- **M**: Individual wiring, with lead wire Length 300 mm
- **MN**: Individual wiring, without lead wire
- **MO**: Individual wiring, without connector

- **With switch**
- **Individual wiring**

**With switch**

- **Internal pilot**
- **External pilot**

- Be sure to select "with power saving circuit" when the solenoid valve will be energized continuously for long periods.

- Connector entries with the symbol "M" cannot use the switch signal from the common wiring on the manifold. For details, refer to "Connector Wiring Diagram" on page 3.
- When ordering a connector assembly separately, refer to back page 6.

**Coil spec.**

- **Nil** Standard
- **T** With power saving circuit (Continuous duty type)

**Connector entry**

- **C**: Dedicated for centralized wiring
- **M**: Individual wiring, with lead wire Length 300 mm
- **MN**: Individual wiring, without lead wire
- **MO**: Individual wiring, without connector

- **With switch**
- **Individual wiring**

**With switch**

- **Internal pilot**
- **External pilot**

- Be sure to select "with power saving circuit" when the solenoid valve will be energized continuously for long periods.

- Connector entries with the symbol "M" cannot use the switch signal from the common wiring on the manifold. For details, refer to "Connector Wiring Diagram" on page 3.
- When ordering a connector assembly separately, refer to back page 6.

**Coil spec.**

- **Nil** Standard
- **T** With power saving circuit (Continuous duty type)
Series SJ2000/3000

Dimensions

SS5J2-60S6B □ D- Stations U - □

(Lock type: Press, then rotate.)
4(A) port side: Blue
2(B) port side: Yellow

Valve lock switch

Switch for locking a connector

DIN rail

DIN rail holding screw

Manual override

Manual override switch

Light/surge voltage suppressor

SOL a: Orange
SOL b: Green

(When equipped with switch)

When equipped with switch

Approx. 300

(Station n) ------ (Station 1)

Note) Refer to page 36 for external pilot spec. and page 23 for elbow fitting manifold dimensions. Please contact SMC regarding the SI unit.

L: Dimensions

<table>
<thead>
<tr>
<th>L</th>
<th>0</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>148</td>
<td>160.5</td>
<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td>185.5</td>
<td>198</td>
<td>198</td>
<td>210.5</td>
<td></td>
</tr>
<tr>
<td>L2</td>
<td>137.5</td>
<td>150</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>175</td>
<td>187.5</td>
<td>187.5</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>L3</td>
<td>120.4</td>
<td>127.9</td>
<td>135.4</td>
<td>142.9</td>
<td>150.4</td>
<td>157.9</td>
<td>165.4</td>
<td>172.9</td>
<td>180.4</td>
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<tr>
<td>L4</td>
<td>14</td>
<td>16.5</td>
<td>12.5</td>
<td>15</td>
<td>17.5</td>
<td>14</td>
<td>16.5</td>
<td>12.5</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

(For individual wiring)

Valve lock switch

Manual override

Light/surge voltage suppressor
Dimensions

**SS5J2-60S6B□D-□**

**L: Dimensions**

<table>
<thead>
<tr>
<th></th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<tbody>
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<tr>
<td>L2</td>
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<td>162.5</td>
<td>175</td>
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<td>187.5</td>
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<td>200</td>
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<td>237.5</td>
<td>237.5</td>
<td>250</td>
<td>250</td>
<td>262.5</td>
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<tr>
<td>L3</td>
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<td>143.4</td>
<td>150.9</td>
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<td>225.9</td>
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<td>L4</td>
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<td>15</td>
<td>17.5</td>
<td>13.5</td>
<td>16</td>
</tr>
</tbody>
</table>

**Note:** Refer to page 37 for external pilot spec. and page 23 for elbow fitting manifold dimensions. Please contact SMC regarding the SI unit.
### Dimensions

**SS5J3-60S6B**

- **Stations**

<table>
<thead>
<tr>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
</tr>
</thead>
<tbody>
<tr>
<td>180</td>
<td>175</td>
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<td>15</td>
</tr>
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<td>200</td>
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<td>17.5</td>
</tr>
<tr>
<td>235</td>
<td>225</td>
<td>205</td>
<td>20</td>
</tr>
</tbody>
</table>

- **Dimensions (Pitch)**

  P = 10

- **One-touch fitting**

  [1(P), 3/5(E) port]

  Applicable tubing O.D: ø8, ø5/16''

- **One-touch fitting**

  [4(A), 2(B) port]

  Applicable tubing O.D: ø2, ø1/8''

  ø4, ø5/32''

  ø6, ø1/4''

- **Switch for locking a connector**

  Manual override switch

  (4(A) port side: Blue)

  (2(B) port side: Yellow)

- **DIN rail holding screw**

- **Valve lock switch**

- **Light/surge voltage suppressor**

  SOL.a: Orange

  SOL.b: Green

- **Switch**

  (When equipped with switch)

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

- **Switching**

  Manual override

  Locking type: Press, then rotate.

- **Note**

  Refer to page 38 for external pilot spec. and page 24 for elbow fitting manifold dimensions.

  Please contact SMC regarding the SI unit.
Dimensions

SS5J3-60S6B

(Diameter)

L: Stations

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

One-touch fitting

Applicable tubing O.D.: ø8, ø5/16"  
ø4, ø5/32"  
ø6, ø1/4"

One-touch fitting

M5 x 0.8

[4(A), 2(B) port]

Applicable tubing O.D.: ø2, ø1/8"

(Station n) - - - - - - (Station 1)

Valve lock switch

Switch for locking a connector

DIN rail

Manual override switch

(Locking type: Press, then rotate.)

4(A) port side: Blue

2(B) port side: Yellow

Light/surge voltage suppressor

SOL.a: Orange

SOL.b: Green

Switch

(When equipped with switch)

DIN rail holding screw

(Station 1)  

U side

L3

L2

L4

D side

Inlet

Outlet

Approx. 300

(Last wire length)

(Approx. 300)

Dimensions

L: Dimensions

n: Stations

<table>
<thead>
<tr>
<th>L</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>173</td>
<td>185.5</td>
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<td>210.5</td>
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<tr>
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<td>170.9</td>
<td>180.9</td>
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<td>200.9</td>
<td>210.9</td>
<td>220.9</td>
<td>230.9</td>
<td>240.9</td>
<td>250.9</td>
<td>260.9</td>
<td>260.9</td>
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</tr>
<tr>
<td>L4</td>
<td>16</td>
<td>17.5</td>
<td>12.5</td>
<td>13.5</td>
<td>15</td>
<td>16</td>
<td>17.5</td>
<td>18.5</td>
<td>13.5</td>
<td>15</td>
<td>16</td>
<td>17.5</td>
<td>18.5</td>
<td>18.5</td>
<td>15</td>
</tr>
</tbody>
</table>

Note) Refer to page 39 for external pilot spec. and page 24 for elbow fitting manifold dimensions. Please contact SMC for specifications.
Dimensions: SJ2000/3000 Mixed Manifold

SS5J3-M60S6B □ D- Stations □

One-touch fitting
[1(P), 3(E) port] Applicable tubing O.D: ø8, ø5/16"  
One-touch fitting
[4(A), 2(B) port]
Applicable tubing O.D: ø2, ø1/8" ø4, ø5/32" ø6, ø1/4"

Switch for locking a connector

DIN rail
DIN rail holding screw

Manual override  
4(A) port side: Blue  
2(B) port side: Yellow

L3 L4  
L1 = M \times 12.5 + 23
L2 = L1 – 10.5
L4 = (L1 – L3)/2 – 2

\[ n1: \text{Piece of the SJ2000} \]
\[ n2: \text{Piece of the SJ3000} \]

U side  
D side

L dimension: Formula, L1 to L4
L3 = 7.5 \times n1 + 10 \times n2 + 105.4
M = (L3 + 4)/12.5 + 1
Remove all numbers after the decimal.
L1 = M \times 12.5 + 23
L2 = L1 – 10.5
L4 = (L1 – L3)/2 – 2

* The dimensions of L1 to L4 for SS5J3-M60S6B □ D- Stations □ are the same as those of SS5J3-M60S6B □ D- Stations □ U.
Manifold Exploded View

Type 60P (Flat ribbon cable) manifold

Type 60S (Plug-in, EX180 Serial wiring) manifold

Type 60G (Plug-in, PC wiring with power supply terminal) manifold

Component Parts / Plug-in

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SUP/EXH block assembly</td>
<td>SJ3000-42-1A-□</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Internal pilot</td>
<td>SJ3000-50-1A-□</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Internal pilot / Built-in silencer</td>
<td>SJ3000-50-1AS-□</td>
<td></td>
</tr>
<tr>
<td></td>
<td>External pilot</td>
<td>SJ3000-50-1AR-□</td>
<td>(Metric size)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SJ3000-50-1ARS-□</td>
<td>(Inch size)</td>
</tr>
<tr>
<td></td>
<td>For different pressures, internal pilot</td>
<td>SJ3000-50-3A-□</td>
<td>Note 1</td>
</tr>
<tr>
<td></td>
<td>Internal pilot / Built-in silencer</td>
<td>SJ3000-50-3AS-□</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>End block assembly</td>
<td>SJ3000-53-1A</td>
<td>For U side</td>
</tr>
<tr>
<td>3</td>
<td>Connector block assembly</td>
<td>SJ3000-42-2A-□</td>
<td>Refer to the connector block assembly part no. shown below.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SJ3000-76-2A-□</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>DIN rail</td>
<td>VZ1000-11-1-□</td>
<td>Refer to page 61.</td>
</tr>
<tr>
<td>5</td>
<td>SI unit</td>
<td>EX180-□□□□</td>
<td>Refer to the SI unit part numbers on page 34.</td>
</tr>
<tr>
<td>6</td>
<td>End block assembly</td>
<td>SJ3000-53-2A-□</td>
<td>For D side</td>
</tr>
</tbody>
</table>

Note 1) The valves cannot be operated only with the SUP/EXH block assembly for different pressure, select them in combination with the SUP/EXH block assembly for internal/external pilot.

Note 2) Refer to page 60 about the SUP/EXH block disk assembly and method of handling of parts at different pressures.

Connector Block Assembly Part No.

<table>
<thead>
<tr>
<th>Connector specifications</th>
<th>Mounting position</th>
<th>Part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>For D-sub connector</td>
<td>D side</td>
<td>SJ3000-42-1A-□</td>
<td></td>
</tr>
<tr>
<td>For flat ribbon cable 26 pins</td>
<td></td>
<td>SJ3000-42-2A-□</td>
<td></td>
</tr>
<tr>
<td>For flat ribbon cable 20 pins</td>
<td></td>
<td>SJ3000-42-3A-□</td>
<td></td>
</tr>
<tr>
<td>For flat ribbon cable 10 pins</td>
<td></td>
<td>SJ3000-42-4A-□</td>
<td></td>
</tr>
<tr>
<td>For PC wiring 20 pins</td>
<td></td>
<td>SJ3000-42-6A-□</td>
<td></td>
</tr>
<tr>
<td>For EX180 serial wiring (Note)</td>
<td></td>
<td>SJ3000-42-5A</td>
<td></td>
</tr>
<tr>
<td>For PC wiring 20 pins with power supply terminal</td>
<td></td>
<td>SJ3000-76-2A-05</td>
<td></td>
</tr>
</tbody>
</table>

Note) SI unit is not included.
How to Add Manifold Stations

1. Loosen threads (8), which are fixed onto the DIN rail (two locations on one side).

2. If blocks are removed without completely releasing the valve lock switch, the connection hook of that switch could be damaged or deformed.

3. Install an additional valve or an SUP/EXH assembly on the DIN rail.

4. When increasing the number of stations from 10 or below to 11 or above, increase the number of SUP/EXH assemblies as well. Fasten the valve lock switch for connecting, so when mounting, tighten the screws after checking that there are no gaps between valves.

**Caution**

1. When increasing the number of stations from 10 or below to 11 or above, increase the number of SUP/EXH assemblies as well.
2. Be sure to turn off the power and stop the supply of air before disassembly. Furthermore, since air may remain inside the actuator, piping and manifold, confirm that the air is completely exhausted before performing any work.
3. After assembly and disassembly, air leakage could occur if blocks are not well connected or a thread is not tightly fastened onto the end block assembly. Before supplying air, make sure that no gaps exist in between blocks and that the valve and block are tightly fastened onto the DIN rail. Also, make sure that air is not leaking before use.
4. For the SJ3A6 series manifold with vacuum release valve with restrictor, there is no valve lock switch for connecting, so when mounting, tighten the screws after checking that there are no gaps between valves.

---

**D-sub, Connector block assembly for flat ribbon cable, End block assembly**
- M3: 0.6 N·m
**Connector block assembly for EX180 serial wiring**
- M4: 1.4 N·m
**Mounting bracket for EX510 serial wiring**
- M4: 0.6 N·m
Non-plug-in
Individual Wiring Manifold

Series SJ2000/3000

P.52 Individual Wiring
How to Order Valve Manifold Assembly

**Series SJ2000/3000**

### How to Order

#### Individual wiring manifold

- **Series SS5J**
  - **3**
  - **60**
  - **05 U**

#### Mixed mounting type

- **Nil** Standard
- **M** Mixed mounting

**Note 1:** There is no need to enter anything when you operate either the SJ2000 or SJ3000 series alone.

**Note 2:** Enter "M" when the SJ2000 or SJ3000 series will be mounted on the same manifold base together.

#### Valve stations

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>2 stations</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>20</td>
<td>20 stations</td>
</tr>
</tbody>
</table>

#### DIN rail length specified

<table>
<thead>
<tr>
<th>Nil</th>
<th>Standard length</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>3 stations</td>
</tr>
<tr>
<td>20</td>
<td>20 stations</td>
</tr>
</tbody>
</table>

* Specify the valve stations not exceeding the maximum stations.

#### SUP/EXH block mounting position

- **U** U side (2 to 10 stations)
- **D** D side (2 to 10 stations)
- **B** Both sides (2 to 20 stations)
- **M** Special specifications

* There is no need to enter anything when the SUP/EXH block mounting position "M" is selected.

#### Pilot spec.

- **Nil** Internal pilot
- **S** Internal pilot / Built-in silencer
- **R** External pilot
- **RS** External pilot / Built-in silencer

* There is no need to enter anything when the SUP/EXH block mounting position "M" is selected.

* For built-in silencers, the 3/5(E) ports are plugged.

#### SUP/EXH block fitting spec.

- **Nil** Straight fitting
- **L** Elbow fitting (Upward)
- **B** Elbow fitting (Downward)

* There is no need to enter anything when the SUP/EXH block mounting position "M" is selected.

#### Ordering example (SS5J3-60-□)

- Double solenoid (24 VDC)
  - SJ3260N-5MZ-C6 (4 sets)
- Single solenoid (24 VDC)
  - SJ3160N-5MZ-C6 (2 sets)
- SUP/EXH block (U side mounting)

**SS5J3-60D** 1 set (Manifold part no.)

* The valve arrangement is numbered as the 1st station from D side.

* The asterisk denotes the symbol for assembly.

* Prefix to the part no. of the solenoid valve, etc.

- "SS5J3-60□-□□" 1 set (Manifold part no.)
- "SJ3160N-5MZ-C6" 2 sets (Single solenoid part no.)
- "SJ3260N-5MZ-C6" 4 sets (Double solenoid part no.)

- The valve to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. In the case of complex arrangement, specify them in the manifold specification sheet.
### How to Order Solenoid Valves

**Series**: SJ2000/3000

#### Type of actuation
- 1: 2 position single solenoid
- 2: 2 position double solenoid
- 3: 3 position closed center
- 4: 3 position exhaust center
- 5: 3 position pressure center
- A: Dual 3 port valve: N.C./N.C.
- B: Dual 3 port valve: N.O./N.O.
- C: Dual 3 port valve: N.C./N.O.

#### Pilot spec.
- Nil: Internal pilot
- R: External pilot

#### Back pressure check valve
- Nil: None
- K: Built-in

#### A, B port size
- Straight (Metric size)
  - C2: ø2 one-touch fitting
  - C4: ø4 one-touch fitting
  - C6: ø6 one-touch fitting
- Elbow fitting assembly (Upward entry) (Metric size)
  - L2: ø2 elbow fitting assembly
  - L4: ø4 elbow fitting assembly
  - L6: ø6 elbow fitting assembly

#### Non-plug-in
- M: Individual wiring, With lead wire (Continuous duty type)
  - Length 300 mm
  - With linkage printed circuit board
- MN: Individual wiring, Without lead wire (With connector, socket)
  - With linkage printed circuit board
- MO: Individual wiring, Without connector
  - With linkage printed circuit board

#### Rated voltage
- 5: 24 VDC
- 6: 12 VDC

#### With light/surge voltage suppressor
- Note: The electrical connection to the manifold will be +COM.

#### Manual override
- Nil: Non-locking push type
- D: Push-turn locking slotted type

#### Connector entry
- M: Individual wiring, With lead wire
  - Length 300 mm
- MN: Individual wiring, Without lead wire (With connector, socket)
- MO: Individual wiring, Without connector

#### Coil spec.
- T: With power saving circuit
  - Continuous duty type

#### With light/surge voltage suppressor
- Note: The electrical connection to the manifold will be +COM.
Series SJ2000/3000

Dimensions

SS5J2-60- [Stations] U (S, R, RS)

<table>
<thead>
<tr>
<th>L</th>
<th>0</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>
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<tbody>
<tr>
<td>L1</td>
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<td>98</td>
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<td>110.5</td>
<td>123</td>
<td>135.5</td>
<td>135.5</td>
<td>148</td>
<td>148</td>
<td></td>
</tr>
<tr>
<td>L2</td>
<td>87.5</td>
<td>87.5</td>
<td>100</td>
<td>100</td>
<td>112.5</td>
<td>125</td>
<td>125</td>
<td>137.5</td>
<td>137.5</td>
<td></td>
</tr>
<tr>
<td>L3</td>
<td>63.2</td>
<td>70.7</td>
<td>78.2</td>
<td>85.7</td>
<td>93.2</td>
<td>100.7</td>
<td>108.2</td>
<td>115.7</td>
<td>123.2</td>
<td></td>
</tr>
<tr>
<td>L4</td>
<td>17.5</td>
<td>13.5</td>
<td>16</td>
<td>12.5</td>
<td>15</td>
<td>17.5</td>
<td>13.5</td>
<td>16</td>
<td>12.5</td>
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</tr>
</tbody>
</table>

Note) For manifold dimensions including elbow fitting, refer to page 23.
Dimensions

SS5J2-60-[Stations] B (S, R, RS)

**Dimensions**

**L**: Dimensions

<table>
<thead>
<tr>
<th>L</th>
<th>0</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<tr>
<td>L1</td>
<td>110.5</td>
<td>110.5</td>
<td>123</td>
<td>135.5</td>
<td>135.5</td>
<td>148</td>
<td>148</td>
<td>160.5</td>
<td>173</td>
<td>173</td>
<td>185.5</td>
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<td>198</td>
<td>210.5</td>
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<td>223</td>
<td>223</td>
<td>235.5</td>
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<tr>
<td>L2</td>
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<td>112.5</td>
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<td>137.5</td>
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<td>150</td>
<td>162.5</td>
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<td>212.5</td>
<td>212.5</td>
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<td>225</td>
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</tr>
<tr>
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<td>101.2</td>
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<tr>
<td>L4</td>
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<td>12</td>
<td>14.5</td>
<td>17</td>
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</tr>
</tbody>
</table>

**Note**: For manifold dimensions including elbow fitting, refer to page 23.
Dimensions

SS5J3-60-\text{Stations} U (S, R, RS)

<table>
<thead>
<tr>
<th>L</th>
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<th>4</th>
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<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>98</td>
<td>110.5</td>
<td>123</td>
<td>123</td>
<td>135.5</td>
<td>148</td>
<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td></td>
</tr>
<tr>
<td>L2</td>
<td>87.5</td>
<td>100</td>
<td>112.5</td>
<td>112.5</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td></td>
</tr>
<tr>
<td>L3</td>
<td>68.2</td>
<td>78.2</td>
<td>88.2</td>
<td>98.2</td>
<td>108.2</td>
<td>118.2</td>
<td>128.2</td>
<td>138.2</td>
<td>148.2</td>
<td></td>
</tr>
<tr>
<td>L4</td>
<td>14.5</td>
<td>16</td>
<td>17</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15.5</td>
<td>16.5</td>
<td>17.5</td>
<td></td>
</tr>
</tbody>
</table>

Note) For manifold dimensions including elbow fitting, refer to page 24.
Non-plug-in  Individual Wiring  Series SJ2000/3000

Dimensions

SS5J3-60-[Stations] B (S, R, RS)

---

**L: Dimensions**

<table>
<thead>
<tr>
<th>n</th>
<th>Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>110.5 123 135.5 148 148 160.5 173 185.5 198 210.5 210.5 223 235.5 248 260.5 260.5 273 285.5 288</td>
</tr>
<tr>
<td>L2</td>
<td>100 112.5 125 137.5 137.5 150 162.5 175 187.5 200 200 212.5 225 237.5 250 250 262.5 275 287.5</td>
</tr>
<tr>
<td>L3</td>
<td>83.7 93.7 103.7 113.7 123.7 133.7 143.7 153.7 163.7 173.7 183.7 193.7 203.7 213.7 223.7 233.7 243.7 253.7 263.7</td>
</tr>
<tr>
<td>L4</td>
<td>13 14.5 15.5 16.5 11.5 12.5 14 15 16 17.5 12 13.5 14.5 15.5 17 11.5 13 14 15</td>
</tr>
</tbody>
</table>

---

*Note: For manifold dimensions including elbow fitting, refer to page 24.*
**Series SJ2000/3000**

**Dimensions: SJ2000/3000 Mixed Manifold**

**SS5J3-M60-[Stations]U (S, R, RS)**

![Diagram of SS5J3-M60-U](image1)

**SS5J3-M60-[Stations]B (S, R, RS)**

![Diagram of SS5J3-M60-B](image2)

---

L dimension: Formula, L1 to L4
L3 = 7.5 \times n1 + 10 \times n2 + 48.2
M = (L3 + 4)/12.5 + 1

Remove all numbers after the decimal.

L1 = M \times 12.5 + 23
L2 = L1 - 10.5
L4 = (L1 - L3)/2 - 2

n1: Piece of the SJ2000
n2: Piece of the SJ3000

+ The dimensions of L1 to L4 for SS5J3-M60-[Stations]D are the same as those of SS5J3-M60-[Stations]U.
Manifold Exploded View

Type 60 (Non-plug-in) manifold

Note) Refer to page 50 for "How to Add Manifold Stations."

Component Parts / Non-plug-in

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Internal pilot</td>
<td>SJ3000-50-5A-□</td>
<td>(Metric size)</td>
</tr>
<tr>
<td></td>
<td>Internal pilot / Built-in silencer</td>
<td>SJ3000-50-5AS-□</td>
<td>C6: With ø6 one-touch fitting (straight)</td>
</tr>
<tr>
<td></td>
<td>External pilot</td>
<td>SJ3000-50-5AR-□</td>
<td>C8: With ø8 one-touch fitting (straight)</td>
</tr>
<tr>
<td></td>
<td>X, PE port: Metric size ø4</td>
<td></td>
<td>L6: With ø6 one-touch fitting (elbow upward entry)</td>
</tr>
<tr>
<td></td>
<td>Inch size ø5/32&quot;</td>
<td></td>
<td>L8: With ø8 one-touch fitting (elbow upward entry)</td>
</tr>
<tr>
<td></td>
<td>External pilot / Built-in silencer</td>
<td>SJ3000-50-5ARS-□</td>
<td>B6: With ø6 one-touch fitting (elbow downward entry)</td>
</tr>
<tr>
<td></td>
<td>X port: Metric size ø4</td>
<td></td>
<td>B8: With ø8 one-touch fitting (elbow downward entry)</td>
</tr>
<tr>
<td></td>
<td>Inch size ø5/32&quot;</td>
<td></td>
<td>(inch size)</td>
</tr>
<tr>
<td></td>
<td>For different pressures, internal pilot □</td>
<td>SJ3000-50-6A-□</td>
<td>N7: With 1/4&quot; one-touch fitting (straight)</td>
</tr>
<tr>
<td></td>
<td>Note 1)</td>
<td></td>
<td>N9: With 5/16&quot; one-touch fitting (straight)</td>
</tr>
<tr>
<td></td>
<td>Internal pilot / Built-in silencer</td>
<td>SJ3000-50-6AS-□</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>End block assembly</td>
<td>SJ3000-53-1A</td>
<td>For U side</td>
</tr>
<tr>
<td>3</td>
<td>End block assembly</td>
<td>SJ3000-53-2A</td>
<td>For D side</td>
</tr>
<tr>
<td>4</td>
<td>DIN rail</td>
<td>VZ1000-11-1-□</td>
<td>Refer to page 61.</td>
</tr>
</tbody>
</table>

Note 1) The valves cannot be operated only with the SUP/EXH block assembly for different pressure, select them in combination with the SUP/EXH block assembly for internal/external pilot.

Note 2) Refer to page 60 about the SUP/EXH block disk assembly and method of handling of parts at different pressure.
**SUP block disk assembly**

By placing a SUP block disk in a manifold valve’s pressure supply passage, two different high and low pressures can be supplied to one manifold. When supplying different pressures using the manifold of the internal pilot, fill out a manifold specification sheet to place an order for an SUP/EXH assembly for the internal pilot specifications and another SUP/EXH assembly for the different-pressure internal pilot specifications (Refer to Circuit Diagram 1).

<table>
<thead>
<tr>
<th>Series</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SJ2000</td>
<td></td>
</tr>
<tr>
<td>SJ3000</td>
<td>SJ3000-44-1A</td>
</tr>
</tbody>
</table>

[Different pressure pneumatic circuit diagram]

- The SJ series supplies air to the pilot port of each valve using a 1(P) port of the SUP/EXH block assembly. When using in situations such as where there are different pressures, combine SUP/EXH block assemblies for internal pilot, external pilot and different-pressure by referring to the circuit below.

1. Different-pressure spec. using the internal pilot

2. Different-pressure spec. using the external pilot
   (For using the SUP/EXH block assembly for external pilot)

3. Different-pressure spec. using the external pilot
   (For using the SUP/EXH block assembly for different-pressure internal pilot spec.)

Note 1) When operating under the different-pressure spec., supply the higher pressure to the pilot passage.

Note 2) If there is a need to partition the pilot passage, consult SMC.
**EXH block disk assembly**

By installing an EXH block disk in a manifold valve’s exhaust passage, the valve’s exhaust can be separated so that it will not affect other valves.

**Label for block disk**

These labels are attached to manifolds in which SUP and EXH block disks have been installed, in order to identify the installed locations. (Three sheets each included.)

**Plug**

These are inserted in unused cylinder ports and P, E ports.

**Silencer with one-touch fitting**

This silencer can be mounted on the manifolds’ port 3/5 (E: Exhaust) with a single touch.

**Blanking block assembly**

These are mounted when later addition of valves is planned, etc.

**DIN rail**

VZ1000-11–1–

L dimension

* Enter a number from the DIN rail dimension table shown below.

---

### 4 Port Solenoid Valve  Series SJ2000/3000

- **Series** SJ2000
- **Part no.** SJ3000

---

**Applicable fitting size**

<table>
<thead>
<tr>
<th>ød</th>
<th>Series</th>
<th>Model</th>
<th>Effective area</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/8&quot;</td>
<td>SJ2000</td>
<td>AN203-KM8</td>
<td>14 mm²</td>
<td>ø16</td>
<td>26</td>
<td>51</td>
</tr>
</tbody>
</table>

---

**Dimensions**

<table>
<thead>
<tr>
<th>Applicable fitting size ød</th>
<th>Model</th>
<th>A</th>
<th>L</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/8&quot;</td>
<td>KJP-02</td>
<td>8.2</td>
<td>17</td>
<td>3</td>
</tr>
<tr>
<td>4/8&quot;</td>
<td>KG2P-04</td>
<td>16</td>
<td>32</td>
<td>6</td>
</tr>
<tr>
<td>6/8&quot;</td>
<td>KG2P-06</td>
<td>18</td>
<td>35</td>
<td>8</td>
</tr>
<tr>
<td>8/8&quot;</td>
<td>KG2P-08</td>
<td>20.5</td>
<td>39</td>
<td>10</td>
</tr>
<tr>
<td>1/8&quot;</td>
<td>KQ2P-01</td>
<td>16</td>
<td>31.5</td>
<td>5</td>
</tr>
<tr>
<td>5/32&quot;</td>
<td>KQ2P-03</td>
<td>16</td>
<td>32</td>
<td>6</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>KQ2P-07</td>
<td>18</td>
<td>35</td>
<td>8.5</td>
</tr>
<tr>
<td>5/16&quot;</td>
<td>KQ2P-09</td>
<td>20.5</td>
<td>39</td>
<td>10</td>
</tr>
</tbody>
</table>

---

**Note**

- When a block disk is concurrently ordered by specifying on the manifold specification sheet, etc., a label will be stuck on the position where block disk is mounted.

---

**Valve lock switch**

SJ2000
- **Series** SJ3000-44-1A
- **Part no.** SJ3000

---

**Blanking block assembly**

These are mounted when later addition of valves is planned, etc.

---

**DIN rail**

VZ1000-11–1–

L dimension

* Enter a number from the DIN rail dimension table shown below.

---

**Note**

- Valve lock switch is not available for the SJ3A6.

---

**Dimensions**

<table>
<thead>
<tr>
<th>No.</th>
<th>0</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>
</tr>
</thead>
<tbody>
<tr>
<td>L dimension</td>
<td>98</td>
<td>110.5</td>
<td>123</td>
<td>135.5</td>
<td>148</td>
<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
</tr>
<tr>
<td>Weight (g)</td>
<td>17.6</td>
<td>19.9</td>
<td>22.1</td>
<td>24.4</td>
<td>26.6</td>
<td>28.9</td>
<td>31.1</td>
<td>33.4</td>
<td>35.6</td>
<td>37.9</td>
</tr>
</tbody>
</table>

---

**Note**

- Valve lock switch is not available for the SJ3A6.
Flat ribbon cable assembly

AXT100 – FC

For other commercial connectors, use a type with strain relief that conforms to MIL-C-83503.

Flat Ribbon Cable Assembly

<table>
<thead>
<tr>
<th>Cable length (L)</th>
<th>10 pins</th>
<th>20 pins</th>
<th>26 pins</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>AXT100-FC10-1</td>
<td>AXT100-FC20-1</td>
<td>AXT100-FC26-1</td>
</tr>
<tr>
<td>3 m</td>
<td>AXT100-FC10-2</td>
<td>AXT100-FC20-2</td>
<td>AXT100-FC26-2</td>
</tr>
<tr>
<td>5 m</td>
<td>AXT100-FC10-3</td>
<td>AXT100-FC20-3</td>
<td>AXT100-FC26-3</td>
</tr>
</tbody>
</table>

Connector manufacturers:

- Hirose Electric Co., Ltd.
- Sumitomo 3M Limited
- Fujitsu Limited
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.

D-sub connector (25 pins)/Cable assembly

AXT100 – DS25

For other commercial connectors, use a 25 pins type with female connector conforming to MIL-C-24308.

D-sub Connector Cable Assembly

<table>
<thead>
<tr>
<th>Cable length (L)</th>
<th>Assembly part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>AXT100-DS25-015</td>
<td>Cable 25 cores x 24AWG</td>
</tr>
<tr>
<td>3 m</td>
<td>AXT100-DS25-030</td>
<td></td>
</tr>
<tr>
<td>5 m</td>
<td>AXT100-DS25-050</td>
<td></td>
</tr>
</tbody>
</table>

Connector manufacturers:

- Hirose Electric Co., Ltd.
- Fujitsu Limited
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.

Electric Characteristics

<table>
<thead>
<tr>
<th>Item</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conductor resistance</td>
<td>65 or less</td>
</tr>
<tr>
<td>Withstand pressure V, 1 min, AC</td>
<td>1000</td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>5 or less</td>
</tr>
</tbody>
</table>

Note: The minimum bending radius for D-sub connector cables is 20 mm.
■ Regulator block
How to Order Regulator Block
This is used to reduce the pressure supplied from the D side inside the manifold. All valves on the U side are depressurized from the regulator block.

SJ3000-00-P
Option
00 Pressure gauge, top mounting
01 Pressure gauge, side mounting
M1 Without pressure gauge

Regulator block

Pressure adjustment screw operation
Nil Slotted locking type
H Manual

Flow Characteristics (Conditions: Inlet pressure 0.7 MPa 2 position solenoid valve mounting)

Pneumatic circuit (Regulator block mounting example)

Note) Reduces supply pressure from the D side of manifold. Supply pressure from the U side cannot be reduced.

Note) When ordering with a regulator block installed in the manifold, please order using the manifold specification sheet.
**Intermediate connector block assembly**

This connector block can be used by inserting it into the middle of the manifold. This can be used, for example, when you wish to separate electrical control of valves in the same manifold, or when the number of control points is insufficient.

<table>
<thead>
<tr>
<th>Series</th>
<th>Part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>SJ2000</td>
<td>SJ3000-76-1A</td>
<td>With power supply terminal (for PC wiring)</td>
</tr>
<tr>
<td>SJ3000</td>
<td>SJ3000-76-2A-05</td>
<td></td>
</tr>
</tbody>
</table>

Note: When ordering with an intermediate connector block assembly installed in the manifold, please order using the manifold specification sheet.

---

**Intermediate connector block assembly wiring example**

![Diagram of intermediate connector block assembly wiring example]

* Enables control of U side solenoid valves from the position where the intermediate connector block assembly is installed.

---

**Dual flow fitting (Set for SJ3000 series)**

<table>
<thead>
<tr>
<th>Port size</th>
<th>C8 ø8</th>
<th>N9 ø5/16&quot;</th>
</tr>
</thead>
</table>

This is a fitting for cylinder ports which enables simultaneous actuation and increase in flow rate of valves for 2 stations. This is a one-touch fitting with port sizes of ø8 and ø5/16.

- When arranging mounted to the valve, arrange the valve part no. using the part no. without the one-touch fitting, and then add the part no. for the dual flow fitting. If the arrangement is complicated, please specify them by means of the manifold specification sheet.

**Example) Valve type (without one-touch fitting)**

- SJ3160-5CU-CO ............ 2 sets
- SJ3000-120-1A-C8 .......... 1 set

---

**Applicable connector: 20 pin MIL type with strain relief (MIL-C-83503 compliant)**

![Diagram of applicable connector]

---

**Series SJ2000/3000**
Fluoro rubber is used for rubber parts of the main valve to allow use in applications such as the following.

1. When using a lubricant other than the recommended turbine oil, and there is a possibility of malfunction due to swelling of the spool valve seals.
2. When ozone enters or is generated in the air supply.

Part no. SJ

- Entry is the same as standard products.

Note: Because in series -X90 fluoro rubber is used for only main valve, the rubber parts of the application/usage in conditions requiring heat resistance should be avoided.
Plug-in Type Connector Connection

- D-sub Connector
- Flat Ribbon Cable
- PC Wiring
- Serial Wiring: EX180
- Serial Wiring: EX510

Non-plug-in Type Individual Wiring

- Individual Wiring
**Manifold Valve Specifications**

<table>
<thead>
<tr>
<th>Fluid construction</th>
<th>3 position 3 port valve with restrictor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid</td>
<td>Air</td>
</tr>
<tr>
<td>Operating pressure range (MPa)</td>
<td>Pilot X port 0.25 to 0.7 Note 2)</td>
</tr>
<tr>
<td>Vacuum pressure port 3/5(E)</td>
<td>–100 kPa to 0.7 Note 1)</td>
</tr>
<tr>
<td>Release pressure port 1(P)</td>
<td>0.25 to 0.7</td>
</tr>
<tr>
<td>Max. operating frequency (Hz)</td>
<td>Non-locking push type Push-turn locking slotted type</td>
</tr>
<tr>
<td>Restrictor operation</td>
<td>Slotted locking type</td>
</tr>
<tr>
<td>Pilot method</td>
<td>External pilot/Pilot valve individual exhaust</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)</td>
<td>150/30</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Dustproof</td>
</tr>
</tbody>
</table>

Note 1) Can be used with positive pressure to suit the application.
Note 2) Please use with pilot X port pressure equal to or higher than the release port 1(P) pressure.
Note 3) 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. (Values at the initial period)

**Solenoid Specifications**

<table>
<thead>
<tr>
<th>Allowable voltage fluctuation</th>
<th>±10% of rated voltage*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power consumption (W)</td>
<td>0.4</td>
</tr>
<tr>
<td>Surge voltage suppressor</td>
<td>Diode</td>
</tr>
</tbody>
</table>

* For the allowable voltage fluctuation for Z/T type (with power saving circuit), please observe the following range because they have voltage drop due to internal circuit.
Z type 24 VDC: −7% to +10%
12 VDC: −4% to +10%
T type 24 VDC: −6% to +10%
12 VDC: −6% to +10%

**Flow Characteristics**

<table>
<thead>
<tr>
<th>Valve model</th>
<th>Fluid passage</th>
<th>1(P)→2(B)</th>
<th>2(B)→3/5(E)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SJ3A6</td>
<td>M5</td>
<td>0.24</td>
<td>0.40</td>
</tr>
</tbody>
</table>

**Rerestrictor Flow Characteristics**

<table>
<thead>
<tr>
<th>Inlet pressure: 0.7 MPa</th>
<th>Inlet pressure: 0.6 MPa</th>
<th>Inlet pressure: 0.3 MPa</th>
<th>Inlet pressure: 0.15 MPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow rate [l/min (AIAPI)]</td>
<td>Flow rate [l/min (AIAPI)]</td>
<td>Flow rate [l/min (AIAPI)]</td>
<td>Flow rate [l/min (AIAPI)]</td>
</tr>
<tr>
<td>0</td>
<td>20</td>
<td>40</td>
<td>60</td>
</tr>
<tr>
<td>1</td>
<td>40</td>
<td>80</td>
<td>120</td>
</tr>
<tr>
<td>2</td>
<td>60</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>80</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>120</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Constitution

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>Spool valve assembly</td>
<td>Resin/H-NBR</td>
<td>A side (for release pressure switching)</td>
</tr>
<tr>
<td>2</td>
<td>Spool valve assembly</td>
<td>Resin/H-NBR</td>
<td>8 side (for vacuum pressure switching)</td>
</tr>
<tr>
<td>3</td>
<td>Body</td>
<td>Zinc die-cast</td>
<td>—</td>
</tr>
<tr>
<td>4</td>
<td>Adaptor plate</td>
<td>Resin</td>
<td>White</td>
</tr>
<tr>
<td>5</td>
<td>Pilot adaptor</td>
<td>Resin</td>
<td>White</td>
</tr>
<tr>
<td>6</td>
<td>Pilot valve assembly</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>7</td>
<td>Body cover</td>
<td>Resin</td>
<td>White</td>
</tr>
<tr>
<td>8</td>
<td>Restrictor block assembly</td>
<td>Resin</td>
<td>White</td>
</tr>
<tr>
<td>9</td>
<td>Bottom cover</td>
<td>Resin</td>
<td>White</td>
</tr>
<tr>
<td>10</td>
<td>Light cover</td>
<td>Resin</td>
<td>Light blue</td>
</tr>
</tbody>
</table>

Note) Set the operating torque of the restrictor of the restrictor block assembly to 0.3 N·m or less.

Component Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Plug</td>
<td>M-5P</td>
<td>PS port with plug</td>
</tr>
<tr>
<td>12</td>
<td>Filter assembly</td>
<td>SJ3000-110-1A</td>
<td>1 μm, White</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Release pressure side)</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Filter</td>
<td>SJ3000-107-1A</td>
<td>1 μm, White</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Release pressure side, 5 pcs. included)</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Filter assembly</td>
<td>SJ3000-110-2A</td>
<td>30 μm, Light purple</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Vacuum pressure side)</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Filter</td>
<td>SJ3000-107-2A</td>
<td>30 μm, Light purple</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Vacuum pressure side, 5 pcs. included)</td>
<td></td>
</tr>
</tbody>
</table>

<Filter replacement instructions>

If there are situations such as filter clogging, a drop in suction force, or slow response time, stop operation and replace the filter.

1. Using a precision driver, remove the filter assembly (12 or 14) from the main unit.
2. Turn the filter guide by hand and remove.
3. Replace the filter (12 or 14) and gently hand tighten the filter guide. At this time, check that there is no foreign matter on the O-ring of the filter assembly.
4. Return the filter assembly to the main unit.
(Tightening torque: 0.12 N·m)

After tightening the plug (M-5P) with a tightening torque of 1 N·m, or manually tightening, use the tightening tool and tighten it by 1/4 turn.

Adsorbing and Transferring System Circuit Example
How to Order Valve Manifold Assembly

- Vacuum release valve manifold with restrictor

SS3J3 – V 60 – 05 U

Vacuum release valve with restrictor type

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Mounting position</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>FD</td>
<td>D-sub connector</td>
<td></td>
</tr>
<tr>
<td>PD</td>
<td>Flat ribbon cable 26 pins</td>
<td></td>
</tr>
<tr>
<td>PGD</td>
<td>Flat ribbon cable 20 pins</td>
<td></td>
</tr>
<tr>
<td>PHD</td>
<td>Flat ribbon cable 10 pins</td>
<td></td>
</tr>
<tr>
<td>JD</td>
<td>Flat ribbon cable (PC wiring, without power supply terminal)</td>
<td></td>
</tr>
<tr>
<td>GD</td>
<td>Flat ribbon cable (PC wiring, with power supply terminal)</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>EX180 serial transmission</td>
<td></td>
</tr>
<tr>
<td>S6B</td>
<td>EX510 serial transmission</td>
<td></td>
</tr>
</tbody>
</table>

Connector type

- Parallel wiring
- Serial wiring

Note: Refer to pages 10, 26, 34, and 42 for details.

Connector entry

With parallel wiring specifications, it is necessary to select the connector entry direction (1: upward, 2: lateral). (Only upward is available for GD.) For details, refer to page 10.

How to Order Valve Manifold Assembly

Ordering example (SS3J3-V60PD2-□)

Individual wiring/lead wire length 300 mm, with plug (24 VDC)

SS3J3-V60PD2-06D – 1 set (Manifold part no.)
- SJ3A6-5MZ-P (1 set)
- SJ3A6-5CZJ-P (1 set)
- SJ3A6-5CU-DP (4 sets)
- SJ3A6-5MZ-P (1 set)
- The asterisk denotes the symbol for assembly.
- Prefix to the part no. of the solenoid valve, etc.

- The valve arrangement is numbered as the 1st station from D side.
- Indicate the valves to be attached below the manifold specification sheet.

- There is no need to enter anything when the SUP/EXH block mounting position “M” is selected. Also, this manifold comes standard with external pilot specifications.

- There are limitations on the station number, depending on the serial type. Refer to page 34 for details.

- The number of the blanking block assembly is also included. For the blanking block assembly, please select double wiring specifications.
How to Order Solenoid Valves (3 Position 3 Port with Restrictor)

**Standard**

**With switch**

**Individual wiring**  
[For plug-in mixed mounting]

Note: Refer to pages 74 and 75 for the dedicated non-plug-in individual wiring.

### Coil spec.

<table>
<thead>
<tr>
<th>Nil</th>
<th>Standard</th>
</tr>
</thead>
</table>
| T    | With power saving circuit  
(Continuous duty type) |

* Be sure to select “with power saving circuit” when the solenoid valve will be energized continuously for long period.

### Rated voltage

- 5 24 VDC
- 6 12 VDC

* Only 24 VDC is available for manifolds compatible with serial wiring and PC wiring.

### Connector entry

- C: Dedicated for centralized wiring
- M: Individual wiring, With lead wire  
Length 300 mm
- MN: Individual wiring, Without lead wire  
(With connector, socket)
- MO: Individual wiring, Without connector

* Connector entries with the symbol “M” can not use the switch signal from the common wiring on the manifold.
* When ordering a connector assembly separately, refer to back page 8.

### Light/surge voltage suppressor

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

* When the types with power saving circuit, with switches, and/or individual wiring are used, the non-polar type cannot be selected.
* “Z” is +COM spec.

### Needle operation

- Nil: Manual
- D: Slotted locking type

* Set operation torque to 0.3 N·m or less.

### Manual override

- Nil: Non-locking push type
- D: Push-turn locking slotted type

### PS port for detection

- P: With plug (M-5P)

* When mounting a pressure sensor etc., select “Nil.”

### With switch

- With power saving circuit  
(Continuous duty type)

* Be sure to select “with power saving circuit” when the solenoid valve will be energized continuously for long period.

Note) Refer to pages 74 and 75 for the dedicated non-plug-in individual wiring.

Note 2) The electrical connection to the manifold will be +COM. spec. when light/surge voltage suppressor is “Z” (Polar type).

Note 3) There is no valve block switch for linking the neighboring valve, etc. to the 3 position 3 port solenoid valve with restrictor. Consult SMC if you wish to use the SJ5000/3000 valve with a valve block switch, or an end block or SUP/EXH block assembly.
Series SJ3A6

Dimensions

SS3J3-V60 [1-Station] U/D/B

One-touch fitting (Pitch) M5 x 0.8
Applicable tubing O.D: ø8

One-touch fitting
Applicable tubing O.D: ø4, ø5/32"

F1 release pressure side
Filter body assembly
46.5 (with plug)

D side
Connector entry upward

PS pressure detection port
M5 x 0.8 (with plug)

U side
Switch for locking a connector

Manual override
(Locking type: Press, then rotate.)
4(A) port side: Blue
2(B) port side: Yellow

Light/surge voltage suppressor
SOLa: Orange
SOLb: Green

Switch (When equipped with switch)

Since DIN rail dimensions are the same as the SSJ3-60□ series, refer to the following pages.

- For D-sub connector: Page 15, 16
- For flat ribbon cable: Page 20, 21
- For EX180 serial wiring: Page 38, 39
- For EX510 serial wiring: Page 46, 47

In case of 60PG (20 pins)
In case of 60PH (10 pins)
In case of 60FD
In case of 60S□
How to Order Valve Manifold Assembly

Ordering example (SS3J3-V60-□)

- With plug (24 VDC)
  - SS3J3-05U
  - SS3J3-V60-06D

- SUP/EXH block
  - (D side mounting)

- SS3J3-V60-06D: 1 set (Manifold part no.)
- SS3J3A6N-SMZ-DP: 4 sets (With plug part no.)
- SS3J3A6N-SMZ-P: 2 sets (With plug part no.)

* The valve arrangement is numbered as the 1st station from D side.
* Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. In the case of complex arrangement, specify them in the manifold specification sheet.

Individual wiring manifold

SS3J3 – V 60 – 05 U

DIN rail length specified

<table>
<thead>
<tr>
<th>Nil</th>
<th>Standard length</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>3 stations</td>
</tr>
<tr>
<td>20</td>
<td>20 stations</td>
</tr>
</tbody>
</table>

- Specify the valve stations not exceeding the maximum stations.

SUP/EXH block mounting position

- U: U side (2 to 10 stations)
- D: D side (2 to 10 stations)
- B: Both sides (2 to 20 stations)
- M*: Special specifications

- Specify the required specifications (including port sizes other than ø8) by means of the manifold specification sheet.

SUP/EXH block fitting spec.

- Nil: Straight fitting
- L: Elbow fitting (Upward)
- B: Elbow fitting (Downward)

* There is no need to enter anything when the SUP/EXH block mounting position "M" is selected. Also, this manifold comes standard with external pilot specifications.

Vacuum release valve with restrictor

- Individual wiring manifold

- Non-plug-in

Series SJ3A6

How to Order

- Non-plug-in

- Individual Wiring

- Vacuum Release Valve with Restrictor

- Supreme SJ3A6
How to Order Solenoid Valves (3 Position 3 Port with Restrictor)

**SJ3A6**

**Coil spec.**
- **Nil**: Standard
- **T**: With power saving circuit (Continuous duty type)
  - *Be sure to select “with power saving circuit” when the solenoid valve will be energized continuously for long period.*

**Rated voltage**
- **5**: 24 VDC
- **6**: 12 VDC

**Connector entry**
- **M**: Individual wiring, With lead wire
  - Length 300 mm
- **MN**: Individual wiring, Without lead wire
  - (With connector, socket)
- **MO**: Individual wiring, Without connector
  - With linkage printed circuit board

**Ps port for detection**
- **Nil**: M5 x 0.8
- **P**: With plug (M-5P)
  - *When mounting a pressure sensor etc., select "Nil."*

**Needle operation**
- **Nil**: Manual
- **D**: Slotted locking type
  - *Set operation torque to 0.3 N·m or less.*

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

**With light/surge voltage suppressor**
- *Note: The electrical connection will be +COM. spec.*

*For non-plug-in only*
Series SJ3A6

Dimensions

SS3J3-V60-[Stations U/D/B]

Since DIN rail dimensions are the same as the SSUJ3-60-□ series, refer to pages 56 and 57.
### Component Parts / Plug-in

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SUP/EXH block assembly</td>
<td>SJ3000-42-1AR-□□-N</td>
<td>(Metric size) C6: With ø6 one-touch fitting (straight)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SJ3000-42-2AR-□□-N</td>
<td>C8: With ø8 one-touch fitting (straight)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SJ3000-42-3AR-□□-N</td>
<td>L6: With ø6 one-touch fitting (elbow upward entry)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SJ3000-42-4AR-□□-N</td>
<td>L8: With ø8 one-touch fitting (elbow upward entry)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SJ3000-42-5AR-□□-N</td>
<td>B6: With ø6 one-touch fitting (elbow downward entry)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SJ3000-42-6AR-□□-N</td>
<td>B8: With ø8 one-touch fitting (elbow downward entry)</td>
</tr>
<tr>
<td>2</td>
<td>End block assembly</td>
<td>SJ3000-53-1A-N</td>
<td>For U side</td>
</tr>
<tr>
<td>3</td>
<td>Connector block assembly</td>
<td>SJ3000-50-1AR-□□-N</td>
<td>Refer to the SUP/EXH block assembly part no. shown below</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SJ3000-50-2AR-□□-N</td>
<td>Refer to page 34.</td>
</tr>
<tr>
<td>4</td>
<td>DIN rail</td>
<td>VZ1000-11-1-□□</td>
<td>Refer to page 61.</td>
</tr>
<tr>
<td>5</td>
<td>SI unit</td>
<td>EX160□□□□</td>
<td>Refer to the SI unit part numbers on page 34.</td>
</tr>
<tr>
<td>6</td>
<td>End block assembly</td>
<td>SJ3000-55-2A-□□-N</td>
<td>For D side</td>
</tr>
</tbody>
</table>

### Component Parts / Non-plug-in

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SUP/EXH block assembly</td>
<td>SJ3000-50-5AR-□□-N</td>
<td>(Metric size) C6: With ø6 one-touch fitting (straight)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SJ3000-50-6AR-□□-N</td>
<td>C8: With ø8 one-touch fitting (straight)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SJ3000-57-6AR-□□-N</td>
<td>L6: With ø6 one-touch fitting (elbow upward entry)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SJ3000-57-7AR-□□-N</td>
<td>L8: With ø8 one-touch fitting (elbow upward entry)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SJ3000-57-8AR-□□-N</td>
<td>B6: With ø6 one-touch fitting (elbow downward entry)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SJ3000-57-9AR-□□-N</td>
<td>B8: With ø8 one-touch fitting (elbow downward entry)</td>
</tr>
</tbody>
</table>

Note 1) For the SJ3A6 series, valve block and manual switches are not available.  
Note 2) The valves cannot be operated only with the SUP/EXH block assembly for different pressure, select in combination with the SUP/EXH block assembly for internal/external pilot.  
Note 3) Refer to page 60 about the SUP/EXH block disk assembly and method of handling of parts at different pressure.
These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of “Caution,” “Warning” or “Danger.” They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC), Japan Industrial Standards (JIS)*1 and other safety regulations*2.

*1) ISO 4414: Pneumatic fluid power – General rules relating to systems.
ISO 4413: Hydraulic fluid power – General rules relating to systems.
IEC 60204-1: Safety of machinery – Electrical equipment of machines. (Part 1: General requirements)
JIS B 8370: General rules for pneumatic equipment.
JIS B 8361: General rules for hydraulic equipment.
JIS B 9960-1: Safety of machinery – Electrical equipment of machines. (Part 1: General requirements)
etc.
*2) Labor Safety and Sanitation Law, etc.

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

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

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

---

## Warning

1. **The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.**
   Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. **Only personnel with appropriate training should operate machinery and equipment.**
   The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

3. **Do not service or attempt to remove product and machinery/equipment until safety is confirmed.**
   1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
   2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
   3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. **Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.**
   1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
   2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalog.
   3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
   4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.
Safety Instructions

⚠️ Caution

The product is provided for use in manufacturing industries.
The product herein described is basically provided for peaceful use in manufacturing industries.
If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary. If anything is unclear, contact your nearest sales branch.

Limited Warranty and Disclaimer/Compliance Requirements

The product used is subject to the following “Limited Warranty and Disclaimer” and “Compliance Requirements”. Read and accept them before using the product.

Limited Warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered.∗(3)
   Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.
   This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
   * 3) Vacuum pads are excluded from this 1 year warranty.
      A vacuum pad is a consumable part, so it is warranted for a year after it is delivered.
      Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

Compliance Requirements

When the product is exported, strictly follow the laws required by the Ministry of Economy, Trade and Industry (Foreign Exchange and Foreign Trade Control Law).
**Series SJ2000/3000**

**Specific Product Precautions 1**

Be sure to read this before handling. Please refer to “Precautions for Handling Pneumatic Devices” (M-03-E3A) for Safety Instructions and 3/4/5 Port Solenoid Valves Precautions.

---

### Manual Override Switch Operation

**Warning**

For manual override operation, move the manual override switch to a position where letters A and B can be seen. [Manual override switch release status (refer to the figure below)] Operation with the manual override switch in a locked status can cause damage to the manual override and air leakage, so be sure to release the manual override switch before use. After manual override operation, lock the manual switch for use (when the manual override of the push-turn locking slotted type is locked, a manual override switch cannot be locked).

---

### Valve with Switch

**Warning**

When turning off the valve using the switch, move it to the position where the valve is locked. If the switch is at an improper position and is energized, equipment connected to the valve could be actuated.

Also, if the switch is turned OFF on the valve in the energized state, be careful because any actuators connected to a single solenoid, a dual 3 port valve or a 3 position valve will actuate.

---

### Manual Override Operation

**Warning**

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

#### Non-locking push type

Press in the direction of the arrow.

#### Push-turn locking slotted type

While pressing, turn in the direction of the arrow (90° clockwise). If it is not turned, it can be used in the same way as the non-locking push type.

---

### Built-in Back Pressure Check Valve Type

**Caution**

Valves with built-in back pressure check valve is to protect the back pressure inside a valve. For this reason, use caution the valves with external pilot specification cannot be pressurized from exhaust port [3/5(E)].

As compared with the types which do not integrate the back pressure check valve, C value of the flow characteristics goes down. For details, please contact SMC.

---

### Exhaust Restriction

**Caution**

Since the SJ series is a type in which the pilot valve exhaust joins the main valve exhaust inside the valve, use caution, so that the piping from the exhaust port is not restricted.
When Using a 4 Port Valve as a 3 Port Valve

Caution

When using a 4 port valve as a 3 port valve
The SJ2000/3000 series can be used as normally closed (N.C.) or normally open (N.O.) 3 port valves by plugging one of the cylinder ports 4(A) or 2(B). However, exhaust ports should be left open. It is convenient when a double solenoid 3 port valve is required.

<table>
<thead>
<tr>
<th>Plug position</th>
<th>2(B) port</th>
<th>4(A) port</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of actuation</td>
<td>N.C.</td>
<td>N.O.</td>
</tr>
<tr>
<td>Single</td>
<td>(A)(B)</td>
<td>(A)(B)</td>
</tr>
<tr>
<td>Double</td>
<td>(A)(B)</td>
<td>(A)(B)</td>
</tr>
</tbody>
</table>

Caution

Light/surge Voltage Suppressor

Non-polar type

Single solenoid

Double solenoid, 3 position type

Polar type

Single solenoid

Double solenoid, 3 position type

Continuous Duty

Caution

If a valve is energized continuously for a long time, the rise in temperature due to heat-up of the coil may cause a decline in solenoid valve performance, reduce service life, or have adverse effects on peripheral equipment. If a valve will be energized continuously, please be sure to use the “Continuous duty type” with a power saving circuit. In particular, there will be a large increase in temperature if 3 or more neighboring stations are simultaneously continuously energized for a long time, or if the A and B sides are simultaneously continuously energized for a long time in a dual 3 port valve. Please be very careful in such cases.

With power saving circuit

Compared to the standard products, power consumption is reduced down to approx. 1/3 (in case of SJ360T) by cutting the unnecessary wattage required to hold the valve in an energized state. (Effective energizing time is over 67 ms at 24 VDC.)

Electric circuit diagram (with power saving circuit)

In case of single solenoid
Working Principle

With the circuit of back page 4, the current consumption, when holding, is reduced to save energy. Please refer to the electric wave data below.

In case of SJ3/L50132, electric waveform of energy saving type

![Electric waveform](image)

- When a power saving circuit is installed, a diode to prevent reverse current is not available for 12 V DC spec. Therefore, use caution not to connect in reverse.
- Be careful about the allowable voltage fluctuation since a voltage drop of about 0.5 V occurs due to a transistor. (Refer to the solenoid specifications of each valve for details.)

**Measures to prevent detours of surge voltage**

When the DC power supply is shut off, by the emergency breaking circuit for example, valve misoperation may occur due to surge voltage produced by other electrical parts (such as electromagnetic coils). Please take measures to prevent surges from detouring to the valve (surge protection diode etc.), or use a valve with diode to prevent reverse current (polar: Z type). However, surge countermeasures are provided on the serial unit side of the serial type.

![Circuit example](image)

1. Valve
2. Electromagnetic load
3. Breaking circuit
4. DC power supply

**Examples of surge voltage countermeasures**

1. Valve with diode to prevent reverse current

**Light Indication**

⚠️ Caution

When equipped with light/surge voltage suppressor, the light window turns orange when solenoid A is energized, and it turns green when solenoid B is energized.

- Indicator light
  - A side: Orange
  - B side: Green

**Changing the Connector Entry Direction**

⚠️ Caution

To change the connector’s entry direction, set the switch on the top of the connector block to the FREE position, before turning the connector. Make sure to set the switch back to the LOCK position before connecting the connector. (When the switch is difficult to slide, move the connector a little so that it will slide easier.)

If an excessive force is applied on the connector in the LOCK position, the connector block may be damaged. Also, using in such a way that the connector floats in the FREE position, it may cause the lead wire, etc. to break. Thus, refrain from using in these ways.

**Manifold Mounting**

When attaching a manifold to a mounting surface, etc., with bolts, if the entire bottom surface of the DIN rail contacts the mounting surface in a horizontal mounting, it can be used by simply securing both ends of the DIN rail. However, for any other mounting method or for side facing and rear facing, etc., secure the DIN rail with bolts at uniform intervals using the following as a guide: 2 to 5 stations at 2 locations, 6 to 10 stations at 3 locations, 11 to 15 stations at 4 locations, 16 to 20 stations at 5 locations, 21 to 25 stations at 6 locations, 26 to 30 stations at 7 locations and more than 30 stations at 8 locations.

In addition, even in the case of a horizontal mounting, if the mounting surface is subject to vibration, etc., take the same measures indicated above. If secured at fewer than the specified number of locations, warping or twisting may occur in the DIN rail and manifold, causing trouble such as air leakage.
By replacing a valve’s fitting assembly, it is possible to change the port size of the 4(A), 2(B), 1(P), and 3/5(E) ports. When replacing it, pull out the fitting assembly after removing the clip with a flat head screwdriver, etc. To mount a new fitting assembly, insert it into place and then fully reinsert the clip.

Caution

Fitting Assembly Replacement

By replacing a valve’s fitting assembly, it is possible to change the port size of the 4(A), 2(B), 1(P), and 3/5(E) ports. When replacing it, pull out the fitting assembly after removing the clip with a flat head screwdriver, etc. To mount a new fitting assembly, insert it into place and then fully reinsert the clip.

Fitting Assembly Part No.

<table>
<thead>
<tr>
<th>Port</th>
<th>Port Size</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SJ2000 4(A)</td>
<td>ø2 one-touch fitting assembly (Straight)</td>
<td>KJH02-C1</td>
</tr>
<tr>
<td>2(B)</td>
<td>ø4 one-touch fitting assembly (Straight)</td>
<td>KJH04-C1</td>
</tr>
<tr>
<td></td>
<td>ø2 one-touch fitting assembly (Elbow type)</td>
<td>KJL02-C1</td>
</tr>
<tr>
<td></td>
<td>ø4 one-touch fitting assembly (Elbow type)</td>
<td>KJL04-C1-N</td>
</tr>
<tr>
<td></td>
<td>ø2 one-touch fitting assembly (Long elbow type)</td>
<td>KJW02-C1</td>
</tr>
<tr>
<td></td>
<td>ø4 one-touch fitting assembly (Long elbow type)</td>
<td>KJW04-C1-N</td>
</tr>
<tr>
<td>M3 port block assembly</td>
<td></td>
<td>SJ2000-56-1A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Port</th>
<th>Port Size</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SJ3000 4(A)</td>
<td>ø2 one-touch fitting assembly (Straight)</td>
<td>KJH02-C2</td>
</tr>
<tr>
<td>2(B)</td>
<td>ø4 one-touch fitting assembly (Straight)</td>
<td>KJH04-C2</td>
</tr>
<tr>
<td></td>
<td>ø2 one-touch fitting assembly (Elbow type)</td>
<td>KJL02-C2</td>
</tr>
<tr>
<td></td>
<td>ø4 one-touch fitting assembly (Elbow type)</td>
<td>KJL04-C2</td>
</tr>
<tr>
<td></td>
<td>ø2 one-touch fitting assembly (Long elbow type)</td>
<td>KJW02-C2</td>
</tr>
<tr>
<td></td>
<td>ø6 one-touch fitting assembly (Long elbow type)</td>
<td>KJW06-C2-N</td>
</tr>
<tr>
<td>M5 port block assembly</td>
<td></td>
<td>SJ3000-56-1A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Port</th>
<th>Port Size</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(P)</td>
<td>ø6 one-touch fitting assembly (Straight)</td>
<td>VVQ1000-51A-C6</td>
</tr>
<tr>
<td>3/5(E)</td>
<td>ø6 one-touch fitting assembly (Elbow type)</td>
<td>ZS3000-74-1A-L6</td>
</tr>
<tr>
<td></td>
<td>ø6 one-touch fitting assembly (Long elbow type)</td>
<td>ZS3000-74-2A-L6</td>
</tr>
<tr>
<td></td>
<td>ø6 one-touch fitting assembly (Straight)</td>
<td>VVQ1000-51A-C8</td>
</tr>
<tr>
<td></td>
<td>ø6 one-touch fitting assembly (Elbow type)</td>
<td>ZS3000-74-1A-L8</td>
</tr>
<tr>
<td></td>
<td>ø6 one-touch fitting assembly (Long elbow type)</td>
<td>ZS3000-74-2A-L8</td>
</tr>
</tbody>
</table>

Fitting Assembly Part No.

<table>
<thead>
<tr>
<th>Port</th>
<th>Port Size</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SJ2000 4(A)</td>
<td>ø1/8” one-touch fitting assembly (Straight)</td>
<td>KJH01-C1</td>
</tr>
<tr>
<td>2(B)</td>
<td>ø5/32” one-touch fitting assembly (Straight)</td>
<td>KJH03-C1</td>
</tr>
<tr>
<td></td>
<td>ø1/8” one-touch fitting assembly (Elbow type)</td>
<td>KJL01-C1</td>
</tr>
<tr>
<td></td>
<td>ø5/32” one-touch fitting assembly (Elbow type)</td>
<td>KJL03-C1</td>
</tr>
<tr>
<td></td>
<td>ø1/8” one-touch fitting assembly (Long elbow type)</td>
<td>KJW01-C1</td>
</tr>
<tr>
<td></td>
<td>ø5/32” one-touch fitting assembly (Long elbow type)</td>
<td>KJW03-C1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Port</th>
<th>Port Size</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SJ3000 4(A)</td>
<td>ø1/8” one-touch fitting assembly (Straight)</td>
<td>KJH01-C2</td>
</tr>
<tr>
<td>2(B)</td>
<td>ø5/32” one-touch fitting assembly (Straight)</td>
<td>KJH03-C2</td>
</tr>
<tr>
<td></td>
<td>ø1/4” one-touch fitting assembly (Straight)</td>
<td>KJL01-C2</td>
</tr>
<tr>
<td></td>
<td>ø5/32” one-touch fitting assembly (Elbow type)</td>
<td>KJL03-C2</td>
</tr>
<tr>
<td></td>
<td>ø1/4” one-touch fitting assembly (Elbow type)</td>
<td>KJL07-C2</td>
</tr>
<tr>
<td></td>
<td>ø1/8” one-touch fitting assembly (Long elbow type)</td>
<td>KJW01-C2</td>
</tr>
<tr>
<td></td>
<td>ø5/32” one-touch fitting assembly (Long elbow type)</td>
<td>KJW03-C2</td>
</tr>
<tr>
<td></td>
<td>ø1/4” one-touch fitting assembly (Long elbow type)</td>
<td>KJW07-C2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Port</th>
<th>Port Size</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(P)</td>
<td>ø1/4” one-touch fitting assembly (Straight)</td>
<td>VVQ1000-51A-N7</td>
</tr>
<tr>
<td>3/5(E)</td>
<td>ø5/16” one-touch fitting assembly (Straight)</td>
<td>VVQ1000-51A-N9</td>
</tr>
</tbody>
</table>

Note 1) To change the port size of the 1(P), 3/5(E) ports into the port sizes other than ø8 (straight), specify the change by means of the manifold specification sheet.

Note 2) Be careful to avoid damage or contamination to the O-rings, as this can cause air leakage.

Note 3) When removing a straight-type fitting assembly from a valve, after removing the clip, attach tubing or a plug (KJP-02, KQP-□□□□□□ to the one-touch fitting, and pull it out while holding the tubing or plug. If it is pulled out while holding the release button of the fitting assembly (resin part), the release button may be damaged.

Note 4) Be sure to turn off the power and stop the supply of air before disassembly. Furthermore, since air may remain inside the actuator, piping and manifold, confirm that the air is completely exhausted before starting any work.

Note 5) While inserting a tubing into an elbow-type fitting assembly, hold the main body of the assembly by hand. Failure to do so will exert an undue force on the valve or the fitting assembly, resulting in air leakage or damage.
One-touch Fittings

Caution
The pitch of the SJ series piping ports (A, B etc.) has been set assuming the use of KJ series one-touch fittings. Therefore, when using fittings with an M3 or M5 port block assembly, there may be some interference between fittings, depending on the type and size, so please use after checking dimensions in the catalog for the pipe fitting being used.

1. Tube attachment/detachment for one-touch fittings
   1) Attaching of tubing
      (1) Take a tube having no flaws on its periphery and cut it off at a right angle. When cutting the tube, use tube cutters TK-1, 2 or 3. Do not use pinchers, nippers or scissors, etc. If cutting is done with tools other than tube cutters, there is the danger that the tube may be cut diagonally or become flattened, etc., making a secure installation impossible, and causing problems such as the tube pulling out after installation or air leakage. Also allow some extra length in the tube.
      (2) Grasp the tube and push it in slowly, inserting it securely all the way into the fitting.
      (3) After inserting the tube, pull on it lightly to confirm that it will not come out. If it is not installed securely all the way into the fitting, this can cause problems such as air leakage or the tube pulling out.
   2) Detaching of tubing
      (1) The 4(A) and 2(B) ports use the KJ series, so the tube can be removed by pressing on part of the release bush. However, for the 1(P) and 3/5(E) ports, please press the release bush evenly as before.
      (2) Pull out the tube while holding down the release button so that it does not come out. If the release button is not pressed down sufficiently, there will be increased bite on the tube and it will become more difficult to pull it out.
      (3) When the removed tube is to be used again, cut off the portion which has been chewed before reusing it. If the chewed portion of the tube is used as is, this can cause trouble such as air leakage or difficulty in removing the tube.

How to Use Plug Connector

Caution
When attaching and detaching a connector, first shut off the electric power and the air supply. Also, crimp the lead wires and sockets securely.

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
   Peel 3.2 to 3.7 mm of the tip of lead wire, enter the core wires neatly into a socket and crimp it with a special crimp tool. Be careful so that the cover of lead wire does not enter into the crimping part. (Crimping tool: Model no. DXT170-75-1)

3. Attaching and detaching lead wires with sockets
   • Attaching
      Insert the sockets into the square holes of the connector (with A, B, C, and N indication) and continue to push the sockets all the way in until the lock by hooking into the seats of the connector. (When they are pushed in, their hooks open and they are locked automatically.) Next, 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 is used again, spread the hook outward.

Other Tubing Brands

Caution
1. When using tube other than SMC brand, confirm the following specifications are satisfied with respect to the outside diameter tolerance of the tube.
   1) Nylon tubing within ±0.1 mm
   2) Soft nylon tubing within ±0.1 mm
   3) Polyurethane tubing within +0.15 mm, within –0.2 mm
   Do not use tubing which does not meet these outside diameter tolerances. It may not be possible to connect them, or they may cause other troubles, such as air leakage or the tube pulling out after connection.

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Series SJ2000/3000
Specific Product Precautions 5

Be sure to read this before handling. Please refer to “Precautions for Handling Pneumatic Devices” (M-03-E3A) for Safety Instructions and 3/4/5 Port Solenoid Valves Precautions.

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Series SJ2000/3000
Specific Product Precautions 6

Be sure to read this before handling. Please refer to “Precautions for Handling Pneumatic Devices” (M-03-E3A) for Safety Instructions and 3/4/5 Port Solenoid Valves Precautions.

---

**Plug Connector Lead Wire Length**

*Caution*
Plug connector lead wires have a standard length of 300 mm, however, the following lengths are also available.

<table>
<thead>
<tr>
<th>Connector Assembly Part No.</th>
<th>Single solenoid</th>
<th>Double solenoid, 3 position type, 4 position type</th>
</tr>
</thead>
<tbody>
<tr>
<td>SJ3000-46-S</td>
<td></td>
<td>SJ3000-46-D</td>
</tr>
</tbody>
</table>

**Connector Assembly Part No. (for Junction Common)**

<table>
<thead>
<tr>
<th>Connector Assembly Part No.</th>
<th>Single solenoid</th>
<th>Double solenoid, 3 position type, 4 position type</th>
</tr>
</thead>
<tbody>
<tr>
<td>SJ3000-46-SC</td>
<td></td>
<td>SJ3000-46-DC</td>
</tr>
</tbody>
</table>

**How to Order**

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

(Example) Lead wire length 2000 mm
SJ3160N-5MOZ-C6
SJ3000-46-S-20

**Connector Assembly for Manifolds (for Junction Common)**

*Caution*
Using the connector assembly (for junction common) for solenoid valves installed in the manifold reduces the labor involved in wiring work because common wiring for all solenoid valves is integrated into a single wire.

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**Wiring Instructions for Connector Assembly (for Junction Common)**

**Caution**

If only connector assembly (for junction common) is ordered, please wire according to the instructions in the diagram below. For details on socket mounting, please refer to “How to Use Plug Connector” on the back page 7.

![Socket and Common wiring](image)

**Insert the socket into the connector (N) of the neighboring solenoid valve**

**How to Wire to PC Wiring System Compliant Power Supply Terminal**

**Caution**

Wire connection instructions

1. Strip 6.5 to 7.5 mm from the tip of the lead wire.
2. Loosen the terminal screws (slotted screws) of the power supply terminal connectors, plug the core wire of the lead wire into the square holes of the connector, tighten terminal screws at the proper torque, and fasten them securely. (Gently pull the lead wire and check that it is fastened.)

**Precautions**

- To remove the power supply terminal connector, pull it upward as is. When mounting, push it in until it makes a snapping noise.
- When connecting wire, be careful because using lead wire that is outside of compatible lead wire ranges, or that are tightened to anything other than the proper torque, creates a risk of defective contact and other problems.

![Lead wire and Wire core](image)

- Insert wire core into the square hole
- Power supply terminal connector (Detachable)
- Terminal screws (2 locations)
- Tightening torque 0.4 to 0.6 N·m
Safety Instructions

Be sure to read “Precautions for Handling Pneumatic Devices” (M-03-E3A) before using.

<table>
<thead>
<tr>
<th>Record of changes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B edition</strong></td>
</tr>
<tr>
<td>• Addition of non-plug-in type, individual wiring manifold</td>
</tr>
<tr>
<td>• Addition of EX510 serial wiring type</td>
</tr>
<tr>
<td>• Addition of PC wiring type</td>
</tr>
<tr>
<td>• Option: Addition of regulator block, intermediate connector block</td>
</tr>
<tr>
<td>• Addition of vacuum release valve with restrictor SJ3A6 series</td>
</tr>
<tr>
<td>• Number of pages from 48 to 96.</td>
</tr>
</tbody>
</table>

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