5 Port Solenoid Valve
Metal Seal / Rubber Seal

Power Saving

High pressure **0.95 W**
(1 MPa Metal seal)

**Easy Replacement of Clip Type One-touch Fittings**
One-touch fittings can be replaced without removing valves.

**Connector Entry Direction Can be Changed with a Single Push.**
The connector entry direction can be changed from the top to the side by simply pressing the manual release button. It is not necessary to use the manual release button when switching from the side to the top.

**4 Position Dual 3 Port Valve**
- Two 3-port valves built into one body.
- The 3-port valves on the A and B sides can operate independently.
- When used as 3-port valves, only half the number of stations is required.
- Can also be used as a 4-position, 5-port valve.

**Built-in Back Pressure Check Valve (Option symbol: B)**
Eliminates trouble with back pressure when driving a single acting cylinder or when using an exhaust center type valve, etc.

**Easy to add or decrease the number of valve stations.**
The use of cassette style valves and manifolds makes it easy to increase or decrease the number of stations on a DIN rail. The plug-in type includes two extra valve station connectors. This design makes rewiring unnecessary during manifold expansion.

**Series SQ1000/2000**
### Wiring Type

<table>
<thead>
<tr>
<th>Manifold variations</th>
<th>EX510 Gateway-type serial transmission system</th>
<th>D-sub connector kit</th>
<th>Flat ribbon cable connector kit</th>
<th>PC wiring system compatible flat ribbon cable</th>
<th>Terminal block box kit</th>
<th>Lead wire kit</th>
</tr>
</thead>
<tbody>
<tr>
<td>F kit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P kit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J kit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T kit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L kit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Plug In Unit

- **SQ1000**
  - F kit: (P.1)
  - P kit: (P.5, 11)
  - J kit: (P.5, 13)
  - T kit: —
  - L kit: (P.5, 17)
- **SQ2000**
  - F kit: (P.21)
  - P kit: (P.25, 31)
  - J kit: (P.25, 33)
  - T kit: (P.25, 37)
  - L kit: (P.25, 39)

### Plug Lead Unit

- **SQ1000**
  - F kit: —
  - P kit: (P.67, 73)
  - J kit: (P.67, 75)
  - T kit: —
  - L kit: —
- **SQ2000**
  - F kit: —
  - P kit: (P.81, 87)
  - J kit: (P.81, 89)
  - T kit: —
  - L kit: —

### Piping Specifications

#### Supply/Exhaust port
- **SQ1000** One-touch fittings for ø8
- **SQ2000** One-touch fittings for ø10

#### Cylinder port
- **Side ported**
  - **SQ1000**
    - One-touch fittings for ø3.2
    - One-touch fittings for ø4
    - One-touch fittings for ø6
    - M5
  - **SQ2000**
    - One-touch fittings for ø4
    - One-touch fittings for ø6
    - One-touch fittings for ø8

- **Top ported**
  - Top porting can be changed to side porting.
Contents

**Plug-in Unit**
- Valve Specifications ........................................ P.9
- Manifold Specifications .................................... P.10
- Manifold Option Parts ........................................ P.42
- How to Increase Manifold Stations .................... P.56
- Construction .................................................... P.61
- Manifold Exploded View: SQ1000 ....................... P.63
- Manifold Spare Parts: SQ1000 .......................... P.64
- Manifold Exploded View: SQ2000 ....................... P.65
- Manifold Spare Parts: SQ2000 .......................... P.66

**Plug Lead Unit**
- Valve Specifications ........................................ P.71
- Manifold Specifications .................................... P.72
- Manifold Option Parts ........................................ P.95
- How to Increase Manifold Stations .................... P.108
- Construction .................................................... P.113
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- Manifold Exploded View: SQ2000 ....................... P.117
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- Specific Product Precautions ............................ P.119

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

<table>
<thead>
<tr>
<th>Series SQ1000</th>
<th>Series CJ2</th>
<th>Series CM2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average speed (mm/s)</td>
<td>ø6</td>
<td>ø10</td>
</tr>
<tr>
<td>800</td>
<td>700</td>
<td>600</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Series SQ2000</th>
<th>Series CJ2</th>
<th>Series CM2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average speed (mm/s)</td>
<td>ø6</td>
<td>ø10</td>
</tr>
<tr>
<td>800</td>
<td>700</td>
<td>600</td>
</tr>
</tbody>
</table>

- Perpendicular, upward actuation
- Horizontal actuation

**Conditions**

<table>
<thead>
<tr>
<th>Base mounted</th>
<th>Series CJ2</th>
<th>Series CM2</th>
<th>Series MB, CA2</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ1000</td>
<td>T0604 x 1 m</td>
<td>AS3002F-06</td>
<td>AN110-01</td>
</tr>
<tr>
<td></td>
<td>Speed controller</td>
<td>Silencer</td>
<td></td>
</tr>
<tr>
<td>SQ2000</td>
<td>T0604 x 1 m</td>
<td>AS3002F-06</td>
<td>AN20-02</td>
</tr>
<tr>
<td></td>
<td>Speed controller</td>
<td>Silencer</td>
<td></td>
</tr>
</tbody>
</table>

- Pressure: 0.5 MPa
- Load factor: ((Load weight x 9.8) / Theoretical force) x 100%

Notes:
- It is when the cylinder is extending that is meter-out controlled by speed controller which is directly connected with cylinder, and its needle valve with being fully open.
- The average velocity of the cylinder is what the stroke is divided by the total stroke time.

Front matter 2
How to Order Manifold Assembly

Example

2 position single (24 VDC)
SQ1130-51-C6 (4 sets)

2 position double (24 VDC)
SQ1230D-51-C6 (3 sets)

Blanking plate
SSQ1000-10A-3 (1 set)

Cylinder port fitting
C6: One-touch fittings for ø6

Manifold base (8 stations)

SS5Q13-SB08-D ······ 1 set (SB kit 8-station manifold base part no.)
SQ1130-S-C6 ········· 4 sets (Single type part no.)
SQ1230-S-C6 ········· 3 sets (Double type part no.)
SSQ1000-10A-3 ······ 1 set (Blanking plate part no.)

The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.
Enter in order starting from the first station on the D side.

Add the valve and option part number under the manifold base part number. When entry of part numbers becomes complicated, indicate by the manifold specification sheet.

DIN rail mounting

SI Unit Part No.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>SI Unit Specifications</th>
<th>SI unit part no.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Positive common (NPN)</td>
<td>EX510-S002B</td>
<td>Best Pneumatics No.1</td>
</tr>
<tr>
<td>N</td>
<td>Negative common (PNP)</td>
<td>EX510-S102B</td>
<td></td>
</tr>
</tbody>
</table>

Refer to Best Pneumatics No.1 and the Operation Manual for the details of EX510 gateway-type serial transmission system. Please download it via our website, http://www.smcworld.com
How to Order Valves

**Series SQ1000**

**Type of actuation**
- 2 position single
- 2 position double (Double solenoid)
- 3 position closed center
- 3 position exhaust center
- 3 position pressure center
- 4 position dual 3 port valve

**Cylinder port**
- C3
- C4
- C6
- M5
- L3
- L4
- L6
- L5

**Function**
- Standard type (0.4 W)
- Quick response type (0.95 W)
- High pressure type (1 MPa, 0.95 W)
- Negative common
- External pilot specifications

**Rated voltage**
- 5V 24V DC

**With/Without manifold block**
- Without manifold block
- With manifold block, built-in back pressure check valve

**Port plug mounting port**
- Port 4(A)
- Port 2(B)

**Manual override**
- Non-locking push type (Tool required)
- Locking type (Tool required)

**Construction**
- Kit (F, P, J, T, L, S, C)

**Manifold Options**
- Plug-in unit (Plug-in kit)

**EX510 Gateway-type Serial Transmission System**

**EX510 Plug-in Kit**
- SQ 1000
- SQ 2000

**Note**
- Lead wire is not included.
- When ordering with manifolds, back pressure cannot be prevented with dual 3 port valves.
- Note 1) For double solenoid specification, the function symbol below is “D”.
- Note 2) Only rubber seal types are applicable.
- Note 1) “D” is specified for 2 position double.
- Note 2) When SI unit output polarity is negative common, the valve common specification should be also be negative common.
- Note 3) Except dual 3 port valves.
- Note 4) When two or more symbols are specified, indicate them alphabetically.
# Series SQ1000

## Dimensions: SQ1000

![Diagram of series SQ1000](image)

### Dimensions

<table>
<thead>
<tr>
<th>L</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>132</td>
<td>143.5</td>
<td>155</td>
<td>166.5</td>
<td>178</td>
<td>189.5</td>
<td>201</td>
<td>212.5</td>
<td>224</td>
<td>235.5</td>
<td>247</td>
<td>258.5</td>
<td>270</td>
<td>281.5</td>
<td>293</td>
<td>304.5</td>
</tr>
<tr>
<td>L2</td>
<td>162.5</td>
<td>175</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>250</td>
<td>262.5</td>
<td>275</td>
<td>287.5</td>
<td>300</td>
<td>312.5</td>
<td>312.5</td>
<td>325</td>
</tr>
<tr>
<td>L3</td>
<td>173</td>
<td>185.5</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
<td>323</td>
<td>323</td>
<td>335.5</td>
</tr>
</tbody>
</table>

Formula: \( L1 = 11.5n + 120.5 \)  
\( n \): Stations (Maximum 16 stations)
Plug-in Unit
Series SQ1000

How to Order Manifold

SS5Q13-08FD2-D-

DIN rail mounting style
Direct mounting style

• Option
  Nil
  None
  02 to 24(1)
  DIN rail length specified
  Back pressure check valve
  Special wire specifications (Except double wiring)
  With name plate (Side ported only)
  External pilot specifications
  Built-in silencer, direct exhaust

• 1(P), (3)R port size
  Nil
  1(P), (3)R port
  One-touch fittings for ø8
  One-touch fittings for ø5/16

Note 1) Specify DIN rail length with “D” at the end. (Enter the number of stations inside “D.”) The number of stations may be displayed longer than the manifold number of stations. Example: 009
Note 2) When “-BKN” is selected, a back pressure check valve is included in all stations of the manifold. If the back pressure check valve is used only for the station that need it, then specify the station in the manifold specification. (“-B” is not necessary)
Note 3) Since 4 port specification valves (S/R1 and R2) are common, back pressure cannot be prevented with dual 3 port valves.
Note 4) Specify “-K” for wiring specification for cases below. (Except “L” kit)
  - Single wiring
  - Single and double mixed wiring.
  - When there are stations which do not require wiring (e.g. single SUP spacer), specify the wiring specification in the manifold specification so that the number of solenoids is the maximum number of solenoids or less. (Standard wiring specification is double wiring)
Note 5) For specifying two or more options, enter them alphabetically. Example: -BKNS
  + Refer to pages 42 to 46 and 52 to 54 for manifold option parts.

Electrical entry

Kit type  Lead wire connector/ location  Cable/SI unit specifications  Station (Double wiring)  Max. number of solenoids for special wiring specifications(2)  CE compliant

<table>
<thead>
<tr>
<th>Kit type</th>
<th>Lead wire connector/ location</th>
<th>Cable/SI unit specifications</th>
<th>Station (Double wiring)</th>
<th>Max. number of solenoids for special wiring specifications(2)</th>
<th>CE compliant</th>
</tr>
</thead>
<tbody>
<tr>
<td>F kit</td>
<td>D side</td>
<td>D-sub connector (25P) kit, without cable</td>
<td>1 to 12 stations</td>
<td>24</td>
<td>●</td>
</tr>
<tr>
<td>P kit</td>
<td>U side</td>
<td>Flat ribbon cable (26P) kit, without cable</td>
<td>1 to 9 stations</td>
<td>18</td>
<td>●</td>
</tr>
<tr>
<td>J kit</td>
<td>D side</td>
<td>Flat ribbon cable (20P) PC wiring system compatible</td>
<td>1 to 8 stations</td>
<td>16</td>
<td>●</td>
</tr>
<tr>
<td>L kit</td>
<td>U side</td>
<td>Lead wire kit with 0.6 m cable</td>
<td>1 to 12 stations</td>
<td>—</td>
<td>●</td>
</tr>
<tr>
<td>S kit</td>
<td>D side</td>
<td>NKE Corp.: Fieldbus System</td>
<td>1 to 8 stations</td>
<td>16</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Panasonic Electric Works SUNX Co., Ltd.: S-LINK (16 output points)</td>
<td>1 to 4 stations</td>
<td>8</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OMRON Corp.: CompoBus/S (8 output points)</td>
<td>1 to 4 stations</td>
<td>8</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CC-LINK</td>
<td>1 to 8 stations</td>
<td>16</td>
<td>—</td>
</tr>
</tbody>
</table>

Stations

01 1 station
  02 to 24 24 stations

Note) The maximum number of stations depends on the type of electrical entries. Refer to “Electrical entry” for details.

Manifold mounting

DIN rail mounting style
Direct mounting style

Note) Refer to page 53 for details.

SI Unit Part No.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Protocol type</th>
<th>SI unit part no.</th>
<th>Page</th>
<th>Symbol</th>
<th>Protocol type</th>
<th>SI unit part no.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDF</td>
<td>NKE Corp.: Fieldbus System</td>
<td>EX140-SUW1</td>
<td></td>
<td>SDQ</td>
<td>DeviceNet</td>
<td>EX140-SDN1</td>
<td></td>
</tr>
<tr>
<td>SDH</td>
<td>NKE Corp.: Fieldbus H System</td>
<td>EX140-SUH1</td>
<td></td>
<td>SDR1</td>
<td>OMRON Corp.: CompoBus/S (16 output points)</td>
<td>EX140-SCS1</td>
<td></td>
</tr>
<tr>
<td>SDJ1</td>
<td>Panasonic Electric Works SUNX Co., Ltd.: S-LINK (16 output points)</td>
<td>EX140-SSL1</td>
<td></td>
<td>SDR2</td>
<td>OMRON Corp.: CompoBus/S (8 output points)</td>
<td>EX140-SCS2</td>
<td></td>
</tr>
<tr>
<td>SDJ2</td>
<td>Panasonic Electric Works SUNX Co., Ltd.: S-LINK (8 output points)</td>
<td>EX140-SSL2</td>
<td></td>
<td>SDV</td>
<td>CC-LINK</td>
<td>EX140-SMJ1</td>
<td></td>
</tr>
</tbody>
</table>

Best Pneumatics No.1

Please download it via our website. http://www.smcworld.com

Note 1) Separately order the 20P type cable assembly for the P kit.
Note 2) Specify the wiring so that the maximum number of solenoids is not exceeded. (The number of solenoids are counted as: 1 for single solenoids and 2 for type 3P and 4P double solenoids.)
Note 3) Refer to Best Pneumatics No.1 and the Operation Manual for the details of EX140 integrated-type (for output) serial transmission system.
Note 4) Specify the wiring so that the maximum number of solenoids is not exceeded. (The number of solenoids are counted as: 1 for single solenoids and 2 for type 3P and 4P double solenoids.)
Note 5) Refer to page 64 for manifold spare parts.

* Refer to page 64 for manifold spare parts.
How to Order Valves

SQ1[ ][ ]{ ] - [ ]{ C6} - [ ]- [ ]

- CE compliant
  Nil — Q CE compliant

Type of actuation

1. 2 position single
   - (A4) 2(B)
   - Type Actuation: Nil
   - Port size Port location
     - 2 position single
     - Port size: A
     - Port location: P

2. 2 position double
   - (A4) 2(B)
   - Type Actuation: Nil
   - Port size Port location
     - 2 position double
     - Port size: A
     - Port location: P

3. 3 position closed center
   - (A4) 2(B)
   - Type Actuation: Nil
   - Port size Port location
     - 3 position closed center
     - Port size: A
     - Port location: P

4. 3 position exhaust center
   - (A4) 2(B)
   - Type Actuation: Nil
   - Port size Port location
     - 3 position exhaust center
     - Port size: A
     - Port location: P

5. 3 position pressure center
   - (A4) 2(B)
   - Type Actuation: Nil
   - Port size Port location
     - 3 position pressure center
     - Port size: A
     - Port location: P

6. 4 position dual 3 port valve
   - (A4) 2(B)
   - Type Actuation: Nil
   - Port size Port location
     - 4 position dual 3 port valve
     - Port size: A
     - Port location: P

7. 4 position dual 3 port valve
   - (A4) 2(B)
   - Type Actuation: Nil
   - Port size Port location
     - 4 position dual 3 port valve
     - Port size: B
     - Port location: P

8. 4 position dual 3 port valve
   - (A4) 2(B)
   - Type Actuation: Nil
   - Port size Port location
     - 4 position dual 3 port valve
     - Port size: C
     - Port location: P

Note 1) For double solenoid specification, the function symbol below is “D”.
Note 2) Only rubber seal types are applicable.

Rated voltage

- 0 VDC
- 5 VDC
- 6 VDC
- 24 VDC
- 12 VDC

- Function
  Symbol Specifications
  - Nil Standard type (0.4 W)
  - B Quick response type (0.95 W)
  - D(1) 2 position double (Double solenoid specifications)
  - K High pressure type (1 MPa, 0.95 W)
  - N(2) Negative common
  - R(3) External pilot specifications

- Manual override
  Symbol Port size Port location
  - Nil Non-locking push type (Tool required)
  - B Locking type (Tool required)

- Cylinder port
  Symbol Port size Port location
  - C3 With One-touch fittings for ø3.2
  - C4 With One-touch fittings for ø4
  - C6 With One-touch fittings for ø6
  - M5 M5 thread
  - L3 With One-touch fittings for ø3.2
  - L4 With One-touch fittings for ø4
  - L6 With One-touch fittings for ø6
  - L5 M5 thread

Note 1) Can be changed to side ported configuration.
Note 2) Refer to page 54 for the inch-size One-touch fittings.

Port plug mounting port

- Nil None
- A Port 4(A)
- B Port 2(B)

- With/Without manifold block
  Without manifold block With manifold block
  - Built-in back pressure check valve

- Type of construction
  Kit
  - F kit
  - P kit
  - J kit
  - T kit
  - L kit
  - S kit
  - C kit

- How to Increase Manifold Stations
  Manifold Options
  Manifold Exploded View

Note 1) “D” is specified for 2 position double.
Note 2) For L kit, when the manifold specifies negative common, the valve common should also be negative. The combination of negative common of the valve cannot be specified with S kit (EX140).
Note 3) Except dual 3 port valves.
Note 4) When two or more symbols are specified, indicate them alphabetically.
## Series SQ1000

### Manifold Options

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blanking plate</td>
<td>SSQ1000-10A-3</td>
<td>P.42</td>
</tr>
<tr>
<td>Individual SUP/EXH spacer</td>
<td>SSQ1000-PR1-3-C6_C6</td>
<td>P.43</td>
</tr>
<tr>
<td>Name plate (-N)</td>
<td>SSQ1000-N3-n</td>
<td>P.45</td>
</tr>
<tr>
<td>External pilot specifications</td>
<td>SSQ1000-52A</td>
<td>P.46</td>
</tr>
<tr>
<td>SUP/EXH block</td>
<td>SSQ1000-PR3-C8(-S)</td>
<td>P.42</td>
</tr>
<tr>
<td>Block plate</td>
<td>SSQ1000-B-P</td>
<td>P.44</td>
</tr>
<tr>
<td>Blanking plug</td>
<td>KQ2P-23/04/06/08</td>
<td>P.45</td>
</tr>
<tr>
<td>Dual flow fitting</td>
<td>SSQ1000-52A</td>
<td>P.46</td>
</tr>
<tr>
<td>Individual SUP spacer</td>
<td>SSQ1000-P3-C6</td>
<td>P.42</td>
</tr>
<tr>
<td>EXH block plate</td>
<td>SSQ1000-B-R</td>
<td>P.44</td>
</tr>
<tr>
<td>Port plug</td>
<td>VVQZ100-CP</td>
<td>P.45</td>
</tr>
<tr>
<td>Silencer (For EXH port)</td>
<td></td>
<td>P.46</td>
</tr>
<tr>
<td>Individual EXH spacer</td>
<td>SSQ1000-R3-C6</td>
<td>P.43</td>
</tr>
<tr>
<td>Back pressure check valve (-B)</td>
<td>SSQ1000-BP</td>
<td>P.44</td>
</tr>
<tr>
<td>Built-in silencer, direct exhaust (-S)</td>
<td>SSQ1000-BP</td>
<td>P.45</td>
</tr>
<tr>
<td>Special wiring specifications</td>
<td></td>
<td>P.52</td>
</tr>
</tbody>
</table>

Although the standard products come with double wiring, mixed single and double wiring is available upon request.
How to Order Manifold Assembly

Example: D-sub connector kit, with cable (3 m)

2 position single (24 VDC)
SQ1130-51-C6 (4 sets)

2 position double (24 VDC)
SQ1230D-51-C6 (4 sets)

D-sub connector cable
AXT100-DS25-030

Manifold base (9 stations)
SS5Q13-09FD2-D

Blanking plate
SSQ1000-10A-3 (1 set)

Cylinder port fitting
C6: One-touch fitting for ø6

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

Add the valve and option part numbers in order starting from the first station on the D side.
When entry of part numbers becomes complicated, indicate on the manifold specification sheet.
## Valve Specifications

### Model

<table>
<thead>
<tr>
<th>Series</th>
<th>Type of actuation</th>
<th>Seal</th>
<th>Model</th>
<th>Flow characteristic (1)</th>
<th>Response time (ms) (2)</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ1000</td>
<td>2 position</td>
<td>Single</td>
<td>Metal seal</td>
<td>SQ1130</td>
<td>1 → 4/2 (P → A/B) 0.62 0.10 0.14 0.63 0.11 0.14</td>
<td>26 or less 12 or less 80</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td>SQ1131</td>
<td>0.79 0.20 0.19 0.80 0.20 0.19</td>
<td>24 or less 15 or less 80</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Double</td>
<td>Metal seal</td>
<td>SQ1230</td>
<td>0.62 0.10 0.14 0.63 0.11 0.14</td>
<td>13 or less 10 or less 95</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td>SQ1231</td>
<td>0.79 0.20 0.19 0.80 0.20 0.19</td>
<td>20 or less 15 or less 95</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Closed center</td>
<td>Metal seal</td>
<td>SQ1330</td>
<td>0.58 0.12 0.14 0.63 0.11 0.14</td>
<td>44 or less 29 or less 100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exhaust center</td>
<td>Rubber seal</td>
<td>SQ1331</td>
<td>0.79 0.20 0.19 0.80 0.20 0.19</td>
<td>39 or less 25 or less 100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pressure center</td>
<td>Metal seal</td>
<td>SQ1430</td>
<td>0.58 0.12 0.14 0.60 0.14 0.14</td>
<td>44 or less 29 or less 100</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rubber seal</td>
<td>SQ1431</td>
<td>0.64 0.20 0.15 0.80 0.20 0.19</td>
<td>39 or less 25 or less 100</td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Dual 3 port valve</td>
<td>Metal seal</td>
<td>SQ1530</td>
<td>0.62 0.12 0.14 0.63 0.14 0.14</td>
<td>44 or less 29 or less 100</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rubber seal</td>
<td>SQ1531</td>
<td>0.79 0.21 0.19 0.59 0.20 0.14</td>
<td>39 or less 25 or less 100</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rubber seal</td>
<td>SQ1531</td>
<td>0.59 0.28 0.15 0.59 0.28 0.15</td>
<td>27 or less 14 or less 95</td>
</tr>
</tbody>
</table>

### Specifications

<table>
<thead>
<tr>
<th>Valve construction</th>
<th>Metal seal</th>
<th>Rubber seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid</td>
<td>Air/Inert gas</td>
<td>Air/Inert gas</td>
</tr>
<tr>
<td>Maximum operating pressure</td>
<td>0.7 MPa (High pressure type (3): 1.0 MPa)</td>
<td>0.01 MPa</td>
</tr>
<tr>
<td>Single</td>
<td>0.1 MPa</td>
<td>0.15 MPa</td>
</tr>
<tr>
<td>Double (Double solenoid)</td>
<td>0.1 MPa</td>
<td>0.15 MPa</td>
</tr>
<tr>
<td>3 position</td>
<td>0.1 MPa</td>
<td>0.2 MPa</td>
</tr>
<tr>
<td>4 position</td>
<td>—</td>
<td>0.15 MPa</td>
</tr>
<tr>
<td>Ambient and fluid temp.</td>
<td>–10 to 50°C (1)</td>
<td>—</td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not required</td>
<td>Not required</td>
</tr>
<tr>
<td>Pilot valve manual override</td>
<td>Push type/Locking type (Tool required)</td>
<td>—</td>
</tr>
<tr>
<td>Vibration/Impact resistance (2)</td>
<td>30/150 m/s²</td>
<td>—</td>
</tr>
<tr>
<td>Protection structure</td>
<td>Dust tight</td>
<td>Dust tight</td>
</tr>
<tr>
<td>Coil rated voltage</td>
<td>12 VDC, 24 VDC</td>
<td>24 VDC</td>
</tr>
<tr>
<td>Allowable voltage fluctuation</td>
<td>±10% of rated voltage</td>
<td>—</td>
</tr>
<tr>
<td>Coil insulation type</td>
<td>Equivalent to class B</td>
<td>—</td>
</tr>
<tr>
<td>Power consumption (Current)</td>
<td>0.4 W DC (17 mA), 0.95 W DC (40 mA) (4)</td>
<td>0.4 W DC (34 mA), 0.95 W DC (80 mA) (4)</td>
</tr>
</tbody>
</table>

### Note

1) Values for the cylinder port size of C6, CYL → Values of EXH. Flow characteristics of 2 → 3 (B → R2) delines about 30% of 4 → 5 (A → R1).
2) Based on JIS B 8375-1981. (Values with a supply pressure of 0.5 MPa and light/surge voltage suppressor. Values fluctuate depending on the pressure and air quality.
3) Metal seal type only.
4) Value for quick response, high pressure type.

### Diagram

[Diagram of SQ1000 series valves]

---

Note 1) Use dry air to prevent condensation when operating at low temperatures.
Note 2) Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature.
(Values at the initial period)
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 deenergized states every once for each condition.

---

Note 3) Metal seal type only.
Note 4) Value for quick response, high pressure type.

---

JIS Symbol

2 position single

(A)4 2(B) (R1)(13)(2R2) (P)

2 position double (Double solenoid)

(A)4 2(B) (R1)(13)(2R2) (P)

Metal seal Rubber seal

3 position closed center

(A)4 2(B) (R1)(13)(2R2) (P)

3 position pressure center

(A)4 2(B) (R1)(13)(2R2) (P)

3 position exhaust center

(A)4 2(B) (R1)(13)(2R2) (P)

3 position dual 3 port valve (B)

4 position dual 3 port valve (A)

4 position dual 3 port valve (C)
## Manifold Specifications

<table>
<thead>
<tr>
<th>Base model</th>
<th>Porting specifications</th>
<th>Applicable solenoid valve</th>
<th>Type of connection</th>
<th>Applicable stations (3)</th>
<th>5-station weight (4)</th>
<th>Addition per station (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS5Q13-□□□</td>
<td>C8 (For ø8)</td>
<td>Side</td>
<td>F kit: D-sub connector</td>
<td>1 to 12 stations</td>
<td>420</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>P kit: Flat ribbon cable</td>
<td>1 to 12 stations</td>
<td>420</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>J kit: Flat ribbon cable</td>
<td>1 to 9 stations</td>
<td>420</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L kit: Lead wire</td>
<td>1 to 8 stations</td>
<td>460</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>S kit: Serial transmission</td>
<td>1 to 8 stations</td>
<td>475</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Notes:
1) One-touch fittings in inch sizes are also available. For details, refer to page 54.
2) Can be changed to side ported configuration.
3) An optional specification for special wiring is available to increase the maximum number of stations. Refer to page 52 for details.
4) Except valves. For valve weight, refer to page 9.

--

Refer to Best Pneumatics No.1 and the Operation Manual for the details of EX140 integrated-type (for output) serial transmission system. Please download it via our website, [http://www.smcworld.com](http://www.smcworld.com)
Series SQ1000

Kit (D-sub Connector Kit)

- The D-sub connector reduces installation labor for electrical connections.
- Using the D-sub connector (25P), conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
- Top or side receptacle position can be selected in accordance with the available mounting space.

### D-sub Connector (25 Pins)

**D-sub Connector Cable Assembly**

- **Cable Assembly**
  - Cable: 0.3 mm² x 25 cores
  - O.D.: ø1.4
  - Seal: (Length indication)
  - Molded cover: 2 x M2.6 x 0.45
  - Connector: DB-25SF-N (Manufactured by Japan Aviation Electronics Industry, Ltd.)
  - Socket side: 16 stations
  - Terminal no.: 47.04

**D-sub Connector Cable Assembly Terminal No.**

<table>
<thead>
<tr>
<th>Terminal number</th>
<th>Lead wire color</th>
<th>Dot marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Black</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>Brown</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>Red</td>
<td>None</td>
</tr>
<tr>
<td>4</td>
<td>Orange</td>
<td>None</td>
</tr>
<tr>
<td>5</td>
<td>Yellow</td>
<td>None</td>
</tr>
<tr>
<td>6</td>
<td>Pink</td>
<td>None</td>
</tr>
<tr>
<td>7</td>
<td>Blue</td>
<td>None</td>
</tr>
<tr>
<td>8</td>
<td>Purple</td>
<td>None</td>
</tr>
<tr>
<td>9</td>
<td>Gray</td>
<td>Black</td>
</tr>
<tr>
<td>10</td>
<td>White</td>
<td>Black</td>
</tr>
<tr>
<td>11</td>
<td>White</td>
<td>Red</td>
</tr>
<tr>
<td>12</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>13</td>
<td>Orange</td>
<td>Red</td>
</tr>
<tr>
<td>14</td>
<td>Yellow</td>
<td>Black</td>
</tr>
<tr>
<td>15</td>
<td>Orange</td>
<td>Black</td>
</tr>
<tr>
<td>16</td>
<td>Pink</td>
<td>Black</td>
</tr>
<tr>
<td>17</td>
<td>Purple</td>
<td>Black</td>
</tr>
<tr>
<td>18</td>
<td>Gray</td>
<td>Red</td>
</tr>
<tr>
<td>19</td>
<td>White</td>
<td>Red</td>
</tr>
<tr>
<td>20</td>
<td>Red</td>
<td>White</td>
</tr>
<tr>
<td>21</td>
<td>Brown</td>
<td>White</td>
</tr>
<tr>
<td>22</td>
<td>Pink</td>
<td>Red</td>
</tr>
<tr>
<td>23</td>
<td>Red</td>
<td>White</td>
</tr>
<tr>
<td>24</td>
<td>Black</td>
<td>None</td>
</tr>
</tbody>
</table>

- + For other commercial connectors, use a 25 pins type with female connector conforming to MIL-C-24308.
- + Cannot be used for movable wiring.
- + Lengths other than the above are also available. Please contact SMC for details.

### Electrical Wiring Specifications

**D-sub connector assembly wire colors**

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Polarities</th>
<th>Lead wire color</th>
<th>Dot marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 station</td>
<td>(+)</td>
<td>Black</td>
<td>None</td>
</tr>
<tr>
<td>2 stations</td>
<td>(+)(-)</td>
<td>Black</td>
<td>Black</td>
</tr>
<tr>
<td>3 stations</td>
<td>(+)</td>
<td>Brown</td>
<td>None</td>
</tr>
<tr>
<td>4 stations</td>
<td>(+)</td>
<td>Yellow</td>
<td>None</td>
</tr>
<tr>
<td>5 stations</td>
<td>(+)</td>
<td>Purple</td>
<td>None</td>
</tr>
<tr>
<td>6 stations</td>
<td>(+)</td>
<td>Gray</td>
<td>Black</td>
</tr>
<tr>
<td>7 stations</td>
<td>(+)(-)</td>
<td>Blue</td>
<td>None</td>
</tr>
<tr>
<td>8 stations</td>
<td>(+)</td>
<td>Gray</td>
<td>Black</td>
</tr>
<tr>
<td>9 stations</td>
<td>(+)</td>
<td>Pink</td>
<td>Black</td>
</tr>
<tr>
<td>10 stations</td>
<td>(+)</td>
<td>Red</td>
<td>White</td>
</tr>
<tr>
<td>11 stations</td>
<td>(+)</td>
<td>Purple</td>
<td>White</td>
</tr>
<tr>
<td>12 stations</td>
<td>(+)</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>13 stations</td>
<td>(+)</td>
<td>White</td>
<td>None</td>
</tr>
</tbody>
</table>

- Positive common: + Negative common: −

Note: When using the negative common specifications, use valves for negative common.

**Electrical Characteristics**

- Conductor resistance: 65 or less
- Withstand voltage: 1000
- Insulation resistance: 5 or more

Note: The minimum bending inner radius of D-sub connector cable is 20 mm.
Plug-in Unit Series SQ1000

Dimensions

<table>
<thead>
<tr>
<th>Station</th>
<th>L1 (mm)</th>
<th>L2 (mm)</th>
<th>L3 (mm)</th>
<th>L4 (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>67</td>
<td>90</td>
<td>113.5</td>
<td>136</td>
</tr>
<tr>
<td>2</td>
<td>78.5</td>
<td>101.5</td>
<td>124.5</td>
<td>136</td>
</tr>
<tr>
<td>3</td>
<td>90</td>
<td>113</td>
<td>124.5</td>
<td>136</td>
</tr>
<tr>
<td>4</td>
<td>101.5</td>
<td>113</td>
<td>124.5</td>
<td>136</td>
</tr>
<tr>
<td>5</td>
<td>112.5</td>
<td>113</td>
<td>124.5</td>
<td>136</td>
</tr>
</tbody>
</table>

Formula: \( L_1 = 11.5n + 55.5, \) \( L_2 = 11.5n + 73 \)

n: Stations (Maximum 24 stations)

Applicable connector: D-sub connector (25P)
(Conforming to MIL-C-24308)

Indicator light
Manual override
EXH outlet
Release for switching connector direction
One-touch fitting
[3(R), 1(P) port]
Applicable tubing O.D.: \( \Theta 8 \)

One-touch fitting, thread piping
[4(A), 2(B) port]
Applicable tubing O.D.: \( \Theta 3.2 \), \( \Theta 4 \), \( \Theta 6 \)
Thread size: M5
Flat ribbon cable connector reduces installation labor for electrical connection.

Using the connector for flat ribbon cable (26P, 20P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.

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

Flat Ribbon Cable (26 Pins, 20 Pins)

**Cable Assembly**

Type 26P flat ribbon cable connector assemblies can be ordered with manifolds. Refer to "How to Order Manifold".

**Flat Ribbon Cable Connector Assembly**

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

* For other commercial connectors, use a 26 pins or 20 pins with strain relief conforming to MIL-C-83503.
* Cannot be used for movable wiring.
* Lengths other than the above are also available. Please contact SMC for details.

**Connector manufacturers’ example**

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

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Maximum number of stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ1000</td>
<td>Side, Top</td>
<td>12 stations</td>
</tr>
</tbody>
</table>

**Electrical Wiring Specifications**

- Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types.
- Mixed single and double wiring is available as an option.

**Porting specifications**

**<26P>**

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Polarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 station</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>2 stations</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>3 stations</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>4 stations</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>5 stations</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>6 stations</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>7 stations</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>8 stations</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>9 stations</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>10 stations</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>11 stations</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>12 stations</td>
<td>(-) (+)</td>
</tr>
</tbody>
</table>

**<20P>**

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Polarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 station</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>2 stations</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>3 stations</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>4 stations</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>5 stations</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>6 stations</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>7 stations</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>8 stations</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>9 stations</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>10 stations</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>11 stations</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>12 stations</td>
<td>(-) (+)</td>
</tr>
</tbody>
</table>

**Note** When using the negative common specifications, use valves for negative common.
Applicable connector:
Flat ribbon cable connector (26P)
(Conforming to MIL-C-83503)

- **M5: External pilot port**
- **Indicator light**
- **Manual override**
- **EXH outlet**
- **Release for switching connector direction**
- **Plug-in Unit Series SQ1000**

**Dimensions**

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
<th>21</th>
<th>22</th>
<th>23</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>67</td>
<td>78.5</td>
<td>90</td>
<td>101.5</td>
<td>113</td>
<td>124.5</td>
<td>138</td>
<td>147.5</td>
<td>159</td>
<td>170.5</td>
<td>182</td>
<td>193.5</td>
<td>205</td>
<td>216.5</td>
<td>228</td>
<td>239.5</td>
<td>251</td>
<td>262.5</td>
<td>274</td>
<td>285.5</td>
<td>297</td>
<td>308.5</td>
<td>320</td>
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<td>L2</td>
<td>84.5</td>
<td>96</td>
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<td>142</td>
<td>153.5</td>
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<td>199.5</td>
<td>211</td>
<td>222.5</td>
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<td>245.5</td>
<td>257</td>
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<td>280</td>
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<td>303</td>
<td>314.5</td>
<td>326</td>
<td>337.5</td>
<td>349</td>
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<tr>
<td>L3</td>
<td>112.5</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>212.5</td>
<td>225</td>
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<td>262.5</td>
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<td>350</td>
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<td>375</td>
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<tr>
<td>L4</td>
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<td>160.5</td>
<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
<td>310.5</td>
<td>323</td>
<td>335.5</td>
<td>348</td>
<td>360.5</td>
<td>373</td>
<td>385.5</td>
</tr>
</tbody>
</table>

Formula: \(L1 = 11.5n + 55.5, L2 = 11.5n + 73\)  
\(n: \text{Stations (Maximum 24 stations)}\)
Series SQ1000

J Kit (PC Wiring System Compatible Flat Ribbon Cable Kit)

- Compatible with PC wiring system.
- Using connector for flat ribbon cable (20P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
- Top or side receptacle position can be selected in accordance with the available mounting space.

Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Maximum number of stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ1000</td>
<td>Side, Top C8, C3, C4, C6, M5</td>
<td>8 stations (16 as a semi-standard)</td>
</tr>
</tbody>
</table>

Electrical Wiring Specifications

- Double wiring (connected to SOL A and SOL B) is adopted for the internal wiring of each station, regardless of valve and option types.
- Mixed single and double wiring is available as an option.
- For details, refer to page 52.

Flat ribbon cable connector

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Polarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 station</td>
<td>SOL b 20 (-) (+)</td>
</tr>
<tr>
<td></td>
<td>SOL b 18 (-) (+)</td>
</tr>
<tr>
<td></td>
<td>SOL b 16 (-) (+)</td>
</tr>
<tr>
<td>2 stations</td>
<td>SOL b 14 (-) (+)</td>
</tr>
<tr>
<td></td>
<td>SOL b 12 (-) (+)</td>
</tr>
<tr>
<td>3 stations</td>
<td>SOL b 10 (-) (+)</td>
</tr>
<tr>
<td></td>
<td>SOL b 8 (-) (+)</td>
</tr>
<tr>
<td>4 stations</td>
<td>SOL b 6 (-) (+)</td>
</tr>
<tr>
<td>5 stations</td>
<td>SOL b 19 (-) (+)</td>
</tr>
<tr>
<td></td>
<td>SOL b 17 (-) (+)</td>
</tr>
<tr>
<td>6 stations</td>
<td>SOL b 15 (-) (+)</td>
</tr>
<tr>
<td></td>
<td>SOL b 13 (-) (+)</td>
</tr>
<tr>
<td>7 stations</td>
<td>SOL b 11 (-) (+)</td>
</tr>
<tr>
<td>8 stations</td>
<td>SOL b 9 (-) (+)</td>
</tr>
<tr>
<td></td>
<td>SOL b 7 (-) (+)</td>
</tr>
<tr>
<td></td>
<td>SOL b 5 (-) (+)</td>
</tr>
<tr>
<td></td>
<td>SOL b 4 (-) (+)</td>
</tr>
<tr>
<td></td>
<td>COM 3 (-) (+)</td>
</tr>
<tr>
<td></td>
<td>COM 2 (+) (-)</td>
</tr>
<tr>
<td></td>
<td>COM 1 (+) (-)</td>
</tr>
</tbody>
</table>

Note) When using the negative common specifications, use valves for negative common.
For details about the PC wiring system, refer to the PCW series catalog (CAT.E02-20) separately.
Plug-in Unit Series SQ1000

One-touch fitting
[3(R), 1(P) port]
Applicable tubing O.D.: ø8

One-touch fitting, thread piping
[4(A), 2(B) port]
Applicable tubing O.D.: ø3.2
: ø4
: ø6
Thread size: M5

Dimensions
Formula: L1 = 11.5n + 55.5, L2 = 11.5n + 73  n: Stations (Maximum 16 stations)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>67</td>
<td>78.5</td>
<td>90</td>
<td>101.5</td>
<td>113</td>
<td>124.5</td>
<td>136</td>
<td>147.5</td>
<td>159</td>
<td>170.5</td>
<td>182</td>
<td>193.5</td>
<td>205</td>
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<td>84.5</td>
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<td>199.5</td>
<td>211</td>
<td>222.5</td>
<td>234</td>
<td>245.5</td>
<td>257</td>
</tr>
<tr>
<td>L3</td>
<td>112.5</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
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<td>237.5</td>
<td>250</td>
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<td>275</td>
<td>287.5</td>
</tr>
<tr>
<td>L4</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>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
<td>285.5</td>
<td>298</td>
</tr>
</tbody>
</table>

Triangle mark indicator position
Release for switching connector direction
D side
U side

Applicable connector:
Flat ribbon cable connector (20P)
(Conforming to MIL-C-83503)

EXH outlet
Manual override
Indicator light

DIN rail clamp screw
2 x M4

EX510
P kit
F kit
J kit
S kit
C kit
L kit
T kit
Kit
Plug-in
Plug Lead
EX510
SQ 1000
SQ 2000

How to Increase Manifold Stations
Manifold Options
Construction kit
Manifold Exploded View

Manifold Options
Construction kit
Manifold Exploded View

Manifold Options
Construction kit
Manifold Exploded View
### Series SQ1000

#### Kit (Lead Wire Cable)

**Direct electrical entry type**

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Maximum number of stations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Port location</td>
<td>Port size</td>
</tr>
<tr>
<td>SQ1000</td>
<td>Side, Top</td>
<td>C8, C3, C4, C6, M5</td>
</tr>
</tbody>
</table>

#### Wiring Specifications: Positive Common Specifications

Three lead wires are included per station regardless of valves used. Among the three lead wires, the red wire is for COM.

<table>
<thead>
<tr>
<th>Lead wire color</th>
<th>Lead wire color</th>
<th>Station number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLA (-) Black</td>
<td>SOLA (-) Black</td>
<td>24AWG x 3 core cable</td>
</tr>
<tr>
<td></td>
<td>COM (+) Red</td>
<td>O.D. ø1.5</td>
</tr>
<tr>
<td>SOLB (-) White</td>
<td>SOLB (-) White</td>
<td></td>
</tr>
</tbody>
</table>

**Single solenoid**

- Black: A side solenoid (-)
- Red: COM (+)
- White: B side solenoid (-)

**Double solenoid**

- Red: A side solenoid (+)
- COM (-) Black
- COM (+) White

#### Wiring Specifications: Negative Common Specifications (Semi-standard)

Three lead wires are included per station regardless of valves used. Among the three lead wires, the black wire is for COM.

<table>
<thead>
<tr>
<th>Lead wire color</th>
<th>Lead wire color</th>
<th>Station number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLA (+) Red</td>
<td>SOLA (+) Red</td>
<td>24AWG x 3 core cable</td>
</tr>
<tr>
<td></td>
<td>COM (-) Black</td>
<td>O.D. ø1.5</td>
</tr>
<tr>
<td>SOLB (+) White</td>
<td>SOLB (+) White</td>
<td></td>
</tr>
</tbody>
</table>

**Single solenoid**

- Red: A side solenoid (+)
- Black: COM (-)
- White: B side solenoid (+)

**Double solenoid**

- Black: COM (-)
- Red: A side solenoid (+)
- White: B side solenoid (+)

#### Negative Common Specifications

The following part numbers are for negative common specifications.

**How to order negative common valves (Example)**

SQ1130 N -51-C6

*Negative common specifications*

**How to order negative common manifold (Example)**

SSSQ13-081LD1N-DIN

- Stations
- Kit type
- DIN rail mounting style
- Negative common specifications

*Note* When using the negative common specifications, use valves for negative common.

*Valves are numbered from the D side.*
**Plug-in Unit Series SQ1000**

**Dimensions**  
Formula: \( L_1 = 11.5n + 44.5, \ L_2 = 11.5n + 59 \)  
*n*: Stations (Maximum 12 stations)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>56</td>
<td>67.5</td>
<td>79</td>
<td>90.5</td>
<td>102</td>
<td>113.5</td>
<td>125</td>
<td>136.5</td>
<td>148</td>
<td>159.5</td>
<td>171</td>
<td>182.5</td>
</tr>
<tr>
<td>L2</td>
<td>70.5</td>
<td>82</td>
<td>93.5</td>
<td>105</td>
<td>116.5</td>
<td>128</td>
<td>139.5</td>
<td>151</td>
<td>162.5</td>
<td>174</td>
<td>185.5</td>
<td>197</td>
</tr>
<tr>
<td>L3</td>
<td>100</td>
<td>112.5</td>
<td>125</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>212.5</td>
<td>225</td>
</tr>
<tr>
<td>L4</td>
<td>110.5</td>
<td>123</td>
<td>135.5</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>
<td>223</td>
<td>235.5</td>
</tr>
</tbody>
</table>

**Lead wire length:**  
- \( L_0, \approx 0.6 \) m
- \( L_1, \approx 1.5 \) m
- \( L_2, \approx 3.0 \) m

**Station number:**
- P 1
- R 2
- ...n 8

**Electrical entry:**
- G1/2

**One-touch fitting, thread piping**
- [3(R), 1(P) port]

**Applicable tubing O.D.:**
- ø8
- ø4
- ø6

**Thread size:** M5

**EXH outlet**

**D side**

**U side**

**For top ported**

**One-touch fitting, thread piping**
- [4(A), 2(B) port]

**Applicable tubing O.D.:**
- ø3.2

**Thread size:** M5

---

**How to Increase Manifold Stations**

**Manifold Options**

**Construction Kit**

**Exploded View**
**Series SQ1000**

**Kit (Serial Transmission Unit)**

EX140 Integrated-type (for Output) Serial Transmission System

- The serial transmission system reduces wiring work, while minimizing wiring and saving space.
- The maximum number of stations is 8. (16 as a semi-standard).
- Only for type J2 and R2, the maximum stations are 4 (8 as a semi-standard).

Refer to Best Pneumatics No.1 and the Operation Manual for the details of EX140 integrated-type (for output) serial transmission system. Please download it via our website, http://www.smcworld.com

### Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Port size</th>
<th>Maximum number of stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ1000</td>
<td>Side, Top C8 C3, C4, C6, M5</td>
<td>8 stations (16 as a semi-standard)</td>
<td></td>
</tr>
</tbody>
</table>

### Dimensions

Formulas:
- L1 = 11.5n + 67
- L2 = 11.5n + 96.5
- n: Stations (Maximum 16 stations)

<table>
<thead>
<tr>
<th>L1</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>78.5</td>
<td>90</td>
<td>101.5</td>
<td>113</td>
<td>124.5</td>
<td>136</td>
<td>147.5</td>
<td>159</td>
<td>170.5</td>
<td>182</td>
<td>193.5</td>
<td>205</td>
<td>216.5</td>
<td>228</td>
<td>239.5</td>
<td>251</td>
<td></td>
</tr>
<tr>
<td>108</td>
<td>119.5</td>
<td>131</td>
<td>142.5</td>
<td>154</td>
<td>165.5</td>
<td>177</td>
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<td>211.5</td>
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<td>234.5</td>
<td>246</td>
<td>257.5</td>
<td>269</td>
<td>280.5</td>
<td></td>
</tr>
<tr>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
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<td></td>
</tr>
<tr>
<td>148</td>
<td>160.5</td>
<td>173</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
<td>310.5</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
- [4(A), 2(B) port]
  - One-touch fitting, thread piping
  - Applicable tubing O.D.: ø3.2

- [4(A), 2(B) port]
  - One-touch fitting, thread piping
  - Applicable tubing O.D.: ø3.2
  - Thread size: M5
**EX510 Gateway-type Serial Transmission System Plug-in Unit**

**Series SQ2000**

---

### How to Order Manifold

**Manifold series**

- **SS5Q23-SB**
- **08 - D**

**SI unit output polarity**

- **Nil**
- **Positive common**
- **N**
- **Negative common**

**Stations**

- **Symbol**
- **Stations**
- **Note**
  - 01: 1 station
  - 08: 8 stations

**Note:** Max. 16 stations (Special wiring specifications)

---

**Example**

2 position single (24 VDC)
SQ2130-51-C6 (3 sets)

2 position double (24 VDC)
SQ2230D-51-C6 (2 sets)

**Cylinder port fitting**

CE: One-touch fittings for ø6

**Manifold base (5 stations)**

SS5Q23-SB05

---

**How to Order Manifold**

1. **Add the valve and option part number under the manifold base part number.**
2. **When entry of part numbers becomes complicated, indicate by the manifold specification sheet.**

---

**Option**

- **Nil**: None
- **02 to 16 (1)**: DIN rail length specified
- **B (2)**: Back pressure check valve
- **K (3)**: Special wiring specifications (Except double wiring)
- **N**: With name plate (Side ported only)
- **R**: External pilot specifications
- **S**: Built-in silencer, direct exhaust

---

**Note:**

1. Specify DIN rail length with “D ” at the end. (Enter the number of stations inside “  ”.)
   - The number of stations that may be displayed is longer than the manifold number of stations.
   - Example: -D09
2. When “-B” is selected, a back pressure check valve is included in all stations of the manifold. If the back pressure check valve is used only for the station that need it, then specify the station location in the manifold specification. (“-B” is not necessary)
3. Specify “-K” for wiring specification for cases below.
   - All single wiring
   - Single and double mixed wiring
   - When there are stations which do not require wiring (e.g. single SUP spacer), specify the wiring specification in the manifold specification so that the number of the solenoids is 16 maximum. (Standard wiring specification is double wiring)
4. For specifying two or more options, enter them alphabetically.
   - Example: -BKN
   - Refer to pages 47 to 54 for manifold option parts.

---

**SI Unit Part No.**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>SI unit output polarity</th>
<th>SI unit part no.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Positive common</td>
<td>EX510-S002B</td>
<td>Best Pneumatics No.1</td>
</tr>
<tr>
<td>N</td>
<td>Negative common</td>
<td>EX510-S102B</td>
<td></td>
</tr>
</tbody>
</table>

---

Refer to Best Pneumatics No.1 and the Operation Manual for the details of EX510 gateway-type serial transmission system.
Please download it via our website, http://www.smcworld.com
How to Order Valves

**SQ 2 | 1 | 3 | 0 - 5 | 1 - C6 -**

- **Series**: SQ2000
- **Seal**: Metal seal (0), Rubber seal (1)

### Type of actuation

1. **2 position single**
   - (A) 2(B)
   - (R1) 3(R2)

2. **2 position double**
   - (A) 2(B)
   - (R1) 3(R2)

3. **3 position closed center**
   - (A) 2(B)
   - (R1) 3(R2)

4. **3 position exhaust center**
   - (A) 2(B)
   - (R1) 3(R2)

5. **3 position pressure center**
   - (A) 2(B)
   - (R1) 3(R2)

6. **4 position dual 3 port valve**
   - (A) 2(B)
   - (R1) 3(R2)

- **With/Without manifold block**
  - **Nil**: Without manifold block
  - **M**: With manifold block, built-in back pressure check valve
  - **MB**: With manifold block, built-in back pressure check valve

- **CE compliant**: Nil, Q (CE compliant)

### Port plug mounting port

- **Nil**: None
- **A**: Port 4(A)
- **B**: Port 2(B)

### Cylinder port

- **Symbol**: C4, C6, C8, L4, L6, L8
- **Port size**: One-touch fittings for ø4, ø6, ø8
- **Port location**: Side ported, Top (1) ported

### Manual override

- **Nil**: Non-locking push type (Tool required)
- **B**: Locking type (Tool required)
- **D**: Slide locking type (Manual type)
  - + Only side ported type applicable

### Rated voltage

- **5 24 VDC**

Note 1) “D” is specified for 2 position double.
Note 2) When SI unit output polarity is negative common, the valve common specification should also be negative common.
Note 3) Except dual 3 port valves.
Note 4) When two or more symbols are specified, indicate them alphabetically.

---

**EX510 Gateway-type Serial Transmission System**

*Plug-in Unit Series SQ2000*

---

**How to Increase Manifold Stations**

**Manifold Options**

**Construction**

**Exploded View**
Series SQ2000

Dimensions: SQ2000

Formula: \( L_1 = 17.5n + 122 \)  
\( n \): Stations (Maximum 16 stations)

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>L1</td>
<td>139.5</td>
<td>157</td>
<td>174.5</td>
<td>192</td>
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<td>244.5</td>
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<td>349.5</td>
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<td>384.5</td>
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<td>L2</td>
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<td>L3</td>
<td>173</td>
<td>198</td>
<td>210.5</td>
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<td>373</td>
<td>385.5</td>
<td>398</td>
<td>423</td>
<td>435.5</td>
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</table>

One-touch fitting
[3(R), 1(P) port] 
Applicable tubing O.D.: \( \phi10 \)

One-touch fitting
[4(A), 2(B) port] 
Applicable tubing O.D.: \( \phi4 \), \( \phi6 \), \( \phi8 \)
Plug-in Unit
Series SQ2000

How to Order Manifold

**SS5Q23-08FD2-D**

**1(P), (3(R) port size**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Protocol type</th>
<th>SI unit part no.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDJ</td>
<td>NKE Corp.: Fieldbus System</td>
<td>EX140-SSL1</td>
<td>47</td>
</tr>
<tr>
<td>SDJH</td>
<td>NKE Corp.: Fieldbus H System</td>
<td>EX140-SUW1</td>
<td>48</td>
</tr>
<tr>
<td>SDJ1</td>
<td>Panasonic Electric Works SUNX Co., Ltd.: S-LINK (16 output points)</td>
<td>EX140-SSL1</td>
<td>48</td>
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<tr>
<td>SDJ2</td>
<td>Panasonic Electric Works SUNX Co., Ltd.: S-LINK (8 output points)</td>
<td>EX140-SSL2</td>
<td>49</td>
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</tbody>
</table>

**CE compliant**

| Note 1 | Specifying 2 or more option types, specify two or more options alphabetically. Example: -BNK | Refer to pages 47 to 54 for manifold option parts. |

**Stations**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Protocol type</th>
<th>SI unit part no.</th>
<th>Page</th>
</tr>
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<tbody>
<tr>
<td>SDJ</td>
<td>NKE Corp.: Fieldbus System</td>
<td>EX140-SSL1</td>
<td>47</td>
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<tr>
<td>SDJH</td>
<td>NKE Corp.: Fieldbus H System</td>
<td>EX140-SUW1</td>
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<td>EX140-SSL1</td>
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<td>SDJ2</td>
<td>Panasonic Electric Works SUNX Co., Ltd.: S-LINK (8 output points)</td>
<td>EX140-SSL2</td>
<td>49</td>
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</table>

**Electrical entry**

<table>
<thead>
<tr>
<th>Kit type</th>
<th>Lead wire connector location</th>
<th>Cable/SI unit specifications</th>
<th>Station (Double wiring)</th>
<th>Max. number of stations for special wiring specifications</th>
<th>Max. number of solenoids for special wiring specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>F kit</td>
<td>D side</td>
<td>D-sub connector (25P) kit, without cable</td>
<td>1 to 12 stations</td>
<td>16 stations</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D-sub connector (25P) kit, with 1.5 m cable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>D-sub connector (25P) kit, with 3.0 m cable</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Flat ribbon cable (25P) kit, without cable</td>
<td>1 to 12 stations</td>
<td>16 stations</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flat ribbon cable (25P) kit, with 1.5 m cable</td>
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<td>Flat ribbon cable (25P) kit, with 3.0 m cable</td>
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<td>Flat ribbon cable (26P) kit, without cable</td>
<td>1 to 9 stations</td>
<td>16 stations</td>
<td>18</td>
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<td>Flat ribbon cable (26P) kit, with 1.5 m cable</td>
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<tr>
<td></td>
<td></td>
<td>Flat ribbon cable (26P) kit, with 3.0 m cable</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>J kit</td>
<td>D side</td>
<td>Flat ribbon cable (20P) PC wiring system compatible</td>
<td>1 to 8 stations</td>
<td>16 stations</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flat ribbon cable (20P) PC wiring system compatible</td>
<td></td>
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</tr>
<tr>
<td>T kit</td>
<td>D side</td>
<td>Terminal block box kit</td>
<td>1 to 10 stations</td>
<td>16 stations</td>
<td>16</td>
</tr>
<tr>
<td>L kit</td>
<td>D side</td>
<td>Lead wire kit with 0.6 m cable</td>
<td>1 to 12 stations</td>
<td>16 stations</td>
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</tr>
<tr>
<td></td>
<td>U side</td>
<td>Lead wire kit with 1.5 m cable</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Lead wire kit with 3.0 m cable</td>
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<td></td>
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</tr>
<tr>
<td>S kit</td>
<td>D side</td>
<td>NKE Corp.: Fieldbus System</td>
<td>1 to 8 stations</td>
<td>16 stations</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NKE Corp.: Fieldbus H System</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Panasonic Electric Works SUNX Co., Ltd.: S-LINK (16 output points)</td>
<td>1 to 4 stations</td>
<td>8 stations</td>
<td>8</td>
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<tr>
<td></td>
<td></td>
<td>Panasonic Electric Works SUNX Co., Ltd.: S-LINK (8 output points)</td>
<td>1 to 8 stations</td>
<td>16 stations</td>
<td>16</td>
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<tr>
<td></td>
<td></td>
<td>OMRON Corp.: CompoBus/S (16 output points)</td>
<td>1 to 4 stations</td>
<td>8 stations</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OMRON Corp.: CompoBus/S (8 output points)</td>
<td>1 to 10 stations</td>
<td>16 stations</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CC-LINK</td>
<td>1 to 10 stations</td>
<td>16 stations</td>
<td>16</td>
</tr>
</tbody>
</table>

**Manifold mounting**

<table>
<thead>
<tr>
<th>DIN rail mounting style</th>
<th>Direct mounting style</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>Nil</td>
</tr>
<tr>
<td>02 to 16 (1)</td>
<td>DIN rail length specified</td>
</tr>
<tr>
<td>B (2)</td>
<td>Back pressure check valve</td>
</tr>
<tr>
<td>K (3)</td>
<td>Social wing specifications (except double wiring)</td>
</tr>
<tr>
<td>N</td>
<td>With name plate (side ported only)</td>
</tr>
<tr>
<td>R</td>
<td>External pilot specifications</td>
</tr>
<tr>
<td>S</td>
<td>Built-in silencer, direct exhaust</td>
</tr>
</tbody>
</table>

**Option**

<table>
<thead>
<tr>
<th>Note</th>
<th>Refer to page 53 for details</th>
</tr>
</thead>
</table>

**Note 1** Specify DIN rail length with "□" at the end. (Enter the number of stations inside □.) The number of stations that may be displayed is longer than the manifold number of stations. Example: -20B

**Note 2** When "B" is selected, a back pressure check valve is included in all stations of the manifold. If the back pressure check valve is used only for the station that need it, then specify the station location in the manifold specification. "B" is not necessary.

**Note 3** Specify "K" for wiring specification for cases below: (Except L kit)

- All single wiring
- Single and double mixed wiring
- When there are stations which do not require wiring (e.g. single SUP spaces), specify the wiring specification in the manifold specification so that the number of solenoids is the maximum number of solenoids or less. (Standard wiring specification is double wiring)

**Note 4** For specifying two or more options, enter them alphabetically. Example: -BNK

- Refer to pages 47 to 54 for manifold option parts.

**Note 3** Refer to Best Pneumatics No.1 and the Operation Manual for the details of EX140 integrated-type (for output) serial transmission system.

Please download it via our website, http://www.smcworld.com — Refer to page 66 for manifold spare parts.
How to Order Valves

**SQ2** 1 3 0 - 5 1 - C6

- **CE compliant**
  - Nil
  - Q CE compliant

- **With/Without manifold block**
  - Nil
  - M
  - MB

  - Without manifold block
  - With manifold block
    - With manifold block, built-in back pressure check valve

- **Port plug mounting port**
  - Nil
  - A Port 4(A)
  - B Port 2(B)

- **Cylinder port**
  - Symbol
  - Port size
  - Port location
  - C4 With One-touch fittings for ø4
  - C6 With One-touch fittings for ø6
  - C8 With One-touch fittings for ø8
  - L4 With One-touch fittings for ø4
  - L6 With One-touch fittings for ø6
  - L8 With One-touch fittings for ø8

  - Side ported
  - Top (1) ported

- **Manual override**
  - Nil
  - B
  - D

  - Non-locking push type (Tool required)
  - Locking type (Tool required)
  - Slide locking type (Manual type)
    - Only side ported type applicable

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

  - Note 1) Light/surge voltage suppressor is built-in.
  - Note 2) S kit: 24 VDC only

**Function**

- **Type of actuation**
  - 2 position single
  - (A4) 2(B)
  - 2 position double
  - (Double solenoid) (1)
  - 3 position closed center
  - (A4) 2(B)
  - 3 position exhaust center
  - (A4) 2(B)
  - 3 position pressure center
  - (A4) 2(B)
  - 4 position dual 3 port valve
  - 4 position dual 3 port valve
  - 4 position dual 3 port valve

- **Symbol**
  - Nil
  - B
  - C

- **Seal**
  - Metal seal
  - Rubber seal

- **Metal seal**
  - A
  - B

- **Rubber seal**
  - C

- **Note**
  - 1) For double solenoid specification, the function symbol below is "D".
  - 2) Only rubber seal types are applicable.
### Series SQ2000

**Manifold Options**

<table>
<thead>
<tr>
<th>Blanking plate</th>
<th>Individual SUP/EXH spacer</th>
<th>Name plate (-N)</th>
<th>External pilot specifications (-R)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSQ2000-10A-3 P.47</td>
<td>SSQ2000-PR1-3-C8 L8 P.48</td>
<td>SSQ2000-N3-n P.50</td>
<td>External pilot port</td>
</tr>
<tr>
<td>SUP/EXH block</td>
<td>SUP block plate</td>
<td>Blank plug</td>
<td>Dual flow fitting</td>
</tr>
<tr>
<td>SSQ2000-PR-3-C10(-S) P.47</td>
<td>SSQ1000-B-R P.49</td>
<td>KQ2P-04/06/08/10</td>
<td>SSQ2000-52A-C10 N11 P.51</td>
</tr>
<tr>
<td>Individual SUP spacer</td>
<td>EXH block plate</td>
<td>Port plug</td>
<td>Silencer (For EXH port)</td>
</tr>
<tr>
<td>SSQ2000-P-3-C8 L8 P.47</td>
<td>SSQ2000-B-R P.49</td>
<td>VVQZ2000-CP P.50</td>
<td>P.51</td>
</tr>
<tr>
<td>Individual EXH spacer</td>
<td>Back pressure check valve</td>
<td>Built-in silencer,</td>
<td>Special wiring specifications (-K)</td>
</tr>
<tr>
<td>SSQ2000-R-3-C8 L8 P.48</td>
<td>(-B) SSQ2000-BP P.49</td>
<td>direct exhaust (-S)</td>
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<td>52</td>
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</tbody>
</table>

Although the standard products come with double wiring, mixed single and double wiring is available upon request.
How to Order Manifold Assembly

Example: D-sub connector kit, with cable (3 m)

SSSQ23-08FD2-D ··· 1 set (F kit 8-station manifold base)
* SQ2130-51-C8 ····· 3 sets (2 position single)
* SQ2230D-51-C8 ··· 3 sets (2 position double)
* SQ2330-51-C8 ··· 1 set (3 position closed center)
* SSQ2000-10A-3 ··· 1 set (Blanking plate)

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

Add the valve and option part numbers in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate on the manifold specification sheet.
## Valve Specifications

### Model

<table>
<thead>
<tr>
<th>Series</th>
<th>Type of actuation</th>
<th>Seal</th>
<th>Model</th>
<th>Flow characteristic (1)</th>
<th>Response time (ms) (2)</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 position</td>
<td>Metal seal</td>
<td>SQ2130</td>
<td>2/3/4 (P→A/B) 4/2 → 5/3 (A/B→R1/R2)</td>
<td>Standard (0.4 W)</td>
<td>Quick response (0.95 W)</td>
</tr>
<tr>
<td>SQ2000</td>
<td>Single</td>
<td>Metal seal</td>
<td>SQ2131</td>
<td>2/3/4 (P→A/B) 4/2 → 5/3 (A/B→R1/R2)</td>
<td>Standard (0.4 W)</td>
<td>Quick response (0.95 W)</td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td>Metal seal</td>
<td>SQ2230D</td>
<td>2/3/4 (P→A/B) 4/2 → 5/3 (A/B→R1/R2)</td>
<td>Standard (0.4 W)</td>
<td>Quick response (0.95 W)</td>
</tr>
<tr>
<td></td>
<td>Closed center</td>
<td>Metal seal</td>
<td>SQ2231</td>
<td>2/3/4 (P→A/B) 4/2 → 5/3 (A/B→R1/R2)</td>
<td>Standard (0.4 W)</td>
<td>Quick response (0.95 W)</td>
</tr>
<tr>
<td></td>
<td>Exhaust center</td>
<td>Metal seal</td>
<td>SQ2230D</td>
<td>2/3/4 (P→A/B) 4/2 → 5/3 (A/B→R1/R2)</td>
<td>Standard (0.4 W)</td>
<td>Quick response (0.95 W)</td>
</tr>
<tr>
<td></td>
<td>Pressure center</td>
<td>Metal seal</td>
<td>SQ2231</td>
<td>2/3/4 (P→A/B) 4/2 → 5/3 (A/B→R1/R2)</td>
<td>Standard (0.4 W)</td>
<td>Quick response (0.95 W)</td>
</tr>
<tr>
<td></td>
<td>Dual 3 port valve</td>
<td>Metal seal</td>
<td>SQ2231</td>
<td>2/3/4 (P→A/B) 4/2 → 5/3 (A/B→R1/R2)</td>
<td>Standard (0.4 W)</td>
<td>Quick response (0.95 W)</td>
</tr>
</tbody>
</table>

### Specifications

#### Valve construction

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Metal seal</th>
<th>Rubber seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min. fluid pressure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. fluid pressure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min. operating pressure</td>
<td>0.1 MPa</td>
<td>0.15 MPa</td>
</tr>
<tr>
<td>Max. operating pressure</td>
<td>0.1 MPa</td>
<td>0.15 MPa</td>
</tr>
</tbody>
</table>

#### Lubrication

- Not required

#### Pilot valve manual override

- Push type (Tool required/Locking type (Tool required)/Slide locking type (Manual type)

#### Vibration/Impact resistance (2)

- 3 position: 0.14 MPa
- 4 position: 0.15 MPa

#### Protection structure

- Dust tight

#### Ambient fluid temperature

- –10 to 50°C (1)

#### Solenoid specifications

<table>
<thead>
<tr>
<th>Power consumption (Current)</th>
<th>24 VDC</th>
<th>12 VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 W DC (17 mA)</td>
<td>0.95 W DC (40 mA)</td>
<td></td>
</tr>
<tr>
<td>4 W DC (34 mA)</td>
<td>0.95 W DC (80 mA)</td>
<td></td>
</tr>
</tbody>
</table>

### Notes

1) Values for the top ported cylinder port size of C8. CYL → Values of EXH. The side ported type will be about 10% less.

2) Based on JIS B 8375-1981. (Values with a supply pressure of 0.5 MPa and light/surge voltage suppressor. Values fluctuate depending on the pressure and air quality.)

3) Value for quick response type.

---

**JIS Symbol**

- 2 position single (A)4 (B)2
- 2 position double (Double solenoid) (A)4 (B)2
- 3 position closed center (A)4 (B)2
- 3 position exhaust center (A)4 (B)2
- 3 position pressure center (A)4 (B)2

---

**Solenoid specifications**

- 2 position double (Double solenoid) (A)4 (B)2
- 3 position closed center (A)4 (B)2
- 3 position exhaust center (A)4 (B)2
- 3 position pressure center (A)4 (B)2
- 4 position dual 3 port valve (B) (A)4 (B)2
- 4 position dual 3 port valve (A) (A)4 (B)2
- 4 position dual 3 port valve (C) (A)4 (B)2

---

**Important Notes**

1) Use dry air to prevent condensation when operating at low temperatures.

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

3) 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.
# Manifold Specifications

<table>
<thead>
<tr>
<th>Base model</th>
<th>Porting specifications</th>
<th>Applicable solenoid valve</th>
<th>Type of connection</th>
<th>Applicable stations (3)</th>
<th>5-station weight (4) (g)</th>
<th>Addition per station (4) (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS5Q23-□□□</td>
<td>C10 (For ø10) Side</td>
<td>C4 (For ø4) C6 (For ø6) C8 (For ø8)</td>
<td>F kit: D-sub connector</td>
<td>1 to 12 stations</td>
<td>580</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Option Built-in silencer, direct exhaust Top (2)</td>
<td>L4 (For ø4) L6 (For ø6) L8 (For ø8)</td>
<td>P kit: Flat ribbon cable</td>
<td>1 to 12 stations</td>
<td>580</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>J kit: Flat ribbon cable</td>
<td>1 to 8 stations</td>
<td>580</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>T kit: Terminal block</td>
<td>1 to 10 stations</td>
<td>1,165</td>
<td>620</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L kit: Lead wire</td>
<td>1 to 12 stations</td>
<td>620</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>S kit: Serial transmission</td>
<td>1 to 8 stations</td>
<td>650</td>
<td>35</td>
</tr>
</tbody>
</table>

Note 1) One-touch fittings in inch sizes are also available. For details, refer to page 54.

Note 2) Can be changed to side ported configuration.

Note 3) An optional specification for special wiring is available to increase the maximum number of stations. Refer to page 52 for details.

Note 4) Except valves. For valve weight, refer to page 29.

![Manifold Exploded View](image-url)

Refer to Best Pneumatics No.1 and the Operation Manual for the details of EX140 integrated-type (for output) serial transmission system. Please download it via our website, http://www.smcworld.com
**Series SQ2000**

**F**

**Kit (D-sub Connector Kit)**

- Simplification and labor savings for wiring work can be achieved by using a D-sub connector for the electrical connection.
- Using connector for flat ribbon cable (25P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
- Top or side entry for the connector can be changed freely, allowing later changes according to the mounting space.

**D-sub Connector (25 Pin)**

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Maximum number of stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ2000</td>
<td>Side, Top</td>
<td>12 stations</td>
</tr>
</tbody>
</table>

**Electrical Wiring Specifications**

As the standard electrical wiring specifications, double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station for 12 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 52.

**Cable Assembly**

- AXT100-DS25-015
- AXT100-DS25-030
- AXT100-DS25-050

- D-sub connector cable assemblies can be ordered with manifolds. Refer to manifold ordering.

**D-sub Connector Cable Assembly Terminal No.**

<table>
<thead>
<tr>
<th>Terminal number</th>
<th>Lead wire color</th>
<th>Dot marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Black</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>Brown</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>Red</td>
<td>None</td>
</tr>
<tr>
<td>4</td>
<td>Orange</td>
<td>None</td>
</tr>
<tr>
<td>5</td>
<td>Yellow</td>
<td>None</td>
</tr>
<tr>
<td>6</td>
<td>Pink</td>
<td>None</td>
</tr>
<tr>
<td>7</td>
<td>Blue</td>
<td>None</td>
</tr>
<tr>
<td>8</td>
<td>Purple</td>
<td>None</td>
</tr>
<tr>
<td>9</td>
<td>Gray</td>
<td>None</td>
</tr>
<tr>
<td>10</td>
<td>White</td>
<td>None</td>
</tr>
<tr>
<td>11</td>
<td>Black</td>
<td>None</td>
</tr>
<tr>
<td>12</td>
<td>Yellow</td>
<td>None</td>
</tr>
<tr>
<td>13</td>
<td>Orange</td>
<td>None</td>
</tr>
<tr>
<td>14</td>
<td>Red</td>
<td>None</td>
</tr>
<tr>
<td>15</td>
<td>Pink</td>
<td>None</td>
</tr>
<tr>
<td>16</td>
<td>Blue</td>
<td>None</td>
</tr>
<tr>
<td>17</td>
<td>Purple</td>
<td>None</td>
</tr>
<tr>
<td>18</td>
<td>Gray</td>
<td>None</td>
</tr>
<tr>
<td>19</td>
<td>White</td>
<td>None</td>
</tr>
<tr>
<td>20</td>
<td>Red</td>
<td>None</td>
</tr>
<tr>
<td>21</td>
<td>Brown</td>
<td>None</td>
</tr>
<tr>
<td>22</td>
<td>Pink</td>
<td>None</td>
</tr>
<tr>
<td>23</td>
<td>Red</td>
<td>None</td>
</tr>
<tr>
<td>24</td>
<td>Black</td>
<td>None</td>
</tr>
<tr>
<td>25</td>
<td>White</td>
<td>None</td>
</tr>
</tbody>
</table>

**Lead wire colors for D-sub connector assembly (AXT100-DS25-015-030-050)**

- Terminal no. 1: SOL.a
- Terminal no. 2: SOL.b
- Lead wire color: Black
- Dot marking: None

**Electric Characteristics**

- **Connector manufacturers’ example**
  - Fujitsu, Ltd.
  - Japan Aviation Electronics Industry, Ltd.
  - J.S.T. Mfg. Co., Ltd.
  - Hirose Electric Co., Ltd.

**Note**

- The minimum bending radius for D-sub connector cable is 20 mm.
Applicable connector: D-sub connector (25P) (Conforming to MIL-C-24308)

For top ported

P = 17.5

Applicable tubing O.D.: \( \Phi 10 \)

Dimensions

Formula: \( L1 = 17.5n + 52, L2 = 17.5n + 74.5 \)  
\( n: \) Stations (Maximum 16 stations)

<table>
<thead>
<tr>
<th>( L )</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>69.5</td>
<td>87</td>
<td>104.5</td>
<td>122</td>
<td>139.5</td>
<td>157</td>
<td>174.5</td>
<td>192</td>
<td>209.5</td>
<td>227</td>
<td>244.5</td>
<td>262</td>
<td>279.5</td>
<td>297</td>
<td>314.5</td>
<td>332</td>
</tr>
<tr>
<td>L2</td>
<td>92</td>
<td>109.5</td>
<td>127</td>
<td>144.5</td>
<td>162</td>
<td>179.5</td>
<td>197</td>
<td>214.5</td>
<td>232</td>
<td>249.5</td>
<td>267</td>
<td>284.5</td>
<td>302</td>
<td>319.5</td>
<td>337</td>
<td>354.5</td>
</tr>
<tr>
<td>L3</td>
<td>112.5</td>
<td>137.5</td>
<td>150</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>225</td>
<td>237.5</td>
<td>262.5</td>
<td>275</td>
<td>287.5</td>
<td>312.5</td>
<td>325</td>
<td>350</td>
<td>362.5</td>
<td>375</td>
</tr>
<tr>
<td>L4</td>
<td>123</td>
<td>148</td>
<td>160.5</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>235.5</td>
<td>248</td>
<td>273</td>
<td>285.5</td>
<td>298</td>
<td>323</td>
<td>335.5</td>
<td>360.5</td>
<td>373</td>
<td>385.5</td>
</tr>
</tbody>
</table>
Flat ribbon cable connector reduces installation labor for electrical connection.
- Using the connector for flat ribbon cable (26P, 20P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
- Top or side receptacle position can be selected in accordance with the available mounting space.

Flat Ribbon Cable Connector Assembly

<table>
<thead>
<tr>
<th>Cable length (L)</th>
<th>26P Assembly part no.</th>
<th>20P Assembly part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>AXT100-FC26-1</td>
<td>AXT100-FC20-1</td>
</tr>
<tr>
<td>3 m</td>
<td>AXT100-FC26-2</td>
<td>AXT100-FC20-2</td>
</tr>
<tr>
<td>5 m</td>
<td>AXT100-FC26-3</td>
<td>AXT100-FC20-3</td>
</tr>
</tbody>
</table>

- For other commercial connectors, use a 26 pins or 20 pins with strain relief conforming to MIL-C-83503.
- Cannot be used for movable wiring.
- Lengths other than the above are also available. Please contact SMC for details.

Connector manufacturers’ example
- Hirose Electric Co., Ltd.
- Sumitomo 3M Limited
- Fujitsu Limited
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Oki Electric Cable Co., Ltd.

Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Port location</th>
<th>Port size</th>
<th>Maximum number of stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ2000</td>
<td>Side, Top</td>
<td>C10, C4, C6, C8</td>
<td>12 stations (16 as a semi-standard)</td>
</tr>
</tbody>
</table>

Electrical Wiring Specifications

- Double wiring (connected to SOL A and SOL B) is adopted for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring is available as an option.
- For details, refer to page 52.

Note) When using the negative common specifications, use valves for negative common.
Dimensions

Formula: \( L1 = 17.5n + 52, \ L2 = 17.5n + 74.5 \)  
\( n: \) Stations (Maximum 16 stations)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
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</thead>
<tbody>
<tr>
<td>L1</td>
<td>69.5</td>
<td>87</td>
<td>104.5</td>
<td>122</td>
<td>139.5</td>
<td>157</td>
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<td>192</td>
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<td>262</td>
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<td>297</td>
<td>314.5</td>
<td>332</td>
</tr>
<tr>
<td>L2</td>
<td>92</td>
<td>109.5</td>
<td>127</td>
<td>144.5</td>
<td>162</td>
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<td>197</td>
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<td>284.5</td>
<td>302</td>
<td>319.5</td>
<td>337</td>
<td>354.5</td>
</tr>
<tr>
<td>L3</td>
<td>112.5</td>
<td>137.5</td>
<td>150</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>225</td>
<td>237.5</td>
<td>262.5</td>
<td>275</td>
<td>287.5</td>
<td>312.5</td>
<td>325</td>
<td>350</td>
<td>362.5</td>
<td>375</td>
</tr>
<tr>
<td>L4</td>
<td>123</td>
<td>148</td>
<td>160.5</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>235.5</td>
<td>248</td>
<td>273</td>
<td>285.5</td>
<td>298</td>
<td>323</td>
<td>335.5</td>
<td>360.5</td>
<td>373</td>
<td>385.5</td>
</tr>
</tbody>
</table>

For top ported

One-touch fitting

3(R), 1(P) port

Applicable tubing O.D.: \( \phi 10 \)

For top ported

One-touch fitting

4(A), 2(B) port

Applicable tubing O.D.: \( \phi 4, \phi 6, \phi 8 \)

Other contents:
- M5: External pilot port
- Release for switching connector direction
- Triangle mark indicator position

Applicable connector:
Flat ribbon cable connector (26P)

(Conforming to MIL-C-83503)
Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types.

Mixed single and double wiring is available as an option. For details, refer to page 52.

### Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Maximum number of stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ2000</td>
<td>Side, Top C10 C4, C6, C8</td>
<td>8 stations (16 as a semi-standard)</td>
</tr>
</tbody>
</table>

- Valves are numbered from the D side.
- Top or side receptacle position can be selected in accordance with the available mounting space.

### Electrical Wiring Specifications

Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 52.

#### Flat ribbon cable connector

- Terminal no.: 1 to 20
- Connector terminal no.: 1 to 20
- Triangle mark indicator position: 1 to 20

#### Terminal no. and Polarity

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Polarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 station</td>
<td></td>
</tr>
<tr>
<td>SOL.b</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>18</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>SOL.b</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>16</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>SOL.b</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>14</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>SOL.b</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>12</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>SOL.b</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>10</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>SOL.b</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>8</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>SOL.b</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>6</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>SOL.b</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>4</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>SOL.b</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>2</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>1</td>
<td>(-) (+)</td>
</tr>
<tr>
<td>COM</td>
<td>(+) (-)</td>
</tr>
<tr>
<td>2</td>
<td>(+) (-)</td>
</tr>
<tr>
<td>1</td>
<td>(+) (-)</td>
</tr>
</tbody>
</table>

Note: When using the negative common specifications, use valves for negative common. For details about the PC wiring system, refer to the PCW series catalog (CAT.E02-20) separately.
Dimensions

Formula: L1 = 17.5n + 52, L2 = 17.5n + 74.5  n: Stations (Maximum 16 stations)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>69.5</td>
<td>87</td>
<td>104.5</td>
<td>122</td>
<td>139.5</td>
<td>157</td>
<td>174.5</td>
<td>192</td>
<td>209.5</td>
<td>227</td>
<td>244.5</td>
<td>262</td>
<td>279.5</td>
<td>297</td>
<td>314.5</td>
<td>332</td>
</tr>
<tr>
<td>L2</td>
<td>92</td>
<td>109.5</td>
<td>127</td>
<td>144.5</td>
<td>162</td>
<td>179.5</td>
<td>197</td>
<td>214.5</td>
<td>232</td>
<td>249.5</td>
<td>267</td>
<td>284.5</td>
<td>302</td>
<td>319.5</td>
<td>337</td>
<td>354.5</td>
</tr>
<tr>
<td>L3</td>
<td>112.5</td>
<td>137.5</td>
<td>150</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>225</td>
<td>237.5</td>
<td>262.5</td>
<td>275</td>
<td>287.5</td>
<td>312.5</td>
<td>325</td>
<td>350</td>
<td>362.5</td>
<td>375</td>
</tr>
<tr>
<td>L4</td>
<td>123</td>
<td>148</td>
<td>160.5</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>235.5</td>
<td>248</td>
<td>273</td>
<td>285.5</td>
<td>298</td>
<td>323</td>
<td>335.5</td>
<td>360.5</td>
<td>373</td>
<td>385.5</td>
</tr>
</tbody>
</table>

For top ported

Applicable tubing O.D.: ø10

One-touch fitting
[3(R), 1(P) port]

Manifold Options

Construction kit kit

Intermediate kit kit

How to Increase Manifold Stations

Manifold Exploded View

Plug-in Unit Series SQ2000
**Series SQ2000**

**Kit (Terminal Block Box Kit)**

- This kit has a small terminal box inside a junction box. The electrical entry port (G3/4) permits connection of conduit fittings.
- The maximum number of stations is 10 (16 as a semi-standard).

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Maximum number of stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ2000</td>
<td>Side, Top C10 C4, C6, C8</td>
<td>10 stations (16 as a semi-standard)</td>
</tr>
</tbody>
</table>

**Electrical Wiring Specifications**

As the standard electrical wiring specifications, double wiring (connected to SOL A and SOL B) is adopted for the internal wiring of each station for 10 stations or less, regardless of valve and option types.

Mixed single and double wiring is available as an option.

For details, refer to page 52.

**Terminal no.**

1 station

- SOL_a 1A (-) (+)
- SOL_a 1B (-) (+)

2 stations

- SOL_a 2A (-) (+)
- SOL_a 2B (-) (+)

3 stations

- SOL_a 3A (-) (+)
- SOL_b 3B (-) (+)

4 stations

- SOL_a 4A (-) (+)
- SOL_b 4B (-) (+)

5 stations

- SOL_a 5A (-) (+)
- SOL_b 5B (-) (+)

6 stations

- SOL_a 6A (-) (+)
- SOL_b 6B (-) (+)

7 stations

- SOL_a 7A (-) (+)
- SOL_b 7B (-) (+)

8 stations

- SOL_a 8A (-) (+)
- SOL_b 8B (-) (+)

9 stations

- SOL_a 9A (-) (+)
- SOL_b 9B (-) (+)

10 stations

- SOL_a 10A (-) (+)
- SOL_b 10B (-) (+)

**COM.** (+) (-)

**Note:** When using the negative common specifications, use valves for negative common.
**Plug-in Unit Series SQ2000**

**Dimensions**

<table>
<thead>
<tr>
<th>L</th>
<th>n 1</th>
<th>n 2</th>
<th>n 3</th>
<th>n 4</th>
<th>n 5</th>
<th>n 6</th>
<th>n 7</th>
<th>n 8</th>
<th>n 9</th>
<th>n 10</th>
<th>n 11</th>
<th>n 12</th>
<th>n 13</th>
<th>n 14</th>
<th>n 15</th>
<th>n 16</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>63.5</td>
<td>81</td>
<td>98.5</td>
<td>116</td>
<td>133.5</td>
<td>151</td>
<td>168.5</td>
<td>186</td>
<td>203.5</td>
<td>221</td>
<td>238.5</td>
<td>256</td>
<td>273.5</td>
<td>291</td>
<td>308.5</td>
<td>326</td>
</tr>
<tr>
<td>L2</td>
<td>77.5</td>
<td>95</td>
<td>112.5</td>
<td>130</td>
<td>147.5</td>
<td>165</td>
<td>182.5</td>
<td>200</td>
<td>217.5</td>
<td>235</td>
<td>252.5</td>
<td>270</td>
<td>287.5</td>
<td>305</td>
<td>322.5</td>
<td>340</td>
</tr>
<tr>
<td>L3</td>
<td>175</td>
<td>200</td>
<td>212.5</td>
<td>237.5</td>
<td>250</td>
<td>262.5</td>
<td>287.5</td>
<td>300</td>
<td>325</td>
<td>357</td>
<td>375</td>
<td>387.5</td>
<td>412.5</td>
<td>425</td>
<td>437.5</td>
<td></td>
</tr>
<tr>
<td>L4</td>
<td>185.5</td>
<td>210.5</td>
<td>223</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
<td>296</td>
<td>310.5</td>
<td>335.5</td>
<td>348</td>
<td>360.5</td>
<td>385.5</td>
<td>398</td>
<td>423</td>
<td>435.5</td>
<td>448</td>
</tr>
<tr>
<td>Direct mounting</td>
<td>160.5</td>
<td>173.0</td>
<td>198.0</td>
<td>210.5</td>
<td>235.5</td>
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<td>260.5</td>
<td>285.5</td>
<td>298.0</td>
<td>323.0</td>
<td>335.5</td>
<td>348.0</td>
<td>373.0</td>
<td>385.5</td>
<td>410.5</td>
<td>423.0</td>
</tr>
</tbody>
</table>

Formula: \( L1 = 17.5n + 46, L2 = 17.5n + 60 \)  

n: Stations (Maximum 16 stations)
**Series SQ2000**

**Kit (Lead Wire Cable)**

- Direct electrical entry type

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Maximum number of stations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Port location</td>
<td>Port size</td>
</tr>
<tr>
<td>SQ2000</td>
<td>Side, Top</td>
<td>C10</td>
</tr>
</tbody>
</table>

**Wiring Specifications: Positive Common Specifications**

Three lead wires are included per station regardless of valves used. Among the three lead wires, the red wire is for COM.

- Black: A side solenoid
- Red: COM
- White: B side solenoid

**Wiring Specifications: Negative Common Specifications (Semi-standard)**

Three lead wires are included per station regardless of valves used. Among the three lead wires, the black wire is for COM.

- Black: COM
- Red: A side solenoid
- White: B side solenoid

**Note:** When using the negative common specifications, use valves for negative common.

---

**Negative Common Specifications**

The following part numbers are for negative common specifications.

- **How to order negative common valves (Example)**
  
  SQ2130 N -51-C6

- **How to order negative common manifold (Example)**

  SS5Q23-[08LD1]-DIN

  Stations
  Kit type
  DIN rail mounting style
  Negative common specifications
### Dimensions

Formula: \( L_1 = 17.5n + 46, \ L_2 = 17.5n + 60 \)  
\( n \): Stations (Maximum 12 stations)

<table>
<thead>
<tr>
<th>( n )</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>( L_1 )</td>
<td>63.5</td>
<td>81</td>
<td>98.5</td>
<td>116</td>
<td>133.5</td>
<td>151</td>
<td>168.5</td>
<td>186</td>
<td>203.5</td>
<td>221</td>
<td>238.5</td>
<td>256</td>
</tr>
<tr>
<td>( L_2 )</td>
<td>77.5</td>
<td>95</td>
<td>112.5</td>
<td>130</td>
<td>147.5</td>
<td>165</td>
<td>182.5</td>
<td>200</td>
<td>217.5</td>
<td>235</td>
<td>252.5</td>
<td>270</td>
</tr>
<tr>
<td>( L_3 )</td>
<td>100</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td>175</td>
<td>187.5</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>262.5</td>
<td>275</td>
<td>300</td>
</tr>
<tr>
<td>( L_4 )</td>
<td>110.5</td>
<td>135.5</td>
<td>148</td>
<td>160.5</td>
<td>185.5</td>
<td>198</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>273</td>
<td>285.5</td>
<td>310.5</td>
</tr>
</tbody>
</table>

**Plug-in Unit Series SQ2000**

- **Mounting hole dimension**: G 1/2
- **Electrical entry**: G 1/2
- **One-touch fitting**: [3(R), 1(P) port]
- **Applicable tubing O.D.**: ø10
- **One-touch fitting**: [4(A), 2(B) port]
- **Applicable tubing O.D.**: ø4, ø6, ø8
The serial transmission system reduces wiring work, while minimizing wiring and saving space.

- The maximum number of stations is 8. (16 as a semi-standard).
- Only for type J2 and R2, the maximum stations are 4 (8 as a semi-standard).

### Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Maximum number of stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ2000</td>
<td>Side, Top C10, C4, C6, C8</td>
<td>8 stations (16 as a semi-standard)</td>
</tr>
</tbody>
</table>

Refer to Best Pneumatics No.1 and the Operation Manual for the details of EX140 integrated-type (for output) serial transmission system. Please download it via our website, http://www.smcworld.com

### Dimensions

Formula: \( L1 = 17.5n + 52 \), \( L2 = 17.5n + 106 \)  
\( n \): Stations (Maximum 16 stations)
**Manifold Option Parts for SQ1000**

**Blanking plate**

SSQ1000-10A-3

It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.

**SUP/EXH block**

SSQ1000-PR-3-C8-

Port size

- **C6**: One-touch fittings for ø8
- **N9**: One-touch fittings for ø5/16"

Note) When specifying both options, indicate “RS”.

- Specify the spacer mounting position on the manifold specification sheet.

For standard type manifolds, the SUP/EXH block is mounted on the D side. It is added to the manifold to increase SUP/EXH capacity.

- The number of SUP/EXH blocks that can be added is limited to two sets, one between manifold stations and another on the U side of the manifold due to the length of the internal lead wire.
- SUP/EXH blocks are not included in the number of manifold stations.

**Individual SUP spacer**

SSQ1000-P-3-C6-

Port size

- **C6**: One-touch fittings for ø8
- **N7**: One-touch fittings for ø5/16"
- **L6**: One-touch fittings for ø6
- **LN7**: One-touch fittings for ø1/4"

This is used as a supply port for different pressures when using different pressures in the same manifold (for one station). Both sides of the station which is used with supply pressure from the individual SUP spacer are shut off. (Refer to application example.)

- Specify the spacer mounting position and SUP passage shut off positions on the manifold specification sheet. Two shut off positions are required per unit.

(Two pieces of SUP block plate that shut off the supply pressure are included with the individual SUP spacer, therefore, it is not necessary to order them separately.)

- Electrical wiring is also connected to the manifold station with the individual EXH spacer.

- By changing the fitting shown in the drawing and the block plates, the spacer’s specification can be changed later (from the individual SUP spacer to the individual EXH spacer).

- The number of spacers is not limited when ordered with the manifold. However, when adding individual SUP spacers later, it is limited to two units, and another on the U side due to the length of the internal lead wire.

- Part number with manifold block: SSQ1000-P-3-C6-M

---

<table>
<thead>
<tr>
<th>Port size</th>
<th>Side ported</th>
<th>Top ported</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C6</strong></td>
<td>One-touch fittings for ø8</td>
<td>One-touch fittings for ø5/16&quot;</td>
</tr>
<tr>
<td><strong>N7</strong></td>
<td>One-touch fittings for ø5/16&quot;</td>
<td>One-touch fittings for ø1/4&quot;</td>
</tr>
</tbody>
</table>

| Option     | Nil       | Standard       | R | External pilot specifications | S | Built-in silencer |

<table>
<thead>
<tr>
<th>Description/Model</th>
<th>Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>3(R)</td>
</tr>
<tr>
<td>D side</td>
<td>valve</td>
</tr>
<tr>
<td>U side</td>
<td>valve</td>
</tr>
<tr>
<td>SUP/EXH block</td>
<td>SSQ1000-PR-3-C8-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description/Model</th>
<th>Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual SUP spacer</td>
<td>SSQ1000-P-3-C6-</td>
</tr>
<tr>
<td>Ordering not required</td>
<td>valve</td>
</tr>
<tr>
<td>D side</td>
<td>valve</td>
</tr>
<tr>
<td>U side</td>
<td>valve</td>
</tr>
<tr>
<td>SUP block plate</td>
<td>Ordering not required</td>
</tr>
<tr>
<td>D side</td>
<td>valve</td>
</tr>
<tr>
<td>U side</td>
<td>valve</td>
</tr>
</tbody>
</table>

**Manifold Option Parts for SQ1000**

It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.

**SUP/EXH block**

SSQ1000-PR-3-C8-

Port size

- **C6**: One-touch fittings for ø8
- **N9**: One-touch fittings for ø5/16"

Note) When specifying both options, indicate “RS”.

- Specify the spacer mounting position on the manifold specification sheet.

For standard type manifolds, the SUP/EXH block is mounted on the D side. It is added to the manifold to increase SUP/EXH capacity.

- The number of SUP/EXH blocks that can be added is limited to two sets, one between manifold stations and another on the U side of the manifold due to the length of the internal lead wire.
- SUP/EXH blocks are not included in the number of manifold stations.
Individual EXH spacer

**SSQ1000-R-3-** [C6]

<table>
<thead>
<tr>
<th>Port size</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Side ported</td>
<td>C6</td>
<td>One-touch fittings for ø6</td>
</tr>
<tr>
<td>Top ported</td>
<td>L6</td>
<td>One-touch fittings for ø6</td>
</tr>
</tbody>
</table>

This is used to exhaust an individual valve when the exhaust from a valve interferes with other stations in the circuit (used for one station). Both sides of the station which is to be individually exhausted are shut off. (Refer to application example.)

- Specify the spacer mounting position and EXH passage shut off positions on the manifold specification sheet. Two shut off positions are required per unit. (Two pieces of EXH block plate that shut off the exhaust are included with the individual EXH spacer, therefore, it is not necessary to order them separately.)
- Electrical wiring is also connected to the manifold station with the individual EXH spacer.
- By changing the fitting shown in the drawing and the block plates, the spacer’s specification can be changed later (from the individual EXH spacer to the individual SUP spacer).
- The number of spacers is not limited when ordered with the manifold. However, when adding individual EXH spacers later, it is limited to two units, one between manifold stations and another on the U side due to the length of the internal lead wire.

- Model no. with manifold block: SSQ1000-R-3-[C6]-M

Individual SUP/EXH spacer

**SSQ1000-PR1-3-** [C6]

<table>
<thead>
<tr>
<th>Port size</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Side ported</td>
<td>C6</td>
<td>One-touch fittings for ø6</td>
</tr>
<tr>
<td>Top ported</td>
<td>L6</td>
<td>One-touch fittings for ø6</td>
</tr>
</tbody>
</table>

This has both functions of the individual SUP and EXH spacers above. (Refer to application example.)

- Specify the spacer mounting position and SUP and EXH passage shut off positions on the manifold specification sheet. Two shut off positions each for SUP and EXH are required per unit. (Two pieces of block plate that shut off the SUP and EXH passages are included with the individual SUP/EXH spacer.)
- Electrical wiring is also connected to the manifold station with the individual EXH spacer.
- By changing the fitting shown in the drawing and the block plates, the spacer’s specification can be changed later.
- The number of spacers is not limited when ordered with the manifold. However, when adding individual SUP/EXH spacers later, it is limited to two units, one between manifold stations and another on the U side due to the length of the internal lead wire.

- Model no. with manifold block: SSQ1000-PR1-3-[C6]-M
Manifold Option Parts for SQ1000

SUP block plate
SSQ1000-B-P
When supplying two different pressures, high and low, to one manifold, this is used between stations with different pressures. Also, it is used with an individual SUP spacer to shut off the air supply.
* Specify the station position on the manifold specification sheet.

<Block indication label>
When using block plates for SUP passage, indication label for confirmation of the blocking position from outside is attached. (One label of each)
* When ordering a block plate for SUP incorporated with the manifold, a block indication label is attached to the manifold.

EXH block plate
SSQ1000-B-R
When the exhaust from a valve interferes with other stations in the circuit, this is used between stations to separate exhausts. Also, it is used with an individual EXH spacer to shut off the exhaust of individual valves.
* Specify the station position on the manifold specification sheet.

<Block indication label>
When using block plates for EXH passage, indication label for confirmation of the blocking position from outside is attached. (One label of each)
* When ordering a block plate for EXH incorporated with the manifold, a block indication label is attached to the manifold.

Back pressure check valve [-B]
SSQ1000-BP
It prevents cylinder malfunction caused by other valve exhaust. Insert it into R (EXH) port on the manifold side of a valve which is affected. It is effective when a single action cylinder is used or an exhaust center type solenoid valve is used.
* When a check valve for back pressure prevention is desired, and is to be installed only in certain manifold stations, clearly write the part number and specify the number of stations on the manifold specification sheet.
* When ordering this option incorporated with a manifold, suffix "-B" to the end of the manifold part number.

Caution
1. The back pressure check valve assembly is assembly parts with a check valve structure. However, as slight air leakage is allowed for the back pressure, take care the exhaust air will not be restricted at the exhaust port.
2. When a back pressure check valve is mounted, the effective area of the valve will decrease by about 20%.
3. Since 4 port specification valves (5 (R1) and 3 (R2) are common) are used, back pressure cannot be prevented with dual 3 port valves.
Manifold Option Parts for SQ1000

Name plate [-N]

SSQ1000-N3-Stations (1 to maximum)

It is a transparent resin plate for placing a label that indicates solenoid valve function, etc. Insert it into the groove on the side of the end plate and bend it as shown in the figure. Also, the plate is difficult to bend for manifolds with only a few stations, therefore, remove the silencer cover to install it.

* When ordering this option incorporated with a manifold, suffix “-N” to the end of the manifold part number.

Blanking plug (For One-touch fitting)

23 KQ2P-04 KQ2P-06 KQ2P-08

It is inserted into an unused cylinder port and SUP/EXH ports. Purchasing order is available in units of 10 pieces.

Port plug

VVQZ100-CP

The plug is used to block the cylinder port when using a 5-port valve as a 3-port valve.

* Add “A” or “B” at the end of the valve part number when ordering with valves.

Example) SQ1131-51-C6-A (N.O. specifications)

Example) SQ1131-51-C6-B (N.C. specifications)

Example) SQ1131-51-C6-B-M (B port plug with manifold block)

Direct EXH outlet, built-in silencer [-S]

This is a type with an exhaust port atop the manifold end plate. The built-in silencer exhibits an excellent noise suppression effect. (Noise reduction: 30 dB)

Note) A large quantity of drainage generated in the air source results in exhaust of air together with drainage.

* When ordering this option incorporated with a manifold, suffix “-S” to the end of the manifold part number.

* For precautions on handling and how to replace elements, refer to “Specific Product Precautions.”

Series SQ1000
Manifold Option Parts for SQ1000

External pilot specifications [-R]

This can be used when the air pressure is 0.1 to 0.2 MPa lower than the minimum operating pressure of the solenoid valves or used for vacuum specifications. Add “R” to the part numbers of manifolds and valves to indicate the external pilot specification. An M5 port will be installed on the top side of the manifold’s SUP/EXH block.

- How to order valves (Example)
  SQ1130  R  -51-C6
  External pilot specifications

- How to order manifold (Example)
  * Indicate “R” for an option.
  SSSQ13-08FD1-D9
  External pilot specifications

Dual flow fitting

SSQ1000-52A- C8

Port size

- C8: One-touch fittings for ø8
- N9: One-touch fittings for ø5/16”

To drive a large bore cylinder, two valve stations are operated simultaneously to double the air flow. This fitting is used on the cylinder ports in this situation. Available sizes are ø8 and ø5/16” One-touch fittings.

* When ordering with valves, specify the valve part number without One-touch fitting and list without One-touch fitting and list the dual flow fitting part number.

Example) Valve part number (without One-touch fitting)
  SQ1131-51-C0 …………… 2 sets
  +SSSQ1000-52A-C8-N9 …………… 1 set

Silencer (For EXH port)

This is inserted into the centralized type EXH port (One-touch fitting).

Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Model</th>
<th>Effective area mm² (Cv factor)</th>
<th>Noise reduction (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ1000</td>
<td>AN15-C08</td>
<td>20 (1.1)</td>
<td>30</td>
</tr>
</tbody>
</table>
Manifold Option Parts for SQ2000

Blanking plate
SSQ2000-10A-3
It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.

SUP/EXH block
SSQ2000-PR-3-C10-
- Option
- Port size
  - C8 One-touch fittings for ø8
  - C10 One-touch fittings for ø10
  - N9 One-touch fittings for ø5/16"
  - N11 One-touch fittings for ø3/8"

Note) When specifying both options, indicate "RS".
• Specify the spacer mounting position on the manifold specification sheet.

For standard type manifolds, the SUP/EXH block is mounted on the D side. It is added to the manifold to increase SUP/EXH capacity.
• The number of SUP/EXH blocks that can be added is limited to two sets, one between manifold stations and another on the U side of the manifold due to the length of the internal lead wire.
• SUP/EXH blocks are not included in the number of manifold stations.

Individual SUP spacer
SSQ2000-P-3-C8
- Port size
  - Side ported C8 One-touch fittings for ø8
  - Top ported N9 One-touch fittings for ø5/16"
  - Top ported L8 One-touch fittings for ø8
  - Top ported LN9 One-touch fittings for ø3/16"

This is used as a supply port for different pressures when using different pressures in the same manifold (for one station).
Both sides of the station which is used with supply pressure from the individual SUP spacer are shut off. (Refer to application example.)
• Specify the spacer mounting position and SUP passage shut off positions on the manifold specification sheet. Two shut off positions are required per unit.
  (Two pieces of SUP block plate that shut off the supply pressure are included with the individual SUP spacer, therefore, it is not necessary to order them separately.)
• Electrical wiring is also connected to the manifold station with the individual SUP spacer.
• By changing the fitting shown in the drawing and the block plates, the spacer’s specification can be changed later (from the individual SUP spacer to the individual EXH spacer).
• The number of spacers is not limited when ordered with the manifold. However, when adding individual SUP spacers later, it is limited to two units, and another on the U side due to the length of the internal lead wire.
• Model no. with manifold block: SSQ2000-P-3-C8-M
Individual SUP/EXH spacer

SSQ2000-PR1-3-[C8]

- **Port size**
  - Side: C8 One-touch fittings for ø8
  - Top: L8 One-touch fittings for ø5/16

This has both functions of the individual SUP and EXH spacers above. (Refer to application example.)

- Specify the spacer mounting position and EXH passage shut off positions on the manifold specification sheet. Two shut off positions are required per unit. (Four pieces of EXH block plate that shut off the exhaust are included with the individual EXH spacer, therefore, it is not necessary to order them separately.)

- Electrical wiring is also connected to the manifold station with the individual EXH spacer.

- By changing the fitting shown in the drawing and the block plates, the spacer’s specification can be changed later (from the individual EXH spacer to the individual SUP/EXH spacer).

- The number of spacers is not limited when ordered with the manifold. However, when adding individual EXH spacers later, it is limited to two units, one between manifold stations and another on the U side due to the length of the internal lead wire.

- Model no. with manifold block: SSQ2000-PR1-3-[C8]-M

Individual EXH spacer

SSQ2000-R-3-[C8]

- **Port size**
  - Side: C8 One-touch fittings for ø8
  - Top: L8 One-touch fittings for ø5/16

This is used to exhaust an individual valve when the exhaust from a valve interferes with other stations in the circuit (used for one station).

- Both sides of the station which is to be individually exhausted are shut off. (Refer to application example.)

- Specify the spacer mounting position and EXH passage shut off positions on the manifold specification sheet. Two shut off positions are required per unit. (Four pieces of EXH block plate that shut off the exhaust are included with the individual EXH spacer, therefore, it is not necessary to order them separately.)

- Electrical wiring is also connected to the manifold station with the individual EXH spacer.

- By changing the fitting shown in the drawing and the block plates, the spacer’s specification can be changed later (from the individual EXH spacer to the individual SUP/EXH spacer).

- The number of spacers is not limited when ordered with the manifold. However, when adding individual EXH spacers later, it is limited to two units, one between manifold stations and another on the U side due to the length of the internal lead wire.

- Model no. with manifold block: SSQ2000-R-3-[C8]-L8

---

**Manifold Option Parts for SQ2000**

**Individual EXH spacer**

SSQ2000-R-3-[C8]

**Individual EXH port**

- Top ported
- Side ported

**Manifold block**

- **Port size**
  - Side: C8 One-touch fittings for ø8
  - Top: L8 One-touch fittings for ø5/16

**Description/Model**

Single EXH shut off position:
Specify 2 positions.

**Stations**

1 2 3 4 5

**Individual EXH port**

- One-touch fittings for ø8

---

**Individual SUP/EXH spacer**

SSQ2000-PR1-3-[C8]

**Individual SUP port**

- One-touch fittings for ø8

**Individual EXH port**

- One-touch fittings for ø8

---

**Model no. with manifold block:**

SSQ2000-PR1-3-[C8]-M
**Series SQ2000**

**Manifold Option Parts for SQ2000**

**SUP block plate**

**SSQ1000-B-R**

When supplying two different pressures, high and low, to one manifold, this is used between stations with different pressures. Also, it is used with an individual SUP spacer to shut off the air supply.

* Specify the station position on the manifold specification sheet.

**<Block indication label>**

When using block plates for SUP passage, indication label for confirmation of the blocking position from outside is attached. (One label of each)

* When ordering a block plate for SUP incorporated with the manifold, a block indication label is attached to the manifold.

**EXH block plate**

**SSQ2000-B-R**

When the exhaust from a valve interferes with other stations in the circuit, this is used between stations to separate exhausts. Also, it is used with an individual EXH spacer to shut off the exhaust of individual valves.

* Specify the station position on the manifold specification sheet.

**<Block indication label>**

When using block plates for EXH passage, indication label for confirmation of the blocking position from outside is attached. (One label of each)

* When ordering a block plate for EXH incorporated with the manifold, a block indication label is attached to the manifold.

**Back pressure check valve [-B]**

**SSQ2000-BP**

It prevents cylinder malfunction caused by other valve exhaust. Insert it into R (EXH) port on the manifold side of a valve which is affected. It is effective when a single action cylinder is used or an exhaust center type solenoid valve is used.

* When a check valve for back pressure prevention is desired, and is to be installed only in certain manifold stations, clearly write the part number and specify the number of stations on the manifold specification sheet.

* When ordering this option incorporated with a manifold, suffix "-B" to the end of the manifold part number.

**Caution**

1. The back pressure check valve assembly is assembly parts with a check valve structure. However, as slight air leakage is allowed for the back pressure, take care the exhaust air will not be restricted at the exhaust port.
2. When a back pressure check valve is mounted, the effective area of the valve will decrease by about 20%. 

---

**Set of 2 pcs.**

**[Diagram]**

---

**49**
Manifold Option Parts for SQ2000

Name plate [-N]

SSQ2000-N3: Stations (1 to maximum)

It is a transparent resin plate for placing a label that indicates solenoid valve function, etc.
Insert it into the groove on the side of the end plate and bend it as shown in the figure. Also, the plate is difficult to bend for manifolds with only a few stations, therefore, remove the silencer cover to install it.
* When ordering this option incorporated with a manifold, suffix “-N” to the end of the manifold part number.

Blanking plug (For One-touch fitting)

KQ2P-04
KQ2P-06
KQ2P-08
KQ2P-10

It is inserted into an unused cylinder port and SUP/EXH ports. Purchasing order is available in units of 10 pieces.

Port plug

VVQZ2000-CP

The plug is used to block the cylinder port when using a 5-port valve as a 3-port valve.
* Add “A” or “B” at the end of the valve part number when ordering with valves.
Example) SQ2131-51-C8-A (N.O. specifications)
Example) SQ2131-51-C8-B (N.C. specifications)
Example) SQ2131-51-C8-B-M (B port plug with manifold block)

Direct EXH outlet, built-in silencer [-S]

This is a type with an exhaust port atop the manifold end plate. The built-in silencer exhibits an excellent noise suppression effect. (Noise reduction: 30 dB)

Note) A large quantity of drainage generated in the air source results in exhaust of air together with drainage.
* When ordering this option incorporated with a manifold, suffix “-S” to the end of the manifold part number.
* For precautions on handling and how to replace elements, refer to “Specific Product Precautions.”
Manifold Option Parts for SQ2000

External pilot specifications [-R]

This can be used when the air pressure is 0.1 to 0.2 MPa lower than the minimum operating pressure of the solenoid valves or used for vacuum specifications.

Add “R” to the part numbers of manifolds and valves to indicate the external pilot specifications.

An M5 port will be installed on the top side of the manifold’s SUP/EXH block.

- How to order valves (Example)
  SQ2130 R 51-C6
  External pilot specifications

- How to order manifold (Example)
  - Indicate “R” for an option.
  SSQ23-08FD1-DR
  External pilot specifications

Note 1) Not applicable for dual 3 port valves.
Note 2) Valves with the external pilot specifications have a pilot EXH with individual exhaust specifications and EXH can be pressurized. However, the pressure supplied from EXH should be 0.4 MPa or lower.

Dual flow fitting

SSQ2000-52A-CT10

Port size

<table>
<thead>
<tr>
<th>Port size</th>
<th>C10</th>
<th>ø10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N11</td>
<td>ø3/8</td>
</tr>
</tbody>
</table>

To drive a large bore cylinder, two valve stations are operated simultaneously to double the air flow. This fitting is used on the cylinder ports in this situation. Available sizes are ø10 and ø3/8” One-touch fittings.

- When ordering with valves, specify the valve part number without One-touch fitting and list without One-touch fitting and list the dual flow fitting part number.

Example) Valve part number (without One-touch fitting)
  SQ2131-50 2 sets

- SSQ2000-52A-C10 1 set

Example) Valve part number (without One-touch fitting)
  SSQ23-08FD1-DR

Silencer (For EXH port)

This is inserted into the centralized type EXH port (One-touch fitting).

Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Model</th>
<th>Effective area (mm²) (Cv factor)</th>
<th>Noise reduction (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ2000</td>
<td>AN20-C10</td>
<td>30 (1.6)</td>
<td>30</td>
</tr>
</tbody>
</table>
Manifold Option for SQ1000/2000

Special Wiring Specifications

In the internal wiring of F kit, P kit, J kit, T kit and S kit, double wiring (connected to SOL A and SOL B) is adopted for each station regardless of the valve and option types. Mixed single and double wiring is available as an option.

1. How to Order

Indicate option symbol “K” in the manifold part number and be sure to specify station positions for single or double wiring on the manifold specification sheet. Also, specify wiring for spare connectors.

(Up to two spare connectors are included depending on the remaining number of connector pins. When the wiring for the spare connectors is not specified, they will be wired according to “Spare Connector Wiring” on page 55.)

Example) SS5Q13 - [09][FD0]-DKS

Others, option symbols: to be indicated alphabetically.

2. Wiring specifications

Connector terminal numbers are connected from solenoid station 1 on the A side in the order indicated by the arrows without skipping any terminal numbers.

F kit
D-sub connector
(For 25P)

P kit
Flat ribbon cable connector
(For 26P)

S kit
Serial

J kit
Flat ribbon cable connector (20P)
PC wiring system compatible

T kit
Terminal block
(SQ2000 only)

For S kit (serial transmission kit), refer to Best Pneumatics No.1.

3. Maximum stations

The maximum number of manifold stations is determined by the number of solenoids. Count one point for a single solenoid type and two points for a double solenoid type. Determine the number of stations so that the total number of solenoids is no more than the maximum points in the table below.

<table>
<thead>
<tr>
<th>Kit</th>
<th>F kit (D-sub connector)</th>
<th>P kit (Flat ribbon cable connector)</th>
<th>J kit (Flat ribbon cable PC wiring system compatible)</th>
<th>T kit (Terminal block) (SQ2000 only)</th>
<th>S kit (Serial)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>FD 25P</td>
<td>PD 26P</td>
<td>PD 26P</td>
<td>T0 20P</td>
<td>SD 16P</td>
</tr>
<tr>
<td>Max. points</td>
<td>24 points</td>
<td>24 points</td>
<td>18 points</td>
<td>16 points</td>
<td>20 points</td>
</tr>
</tbody>
</table>

Note: Maximum stations
SQ1000: 24 stations
SQ2000: 16 stations
**Series SQ1000/2000**

**Manifold Option for SQ1000/2000**

### Special DIN Rail Length (DIN Rail Mounting (-D) Only)

The standard DIN rail provided is approximately 30 mm longer than the overall length of the manifold with a specified number of stations. The following options are also available.

- **DIN rail length longer than the standard type (for stations to be added later, etc.)**
  
  In the manifold part number, specify “-D” for the manifold mounting symbol and add the number of required stations after the symbol.

  Example) **SS5Q13-08FD0-D09BNK**

- **Ordering DIN rail only**

  DIN rail part number

  AXT100-DR- [n]  
  
  Note) For “n”, enter a number from the “No.” line in the table below.
  
  For L dimension, refer to the dimensions of each kit.

  **L Dimension**

<table>
<thead>
<tr>
<th>No.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>L dimension</td>
<td>23</td>
<td>35.5</td>
<td>48</td>
<td>60.5</td>
<td>73</td>
<td>85.5</td>
<td>98</td>
<td>110.5</td>
<td>123</td>
<td>135.5</td>
</tr>
<tr>
<td>L dimension</td>
<td>148</td>
<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
</tr>
<tr>
<td>L dimension</td>
<td>273</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
<td>323</td>
<td>335.5</td>
<td>348</td>
<td>360.5</td>
<td>373</td>
<td>385.5</td>
</tr>
<tr>
<td>L dimension</td>
<td>398</td>
<td>410.5</td>
<td>423</td>
<td>435.5</td>
<td>448</td>
<td>460.5</td>
<td>473</td>
<td>485.5</td>
<td>498</td>
<td>510.5</td>
</tr>
</tbody>
</table>

**Direct Mounting Style (-E)**

Manifold is mounted by using mounting holes of both sides of the manifold.

DIN rail is not sticking out of the edge of end plate. (Except SQ2000 T kit type. Refer to pages 37 and 38.)

Furthermore, the reinforcing part that comes to the bottom of the DIN rail is attached to the end plate assembly.

---

Manifold Option for SQ1000/2000 (continued)
Manifold Option for SQ1000/2000

Negative Common Specifications

The following valve part numbers are for negative common specifications. Manifold part numbers are the same as the standard except L kit. Also, negative common specifications are not available for the S kit.

- **How to order negative common valves (Example)**
  
  SQ1130 N-51-C6

- **How to order negative common manifold (Example)**
  
  SSSQ13-08LD1 N - DIN

### Inch-size One-touch Fittings

For One-touch fittings in inch sizes, use the following part numbers. Also, the color of the release button is orange.

- **How to order valves (Example)**
  
  SQ1130- 51 - N7

- **How to order manifold (Example)**
  
  Add "00T" at the end of the part number.

  SSSQ13-08FD0-DN- 00T

  - 1 (P), 3 (R) port in inch size
    - SQ1000: ø5/16" (N9)
    - SQ2000: ø3/8" (N11)
How to Increase Manifold Stations for SQ1000/2000

1. Using Spare Connector to Add Stations

As shown in the table below, wiring specifications for spare connectors are based on the remaining number of connector pins (remaining number of pins against the maximum number of solenoids for each kit.)

The following steps are for using spare connectors to add stations.

**Spare Connector Wiring**

<table>
<thead>
<tr>
<th>Remaining connector pins</th>
<th>4 pins or more</th>
<th>3 pins</th>
<th>2 pins</th>
<th>1 pin</th>
<th>0 pin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spare connector wiring</td>
<td>2 for double wiring</td>
<td>1 for double wiring (on the low no. station side)</td>
<td>1 for double wiring</td>
<td>1 for single wiring</td>
<td>None</td>
</tr>
</tbody>
</table>

**What to order**

- Valves with manifold block (refer to pages 6 and 26) or the manifold blocks (Refer to page 56).

**Steps for adding stations**

1. Loosen the clamp screw on the U side end plate and open the manifold.
2. Mount the manifold block to be added.
3. Open the junction cover and attach the spare connector. Match the station position of the added station and the spare connector station number.
4. Press on the end plate to eliminate any space between the manifold blocks and tighten the clamp screw.

(Proper tightening torque: 0.8 to 1.0 N·m)

**Note**

1) Order a manifold block with lead wire for the L kit because a spare connector is not included with the kit. (Refer to page 56.)
2) Do not let the lead wires get caught between manifolds, or when closing the junction cover.
How to Increase Manifold Stations for SQ1000/2000

2. Adding Stations Without Required Spare Connectors

Spare connectors for 2 stations are initially included. However, to add 3 or more stations, order manifold blocks with lead wire in the tables below.

How to order manifold blocks with lead wire

<table>
<thead>
<tr>
<th>SQ1000</th>
<th>SQ2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSQ1000–1A–3–FS 03</td>
<td>SSQ2000–1A–3–FS 03</td>
</tr>
</tbody>
</table>

**Lead wire type**
- **F0**: Without lead wire (for using spare connectors to add stations)
- **FS**: F kit (D-sub connector kit) Single wiring
- **FW**: F kit (D-sub connector kit) Double wiring
- **PS**: P, J kit (Flat ribbon cable kit) Single wiring
- **PW**: P, J kit (Flat ribbon cable kit) Double wiring
- **L0**: L kit (Lead wire kit) Lead wire length 0.6 m
- **L1**: L kit (Lead wire kit) Lead wire length 1.5 m
- **L2**: L kit (Lead wire kit) Lead wire length 3.0 m
- **SS**: S kit (Serial transmission kit) Single wiring
- **SW**: S kit (Serial transmission kit) Double wiring

**Applicable stations**
- **01**: 1 station
- **24**: 24 stations

**Option**
- **Nil**: None
- **B**: Back pressure check valve
- **R**: External pilot specifications

**Note**
1) “F0”: Nil
2) S kit is from 01 to 16

**COM. (L kit only)**
- **Nil**: Positive common
- **N**: Negative common

**Applicable stations**
- **01**: 1 station
- **16**: 16 stations

**Option**
- **Nil**: None
- **B**: Back pressure check valve
- **R**: External pilot specifications

**Note**
Enter “-BR” for both options.
### 3. Connection Method
(Refer to page 55 regarding the steps for adding stations to a manifold block.)

Connect the round terminal of the red lead wire to the common terminal inside the junction cover.

**1) Connecting common terminals**
Connect lead wire assemblies included with manifold blocks as follows.

**2) Pulling out connector**
Pull out the connector to connect the lead wire.
- For F, P, and J kits, pull out and remove the housing while pressing down hard on the hook with a flat head screwdriver, etc.
- Remove the manual lever and lead wire cover, and pull out the connector.
- For T kits, remove the screws and pull out the terminal block.
- For S kits, remove the screws and pull out the connector.
How to Increase Manifold Stations for SQ1000/2000

(3) Connect the black and white lead wire pins to the positions shown below in accordance with each kit.

**Caution**
1. After inserting the pin, confirm that the pin hook is locked by lightly pulling the lead wire.
2. Do not pull the lead wire forcefully when connecting. Also, take care that lead wires do not get caught between manifolds or when closing the junction cover.

Wiring (F Kit: D-sub Connector Kit)

Based on the manifold specifications, station 1 of SOL.A (black wire) will be terminal number 1 of the D-sub connector, and for station 2 and thereafter, connect black wires, then white wires in the order as shown below by the arrows.

* The drawing above shows connections based on the manifold specifications' example in the table to the left.

Wiring (P Kit: Flat Ribbon Cable Kit)

Based on the manifold specifications, station 1 of SOL.A (black wire) will be terminal number 1B of the flat ribbon cable connector, and for station 2 and thereafter, connect black wires, then white wires in the order as shown below by the arrows.

* The drawing above shows connections for type 26P flat ribbon cable connector based on the manifold specifications' example in the table to the left. For type 20P, the connection will be the same as above except that COM changes to 10A and 10B.
How to Increase Manifold Stations for SQ1000/2000

Wiring (J Kit: Flat Ribbon Cable Kit, PC Wiring System Compatible)

Procedure) Based on the manifold specifications, station 1 of SOLA (black wire) will be terminal number 10A of the flat ribbon cable connector, and for station 2 and thereafter, connect black wires, then white wires in the order as shown below by the arrows.

**Manifold Specifications’ Example**

<table>
<thead>
<tr>
<th>Single wiring</th>
<th>Double wiring</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6</td>
<td>1 2 3 4 5 6</td>
</tr>
</tbody>
</table>

**Wiring (T Kit: Terminal Block Kit)**

Procedure) Based on the manifold specifications, connect to the housing according to the wiring example below.

**Manifold Specifications’ Example**

<table>
<thead>
<tr>
<th>Single wiring</th>
<th>Double wiring</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6</td>
<td>1 2 3 4 5 6</td>
</tr>
</tbody>
</table>
How to Increase Manifold Stations for SQ1000/2000

Wiring (S Kit: Serial Transmission Kit)

Procedure) Based on the manifold specifications, station 1 of SOL.A (black wire) will be terminal number 1 of the serial connector, and for station 2 and thereafter, connect black wires, then white wires in the order as shown below by the arrows.

- The drawing above shows connections based on the manifold specifications’ example in the table to the left.

**Manifold Specifications’ Example**

<table>
<thead>
<tr>
<th>Series</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single wiring</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Double wiring</td>
<td></td>
<td></td>
<td></td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

**Connector terminal no.**

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Station 1 Black, SOL.A</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Station 3 Black, SOL.A</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Station 4 Black, SOL.A</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Station 5 Black, SOL.A</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Station 6 Black, SOL.A</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 stations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 stations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 stations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COM Red</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 stations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 stations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 stations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 stations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 stations</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 stations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Terminal Lead wire color**

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Lead wire color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Black</td>
</tr>
<tr>
<td>2</td>
<td>Black</td>
</tr>
<tr>
<td>3</td>
<td>Black</td>
</tr>
<tr>
<td>4</td>
<td>White</td>
</tr>
<tr>
<td>5</td>
<td>Black</td>
</tr>
<tr>
<td>6</td>
<td>White</td>
</tr>
<tr>
<td>7</td>
<td>Black</td>
</tr>
<tr>
<td>8</td>
<td>White</td>
</tr>
<tr>
<td>9</td>
<td>Black</td>
</tr>
<tr>
<td>10</td>
<td>Black</td>
</tr>
<tr>
<td>12</td>
<td>Red</td>
</tr>
<tr>
<td>14</td>
<td>Red</td>
</tr>
<tr>
<td>16</td>
<td>Red</td>
</tr>
<tr>
<td>18</td>
<td>Red</td>
</tr>
</tbody>
</table>

*For more details, refer to the manifold specifications’ example in the table to the left.*
Construction: Series SQ1000 Plug-in Type Main Parts and Pilot Valve Assembly

**Metal seal type**

**Single:** SQ1130

**Double:** SQ1230D

**3 position:** SQ1330

**Rubber seal type**

**Single:** SQ1131

**Double:** SQ1231D

**3 position:** SQ1331

Component Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Zinc die-cast</td>
</tr>
<tr>
<td>2</td>
<td>Spool/Sleeve</td>
<td>Stainless steel (Metal seal)</td>
</tr>
<tr>
<td></td>
<td>Spool</td>
<td>Aluminum (Rubber seal)</td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
</tr>
<tr>
<td>4</td>
<td>Pilot valve assembly (Refer to the below.)</td>
<td>—</td>
</tr>
</tbody>
</table>

Pilot valve assembly V112

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

- **Function**
  
<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specifications</th>
<th>DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Standard type</td>
<td>0.4 W</td>
</tr>
<tr>
<td>B</td>
<td>Quick response type</td>
<td>0.95 W</td>
</tr>
<tr>
<td>K</td>
<td>High pressure type (1.0MPa)</td>
<td>0.95 W</td>
</tr>
</tbody>
</table>

Note) Common to single solenoid and double solenoid
Construction: Series SQ2000 Plug-in Type Main Parts and Pilot Valve Assembly

**Metal seal type**
- **Single:** SQ2130
  - Double: SQ2230D
  - 3 position: SQ2430

**Rubber seal type**
- **Single:** SQ2131
  - Double: SQ2231D
  - 3 position: SQ2431

**Component Parts**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Aluminum die-casted</td>
</tr>
<tr>
<td>2</td>
<td>Spool/Sleeve</td>
<td>Stainless steel (Metal seal)</td>
</tr>
<tr>
<td></td>
<td>Spool</td>
<td>Aluminum (Rubber seal)</td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
</tr>
<tr>
<td>4</td>
<td>Pilot valve assembly</td>
<td>(Refer to the below.)</td>
</tr>
</tbody>
</table>

**Pilot valve assembly**

V112

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

- **Function**
  - Symbol Specifications: DC
    - Nil: Standard type (0.4 W)
    - B: Quick response type (0.95 W)

Note) Common to single solenoid and double solenoid
Manifold Spare Parts

Refer to pages 55 to 60 of “How to Increase Manifold Stations” regarding the mounting of each spare parts.

<1> D side end plate assembly>

SSQ1000 – 3A – 3

Manifold mounting
- Nil DIN rail mounting style
- E Direct mounting style

<5> SI unit>

Port size
- Without lead wire
- Single wiring
- Double wiring

<6> U side end plate assembly>

(For F, P, J, S kit)

SSQ1000 – 2A – 3

(For L kit)

SSQ1000 – 2A – 3

<7> SUP/EXH block assembly>

Port size
- C8 One-touch fitting for ø6
- N9 One-touch fitting for ø5/16"*2

<8> Manifold block assembly>

Lead wire type
- F0 Without lead wire
- FS F kit: D-sub connector kit
- SW Single wiring
- FW F kit: D-sub connector kit
- PW Double wiring
- PS P kit: Flat ribbon cable kit
- J kit: PC wiring system compatible
- Single wiring
- PW P kit: Flat ribbon cable kit
- J kit: PC wiring system compatible
- Double wiring

Note) Enter "-R" for both options.

<9> Element>

SSQ1000 – SE
Note) Part number for a 10 piece set of element.
For replacement procedures, refer to page 120.

<10> Port plug>

VVQZ2000 – CP

<11> Fitting assembly>

(For P, R port)

VVQ1000 – 51A – C8

Port size
- C6 One-touch fitting for ø6
- C8 One-touch fitting for ø8
- N7 One-touch fitting for ø1/4"
- N9 One-touch fitting for ø5/16"*

Note) Purchasing order is available in units of 10 pieces.

<12> Fitting assembly>

(For cylinder port)

VVQ1000 – 50A – C3

Port size
- C3 One-touch fitting for ø3.2
- C4 One-touch fitting for ø4
- C6 One-touch fitting for ø6
- M5 M5 thread
- N1 One-touch fitting for ø1/8"
- N3 One-touch fitting for ø5/32"
- N7 One-touch fitting for ø1/4"

Note) Purchasing order is available in units of 10 pieces.

<13> Gasket and screw assembly>

SQ1000 – GS
Note) Part number for 10 pieces each of gaskets and screws.

Series SQ2000

Manifold Exploded View: SQ2000 (Plug-in Type Manifold) SS5Q23

(F, P, J, T, L, S kit)

<table>
<thead>
<tr>
<th>D side end plate assembly</th>
<th>SUP/EXH block assembly</th>
<th>Valve and manifold block assembly</th>
<th>U side end plate assembly</th>
</tr>
</thead>
<tbody>
<tr>
<td>F kit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P (J) kit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T kit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L kit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S kit</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Manifold Spare Parts

Refer to pages 55 to 60 of "How to Increase Manifold Stations" regarding the mounting of each spare parts.

<1> D side end plate assembly

<table>
<thead>
<tr>
<th>SSQ2000 – 3A – 3</th>
<th>Nil</th>
<th>DIN rail mounting style</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>E</td>
<td>Direct mounting style</td>
</tr>
</tbody>
</table>

### Electrical entry
- **F** kit (16 output points)
- **P** kit (26P)
- **PC** kit (20P)
- **J** kit (20P)
- **T** kit (3)
- **Nil** L kit (4)
- **S** S kit (5)

### Wiring specifications
- **0** Without lead wire
- **S** Single wiring
- **W** Double wiring

Note 1: The maximum number of stations will be different depending on the wiring specifications.

Note 2: L kit: Nil

<2> SI unit

<table>
<thead>
<tr>
<th>Manifold</th>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDF kit</td>
<td>EX140-SUW1</td>
<td>NKE Corp.: Fieldbus System (16 output points)</td>
</tr>
<tr>
<td>SDH kit</td>
<td>EX140-SUH1</td>
<td>NKE Corp.: Fieldbus H System (16 output points)</td>
</tr>
<tr>
<td>SDJ1 kit</td>
<td>EX140-SSL1</td>
<td>Panasonic Electric Works SUNX Co., Ltd: S-LINK System (16 output points)</td>
</tr>
<tr>
<td>SDJ2 kit</td>
<td>EX140-SSL2</td>
<td>Panasonic Electric Works SUNX Co., Ltd: S-LINK System (8 output points)</td>
</tr>
<tr>
<td>SDQ kit</td>
<td>EX140-SDN1</td>
<td>DeviceNet™ (16 output points)</td>
</tr>
<tr>
<td>SDR1 kit</td>
<td>EX140-SCS1</td>
<td>OMRON Corp.: CompoBus/S (16 output points)</td>
</tr>
<tr>
<td>SDR2 kit</td>
<td>EX140-SCS2</td>
<td>OMRON Corp.: CompoBus/S (8 output points)</td>
</tr>
<tr>
<td>SDV kit</td>
<td>EX140-SMJ1</td>
<td>CC-LINK (16 output points)</td>
</tr>
</tbody>
</table>

<3> U side end plate assembly

(For F, P, J, T, S kit)

<table>
<thead>
<tr>
<th>SSQ2000 – 2A – 3</th>
<th>Nil</th>
<th>DIN rail mounting style</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>E</td>
<td>Direct mounting style</td>
</tr>
</tbody>
</table>

<4> SUP/EXH block assembly

<table>
<thead>
<tr>
<th>SSQ2000 – PR – 3</th>
<th><strong>C8</strong></th>
<th>One-touch fitting for ø8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>C10</strong></td>
<td>One-touch fitting for ø10</td>
</tr>
<tr>
<td></td>
<td><strong>N9</strong></td>
<td>One-touch fitting for ø5/16&quot;</td>
</tr>
<tr>
<td></td>
<td><strong>N11</strong></td>
<td>One-touch fitting for ø3/8&quot;</td>
</tr>
</tbody>
</table>

Note) Part number for a 10 piece set of element.

For replacement procedures, refer to page 120.

<5> Fitting assembly

(For P, R port)

<table>
<thead>
<tr>
<th>SSQ2000 – 51A – <strong>C8</strong></th>
<th>Nil</th>
</tr>
</thead>
</table>

### Port size
- **C8** One-touch fitting for ø8
- **C10** One-touch fitting for ø10
- **N9** One-touch fitting for ø5/16"
- **N11** One-touch fitting for ø3/8"

### Note) Purchasing order is available in units of 10 pieces.

<6> Fitting assembly

(For cylinder port)

<table>
<thead>
<tr>
<th>SSQ2000 – 51A – <strong>C4</strong></th>
<th>Nil</th>
</tr>
</thead>
</table>

### Port size
- **C4** One-touch fitting for ø4
- **C6** One-touch fitting for ø6
- **C8** One-touch fitting for ø8
- **N4** One-touch fitting for ø5/32"
- **N7** One-touch fitting for ø1/4"
- **N9** One-touch fitting for ø5/16"
- **01** Rc 1/8 thread

### Note) Purchasing order is available in units of 10 pieces.

<7> Manifold block assembly

<table>
<thead>
<tr>
<th>SSQ2000 – 1A – 3</th>
<th><strong>F0</strong></th>
<th>Without lead wire</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>FS</strong></td>
<td>F kit: D-sub connector kit</td>
</tr>
<tr>
<td></td>
<td><strong>FW</strong></td>
<td>F kit: D-sub connector kit</td>
</tr>
<tr>
<td></td>
<td><strong>PS</strong></td>
<td>P kit: Flat ribbon cable Single wiring</td>
</tr>
<tr>
<td></td>
<td><strong>PW</strong></td>
<td>P kit: Flat ribbon cable Double wiring</td>
</tr>
<tr>
<td></td>
<td><strong>TS</strong></td>
<td>T kit: Terminal block Single wiring</td>
</tr>
<tr>
<td></td>
<td><strong>TW</strong></td>
<td>T kit: Terminal block Double wiring</td>
</tr>
<tr>
<td></td>
<td><strong>L0</strong></td>
<td>L kit: Lead wire length 0.6 m</td>
</tr>
<tr>
<td></td>
<td><strong>L1</strong></td>
<td>L kit: Lead wire length 1.5 m</td>
</tr>
<tr>
<td></td>
<td><strong>L2</strong></td>
<td>L kit: Lead wire length 3 m</td>
</tr>
<tr>
<td></td>
<td><strong>SS</strong></td>
<td>S kit: Serial transmission Single wiring</td>
</tr>
<tr>
<td></td>
<td><strong>SW</strong></td>
<td>S kit: Serial transmission Double wiring</td>
</tr>
</tbody>
</table>

### Lead wire type
- **F0** Without lead wire
- **FS** F kit: D-sub connector kit Single wiring
- **FW** F kit: D-sub connector kit Double wiring
- **PS** P kit: Flat ribbon cable Single wiring
- **PW** P kit: Flat ribbon cable Double wiring
- **TS** T kit: Terminal block Single wiring
- **TW** T kit: Terminal block Double wiring
- **L0** L kit: Lead wire length 0.6 m
- **L1** L kit: Lead wire length 1.5 m
- **L2** L kit: Lead wire length 3 m
- **SS** S kit: Serial transmission Single wiring
- **SW** S kit: Serial transmission Double wiring

### Option
- **Nil** None
- **B** Back pressure check valve
- **R** External pilot specifications

### Note) Enter "-BR" for both options.

### Applicable stations
- **01** Station 1
- **16** Station 16

Note 1) "F0": Nil

<8> Manifold mounting

<table>
<thead>
<tr>
<th>SSQ2000 – 3A – 3</th>
<th>Nil</th>
<th>DIN rail mounting style</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>E</td>
<td>Direct mounting style</td>
</tr>
</tbody>
</table>

<9> Manifold mounting

<table>
<thead>
<tr>
<th>SSQ2000 – 2A – 3</th>
<th>Nil</th>
<th>DIN rail mounting style</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>E</td>
<td>Direct mounting style</td>
</tr>
</tbody>
</table>

<10> Element

SSQ2000 – SE

Note) Part number for a 10 piece set of element.

For replacement procedures, refer to page 120.

<11> Port plug

VVQZ3000 – CP

<12> Fitting assembly

### (For P, R port)

<table>
<thead>
<tr>
<th>SSQ2000 – 51A – <strong>C8</strong></th>
<th>Nil</th>
</tr>
</thead>
</table>

### Port size
- **C8** One-touch fitting for ø8
- **C10** One-touch fitting for ø10
- **N9** One-touch fitting for ø5/16"
- **N11** One-touch fitting for ø3/8"

### Note) Purchasing order is available in units of 10 pieces.

<13> Fitting assembly

### (For cylinder port)

<table>
<thead>
<tr>
<th>SSQ2000 – 51A – <strong>C4</strong></th>
<th>Nil</th>
</tr>
</thead>
</table>

### Port size
- **C4** One-touch fitting for ø4
- **C6** One-touch fitting for ø6
- **C8** One-touch fitting for ø8
- **N4** One-touch fitting for ø5/32"
- **N7** One-touch fitting for ø1/4"
- **N9** One-touch fitting for ø5/16"
- **01** Rc 1/8 thread

### Note) Purchasing order is available in units of 10 pieces.

<14> Gasket and screw assembly

SSQ2000 – GS

Note) Part number for 10 pieces each of gaskets and screws.
How to Order Manifold

**SS5Q14-08 FD2 - D - - -**

**Stations**

<table>
<thead>
<tr>
<th>Station</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>1 station</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>24 (Note)</td>
<td>24 stations</td>
</tr>
</tbody>
</table>

*Note) The maximum number of stations depends on the type of electrical entries. Refer to "Electrical entry" for details.

**Manifold mounting**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>None</td>
</tr>
<tr>
<td>02 to 24 (1)</td>
<td>DIN rail length specified</td>
</tr>
<tr>
<td>B (2/3)</td>
<td>Back pressure check valve</td>
</tr>
<tr>
<td>K (4)</td>
<td>Special wiring specifications (Except double wiring)</td>
</tr>
<tr>
<td>N</td>
<td>With name plate (Side ported only)</td>
</tr>
<tr>
<td>R</td>
<td>External pilot specifications</td>
</tr>
<tr>
<td>S</td>
<td>Built-in silencer, direct exhaust</td>
</tr>
</tbody>
</table>

**CE compliant**

- Nil
- Q

**1(P), 3(R) port size**

- Nil
- 1(P), 3(R) port, One-touch fittings for ø8
- 00T
- 1(P), 3(R) port, One-touch fittings for ø5/16"

**Electrical entry**

<table>
<thead>
<tr>
<th>Kit type</th>
<th>Lead wire connector location</th>
<th>Cable specifications</th>
<th>Station</th>
<th>Max. number of solenoids for special wiring specifications (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>F kit</td>
<td>D side</td>
<td>D-sub connector (25P) kit, without cable</td>
<td>1 to 12 stations (Double wiring)</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D-sub connector (25P) kit, with 1.5 m cable</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>D-sub connector (25P) kit, with 3.0 m cable</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>D-sub connector (25P) kit, with 5.0 m cable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P kit</td>
<td>D side (1)</td>
<td>Flat ribbon cable (26P) kit, without cable</td>
<td>1 to 12 stations (Double wiring)</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flat ribbon cable (26P) kit, with 1.5 m cable</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flat ribbon cable (26P) kit, with 3.0 m cable</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flat ribbon cable (26P) kit, with 5.0 m cable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U kit</td>
<td>D side</td>
<td>Flat ribbon cable (20P) PC wiring system compatible</td>
<td>1 to 8 stations (Double wiring)</td>
<td>16</td>
</tr>
<tr>
<td>C kit</td>
<td>C</td>
<td>Connector kit</td>
<td>1 to 24 stations</td>
<td></td>
</tr>
</tbody>
</table>

*Note 1) Specify DIN rail length with "D_" at the end. (Enter the number of stations inside _.)

- The number of stations that may be displayed is longer than the manifold number of stations. Example: -D09

*Note 2) When "-B" is selected, a back pressure check valve is included in all stations of the manifold. If the back pressure check valve is used only for the station that need it, then specify the station location in the manifold specification. ("-B" is not necessary)

*Note 3) Since 4 port specification valves (5 (R1) and 3 (R2) are common) are used, back pressure cannot be prevented with dual 3 port valves.

*Note 4) Specify "-K" for wiring specification for cases below. (Except C kit)

- All single wiring
- Single and double mixed wiring.
- When there are stations which do not require wiring (e.g. single SUP, spacer), specify the wiring specification in the manifold specification so that the number of solenoids is the maximum number of solenoids or less. (Standard wiring specification is double wiring)

*Note 5) For specifying two or more options, enter them alphabetically. Example: -BKN

* Refer to pages 95 to 99 and 105 to 107 for manifold option parts.

Note 1) Separately order the 20P type cable assembly for the P kit.

Note 2) Specify the wiring so that the maximum number of solenoids is not exceeded. (The number of solenoids are counted as: 1 for single solenoids and 2 for type 3P and 4P double solenoids.)

* Refer to page 116 for manifold spare parts.
## How to Order Valves

**Series SQ1000**

### Type of actuation

<table>
<thead>
<tr>
<th>1</th>
<th>2 position single</th>
<th>(A4)</th>
<th>2(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2 position double (Double solenoid) (1)</td>
<td>(A4)</td>
<td>2(B)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(R1)</td>
<td>(R2)</td>
</tr>
<tr>
<td>3</td>
<td>3 position closed center</td>
<td>(A4)</td>
<td>2(B)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(R1)</td>
<td>(R2)</td>
</tr>
<tr>
<td>4</td>
<td>3 position exhaust center</td>
<td>(A4)</td>
<td>2(B)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(R1)</td>
<td>(R2)</td>
</tr>
<tr>
<td>5</td>
<td>3 position pressure center</td>
<td>(A4)</td>
<td>2(B)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(R1)</td>
<td>(R2)</td>
</tr>
<tr>
<td>A</td>
<td>4 position dual 3 port valve</td>
<td>4(A)</td>
<td>2(B)</td>
</tr>
<tr>
<td>B</td>
<td>4 position dual 3 port valve</td>
<td>4(A)</td>
<td>2(B)</td>
</tr>
<tr>
<td>C</td>
<td>4 position dual 3 port valve</td>
<td>4(A)</td>
<td>2(B)</td>
</tr>
</tbody>
</table>

### Seal

0 | Metal seal
1 | Rubber seal

### Port plug mounting port

<table>
<thead>
<tr>
<th>Nil</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Port 4(A)</td>
<td>Port 2(B)</td>
</tr>
</tbody>
</table>

### Cylinder port

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Port size</th>
<th>Port location</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3</td>
<td>One-touch fitting for ø3.2</td>
<td>Side ported</td>
</tr>
<tr>
<td>C4</td>
<td>One-touch fitting for ø4</td>
<td>Side ported</td>
</tr>
<tr>
<td>C6</td>
<td>One-touch fitting for ø6</td>
<td>Top (1) ported</td>
</tr>
<tr>
<td>M5</td>
<td>M5 thread</td>
<td>Top (1) ported</td>
</tr>
<tr>
<td>L3</td>
<td>One-touch fitting for ø3.2</td>
<td>Top (1) ported</td>
</tr>
<tr>
<td>L4</td>
<td>One-touch fitting for ø4</td>
<td>Top (1) ported</td>
</tr>
<tr>
<td>L6</td>
<td>One-touch fitting for ø6</td>
<td>Top (1) ported</td>
</tr>
<tr>
<td>L5</td>
<td>M5 thread</td>
<td>Top (1) ported</td>
</tr>
</tbody>
</table>

### Function

### Rated voltage

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Standard type (0.4 W)</td>
</tr>
<tr>
<td>B</td>
<td>Quick response type (0.95 W)</td>
</tr>
<tr>
<td>D</td>
<td>2 position double (Double solenoid specifications)</td>
</tr>
<tr>
<td>K</td>
<td>High pressure type (1 MPa, 0.95 W) [Applicable to metal seal only]</td>
</tr>
<tr>
<td>N</td>
<td>Negative common</td>
</tr>
<tr>
<td>R</td>
<td>External pilot specifications</td>
</tr>
</tbody>
</table>

### Manual override

<table>
<thead>
<tr>
<th>Nil</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-locking push type (Tool required)</td>
<td>Locking type (Tool required)</td>
</tr>
</tbody>
</table>

### Electrical entry

<table>
<thead>
<tr>
<th>L</th>
<th>LO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plug connector type With 300 mm lead wire</td>
<td>Plug connector type without connector</td>
</tr>
</tbody>
</table>

### Note

- “D” is specified for 2 position double.
- Except dual 3 port valves.
- When two or more symbols are specified, indicate them alphabetically.
## Manifold Options

<table>
<thead>
<tr>
<th>Connector terminal no.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
<th>21</th>
<th>22</th>
<th>23</th>
<th>24</th>
<th>25</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>External pilot port</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Series SQ1000

#### Manifold Options

- **Blanking plate**
  - SSQ1000-10A-4 [P.95](#)

- **Individual SUP/EXH spacer**
  - SSQ1000-PR1-4-C6 [P.96](#)

- **Name plate (-N)**
  - SSQ1000-N3-n [P.98](#)

- **External pilot specifications (-R)**
  - External pilot port

- **Sup(EXH) block**
  - SSQ1000-PR-4-C8 (-S) [P.95](#)

- **SUP block plate**
  - SSQ1000-B-P [P.97](#)

- **Blanking plug**
  - KQ2P-23/04/06/08 [P.98](#)

- **Dual flow fitting**
  - SSQ1000-52A-N5 [P.99](#)

- **Individual SUP spacer**
  - SSQ1000-P-4-C6 [P.95](#)

- **EXH block plate**
  - SSQ1000-B-R [P.97](#)

- **Port plug**
  - VVQZ100-CP [P.98](#)

- **Silencer (For EXH port)**
  - [P.99](#)

- **Individual EXH spacer**
  - SSQ1000-R-4-C6 [P.96](#)

- **Back pressure check valve (-B)**
  - SSQ1000-BP [P.97](#)

- **Built-in silencer, direct exhaust (-S)**
  - [P.98](#)

- **Special wiring specifications (-K)**
  - [P.105](#)

### D-sub connector

- **Terminal no.**
  - 1 (+)
  - 2 (+)
  - 3 (+)
  - 4 (+)
  - 5 (+)
  - 6 (+)
  - 7 (+)
  - 8 (+)
  - 9 (+)
  - 10 (+)
  - 11 (+)
  - 12 (+)
  - 13 (+)

**Connector terminal no.**

Although the standard products come with double wiring, mixed single and double wiring is available upon request.
How to Order Manifold Assembly

Example: D-sub connector kit, with cable (3 m)

SSQ14-09FD2-D ····· 1 set (F kit 9-station manifold base)
∗ SQ1140-5LO1-C6 ····· 4 sets (2 position single)
∗ SQ1240D-5LO1-C6 ····· 4 sets (2 position double)
∗ SSQ1000-10A-4 ········ 1 set (Blanking plate)

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

Add the valve and option part numbers in order starting from the first station on the D side.
When entry of part numbers becomes complicated, indicate on the manifold specification sheet.
Valve Specifications

### Specifications

**Valve construction**
- Metal seal
- Rubber seal

**Fluid**
- Air/Inert gas

**Maximum operating pressure**
- Single: 0.1 MPa
- Double (Double solenoid): 0.1 MPa
- 3 position: 0.1 MPa
- 4 position: —

**Ambient and fluid temperature**
- –10 to 50°C (1)

**Lubrication**
- Not required

**Pilot valve manual override**
- Push type/Locking type (Tool required)

**Vibration/Impact resistance**
- Push type
- Dust tight

**Coil rated voltage**
- 24 VDC
- 12 VDC

**Allowable voltage fluctuation**
- ±10% of rated voltage

**Coil insulation type**
- Equivalent to class B

**Power consumption**
- 24 VDC: 0.4 W (17 mA), 0.95 W (40 mA)
- 12 VDC: 0.4 W (34 mA), 0.95 W (80 mA)

**Note 1)** Use dry air to prevent condensation when operating at low temperatures.

**Note 2)** Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

**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 deenergized states every once for each condition.

**Note 3)** Metal seal type only.

**Note 4)** Value for quick response, high pressure type.

---

### Model

<table>
<thead>
<tr>
<th>Series</th>
<th>Type of actuation</th>
<th>Seal</th>
<th>Model</th>
<th>Flow characteristics (1)</th>
<th>Response time (ms) (2)</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ1000</td>
<td>2 position single</td>
<td>Metal seal</td>
<td>SQ1140</td>
<td>C (dm³/s·bar)</td>
<td>b</td>
<td>Cv</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td>SQ1141</td>
<td>0.79</td>
<td>0.20</td>
<td>0.19</td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Metal seal</td>
<td>SQ1240D</td>
<td>0.62</td>
<td>0.10</td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td>SQ1241D</td>
<td>0.79</td>
<td>0.20</td>
<td>0.19</td>
</tr>
<tr>
<td></td>
<td>4 position</td>
<td>Metal seal</td>
<td>SQ1340</td>
<td>0.58</td>
<td>0.12</td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td>SQ1341</td>
<td>0.64</td>
<td>0.20</td>
<td>0.15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Metal seal</td>
<td>SQ1440</td>
<td>0.58</td>
<td>0.12</td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td>SQ1441</td>
<td>0.64</td>
<td>0.20</td>
<td>0.15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Metal seal</td>
<td>SQ1540</td>
<td>0.62</td>
<td>0.12</td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td>SQ1541</td>
<td>0.79</td>
<td>0.21</td>
<td>0.19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td>SQ141</td>
<td>0.59</td>
<td>0.28</td>
<td>0.15</td>
</tr>
</tbody>
</table>

---

**JIS Symbol**

- 2 position single
  - (A)4 (P) 2(B) (R1) (R2)
  - 3 position closed center
    - (A)4 (P) 2(B) (R1) (R2)
  - 3 position exhaust center
    - (A)4 (P) 2(B) (R1) (R2)
  - 3 position pressure center
    - (A)4 (P) 2(B) (R1) (R2)
  - 4 position dual 3 port valve (A)
    - (A)4 (P) 3(R) 2(B)
  - 4 position dual 3 port valve (B)
    - (A)4 (P) 3(R) 2(B)
  - 4 position dual 3 port valve (C)
    - (A)4 (P) 3(R) 2(B)

---

**Note 1)** Values for the cylinder port size of C6, CYL → Values of EXH. Flow characteristics of 2 → 3 (B → R2) delines about 30% of 4 → 5 (A → R1).

**Note 2)** Based on JIS B 8375-1981. (Values with a supply pressure of 0.5 MPa and light/surge voltage suppressor. Values fluctuate depending on the pressure and air quality.)
## Manifold Specifications

<table>
<thead>
<tr>
<th>Base model</th>
<th>Porting specifications</th>
<th>Applicable solenoid valve</th>
<th>Type of connection</th>
<th>Applicable stations (3)</th>
<th>5-station weight (4) (g)</th>
<th>Addition per station (4) (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSQ14-□□□</td>
<td>1(P), 3(R) 4(A), 2(B)</td>
<td>C8 (For ø8)</td>
<td>F kit: D-sub connector</td>
<td>1 to 12 stations</td>
<td>420</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Side</td>
<td>P kit: Flat ribbon cable</td>
<td>1 to 12 stations</td>
<td>420</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Top (2)</td>
<td>J kit: Flat ribbon cable</td>
<td>1 to 9 stations</td>
<td>420</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>C kit: Connector kit</td>
<td>1 to 24 stations</td>
<td>460</td>
<td>35</td>
</tr>
</tbody>
</table>

Note 1) One-touch fittings in inch sizes are also available. For details, refer to page 107.

Note 2) Can be changed to side ported configuration.

Note 3) An optional specification for special wiring is available to increase the maximum number of stations. Refer to page 105 for details.

Note 4) Except valves. For valve weight, refer to page 71.
The D-sub connector reduces installation labor for electrical connections.

Using the D-sub connector (25P), conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.

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

**D-sub connector (25 Pins)**

**Electrical Wiring Specifications**

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Polarity</th>
<th>Lead wire color</th>
<th>Dot marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+</td>
<td>Black</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>−</td>
<td>Black</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>+</td>
<td>Orange</td>
<td>None</td>
</tr>
<tr>
<td>4</td>
<td>−</td>
<td>Orange</td>
<td>None</td>
</tr>
<tr>
<td>5</td>
<td>+</td>
<td>Yellow</td>
<td>None</td>
</tr>
<tr>
<td>6</td>
<td>−</td>
<td>Yellow</td>
<td>None</td>
</tr>
<tr>
<td>7</td>
<td>+</td>
<td>Purple</td>
<td>None</td>
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<tr>
<td>8</td>
<td>−</td>
<td>Purple</td>
<td>None</td>
</tr>
<tr>
<td>9</td>
<td>+</td>
<td>White</td>
<td>None</td>
</tr>
<tr>
<td>10</td>
<td>−</td>
<td>White</td>
<td>None</td>
</tr>
<tr>
<td>11</td>
<td>+</td>
<td>Red</td>
<td>None</td>
</tr>
<tr>
<td>12</td>
<td>−</td>
<td>Red</td>
<td>None</td>
</tr>
<tr>
<td>13</td>
<td>+</td>
<td>Black</td>
<td>None</td>
</tr>
<tr>
<td>14</td>
<td>−</td>
<td>Black</td>
<td>None</td>
</tr>
<tr>
<td>15</td>
<td>+</td>
<td>Orange</td>
<td>None</td>
</tr>
<tr>
<td>16</td>
<td>−</td>
<td>Orange</td>
<td>None</td>
</tr>
<tr>
<td>17</td>
<td>+</td>
<td>Purple</td>
<td>None</td>
</tr>
<tr>
<td>18</td>
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<td>Purple</td>
<td>None</td>
</tr>
<tr>
<td>19</td>
<td>+</td>
<td>White</td>
<td>None</td>
</tr>
<tr>
<td>20</td>
<td>−</td>
<td>White</td>
<td>None</td>
</tr>
<tr>
<td>21</td>
<td>+</td>
<td>Red</td>
<td>None</td>
</tr>
<tr>
<td>22</td>
<td>−</td>
<td>Red</td>
<td>None</td>
</tr>
<tr>
<td>23</td>
<td>+</td>
<td>Black</td>
<td>None</td>
</tr>
<tr>
<td>24</td>
<td>−</td>
<td>Black</td>
<td>None</td>
</tr>
<tr>
<td>25</td>
<td>+</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

Note) When using the negative common specifications, use valves for negative common.

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Maximum number of stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ1000</td>
<td>Side, Top</td>
<td>12 stations</td>
</tr>
</tbody>
</table>

* Valves are numbered from the D side.
One-touch fitting, thread piping

Applicable tubing O.D.: ø3.2

Thread size: M5

Applicable connector D-sub connector (25P)

(Conforming to MIL-C-24308)

Dimensions

<table>
<thead>
<tr>
<th>L</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>
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<th>11</th>
<th>12</th>
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<th>19</th>
<th>20</th>
<th>21</th>
<th>22</th>
<th>23</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>65.5</td>
<td>77</td>
<td>88.5</td>
<td>100</td>
<td>111.5</td>
<td>123</td>
<td>134.5</td>
<td>146</td>
<td>157.5</td>
<td>169</td>
<td>180.5</td>
<td>192</td>
<td>203.5</td>
<td>215</td>
<td>226.5</td>
<td>238</td>
<td>249.5</td>
<td>261</td>
<td>272.5</td>
<td>284</td>
<td>295.5</td>
<td>307</td>
<td>318.5</td>
<td>330</td>
</tr>
<tr>
<td>L2</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>250</td>
<td>262.5</td>
<td>275</td>
<td>287.5</td>
<td>300</td>
<td>312.5</td>
<td>325</td>
<td>337.5</td>
<td>350</td>
<td>362.5</td>
<td>375</td>
<td>378.5</td>
<td>375</td>
<td></td>
</tr>
<tr>
<td>L3</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>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
<td>323</td>
<td>335.5</td>
<td>348</td>
<td>360.5</td>
<td>373</td>
<td>385.5</td>
<td>385.5</td>
<td>398</td>
<td></td>
</tr>
</tbody>
</table>

Formula: \( L1 = 11.5n + 54 \)

Manifold Options

How to Increase Manifold Stations

Construction

Exploded View

74
Flat Ribbon Cable (26 Pins, 20 Pins)

Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Maximum number of stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ1000</td>
<td>Side, Top C8 C3, C4, C6, M5</td>
<td>12 stations (24 as a semi-standard)</td>
</tr>
</tbody>
</table>

Electrical Wiring Specifications

Flat ribbon cable connector

Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 105.

Connector terminal no.

Triangle mark indicator position

Note) When using the negative common specifications, use valves for negative common.
### Dimensions

<table>
<thead>
<tr>
<th>L</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
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<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
<th>21</th>
<th>22</th>
<th>23</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>65.5</td>
<td>77</td>
<td>88.5</td>
<td>100</td>
<td>111.5</td>
<td>123</td>
<td>134.5</td>
<td>146</td>
<td>157.5</td>
<td>169</td>
<td>180.5</td>
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<td>226.5</td>
<td>238</td>
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<td>272.5</td>
<td>284</td>
<td>295.5</td>
<td>307</td>
<td>318.5</td>
<td>330</td>
</tr>
<tr>
<td>L2</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>250</td>
<td>262.5</td>
<td>275</td>
<td>287.5</td>
<td>300</td>
<td>312.5</td>
<td>325</td>
<td>337.5</td>
<td>350</td>
<td>362.5</td>
<td>375</td>
<td>387.5</td>
<td>399</td>
<td></td>
</tr>
<tr>
<td>L3</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>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
<td>323</td>
<td>335.5</td>
<td>348</td>
<td>360.5</td>
<td>373</td>
<td>386.5</td>
<td>386.5</td>
<td>398</td>
<td></td>
</tr>
</tbody>
</table>

Formula: \( L1 = 11.5n + 54 \)  
\( n: \) Stations (Maximum 24 stations)
Kit (PC Wiring System Compatible Flat Ribbon Cable Kit)

- Compatible with PC wiring system.
- Using connector for flat ribbon cable (20P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
- Top or side receptacle position can be selected in accordance with the available mounting space.

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Maximum number of stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ1000</td>
<td>Side, Top</td>
<td>C8, C3, C4, C6, M5</td>
</tr>
</tbody>
</table>

**Electrical Wiring Specifications**

Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 105.

- **Flat ribbon cable connector**
  
  - 20 □ □ 19
  - 18 □ □ 17
  - 16 □ □ 15
  - 14 □ □ 13
  - 12 □ □ 11
  - 10 □ □ 9
  - 8 □ □ 7
  - 6 □ □ 5
  - 4 □ □ 3
  - 2 □ □ 1

  **Connector terminal no.**  
  **Triangle mark indicator position**

**Terminal no.**  
**Polarity**

1 station

- SOL-a 20 (-) (+)
- SOL-b 18 (-) (+)

2 stations

- SOL-a 16 (-) (+)
- SOL-b 14 (-) (+)

3 stations

- SOL-a 12 (-) (+)
- SOL-b 10 (-) (+)

4 stations

- SOL-a 8 (-) (+)
- SOL-b 6 (-) (+)

5 stations

- SOL-a 19 (-) (+)
- SOL-b 17 (-) (+)

6 stations

- SOL-a 15 (-) (+)
- SOL-b 13 (-) (+)

7 stations

- SOL-a 11 (-) (+)
- SOL-b 9 (-) (+)

8 stations

- SOL-a 7 (-) (+)
- SOL-b 5 (-) (+)

- 4 (-) (+)
- 3 (-) (+)

- 2 (+) (-)
- COM 1 (+) (-)

Note) When using the negative common specifications, use valves for negative common. For details about the PC wiring system, refer to the PCW series catalog (CAT.E02-20) separately.
One-touch fitting, thread piping
[4(A), 2(B) port]
Applicable tubing O.D.: ø3.2
: ø4
: ø6
Thread size: M5

Applicable connector:
Flat ribbon cable connector (20P)
(Conforming to MIL-C-83503)

Dimensions

Formula: L1 = 11.5n + 54  n: Stations (Maximum 16 stations)

<table>
<thead>
<tr>
<th>L</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>65.5</td>
<td>77</td>
<td>88.5</td>
<td>100</td>
<td>111.5</td>
<td>123</td>
<td>134.5</td>
<td>146</td>
<td>157.5</td>
<td>169</td>
<td>180.5</td>
<td>192</td>
<td>203.5</td>
<td>215</td>
<td>226.5</td>
<td>238</td>
</tr>
<tr>
<td>L2</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>250</td>
<td>262.5</td>
<td>275</td>
<td>287.5</td>
<td>300</td>
<td></td>
</tr>
<tr>
<td>L3</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>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
<td></td>
</tr>
</tbody>
</table>
Series SQ1000

Kit (Connector)

- Standard with lead wires connected to each valve individually.

### Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Maximum number of stations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Port location</td>
<td>Port size</td>
</tr>
<tr>
<td>SQ1000</td>
<td>Side, Top</td>
<td>C8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C3, C4, C6, M5</td>
</tr>
</tbody>
</table>

- Valves are numbered from the D side.

### Wiring Specifications: Positive Common Specifications

Since lead wires are connected to the valves as shown below, connect each wire to the power supply.

#### Single solenoid

- Lead wire color
  - SOLA: Black
  - COM: Red

- Black: A side solenoid (–)
- Red: COM (+)

#### Double solenoid

- Lead wire color
  - SOLA: Black
  - SOLB: White
  - COM: Red

- Black: A side solenoid (–)
- Red: COM (+)
- White: B side solenoid (–)

### Wiring Specifications: Negative Common Specifications (Semi-standard)

Since lead wires are connected to the valves as shown below, connect each wire to the power supply.

#### Single solenoid

- Lead wire color
  - SOLA: Red
  - COM: Black

- Red: A side solenoid (+)
- Black: COM (–)

#### Double solenoid

- Lead wire color
  - SOLA: Red
  - SOLB: White
  - COM: Black

- Red: A side solenoid (+)
- White: B side solenoid (+)
- Black: COM (–)

### Plug connector lead wire length

The lead wire length of the valves with lead wire is 300 mm. When ordering a lead wire length of 600 mm or longer, list the part numbers for the valve without connector and the connector assembly. (Example) For lead wire length of 1000 mm: SQ1140-SLO1-C6—3 pcs. AXT661-14AL-10—3 pcs.

### Connector Assembly Part No.

<table>
<thead>
<tr>
<th>Lead wire length</th>
<th>Single solenoid</th>
<th>Double solenoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socket only (3 pcs.)</td>
<td>AXT661-12AL</td>
<td>AXT661-12AL</td>
</tr>
<tr>
<td>300 mm</td>
<td>AXT661-14AL</td>
<td>AXT661-14AL</td>
</tr>
<tr>
<td>600 mm</td>
<td>AXT661-14AL-6</td>
<td>AXT661-14AL-6</td>
</tr>
<tr>
<td>1000 mm</td>
<td>AXT661-14AL-10</td>
<td>AXT661-13AL-10</td>
</tr>
<tr>
<td>2000 mm</td>
<td>AXT661-14AL-20</td>
<td>AXT661-13AL-20</td>
</tr>
<tr>
<td>3000 mm</td>
<td>AXT661-14AL-30</td>
<td>AXT661-13AL-30</td>
</tr>
</tbody>
</table>

- Note: When using the negative common specifications, use valves for negative common.
**Plug Lead Unit Series SQ1000**

**Dimensions**

| L  | 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 | 65.5 | 77 | 80.5 | 100 | 111.5 | 123 | 134.5 | 146 | 157.5 | 169 | 180.5 | 192 | 203.5 | 215 | 226.5 | 238 | 249.5 | 261 | 272.5 | 284 | 295.5 | 307 | 318.5 | 330 |
| L2 | 87.5 | 100 | 112.5 | 125 | 137.5 | 150 | 162.5 | 175 | 187.5 | 200 | 212.5 | 225 | 237.5 | 250 | 262.5 | 275 | 287.5 | 300 | 312.5 | 325 | 337.5 | 350 |
| L3 | 98  | 110.5 | 123 | 135.5 | 148 | 160.5 | 173 | 185.5 | 198 | 210.5 | 223 | 235.5 | 248 | 260.5 | 273 | 285.5 | 298 | 310.5 | 323 | 335.5 | 348 | 360.5 | 380.5 |

Formula: \( L_1 = 11.5n + 54 \)  \( n \): Stations (Maximum 24 stations)

- **M5**: External pilot port
- **EXH outlet**: For top ported
- **EXH outlet**: Applicable tubing O.D.: ⌀8
- **For top ported**: One-touch fitting, thread piping ⌀3.2
- **For top ported**: Applicable tubing O.D.: ⌀4
- **For top ported**: Applicable tubing O.D.: ⌀6
- **Thread size**: M5

**Notes**

- Lead wire length: >300
- **Manual override**
- **Indicator light**
- **One-touch fitting**
- **D side**
- **U side**

**How to Increase Manifold Stations**

**Manifold Options**

**Construction**

**Exploded View**

---

**Page 80**
### How to Order Manifold

#### SS5Q24 - 08 FD2 - D

<table>
<thead>
<tr>
<th>Stations</th>
<th>01</th>
<th>1 station</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>16 stations</td>
</tr>
</tbody>
</table>

- CE compliant
  - Nil
  - Q

**Note:**
- Specify DIN rail length with "D" at the end. (Enter the number of stations inside "D").
- The number of stations that may be displayed is longer than the manifold number of stations. Example: -D09
- When "-B" is selected, a back pressure check valve is included in all stations of the manifold. If the back pressure check valve is used only for the station that need it, then specify the station location in the manifold specification. "-B" is not necessary.
- Note 3: Specify "-K" for wiring specification for cases below. (Except C kit)
  - All single wiring
  - Single and double mixed wiring.
  - When there are stations which do not require wiring (e.g. single SUP spacer), specify the wiring specification in the manifold specification so that the number of solenoids is the maximum number of solenoids or less. (Standard wiring specification is double wiring)
- For specifying two or more options, enter them alphabetically. Example: -BKN

#### Option

| Nil | None |
| 02 to 16 (1) | DIN rail length specified |
| B | Back pressure check valve |
| K (3) | Social wiring specifications (Except double wiring) |
| N | With name plate (Side ported only) |
| R | External pilot specifications |
| S | Built-in silencer, direct exhaust |

#### Electrical entry

<table>
<thead>
<tr>
<th>Kit type</th>
<th>Lead wire connector location</th>
<th>Cable specifications</th>
<th>Stations</th>
<th>Max. number of solenoids for special wiring specifications</th>
<th>Max. number of solenoids for special wiring specifications (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>F kit</td>
<td>D side</td>
<td>D-sub connector (25P) kit, without cable</td>
<td>1 to 12 stations (Double wiring)</td>
<td>16 stations</td>
<td>24</td>
</tr>
<tr>
<td>D-sub Connector kit</td>
<td></td>
<td>D-sub connector (25P) kit, with 1.5 m cable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F kit</td>
<td>D side</td>
<td>D-sub connector (25P) kit, with 5.0 m cable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D side</td>
<td></td>
<td>D-sub connector (25P) kit, without cable</td>
<td>1 to 12 stations (Double wiring)</td>
<td>16 stations</td>
<td>24</td>
</tr>
<tr>
<td>D side</td>
<td></td>
<td>D-sub connector (25P) kit, with 1.5 m cable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D side</td>
<td></td>
<td>D-sub connector (25P) kit, with 5.0 m cable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D side</td>
<td></td>
<td>Flat ribbon cable (26P) kit, without cable</td>
<td>1 to 9 stations (Double wiring)</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>D side</td>
<td></td>
<td>Flat ribbon cable (26P) kit, with 1.5 m cable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D side</td>
<td></td>
<td>Flat ribbon cable (26P) kit, with 5.0 m cable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D side</td>
<td></td>
<td>Flat ribbon cable (20P) kit, without cable</td>
<td>1 to 8 stations (Double wiring)</td>
<td>16 stations</td>
<td>16</td>
</tr>
<tr>
<td>D side</td>
<td></td>
<td>Flat ribbon cable (20P) PC wiring system compatible</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J kit</td>
<td>D side</td>
<td>Flat ribbon cable (20P)</td>
<td>1 to 8 stations (Double wiring)</td>
<td>16 stations</td>
<td>16</td>
</tr>
<tr>
<td>J kit</td>
<td>D side</td>
<td>PC wiring system compatible</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J kit</td>
<td>D side</td>
<td>Connector kit</td>
<td>1 to 16 stations</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>C kit</td>
<td>—</td>
<td>Connector kit</td>
<td>16</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:*
- Separately order the 20P type cable assembly for the P kit.
- Specify the number of the solenoid so that the maximum station number is not exceeded. (The number of solenoids are counted as: 1 for single solenoids and 2 for type 3P and 4P double solenoids.)
- Refer to page 116 for manifold spare parts.
Plug Lead Unit Series SQ2000

How to Order Valves

SQ2[1 4 0] - 5 L 1 - C6 -

Type of actuation

<table>
<thead>
<tr>
<th>Function</th>
<th>Symbol</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>A[4]</td>
<td>2 position single (A4 2(B))</td>
</tr>
<tr>
<td>B[4]</td>
<td>2 position double (Double solenoid) (B4 2(B))</td>
<td></td>
</tr>
<tr>
<td>C[4]</td>
<td>3 position closed center (C4 2(B))</td>
<td></td>
</tr>
<tr>
<td>D[4]</td>
<td>3 position exhaust center (D4 2(B))</td>
<td></td>
</tr>
<tr>
<td>E[4]</td>
<td>3 position pressure center (E4 2(B))</td>
<td></td>
</tr>
<tr>
<td>F[4]</td>
<td>4 position dual 3 port valve (F4 2(B))</td>
<td></td>
</tr>
<tr>
<td>G[4]</td>
<td>4 position dual 3 port valve (G4 2(B))</td>
<td></td>
</tr>
<tr>
<td>H[4]</td>
<td>4 position dual 3 port valve (H4 2(B))</td>
<td></td>
</tr>
</tbody>
</table>

Note 1) For double solenoid specifications, the function symbol below is “D”.
Note 2) Only rubber seal types are applicable.

Port plug mounting port

With/Without manifold block

<table>
<thead>
<tr>
<th>Nil</th>
<th>M</th>
<th>MB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without manifold block</td>
<td>With manifold block</td>
<td>With manifold block, built-in back pressure check valve</td>
</tr>
</tbody>
</table>

Port 4(A)

Port 2(B)

Cylinder port

Symbol | Port size | Port location |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>C4</td>
<td>One-touch fitting for ø4</td>
<td>Side ported</td>
</tr>
<tr>
<td>C6</td>
<td>One-touch fitting for ø6</td>
<td>Top ported</td>
</tr>
<tr>
<td>C8</td>
<td>One-touch fitting for ø8</td>
<td></td>
</tr>
<tr>
<td>L4</td>
<td>One-touch fitting for ø4</td>
<td>Top ported</td>
</tr>
<tr>
<td>L6</td>
<td>One-touch fitting for ø6</td>
<td>Top ported</td>
</tr>
<tr>
<td>L8</td>
<td>One-touch fitting for ø8</td>
<td></td>
</tr>
</tbody>
</table>

Note 1) Can be changed to side ported configuration. Note 2) Refer to page 107 for the inch-size One-touch fittings.

Manifold override

<table>
<thead>
<tr>
<th>Nil</th>
<th>B</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-locking push type (Tool required)</td>
<td>Locking type (Tool required)</td>
<td>Slide locking type (Manual type)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>A[5]</td>
<td>Standard type (0.4 W)</td>
</tr>
<tr>
<td>B[5]</td>
<td>Quick response type (0.95 W)</td>
</tr>
<tr>
<td>C[5]</td>
<td>2 position double (Double solenoid specifications)</td>
</tr>
<tr>
<td>D[5]</td>
<td>Negative common</td>
</tr>
</tbody>
</table>

Rated voltage

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5[5]</td>
<td>24 VDC</td>
</tr>
<tr>
<td>6[5]</td>
<td>12 VDC</td>
</tr>
</tbody>
</table>

Electrical entry

<table>
<thead>
<tr>
<th>L</th>
<th>LO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plug connector type</td>
<td>Plug connector type</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5[5]</td>
<td>With 300 mm lead wire</td>
</tr>
</tbody>
</table>

CE compliant

<table>
<thead>
<tr>
<th>Nil</th>
<th>Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE compliant</td>
<td>CE compliant</td>
</tr>
</tbody>
</table>

Note 1) “D” is specified for 2 position double.
Note 2) Except dual 3 port valves.
Note 3) When two or more symbols are specified, indicate them alphabetically.

Note) Light/surge voltage suppressor is built-in.

Note) Indicate “LO” when ordering centralized wiring type manifolds, F, P, and J kits, since the lead wire will be attached to the manifold side.
## Manifold Options

<table>
<thead>
<tr>
<th>Component</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blanking plate</td>
<td>P.100</td>
</tr>
<tr>
<td>SSQ2000-10A-4</td>
<td></td>
</tr>
<tr>
<td>Individual SUP/EXH spacer</td>
<td>P.101</td>
</tr>
<tr>
<td>SSQ2000-PR1-4-</td>
<td></td>
</tr>
<tr>
<td>Name plate (-N)</td>
<td>P.103</td>
</tr>
<tr>
<td>SSQ2000-N3-n</td>
<td></td>
</tr>
<tr>
<td>External pilot specifications (-R)</td>
<td>P.104</td>
</tr>
<tr>
<td>External pilot port</td>
<td></td>
</tr>
<tr>
<td>SUP/EXH block</td>
<td>P.100</td>
</tr>
<tr>
<td>SSQ2000-PR-3-C10(-S)</td>
<td></td>
</tr>
<tr>
<td>SUP block plate</td>
<td>P.102</td>
</tr>
<tr>
<td>SSQ1000-B-R</td>
<td></td>
</tr>
<tr>
<td>Blanking plug</td>
<td>P.103</td>
</tr>
<tr>
<td>KQ2P-04/06/08/10</td>
<td></td>
</tr>
<tr>
<td>Dual flow fitting</td>
<td>P.104</td>
</tr>
<tr>
<td>SSQ2000-52A-</td>
<td></td>
</tr>
<tr>
<td>Individual SUP spacer</td>
<td>P.100</td>
</tr>
<tr>
<td>SSQ2000-P-4-</td>
<td></td>
</tr>
<tr>
<td>EXH block plate</td>
<td>P.102</td>
</tr>
<tr>
<td>SSQ2000-B-R</td>
<td></td>
</tr>
<tr>
<td>Port plug</td>
<td>P.103</td>
</tr>
<tr>
<td>VVQZ2000-CP</td>
<td></td>
</tr>
<tr>
<td>Silencer (For EXH port)</td>
<td>P.104</td>
</tr>
<tr>
<td>Built-in silencer, direct exhaust (-S)</td>
<td>P.103</td>
</tr>
<tr>
<td>SSQ2000-BP</td>
<td></td>
</tr>
<tr>
<td>Special wiring specifications (-K)</td>
<td>P.105</td>
</tr>
<tr>
<td>D-sub connector</td>
<td></td>
</tr>
</tbody>
</table>

Although the standard products come with double wiring, mixed single and double wiring is available upon request.
How to Order Manifold Assembly

Example: D-sub connector kit, with cable (3 m)

Add the valve and option part numbers in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate on the manifold specification sheet.

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

SSQ24-08FD2-D ……… 1 set (F kit 8-station manifold base)
* SQ2140-5LO1-C8 …… 3 sets (2 position single)
* SQ2240D-5LO1-C8 … 3 sets (2 position double)
* SQ2340-5LO1-C8 ….. 1 set (3 position exhaust center)
* SSQ2000-10A-4 …… 1 set (Blanking plate)
### Valve Specifications

#### Model

<table>
<thead>
<tr>
<th>Series</th>
<th>Type of actuation</th>
<th>Seal</th>
<th>Model</th>
<th>Flow characteristics (1)</th>
<th>Response time (ms) (2)</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1→4/2 (P→A/B)</td>
<td>4/2→5/3 (A/B→R1/R2)</td>
<td>Standard (0.4 W)</td>
</tr>
<tr>
<td>SQ2000</td>
<td>2 position</td>
<td>Single</td>
<td>Metal seal</td>
<td>SQ2140</td>
<td>2.2 0.17 0.51 2.4 0.14 0.57</td>
<td>35 or less 20 or less</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td>SQ2141</td>
<td>2.3 0.17 0.51 3.1 0.18 0.71</td>
<td>31 or less 24 or less</td>
<td>140</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Double</td>
<td>Metal seal</td>
<td>SQ2400</td>
<td>2.2 0.17 0.51 2.4 0.14 0.57</td>
<td>20 or less 15 or less</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td>SQ241D</td>
<td>2.3 0.17 0.51 3.1 0.18 0.71</td>
<td>26 or less 20 or less</td>
<td>155</td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Closed center</td>
<td>Metal seal</td>
<td>SQ2340</td>
<td>1.9 0.17 0.46 2.1 0.15 0.47</td>
<td>56 or less 37 or less</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exhaust center</td>
<td>Rubber seal</td>
<td>SQ2341</td>
<td>1.9 0.17 0.46 1.8 0.29 0.45</td>
<td>44 or less 34 or less</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pressure center</td>
<td>Metal seal</td>
<td>SQ2440</td>
<td>1.9 0.17 0.46 2.4 0.14 0.55</td>
<td>56 or less 37 or less</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dual 3 port valve</td>
<td>Rubber seal</td>
<td>SQ2441</td>
<td>1.9 0.17 0.46 3.1 0.14 0.58</td>
<td>44 or less 34 or less</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.5 0.17 0.56 1.8 0.30 0.47</td>
<td>44 or less 34 or less</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15 0.17 0.40 1.5 0.17 0.40</td>
<td>34 or less 19 or less</td>
</tr>
</tbody>
</table>

**Note 1)** Values for the top ported cylinder port size of C8, CYL → Values of EXH. The side ported type will be about 10% less.
**Note 2)** Based on JIS B 8375-1981. (Values with a supply pressure of 0.5 MPa and light/surge voltage suppressor. Values fluctuate depending on the pressure and air quality.)

#### Specifications

<table>
<thead>
<tr>
<th>Valve construction</th>
<th>Metal seal</th>
<th>Rubber seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid</td>
<td>Air/Inert gas</td>
<td></td>
</tr>
<tr>
<td>Maximum operating pressure</td>
<td>0.7 MPa</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>0.1 MPa</td>
<td>0.15 MPa</td>
</tr>
<tr>
<td>Double (Double solenoid)</td>
<td>0.1 MPa</td>
<td>0.1 MPa</td>
</tr>
<tr>
<td>3 position</td>
<td>0.1 MPa</td>
<td>0.2 MPa</td>
</tr>
<tr>
<td>4 position</td>
<td>—</td>
<td>0.15 MPa</td>
</tr>
<tr>
<td>Ambient and fluid temperature</td>
<td>–10 to 50°C(1)</td>
<td></td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not required</td>
<td></td>
</tr>
<tr>
<td>Pilot valve manual override</td>
<td>Push type (Tool required)/Locking type (Tool required)</td>
<td></td>
</tr>
<tr>
<td>Vibration/Impact resistance (2)</td>
<td>30/150 m/s²</td>
<td></td>
</tr>
<tr>
<td>Protection structure</td>
<td>Dust tight</td>
<td></td>
</tr>
</tbody>
</table>

**Note 1)** Use dry air to prevent condensation when operating at low temperatures.
**Note 2)** Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)
**Note 3)** Value for quick response type.

#### JIS Symbol

- 2 position single
  - (A)4 (2B)
  - (R1)1 3(R2)
  - Metal seal
  - Rubber seal
- 3 position closed center
  - (A)4 (2B)
  - (R1)1 3(R2)
- 3 position pressure center
  - (A)4 (2B)
  - (R1)1 3(R2)
- 3 position exhaust center
  - (A)4 (2B)
  - (R1)1 3(R2)
- 4 position dual 3 port valve (B)
  - 4(A)
  - 2(B)
- 4 position dual 3 port valve (A)
  - 4(A)
  - 2(B)
- 4 position dual 3 port valve (C)
  - 4(A)
  - 2(B)

**Note 1)** Use dry air to prevent condensation when operating at low temperatures.
**Note 2)** Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)
**Note 3)** Use dry air to prevent condensation when operating at low temperatures.
**Note 4)** Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

**Note 5)** 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 deenergized states every once for each condition. (Values at the initial period)
### Manifold Specifications

<table>
<thead>
<tr>
<th>Base model</th>
<th>Porting specifications</th>
<th>Applicable solenoid valve</th>
<th>Type of connection</th>
<th>Applicable stations</th>
<th>5-station weight</th>
<th>Addition per station</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS SQ24-□□</td>
<td>1(P), 3(R)</td>
<td>4(A), 2(B)</td>
<td>Side C10 (For ø10)</td>
<td>F kit: D-sub connector</td>
<td>1 to 12 stations</td>
<td>580</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Top</td>
<td>P kit: Flat ribbon cable</td>
<td>1 to 12 stations</td>
<td>580</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>J kit: Flat ribbon cable</td>
<td>1 to 9 stations</td>
<td>580</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>C kit: Connector kit</td>
<td>1 to 16 stations</td>
<td>620</td>
</tr>
</tbody>
</table>

**Notes:**
1. One-touch fittings in inch sizes are also available. For details, refer to page 107.
2. Can be changed to side ported configuration.
3. An optional specification for special wiring is available to increase the maximum number of stations. Refer to page 105 for details.
4. Except valves. For valve weight, refer to page 85.
The D-sub connector reduces installation labor for electrical connections.
- Using the D-sub connector (25P), conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
- Top or side receptacle position can be selected in accordance with the available mounting space.

D-sub Connector (25 Pins)

Manifold specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Maximum number of stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ2000</td>
<td>Side, Top C10, C4, C6, C8</td>
<td>12 stations (16 as a semi-standard)</td>
</tr>
</tbody>
</table>

Electrical Specifications

As the standard electrical wiring specifications, double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station for 12 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 105.

D-sub connector assembly wire colors

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Lead wire color</th>
<th>Dot marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Black</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>Brown</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>Red</td>
<td>None</td>
</tr>
<tr>
<td>4</td>
<td>Orange</td>
<td>None</td>
</tr>
<tr>
<td>5</td>
<td>Yellow</td>
<td>None</td>
</tr>
<tr>
<td>6</td>
<td>Pink</td>
<td>None</td>
</tr>
<tr>
<td>7</td>
<td>Blue</td>
<td>None</td>
</tr>
<tr>
<td>8</td>
<td>Purple</td>
<td>None</td>
</tr>
<tr>
<td>9</td>
<td>Gray</td>
<td>None</td>
</tr>
<tr>
<td>10</td>
<td>Black</td>
<td>None</td>
</tr>
<tr>
<td>11</td>
<td>White</td>
<td>Red</td>
</tr>
<tr>
<td>12</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>13</td>
<td>Orange</td>
<td>Red</td>
</tr>
<tr>
<td>14</td>
<td>Black</td>
<td>None</td>
</tr>
<tr>
<td>15</td>
<td>White</td>
<td>None</td>
</tr>
<tr>
<td>16</td>
<td>Yellow</td>
<td>None</td>
</tr>
<tr>
<td>17</td>
<td>Gray</td>
<td>None</td>
</tr>
<tr>
<td>18</td>
<td>Black</td>
<td>None</td>
</tr>
<tr>
<td>19</td>
<td>Orange</td>
<td>None</td>
</tr>
<tr>
<td>20</td>
<td>Red</td>
<td>None</td>
</tr>
<tr>
<td>21</td>
<td>White</td>
<td>None</td>
</tr>
<tr>
<td>22</td>
<td>Black</td>
<td>None</td>
</tr>
<tr>
<td>23</td>
<td>Gray</td>
<td>None</td>
</tr>
<tr>
<td>24</td>
<td>White</td>
<td>None</td>
</tr>
<tr>
<td>25</td>
<td>Black</td>
<td>None</td>
</tr>
</tbody>
</table>

Note: Valves are numbered from the D side.

Electrical Characteristics

<table>
<thead>
<tr>
<th>Item</th>
<th>Property</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conductor resistance</td>
<td>L/km, 20°C 65 or less</td>
</tr>
<tr>
<td>Withstand voltage</td>
<td>VAC, 1 min. 1000</td>
</tr>
<tr>
<td>Insulation resistance</td>
<td>MΩ/km, 20°C 5 or more</td>
</tr>
</tbody>
</table>

Note: The minimum bending inner radius of D-sub connector cable is 20 mm.

Connector manufacturers’ example

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

Note: When using the negative common specifications, use valves for negative common.
### Dimensions

<table>
<thead>
<tr>
<th>Station</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>77.5</td>
<td>95</td>
<td>112.5</td>
</tr>
<tr>
<td>2</td>
<td>130</td>
<td>165</td>
<td>182.5</td>
</tr>
<tr>
<td>3</td>
<td>147.5</td>
<td>165</td>
<td>200</td>
</tr>
<tr>
<td>4</td>
<td>182.5</td>
<td>200</td>
<td>217.5</td>
</tr>
<tr>
<td>5</td>
<td>217.5</td>
<td>235</td>
<td>252.5</td>
</tr>
<tr>
<td>6</td>
<td>235</td>
<td>250</td>
<td>262.5</td>
</tr>
<tr>
<td>7</td>
<td>250</td>
<td>275</td>
<td>300</td>
</tr>
<tr>
<td>8</td>
<td>275</td>
<td>300</td>
<td>312.5</td>
</tr>
<tr>
<td>9</td>
<td>300</td>
<td>312.5</td>
<td>337.5</td>
</tr>
<tr>
<td>10</td>
<td>312.5</td>
<td>337.5</td>
<td>350</td>
</tr>
<tr>
<td>11</td>
<td>337.5</td>
<td>350</td>
<td>362.5</td>
</tr>
<tr>
<td>12</td>
<td>350</td>
<td>362.5</td>
<td>387.5</td>
</tr>
<tr>
<td>13</td>
<td>387.5</td>
<td>400</td>
<td>400</td>
</tr>
</tbody>
</table>

Formula: \[ L = 17.5n + 60 \]  
where \( n \) is the number of stations (maximum 16 stations).
Series SQ2000

Flat Ribbon Cable (26 Pins, 20 Pins)

- Simplification and labor savings for wiring work can be achieved by using a MIL type for the electrical connection.
- Using the connector for flat ribbon cable (26P, 20P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
- Top or side receptacle position can be selected in accordance with the available mounting space.

Flat Ribbon Cable Connector Assembly

<table>
<thead>
<tr>
<th>Cable length (L)</th>
<th>Assembly part no. 26P</th>
<th>Assembly part no. 20P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>AXT100-FC26-1</td>
<td>AXT100-FC20-1</td>
</tr>
<tr>
<td>3 m</td>
<td>AXT100-FC26-2</td>
<td>AXT100-FC20-2</td>
</tr>
<tr>
<td>5 m</td>
<td>AXT100-FC26-3</td>
<td>AXT100-FC20-3</td>
</tr>
</tbody>
</table>

For other commercial connectors, use a 26 pins or 20 pins with strain relief conforming to MIL-C-83503.

Electrical Wiring Specifications

26P double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring is available as an option.

Porting specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Port location</th>
<th>Port size</th>
<th>Maximum number of stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ2000</td>
<td>Side, Top</td>
<td>C10</td>
<td>12 stations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C4, C6, C8</td>
<td>16 as a semi-standard</td>
</tr>
</tbody>
</table>

Note: When using the negative common specifications, use valves for negative common.

Connector manufacturers’ example

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

* Valves are numbered from the D side.
Kit (PC Wiring System Compatible Flat Ribbon Cable Kit)

- Compatible with PC wiring system.
- Using connector for flat ribbon cable (20P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
- Top or side receptacle position can be selected in accordance with the available mounting space.

### Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Maximum number of stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ2000</td>
<td>Side, Top C10 C4, C6, C8</td>
<td>8 stations (16 as a semi-standard)</td>
</tr>
</tbody>
</table>

### Electrical Wiring Specifications

Double wiring (connected to SOL A and SOL B) is adopted for the internal wiring of each station, regardless of valve and option types.

Mixed single and double wiring is available as an option.

For details, refer to page 105.

#### Flat ribbon cable connector

- Connector terminal no.:
  - 20: 19
  - 16: 15
  - 14: 13
  - 12: 11
  - 10: 9
  - 8: 7
  - 6: 5
  - 4: 3
  - 2: 1

- Triangle mark indicator position:
  - connectors for flat ribbon cable (20P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
  - Top or side receptacle position can be selected in accordance with the available mounting space.

Note: When using the negative common specifications, use valves for negative common.

For details about the PC wiring system, refer to the PCW series catalog (Cat. E02-20) separately.
Plug Lead Unit Series SQ2000

Dimensions

<table>
<thead>
<tr>
<th>Station</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>77.5</td>
<td>95</td>
<td>112.5</td>
</tr>
<tr>
<td>2</td>
<td>137.5</td>
<td>162.5</td>
<td>175</td>
</tr>
<tr>
<td>3</td>
<td>198</td>
<td>223</td>
<td>235.5</td>
</tr>
<tr>
<td>4</td>
<td>260.5</td>
<td>273</td>
<td>285.5</td>
</tr>
<tr>
<td>5</td>
<td>310.5</td>
<td>323</td>
<td>348</td>
</tr>
<tr>
<td>6</td>
<td>360.5</td>
<td>373</td>
<td>398</td>
</tr>
<tr>
<td>7</td>
<td>410.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Formula: $L = 17.5n + 60$  
$n$: Stations (Maximum 16 stations)
**Series SQ2000**

**C Kit (Connector)**

- Standard with lead wires connected to each valve individually.

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Maximum number of stations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Port location</td>
<td>Port size</td>
</tr>
<tr>
<td>SQ2000</td>
<td>Side, Top</td>
<td>C10</td>
</tr>
</tbody>
</table>

- **Wiring Specifications: Positive Common Specifications**

Since lead wires are connected to the valves as shown below, connect each wire to the power supply.

**Single solenoid**

- Lead wire color
  - SOLA (−) Black
  - COM (+) Red

- Black: A side solenoid (−)
- Red: COM (+)

**Double solenoid**

- Lead wire color
  - SOLA (−) Black
  - COM (+) Red
  - SOLB (−) White

- Black: A side solenoid (−)
- Red: COM (+)
- White: B side solenoid (−)

- **Plug connector lead wire length**

The lead wire length of the valves with lead wire is 300 mm. When ordering a lead wire length of 600 mm or longer, list the part numbers for the valve without connector and the connector assembly.

Example) For lead wire length of 1000 mm: SQ2140-5LO1-C6····3 pcs.
AXT661-14AL-10····3 pcs.

**Wiring Specifications: Negative Common Specifications (Semi-standard)**

Since lead wires are connected to the valves as shown below, connect each wire to the power supply.

**Single solenoid**

- Lead wire color
  - SOLA (+) Red
  - COM (−) Black

- Red: A side solenoid (+)
- Black: COM (−)

**Double solenoid**

- Lead wire color
  - SOLA (+) Red
  - SOLB (+) White
  - COM (−) Black

- Red: A side solenoid (+)
- White: B side solenoid (+)

- **Plug connector lead wire length**

The lead wire length of the valves with lead wire is 300 mm. When ordering a lead wire length of 600 mm or longer, list the part numbers for the valve without connector and the connector assembly.

Example) For lead wire length of 1000 mm: SQ2140N-5LO1-C6···3 pcs.
AXT661-14ANL-10···3 pcs.

**Connector Assembly Part No.**

<table>
<thead>
<tr>
<th>Lead wire length</th>
<th>Single solenoid</th>
<th>Double solenoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socket only (3 pcs.)</td>
<td>AXT661-12AL</td>
<td>AXT661-14AL</td>
</tr>
<tr>
<td>300 mm</td>
<td>AXT661-14AL</td>
<td>AXT661-13AL</td>
</tr>
<tr>
<td>600 mm</td>
<td>AXT661-14AL-6</td>
<td>AXT661-13AL-6</td>
</tr>
<tr>
<td>1000 mm</td>
<td>AXT661-14AL-10</td>
<td>AXT661-13AL-10</td>
</tr>
<tr>
<td>2000 mm</td>
<td>AXT661-14AL-20</td>
<td>AXT661-13AL-20</td>
</tr>
<tr>
<td>3000 mm</td>
<td>AXT661-14AL-30</td>
<td>AXT661-13AL-30</td>
</tr>
</tbody>
</table>

**Connector Assembly Part No.**

<table>
<thead>
<tr>
<th>Lead wire length</th>
<th>Single solenoid</th>
<th>Double solenoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socket only (3 pcs.)</td>
<td>AXT661-12AL</td>
<td>AXT661-14ANL</td>
</tr>
<tr>
<td>300 mm</td>
<td>AXT661-14ANL</td>
<td>AXT661-13ANL</td>
</tr>
<tr>
<td>600 mm</td>
<td>AXT661-14ANL-6</td>
<td>AXT661-13ANL-6</td>
</tr>
<tr>
<td>1000 mm</td>
<td>AXT661-14ANL-10</td>
<td>AXT661-13ANL-10</td>
</tr>
<tr>
<td>2000 mm</td>
<td>AXT661-14ANL-20</td>
<td>AXT661-13ANL-20</td>
</tr>
<tr>
<td>3000 mm</td>
<td>AXT661-14ANL-30</td>
<td>AXT661-13ANL-30</td>
</tr>
</tbody>
</table>

Note) When using the negative common specifications, use valves for negative common.
Series SQ1000

Manifold Option Parts for SQ1000

Blanking plate

SSQ1000-10A-4

It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.

SUP/EXH block

SSQ1000-PR-4-C8

Option

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description/Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>C8</td>
<td>One-touch fittings for ø8</td>
</tr>
<tr>
<td>N9</td>
<td>One-touch fittings for ø5/16&quot;</td>
</tr>
</tbody>
</table>

Note) When specifying both options, indicate "-RS".
• Specify the spacer mounting position on the manifold specification sheet.

For standard type manifolds, the SUP/EXH block is mounted on the D side. It is added to the manifold to increase SUP/EXH capacity.
• The number of SUP/EXH blocks that can be added is limited to two sets, one between manifold stations and another on the U side of the manifold, due to the length of the lead wire.
• SUP/EXH blocks are not included in the number of manifold stations.

Individual SUP spacer

SSQ1000-P-4-C6

Port size

<table>
<thead>
<tr>
<th>Side ported</th>
<th>Top ported</th>
</tr>
</thead>
<tbody>
<tr>
<td>C8</td>
<td>L8</td>
</tr>
<tr>
<td>N7</td>
<td>L9</td>
</tr>
</tbody>
</table>

This is used as a supply port for different pressures when using different pressures in the same manifold (for one station). Both sides of the station which is used with supply pressure from the individual SUP spacer are shut off. (Refer to application example.)
• Specify the spacer mounting position and SUP passage shut off positions on the manifold specification sheet. Two shut off positions are required per unit.
(Two pieces of SUP block plate that shut off the supply pressure are included with the individual SUP spacer, therefore, it is not necessary to order them separately.)
• Electrical wiring is connected to the manifold station with the individual SUP spacer.
• By changing the fitting shown in the drawing and the block plates, the spacer's specification can be changed later (from the individual SUP spacer to the individual EXH spacer).
• The number of spacers is not limited when ordered with the manifold. However, when adding individual for F, P, and J kits, it is limited to two units, one between manifold stations and another on the U side, due to the length of the lead wire.
• Model no. with manifold block:
SSQ1000-P-4-C8-M
Individual EXH spacer

SSQ1000-R-4-[C6]

- **Port size**
  - Side ported: C6 One-touch fittings for ø6
  - Top ported: L6 One-touch fittings for ø6

This is used to exhaust an individual valve when the exhaust from a valve interferes with other stations in the circuit (used for one station). Both sides of the station which is to be individually exhausted are shut off. (Refer to application example.)

- Specify the spacer mounting position and EXH passage shut off positions on the manifold specification sheet. Two shut off positions are required per unit.
- Electrical wiring is connected to the manifold station with the individual EXH spacer.
- By changing the fitting shown in the drawing and the block plates, the spacer’s specification can be changed later (from the individual EXH spacer to the individual SUP spacer).
- The number of spacers is not limited when ordered with the manifold. However, when adding individual for F, P, and J kits, it is limited to two units, one between manifold stations and another on the U side, due to the length of the lead wire.
- Model no. with manifold block: SSQ1000-R-4-C6-M

Individual SUP/EXH spacer

SSQ1000-PR1-4-[C6]

- **Port size**
  - Side ported: C6 One-touch fittings for ø6
  - Top ported: L6 One-touch fittings for ø6

This has both functions of the individual SUP and EXH spacers above.

- Specify the spacer mounting position and SUP and EXH passage shut off positions on the manifold specification sheet. Two shut off positions for each for SUP and EXH are required per unit.
- Electrical wiring is connected to the manifold station with the individual EXH spacer.
- By changing the fitting shown in the drawing and the block plates, the spacer’s specification can be changed later.
- The number of spacers is not limited when ordered with the manifold. However, when adding individual for F, P, and J kits, it is limited to two units, one between manifold stations and another on the U side, due to the length of the lead wire.
- Model no. with manifold block: SSQ1000-PR1-4-C6-M
Manifold Option Parts for SQ1000

SUP block plate
SSQ1000-B-P

When supplying two different pressures, high and low, to one manifold, this is used between stations with different pressures. Also, it is used with an individual SUP spacer to shut off the air supply.

- Specify the station position on the manifold specification sheet.

<Block indication label>
When using block plates for SUP passage, indication label for confirmation of the blocking position from outside is attached. (One label of each)

- When ordering a block plate for SUP incorporated with the manifold, a block indication label is attached to the manifold.

EXH block plate
SSQ1000-B-R

When the exhaust from a valve interferes with other stations in the circuit, this is used between stations to separate exhausts. Also, it is used with an individual EXH spacer to shut off the exhaust of individual valves.

- Specify the station position on the manifold specification sheet.

<Block indication label>
When using block plates for EXH passage, indication label for confirmation of the blocking position from outside is attached. (One label of each)

- When ordering a block plate for EXH incorporated with the manifold, a block indication label is attached to the manifold.

Back pressure check valve [-B]
SSQ1000-BP

It prevents cylinder malfunction caused by other valve exhaust. Insert it into R (EXH) port on the manifold side of a valve which is affected. It is effective when a single action cylinder is used or an exhaust center type solenoid valve is used.

- When a check valve for back pressure prevention is desired, and is to be installed only in certain manifold stations, clearly write the part number and specify the number of stations on the manifold specification sheet.

- When ordering this option incorporated with a manifold, suffix "-B" to the end of the manifold part number.

**Caution**

1. The back pressure check valve assembly is assembly parts with a check valve structure. However, as slight air leakage is allowed for the back pressure, take care the exhaust air will not be restricted at the exhaust port.
2. When a back pressure check valve is mounted, the effective area of the valve will decrease by about 20%.
3. Since 4 port specification valves (5 (R1) and 3 (R2) are common) are used, back pressure cannot be prevented with dual 3 port valves.
Name plate [-N]
SSQ1000-N3-Stations (1 to maximum)

It is a transparent resin plate for placing a label that indicates solenoid valve function, etc. Insert it into the groove on the side of the end plate and bend it as shown in the figure. Also, the plate is difficult to bend for manifolds with only a few stations, therefore, remove the silencer cover to install it.

∗ When ordering this option incorporated with a manifold, suffix "-N" to the end of the manifold part number.

Blanking plug (For One-touch fitting)

KQ2P-23
KQ2P-04
KQ2P-06
KQ2P-08

It is inserted into an unused cylinder port and SUP/EXH ports. Purchasing order is available in units of 10 pieces.

Port plug

VVQZ100-CP

The plug is used to block the cylinder port when using a 5-port valve as a 3-port valve.

∗ Add “A” or “B” at the end of the valve part number when ordering with valves.

Example) SQ1141-5L1-C6-A (N.O. specifications)

Example) SQ1141-5L1-C6-B (N.C. specifications)

Example) SQ1141-5L1-C6-B-M (B port plug with manifold block)

Direct EXH outlet, built-in silencer [-S]

This is a type with an exhaust port atop the manifold end plate. The built-in silencer exhibits an excellent noise suppression effect. (Noise reduction: 30 dB)

Note) A large quantity of drainage generated in the air source results in exhaust of air together with drainage.

∗ When ordering this option incorporated with a manifold, suffix "-S" to the end of the manifold part number.

∗ For precautions on handling and how to replace elements, refer to “Specific Product Precautions.”
**Series SQ1000**

**Manifold Option Parts for SQ1000**

**External pilot specifications [-R]**

This can be used when the air pressure is 0.1 to 0.2 MPa lower than the minimum operating pressure of the solenoid valves or used for vacuum specifications. Add “R” to the part numbers of manifolds and valves to indicate the external pilot specification. An M5 port will be installed on the top side of the manifold’s SUP/EXH block.

- How to order valves (Example)
  SQ1140 R-5L1-C6
  External pilot specifications

- How to order manifold (Example)
  * Indicate “R” for an option.
  SS5Q14-08FD1-DR
  External pilot specifications

Note 1) Not applicable for dual 3 port valves.

Note 2) Valves with the external pilot specifications have a pilot EXH with individual exhaust specifications and EXH can be pressurized. However, the pressure supplied from EXH should be 0.4 MPa or lower.

**Dual flow fitting**

**SSQ1000-52A-C8**

![Dual flow fitting diagram]

To drive a large bore cylinder, two valve stations are operated simultaneously to double the air flow. This fitting is used on the cylinder ports in this situation. Available sizes are Ø8 and Ø5/16” One-touch fitting.

* When ordering with valves, specify the valve part number without One-touch fitting and list the dual flow fitting part number.

Example) Valve part number (without One-touch fitting part number)

<table>
<thead>
<tr>
<th>Model</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ1141-5L1-C6</td>
<td>2 sets</td>
</tr>
<tr>
<td>SSQ1000-52A-C8</td>
<td>1 set</td>
</tr>
</tbody>
</table>

**Silencer (For EXH port)**

This is inserted into the centralized type EXH port (One-touch fitting).

![Silencer diagram]

**Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Model</th>
<th>Effective area (mm²)</th>
<th>Noise reduction (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ1000</td>
<td>AN15-C08</td>
<td>20 (1.1)</td>
<td>30</td>
</tr>
</tbody>
</table>
Manifold Option Parts for SQ2000

Blanking plate
SSQ2000-10A-4

It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.

SUP/EXH block
SSQ2000-PR-3-C10-

Option

Port size

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description/Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>C8</td>
<td>One-touch fittings for ø8</td>
</tr>
<tr>
<td>C10</td>
<td>One-touch fittings for ø10</td>
</tr>
<tr>
<td>N9</td>
<td>One-touch fittings for ø5/16&quot;</td>
</tr>
<tr>
<td>N11</td>
<td>One-touch fittings for ø3/8&quot;</td>
</tr>
</tbody>
</table>

Note: When specifying both options, indicate “RS”.

Specify the spacer mounting position on the manifold specification sheet.

For standard type manifolds, the SUP/EXH block is mounted on the D side. It is added to the manifold to increase SUP/EXH capacity.

The number of SUP/EXH blocks that can be added is limited to two sets, one between manifold stations and another on the U side of manifold, due to the length of the lead wire.

SUP/EXH blocks are not included in the number of manifold stations.

Individual SUP spacer
SSQ2000-P-4-C8

Port size

<table>
<thead>
<tr>
<th>Port size</th>
<th>Description/Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>C8</td>
<td>One-touch fittings for ø8</td>
</tr>
<tr>
<td>N9</td>
<td>One-touch fittings for ø5/16&quot;</td>
</tr>
<tr>
<td>L8</td>
<td>One-touch fittings for ø8</td>
</tr>
<tr>
<td>LN9</td>
<td>One-touch fittings for ø5/16&quot;</td>
</tr>
</tbody>
</table>

This is used as a supply port for different pressures when using different pressures in the same manifold (for one station).

Both sides of the station which is used with supply pressure from the individual SUP spacer are shut off. (Refer to application example.)

Specify the spacer mounting position and SUP passage shut off positions on the manifold specification sheet. Two shut off positions are required per unit.

(Two pieces of SUP block plate that shut off the supply pressure are included with the individual SUP spacer, therefore, it is not necessary to order them separately.)

Electrical wiring is connected to the manifold station with the individual SUP spacer.

By changing the fitting shown in the drawing and the block plates, the spacer’s specification can be changed later (from the individual SUP spacer to the individual EXH spacer).

The number of spacers is not limited when ordered with the manifold. However, when adding individual for F, P, and J kits, it is limited to two units, one between manifold stations and another on the U side, due to the length of the lead wire.

Model no. with manifold block: SSQ2000-PR-3-C10-M
Individual EXH spacer

SSQ2000-R-4- [C8]

**Port size**
- Side C8: One-touch fittings for ø8
- Top L8: One-touch fittings for ø8

This is used to exhaust an individual valve when the exhaust from a valve interferes with other stations in the circuit (used for one station). Both sides of the station which is to be individually exhausted are shut off. (Refer to application example.)

- Specify the spacer mounting position and EXH passage shut off positions on the manifold specification sheet. Two shut off positions are required per unit.
- Electrical wiring is connected to the manifold station with the individual EXH spacer.
- By changing the fitting shown in the drawing and the block plates, the spacer’s specification can be changed later (from the individual EXH spacer to the individual SUP spacer).
- The number of spacers is not limited when ordered with the manifold. However, when adding individual for F, P, and J kits, it is limited to two units, one between manifold stations and another on the U side, due to the length of the lead wire.

- Model no. with manifold block: SSQ2000-R-4-[C8]-M

Individual SUP/EXH spacer

SSQ2000-PR1-4-[C8]

**Port size**
- Side C8: One-touch fittings for ø8
- Top L8: One-touch fittings for ø8

This has both functions of the individual SUP and EXH spacers above. (Refer to application example.)

- Specify the spacer mounting position and SUP and EXH passage shut off positions on the manifold specification sheet. Two shut off positions each for SUP and EXH are required per unit.
- Electrical wiring is connected to the manifold station with the individual SUP/EXH spacer.
- By changing the fitting shown in the drawing and the block plates, the spacer’s specification can be changed later.
- The number of spacers is not limited when ordered with the manifold. However, when adding individual for F, P, and J kits, it is limited to two units, one between manifold stations and another on the U side, due to the length of the lead wire.

- Model no. with manifold block: SSQ2000-PR1-4-[C8]-M

---

**Individual EXH port**
- One-touch fitting for ø8
- Side ported
- Top ported

**Individual SUP port**
- One-touch fitting for ø8
- Side ported
- Top ported

---

**Series SQ2000**

**Manifold Option Parts for SQ2000**

---

**Description/Model**
- Single
- EXH shut off position: Specify 2 positions.
- SUP shut off position: Specify 2 positions.

---

**Port size**
- C8
- N9
- L8
- LN9

---

**One-touch fittings for ø8**

---

**One-touch fittings for ø5/16”**

---

**Side ported**

---

**Top ported**

---

**Port size**
- C8
- N9
- L8
- LN9

---

**One-touch fittings for ø8**

---

**One-touch fittings for ø5/16”**

---

**Side ported**

---

**Top ported**

---

**Model no.**
- SSQ2000-R-4-[C8]-M

---

**Valve Option**
- U side
- D side
- XX
- X
- X
- X
- X
- X
- X

---

**Series SQ2000**

**D side**

---

**U side**

---

**Valve Option**
- U side
- D side
- XX
- X
- X
- X
- X
- X

---

**Individual EXH port**
- One-touch fitting for ø8
- Side ported
- Top ported

---

**Individual SUP port**
- One-touch fitting for ø8
- Side ported
- Top ported

---

**Individual EXH spacer**
- SSQ2000-R-4-[C8]
- EXH shut off position: Specify 2 positions.

---

**Individual SUP/EXH spacer**
- SSQ2000-PR1-4-[C8]
- SUP shut off position: Specify 2 positions.
- EXH shut off position: Specify 2 positions.
SUP block plate
SSQ1000-B-R
When supplying two different pressures, high and low, to one manifold, this is used between stations with different pressures. Also, it is used with an individual SUP spacer to shut off the air supply.
+ Specify the station position on the manifold specification sheet.

<Block indication label>
When using block plates for SUP passage, indication label for confirmation of the blocking position from outside is attached. (One label of each)
+ When ordering a block plate for SUP incorporated with the manifold, a block indication label is attached to the manifold.

EXH block plate
SSQ2000-B-R
When the exhaust from a valve interferes with other stations in the circuit, this is used between stations to separate exhausts. Also, it is used with an individual EXH spacer to shut off the exhaust of individual valves.
+ Specify the station position on the manifold specification sheet.

<Block indication label>
When using block plates for EXH passage, indication label for confirmation of the blocking position from outside is attached. (One label of each)
+ When ordering a block plate for EXH incorporated with the manifold, a block indication label is attached to the manifold.

Back pressure check valve [-B]
SSQ2000-BP
It prevents cylinder malfunction caused by other valve exhaust. Insert it into R (EXH) port on the manifold side of a valve which is affected. It is effective when a single action cylinder is used or an exhaust center type solenoid valve is used.
+ When a check valve for back pressure prevention is desired, and is to be installed only in certain manifold stations, clearly write the part number and specify the number of stations on the manifold specification sheet.
+ When ordering this option incorporated with a manifold, suffix "-B" to the end of the manifold part number.

Caution
1. The back pressure check valve assembly is assembly parts with a check valve structure. However, as slight air leakage is allowed for the back pressure, take care the exhaust air will not be restricted at the exhaust port.
2. When a back pressure check valve is mounted, the effective area of the valve will decrease by about 20%.
**Series SQ2000**

### Manifold Option Parts for SQ2000

**Name plate [-N]**

SSQ2000-N3-Stations (1 to maximum)

It is a transparent resin plate for placing a label that indicates solenoid valve function, etc.

Insert it into the groove on the side of the end plate and bend it as shown in the figure. Also, the plate is difficult to bend for manifolds with only a few stations, therefore, remove the silencer cover to install it.

When ordering this option incorporated with a manifold, suffix “-N” to the end of the manifold part number.

**Blanking plug (For One-touch fitting)**

KQ2P-

It is inserted into an unused cylinder port and SUP/EXH ports.

Purchasing order is available in units of 10 pieces.

**Port plug**

**VVQZ2000-CP**

The plug is used to block the cylinder port when using a 5-port valve as a 3-port valve.

Add “A” or “B” at the end of the valve part number when ordering with valves.

Example) SQ2141-5L1-C8-A (N.O. specifications)

Example) SQ2141-5L1-C8-B (N.C. specifications)

Example) SQ2141-5L1-C8-B-M (B port plug with manifold block)

**Direct EXH outlet, built-in silencer [-S]**

This is a type with an exhaust port atop the manifold end plate. The built-in silencer exhibits an excellent noise suppression effect. (Noise reduction: 30 dB)

Note) A large quantity of drainage generated in the air source results in exhaust of air together with drainage.

When ordering this option incorporated with a manifold, suffix “-S” to the end of the manifold part number.

For precautions on handling and how to replace elements, refer to “Specific Product Precautions.”

---

**Dimensions**

<table>
<thead>
<tr>
<th>Applicable fittings size ød</th>
<th>Model</th>
<th>A</th>
<th>L</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>KQ2P-04</td>
<td>16</td>
<td>32</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>KQ2P-06</td>
<td>18</td>
<td>35</td>
<td>8</td>
</tr>
<tr>
<td>8</td>
<td>KQ2P-08</td>
<td>20.5</td>
<td>39</td>
<td>10</td>
</tr>
<tr>
<td>10</td>
<td>KQ2P-10</td>
<td>22</td>
<td>43</td>
<td>12</td>
</tr>
</tbody>
</table>

---

**Silencer cover**

EXH outlet

O-ring

A port

B port

Manifold Option Parts for SQ2000 Series SQ2000

It is a transparent resin plate for placing a label that indicates solenoid valve function, etc.

Insert it into the groove on the side of the end plate and bend it as shown in the figure. Also, the plate is difficult to bend for manifolds with only a few stations, therefore, remove the silencer cover to install it.

When ordering this option incorporated with a manifold, suffix “-N” to the end of the manifold part number.

**Blanking plug (For One-touch fitting)**

It is inserted into an unused cylinder port and SUP/EXH ports.

Purchasing order is available in units of 10 pieces.

**Port plug**

**VVQZ2000-CP**

The plug is used to block the cylinder port when using a 5-port valve as a 3-port valve.

Add “A” or “B” at the end of the valve part number when ordering with valves.

Example) SQ2141-5L1-C8-A (N.O. specifications)

Example) SQ2141-5L1-C8-B (N.C. specifications)

Example) SQ2141-5L1-C8-B-M (B port plug with manifold block)

**Direct EXH outlet, built-in silencer [-S]**

This is a type with an exhaust port atop the manifold end plate. The built-in silencer exhibits an excellent noise suppression effect. (Noise reduction: 30 dB)

Note) A large quantity of drainage generated in the air source results in exhaust of air together with drainage.

When ordering this option incorporated with a manifold, suffix “-S” to the end of the manifold part number.

For precautions on handling and how to replace elements, refer to “Specific Product Precautions.”

---

**Dimensions**

<table>
<thead>
<tr>
<th>Applicable fittings size ød</th>
<th>Model</th>
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<th>L</th>
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<tr>
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<td>KQ2P-04</td>
<td>16</td>
<td>32</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>KQ2P-06</td>
<td>18</td>
<td>35</td>
<td>8</td>
</tr>
<tr>
<td>8</td>
<td>KQ2P-08</td>
<td>20.5</td>
<td>39</td>
<td>10</td>
</tr>
<tr>
<td>10</td>
<td>KQ2P-10</td>
<td>22</td>
<td>43</td>
<td>12</td>
</tr>
</tbody>
</table>

---

**Silencer cover**

EXH outlet

O-ring

A port

B port

Manifold Option Parts for SQ2000 Series SQ2000

It is a transparent resin plate for placing a label that indicates solenoid valve function, etc.

Insert it into the groove on the side of the end plate and bend it as shown in the figure. Also, the plate is difficult to bend for manifolds with only a few stations, therefore, remove the silencer cover to install it.

When ordering this option incorporated with a manifold, suffix “-N” to the end of the manifold part number.

**Blanking plug (For One-touch fitting)**

It is inserted into an unused cylinder port and SUP/EXH ports.

Purchasing order is available in units of 10 pieces.

**Port plug**

**VVQZ2000-CP**

The plug is used to block the cylinder port when using a 5-port valve as a 3-port valve.

Add “A” or “B” at the end of the valve part number when ordering with valves.

Example) SQ2141-5L1-C8-A (N.O. specifications)

Example) SQ2141-5L1-C8-B (N.C. specifications)

Example) SQ2141-5L1-C8-B-M (B port plug with manifold block)

**Direct EXH outlet, built-in silencer [-S]**

This is a type with an exhaust port atop the manifold end plate. The built-in silencer exhibits an excellent noise suppression effect. (Noise reduction: 30 dB)

Note) A large quantity of drainage generated in the air source results in exhaust of air together with drainage.

When ordering this option incorporated with a manifold, suffix “-S” to the end of the manifold part number.

For precautions on handling and how to replace elements, refer to “Specific Product Precautions.”

---

**Dimensions**

<table>
<thead>
<tr>
<th>Applicable fittings size ød</th>
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<tr>
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<tr>
<td>6</td>
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<td>35</td>
<td>8</td>
</tr>
<tr>
<td>8</td>
<td>KQ2P-08</td>
<td>20.5</td>
<td>39</td>
<td>10</td>
</tr>
<tr>
<td>10</td>
<td>KQ2P-10</td>
<td>22</td>
<td>43</td>
<td>12</td>
</tr>
</tbody>
</table>
**External pilot specifications [-R]**

This can be used when the air pressure is 0.1 to 0.2 MPa lower than the minimum operating pressure of the solenoid valves or used for vacuum specifications.

Add “R” to the part numbers of manifolds and valves to indicate the external pilot specifications.

An M5 port will be installed on the top side of the manifold's SUP/EXH block.

- **How to order valves (Example)**
  SQ2140 R-5L1-C6
  
  - External pilot specifications

- **How to order manifold (Example)**
  - Indicate “R” for an option.
  - SSQ24-6FD1-D8

**Note 1)** Not applicable for dual 3 port valves.

**Note 2)** Valves with the external pilot specifications have a pilot EXH with individual exhaust specifications and EXH can be pressurized. However, the pressure supplied from EXH should be 0.4 MPa or lower.

**Dual flow fitting**

**SSQ2000-52A- C10**

To drive a large bore cylinder, two valve stations are operated simultaneously to double the air flow. This fitting is used on the cylinder ports in this situation. Available sizes are ø10 and ø3/8" One-touch fittings.

- When ordering with valves, specify the valve part number without One-touch fitting and list the dual flow fitting part number.

Example) Valve part number (without One-touch fitting)

SQ2141-5L1-C6 .......... 2 sets

* SSQ24-6FD1-D8 .......... 1 set

**Silencer (For EXH port)**

This is inserted into the centralized type EXH port (One-touch fitting).

**Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Model</th>
<th>Effective area (mm²)</th>
<th>Noise reduction (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ2000</td>
<td>AN20-C10</td>
<td>30 (1.6)</td>
<td>30</td>
</tr>
</tbody>
</table>
Manifold Option for SQ1000/2000

Special Wiring Specifications

In the internal wiring of F kit, P kit, and J kit, double wiring (connected to SOL A and SOL B) is adopted for each station regardless of the valve and option types. Mixed wiring of single and double wiring can be specified for the wiring specification.

1. How to order
Indicate option symbol "-K" in the manifold part number and be sure to specify station positions for single or double wiring on the manifold specification sheet.
Example) SS5Q14-09FD0-DKS
Others, option symbols: to be indicated alphabetically.

2. Wiring specifications
Connector terminal numbers are connected from solenoid station 1 on the A side in the order indicated by the arrows without skipping any terminal numbers.

3. Maximum stations
The maximum number of manifold stations is determined by the number of solenoids. Count one point for a single solenoid type and two points for a double solenoid type. Determine the number of stations so that the total number of solenoids is no more than the maximum points in the table below.

<table>
<thead>
<tr>
<th>Kit</th>
<th>F kit (D-sub connector)</th>
<th>P kit (Flat ribbon cable connector)</th>
<th>J kit (Flat ribbon cable PC wiring system compatible)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>FD□ 25P</td>
<td>PD□ 26P</td>
<td>JD0 20P</td>
</tr>
<tr>
<td>Max points</td>
<td>24 points</td>
<td>24 points</td>
<td>18 points</td>
</tr>
</tbody>
</table>

Note) Maximum stations --- SQ1000: 24 stations
SQ2000: 16 stations
**Special DIN Rail Length (DIN Rail Mounting (-D) Only)**

The standard DIN rail provided is approximately 30 mm longer than the overall length of the manifold with a specified number of stations. The following options are also available.

- **DIN rail length longer than the standard type (for stations to be added later, etc.)**
  
  In the manifold part number, specify "-D" for the manifold mounting symbol and add the number of required stations after the symbol.

  Example) **SS5Q14- 08FD0 - D09BNK**
  
  8 station manifold  
  Option symbols (alphabetically)  
  DIN rail for 9 stations

- **Ordering DIN rail only**

  DIN rail part number
  
  AXT100- DR -n  
  
  (Note) For "n", enter a number from the "No." line in the table below.
  
  For L dimension, refer to the dimensions of each kit.

<table>
<thead>
<tr>
<th>No.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>L dimension</td>
<td>23</td>
<td>35.5</td>
<td>48</td>
<td>60.5</td>
<td>73</td>
<td>85.5</td>
<td>98</td>
<td>110.5</td>
<td>123</td>
<td>135.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>L dimension</td>
<td>148</td>
<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>21</th>
<th>22</th>
<th>23</th>
<th>24</th>
<th>25</th>
<th>26</th>
<th>27</th>
<th>28</th>
<th>29</th>
<th>30</th>
</tr>
</thead>
<tbody>
<tr>
<td>L dimension</td>
<td>273</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
<td>323</td>
<td>335.5</td>
<td>348</td>
<td>360.5</td>
<td>373</td>
<td>385.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>31</th>
<th>32</th>
<th>33</th>
<th>34</th>
<th>35</th>
<th>36</th>
<th>37</th>
<th>38</th>
<th>39</th>
<th>40</th>
</tr>
</thead>
<tbody>
<tr>
<td>L dimension</td>
<td>398</td>
<td>410.5</td>
<td>423</td>
<td>435.5</td>
<td>448</td>
<td>460.5</td>
<td>473</td>
<td>485.5</td>
<td>498</td>
<td>510.5</td>
</tr>
</tbody>
</table>

**Direct Mounting Style (-E) (SQ2000 C Kit Only)**

Manifold is mounted by using mounting holes of both sides of the manifold.

Furthermore, the reinforcing part that comes to the bottom of the DIN rail is attached to the end plate assembly.
Manifold Option for SQ1000/2000

Negative Common Specifications

The following valve part numbers are for negative common specifications. Manifold part numbers are the same as standard.

● How to order negative common valves (Example)

SQ1140 N -5L1-C6

Inch-size One-touch Fittings

For One-touch fittings in inch sizes, use the following part numbers. Also, the color of the release button is orange.

● How to order valves (Example)

SQ1140-5L1- [N7]

Add "00T" at the end of the part number.

SS5Q14- 08FD0--DN--00T

How to order manifold (Example)

Add "00T" at the end of the part number.

SSQ1000 4 1A

SSQ2000 4 1A

How to Increase Manifold Stations for SQ1000/2000

1. How to Increase Manifold Stations

What to order

• Valves with manifold block (refer to pages 68 and 82) or the manifold blocks shown below. For F kit, P kit, and J kit, also order the lead wire assemblies in the next section.

Manifold Block Part No.

<table>
<thead>
<tr>
<th>Option</th>
<th>Nil</th>
<th>B</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Back pressure check valve</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>External pilot specifications</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Enter "-BR" for both options.
How to Increase Manifold Stations for SQ1000/2000

For F kit, P kit, J kit

What to order: Lead wire assembly

**SQ1000**

D-sub connector kit (F kit)
- For single wiring **SSQ1000 – 40A – F – 205**
- For double wiring **SSQ1000 – 41A – F – 280**

Flat ribbon cable kit (P kit), PC wiring system compatible (J kit)
- For single wiring **SSQ1000 – 40A – P – 200**
- For double wiring **SSQ1000 – 41A – P – 275**

**SQ2000**

D-sub connector kit (F kit)
- For single wiring **SSQ1000 – 40A – F – 250**
- For double wiring **SSQ1000 – 41A – F – 350**

Flat ribbon cable kit (P kit), PC wiring system compatible (J kit)
- For single wiring **SSQ1000 – 40A – P – 250**
- For double wiring **SSQ1000 – 41A – P – 350**

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How to Increase Manifold Stations for SQ1000/2000

Steps for adding stations

1. Loosen the clamp screw on the U side end plate and open the manifold.
2. Mount the manifold block or valve with manifold block to be added.
3. Press on the end plate to eliminate any space between the manifold blocks and tighten the clamp screw.
   (Proper tightening torque: 0.8 to 1.0 N·m)
4. In the case of F kit, P kit or J kit, remove the connector housing from the DIN rail and connect the wiring.

2. Connection Method

(1) Connecting common wire

Insert the red lead wire (common wire) of the connector to be added into the adjacent connector as shown in the drawing below. After inserting, lightly pull on the wire to confirm that the socket is locked.

(2) Pulling out connector

Pull out the connector to connect the lead wires for SOL A and SOL B. Insert a flat head screwdriver into the slot of the housing cover and remove it. Remove the manual lever and pull out the connector.
(3) Connector connection/Connect the black and white lead wire pins to the positions shown below in accordance with each kit.

**Caution**
1. After inserting the pin, confirm that the pin hook is locked by lightly pulling the lead wire.
2. Do not pull the lead wire forcefully when connecting. Also, take care that lead wires do not get caught between manifolds or when remounting the housing.

**Wiring (F Kit: D-sub Connector Kit)**

**Procedure** Based on the manifold specifications, station 1 of SOL A (black wire) will be terminal number 1 of the D-sub connector, and for station 2 and thereafter, connect black wires, then white wires in the order as shown below by the arrows.

![Diagram of D-sub connector wiring](image)

**Manifold Specifications' Example**

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Lead wire color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Black</td>
</tr>
<tr>
<td>2</td>
<td>Black</td>
</tr>
<tr>
<td>3</td>
<td>White</td>
</tr>
<tr>
<td>4</td>
<td>Black</td>
</tr>
<tr>
<td>5</td>
<td>White</td>
</tr>
<tr>
<td>6</td>
<td>Black</td>
</tr>
</tbody>
</table>

**Wiring (P Kit: Flat Ribbon Cable Kit)**

**Procedure** Based on the manifold specifications, station 1 of SOL A (black wire) will be terminal number 1B of the flat ribbon cable connector, and for station 2 and thereafter, connect black wires, then white wires in the order as shown below by the arrows.

![Diagram of flat ribbon cable connector wiring](image)

**Manifold Specifications' Example**

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Lead wire color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Black</td>
</tr>
<tr>
<td>2</td>
<td>Black</td>
</tr>
<tr>
<td>3</td>
<td>White</td>
</tr>
<tr>
<td>4</td>
<td>Black</td>
</tr>
<tr>
<td>5</td>
<td>White</td>
</tr>
<tr>
<td>6</td>
<td>Black</td>
</tr>
</tbody>
</table>

* The drawing above shows connections based on the manifold specifications’ example in the table to the left.
### How to Increase Manifold Stations for SQ1000/2000

#### Wiring (J Kit: Flat Ribbon Cable, PC Wiring System Compatible)

Procedure) Based on the manifold specifications, station 1 of SOL.A (black wire) will be terminal number 10A of the flat ribbon cable connector, and for station 2 and thereafter, connect black wires, then white wires in the order as shown below by the arrows.

#### Manifold Specifications' Example

<table>
<thead>
<tr>
<th>Stations</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single wiring</td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Double wiring</td>
<td>√</td>
<td></td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Terminal no.**
  - Red (COM) ... 1A
  - Unused ... 2A
  - Station 5 White ... 3A
  - Station 5 Black ... 4A
  - Station 4 White ... 5A
  - Station 4 Black ... 6A
  - Station 3 White ... 7A
  - Station 3 Black ... 8A
  - Station 2 Black ... 9A
  - Station 1 Black ... 10A

- **Terminal 1B**
  - Red (COM)

- **Terminal 2B**
  - Unused

- **Terminal 3B**
- **Terminal 4B**
- **Terminal 5B**
- **Terminal 6B**
- **Terminal 7B**
- **Terminal 8B**
- **Terminal 9B**
- **Terminal 10B**

- **Terminal no.**
  - 10A Black
  - 9A Black
  - 8A Black
  - 7A White
  - 6A Black
  - 5A White
  - 4A Black
  - 3A White
  - 10B Black

- **Lead wire color**
  - Red
  - Black
  - White

---

**Procedure** Based on the manifold specifications, station 1 of SOL.A (black wire) will be terminal number 10A of the flat ribbon cable connector, and for station 2 and thereafter, connect black wires, then white wires in the order as shown below by the arrows.

- **Terminal no.**
  - Red (COM) ... 1A
  - Unused ... 2A
  - Station 5 White ... 3A
  - Station 5 Black ... 4A
  - Station 4 White ... 5A
  - Station 4 Black ... 6A
  - Station 3 White ... 7A
  - Station 3 Black ... 8A
  - Station 2 Black ... 9A
  - Station 1 Black ... 10A

- **Terminal 1B**
  - Red (COM)

- **Terminal 2B**
  - Unused

- **Terminal 3B**
- **Terminal 4B**
- **Terminal 5B**
- **Terminal 6B**
- **Terminal 7B**
- **Terminal 8B**
- **Terminal 9B**
- **Terminal 10B**

- **Terminal no.**
  - 10A Black
  - 9A Black
  - 8A Black
  - 7A White
  - 6A Black
  - 5A White
  - 4A Black
  - 3A White
  - 10B Black

- **Lead wire color**
  - Red
  - Black
  - White
**Series SQ1000**

**Construction: Series SQ1000 Plug Lead Type Main Parts and Pilot Valve Assembly**

**Metal seal type**

- **Single:** SQ1140

**Rubber seal type**

- **Single:** SQ1141

**Double:** SQ1240D

**3 position:** SQ1340

**Double:** SQ1241D

**3 position:** SQ1341

**Dual 3 port valve:** SQ1A41 SQ1B41 SQ1C41

---

**Component Parts**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Zinc die-casted</td>
</tr>
<tr>
<td>2</td>
<td>Spool/Sleeve</td>
<td>Stainless steel (Metal seal)</td>
</tr>
<tr>
<td></td>
<td>Spool</td>
<td>Aluminum (Rubber seal)</td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
</tr>
<tr>
<td>4</td>
<td>Pilot valve assembly (Refer to the below.)</td>
<td>—</td>
</tr>
</tbody>
</table>

**Pilot valve assembly V112**

- **Coil voltage**
  - 1: 24 VDC
  - 5: 12 VDC

- **Function**
  - Symbol: Nil
  - Specifications: Standard type (0.4 W)
  - DC
  - B: Quick response type (0.95 W)
  - K: High pressure type (1.0 MPa)

Note: Common to single solenoid and double solenoid
Construction: Series SQ2000 Plug Lead Type Main Parts and Pilot Valve Assembly

**Metal seal type**

Single: SQ2140

Double: SQ2240D

3 position: SQ2340

**Rubber seal type**

Single: SQ2141

Double: SQ2241D

3 position: SQ2441

Dual 3 port valve: SQ2A41

**Component Parts**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Aluminum die-casted</td>
</tr>
<tr>
<td>2</td>
<td>Spool/Sleeve</td>
<td>Stainless steel (Metal seal)</td>
</tr>
<tr>
<td></td>
<td>Spool</td>
<td>Aluminum (Rubber seal)</td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
</tr>
<tr>
<td>4</td>
<td>Pilot valve assembly (Refer to the below.)</td>
<td>—</td>
</tr>
</tbody>
</table>

**Pilot valve assembly**

V112

- **Coil voltage**
  - S: 24 VDC
  - T: 12 VDC

- **Function**
  - Nil: Standard type (0.4 W)
  - B: Quick response type (0.95 W)

Note: Common to single solenoid and double solenoid
Series SQ1000

Manifold Exploded View: SQ1000 (Plug Lead Type Manifold) SS5Q14

(F, P, J, C kit)

<table>
<thead>
<tr>
<th>Wiring unit assembly</th>
<th>D side end plate assembly</th>
<th>SUP/EXH block assembly</th>
<th>Valve and manifold block assembly</th>
<th>U side end plate assembly</th>
</tr>
</thead>
</table>

F kit

P (J) kit (26P/20P)

J kit (20P)
Manifold Spare Parts

Refer to pages 108 to 111 of “How to Increase Manifold Stations” regarding the mounting of each spare part.

<① D-sub connector housing assembly>
AXT100 – 40 – FL25 – S
Wiring
S Single wiring
D Double wiring
Stations
01 For 1 station
24 For 24 stations

<② Flat ribbon cable connector housing assembly>
PL26
AXT100 – 40 – PL20 – S
JL20
Wiring
S Single wiring
D Double wiring
Stations
01 For 1 station
24 For 24 stations

<③ Lead wire assembly>
(For F kit)
For station 1
SSQ1000 – 4 B – F – 155
Wiring
0 For single (2-wire)
1 For double (3-wire)

For station 2 to 24
SSQ1000 – 4 A – F – 205
Wiring
0 For single (2-wire)
1 For double (3-wire)

<④ D side end plate assembly>
SSQ1000 – 3A – 4

<⑤ U side end plate assembly>
SSQ1000 – 2A – 4

<⑥ SUP/EXH block assembly>
SSQ1000 – PR – 4 – C8
Port size
C6 One-touch fitting for ø6
C8 One-touch fitting for ø8
N7 One-touch fitting for ø1/4"
N9 One-touch fitting for ø5/16"

Option
Nil Common exhaust type
B External pilot
S Built-in silencer, direct exhaust

Note) Enter “-RS” for both options.

<⑦ Optional block assembly>
SSQ1000 – 1A – 4 –
Including gaskets

Option
Nil None
B Back pressure check valve
R External pilot specifications

Note) Enter “-RS” for both options.

<⑧ Element>
SSQ1000 – SE
Note) Part number for a 10 piece set of elements. Refer to page 120 for replacement procedures.

<⑨ Port plug>
VVQZ2000 – CP

<⑩ Fitting assembly>
(For P, R port)
VVQ1000 – 51A – C8
Port size
C6 One-touch fitting for ø6
C8 One-touch fitting for ø8
N7 One-touch fitting for ø1/4"
N9 One-touch fitting for ø5/16"

Note) Purchasing order is available in units of 10 pieces.

<⑪ Fitting assembly>
(For cylinder port)
VVQ1000 – 50A – C6
Port size
C3 One-touch fitting for ø3.2
C4 One-touch fitting for ø4
C6 One-touch fitting for ø6
M5 M5 thread
N1 One-touch fitting for ø1/8"
N3 One-touch fitting for ø5/32"
N7 One-touch fitting for ø1/4"

Note) Purchasing order is available in units of 10 pieces.

<⑫ Gasket and screw assembly>
SQ1000 – GS
Note) Part number for 10 pieces each of gaskets and screws.

Lead wire length

<table>
<thead>
<tr>
<th>Stations</th>
<th>L dimension (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>300</td>
</tr>
<tr>
<td>02</td>
<td>600</td>
</tr>
<tr>
<td>03</td>
<td>900</td>
</tr>
<tr>
<td>04</td>
<td>1200</td>
</tr>
<tr>
<td>05</td>
<td>1500</td>
</tr>
<tr>
<td>06</td>
<td>1800</td>
</tr>
<tr>
<td>07</td>
<td>2100</td>
</tr>
<tr>
<td>08</td>
<td>2400</td>
</tr>
<tr>
<td>09</td>
<td>2700</td>
</tr>
<tr>
<td>10</td>
<td>3000</td>
</tr>
<tr>
<td>11</td>
<td>3300</td>
</tr>
<tr>
<td>12</td>
<td>3600</td>
</tr>
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<td>13</td>
<td>3900</td>
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<td>14</td>
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<td>20</td>
<td>6000</td>
</tr>
<tr>
<td>21</td>
<td>6300</td>
</tr>
<tr>
<td>22</td>
<td>6600</td>
</tr>
<tr>
<td>23</td>
<td>6900</td>
</tr>
<tr>
<td>24</td>
<td>7200</td>
</tr>
</tbody>
</table>

<③ Lead wire assembly>
(For P, J kit)
For station 1
SSQ1000 – 4 B – P – 150
Wiring
0 For single (2-wire)
1 For double (3-wire)

For station 2 to 24
SSQ1000 – 4 A – P – 200
Wiring
0 For single (2-wire)
1 For double (3-wire)

<③ Lead wire assembly>
(For C kit)
AXT661 – 1 3 AL –
Wiring
3 For double (3-wire)
4 For single (2-wire)
## Manifold Exploded View: SQ2000 (Plug Lead Type Manifold) SS5Q24

### (F, P, J, C kit)

<table>
<thead>
<tr>
<th>Wiring unit assembly</th>
<th>D side end plate assembly</th>
<th>SUP/EXH block assembly</th>
<th>Valve and manifold block assembly</th>
<th>U side end plate assembly</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Diagram" /></td>
<td><img src="image2.png" alt="Diagram" /></td>
<td><img src="image3.png" alt="Diagram" /></td>
<td><img src="image4.png" alt="Diagram" /></td>
<td><img src="image5.png" alt="Diagram" /></td>
</tr>
</tbody>
</table>

- F kit
- P kit (26P/20P)
- J kit (20P)
**Plug Lead Unit Series SQ2000**

### Manifold Spare Parts

Refer to pages 108 to 111 of “How to Increase Manifold Stations” regarding the mounting of each spare part.

#### <1 D-sub connector housing assembly>

**AXT100 – 41 – FL25 – S 03**

Wiring:
- S: Single wiring
- D: Double wiring

<table>
<thead>
<tr>
<th>Stations</th>
<th>Wiring</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>For 1 station</td>
</tr>
<tr>
<td>24</td>
<td>For 12 stations</td>
</tr>
</tbody>
</table>

#### <2 Flat ribbon cable connector housing assembly>

**PL26**

**AXT100 – 41 – PL20 – S 03**

Wiring:
- S: Single wiring
- D: Double wiring

<table>
<thead>
<tr>
<th>Stations</th>
<th>Wiring</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>For 1 station</td>
</tr>
<tr>
<td>24</td>
<td>For 12 stations</td>
</tr>
</tbody>
</table>

#### <3 Lead wire assembly>

**SSQ1000 – 4 1 B – F – 170**

Wiring:
- 0: For single (2-wire)
- 1: For double (3-wire)

**SSQ1000 – 4 1 A – F – 230**

Wiring:
- 0: For single (2-wire)
- 1: For double (3-wire)

<table>
<thead>
<tr>
<th>Lead wire length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stations</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>Station 1</td>
</tr>
<tr>
<td>Station 2</td>
</tr>
<tr>
<td>Station 3</td>
</tr>
<tr>
<td>Station 4</td>
</tr>
</tbody>
</table>

**SSQ1000 – 4 1 B – P – 170**

Wiring:
- 0: For single (2-wire)
- 1: For double (3-wire)

**SSQ1000 – 4 1 A – P – 310**

Wiring:
- 0: For single (2-wire)
- 1: For double (3-wire)

<table>
<thead>
<tr>
<th>Lead wire length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stations</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>Station 2</td>
</tr>
<tr>
<td>Station 3</td>
</tr>
<tr>
<td>Station 4</td>
</tr>
<tr>
<td>Station 5</td>
</tr>
</tbody>
</table>

#### <4 D side end plate assembly>

**SSQ2000 – 3A – 4**

Manifold mounting:
- Nil: DIN rail mounting style
- E: Direct mounting style

#### <5 U side end plate assembly>

**SSQ2000 – 2A – 4 – 1**

Manifold mounting:
- Nil: DIN rail mounting style
- E: Direct mounting style

#### <6 SUP/EXH block assembly>

**SSQ2000 – PR – 3 – C10**

Port size:
- C8: One-touch fitting for ø8
- C10: One-touch fitting for ø10
- N9: One-touch fitting for ø5/16
- N11: One-touch fitting for ø3/8

Option:
- Nil: Common exhaust type
- R: External pilot
- S: Built-in silencer, direct exhaust

Note) Enter “RS” for both options.

#### <7 Manifold block assembly>

**SSQ2000 – 1A – 4**

Including gaskets

#### <8 Element>

**SSQ2000 – SE**

Note) Part number for a 10 piece set of elements. Refer to page 120 for replacement procedure.

#### <9 Port plug>

**VVQ3000 – CP**

#### <10 Fitting assembly>

**VVQ2000 – 51A – C10**

Port size:
- C8: One-touch fitting for ø8
- C10: One-touch fitting for ø10
- N9: One-touch fitting for ø5/16
- N11: One-touch fitting for ø3/8

Note) Purchasing order is available in units of 10 pieces.

#### <11 Fitting assembly>

**VVQ1000 – 51A – C8**

Port size:
- C4: One-touch fitting for ø4
- C6: One-touch fitting for ø6
- C8: One-touch fitting for ø8
- N3: One-touch fitting for ø5/32
- N7: One-touch fitting for ø1/4
- N9: One-touch fitting for ø3/16

Note) Purchasing order is available in units of 10 pieces.

#### <12 Gasket and screw assembly>

**SQ2000 – GS**

Note) Part number for 10 pieces each of gaskets and screws.
Warning
Use to switch the main valve.

Push Type (Tool Required)
Push down on the manual override button with a small screwdriver until it stops.

<table>
<thead>
<tr>
<th>SQ1000</th>
<th>SQ2000</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Image of SQ1000" /></td>
<td><img src="image2" alt="Image of SQ2000" /></td>
</tr>
</tbody>
</table>

Locking Type (Tool Required)
Push down completely on the manual override button with a small screwdriver. While down, turn clockwise 90° to lock it. Turn it counterclockwise to release it.

<table>
<thead>
<tr>
<th>SQ1000</th>
<th>SQ2000</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3" alt="Image of SQ1000" /></td>
<td><img src="image4" alt="Image of SQ2000" /></td>
</tr>
</tbody>
</table>

Slide Locking Type (Manual Type) (SQ2000 only)
The manual override is locked by sliding it all the way to the pilot valve side (ON side) with a flat head screwdriver or finger. Slide it to the fitting side (OFF side) to release it. In addition, it can also be used as a push type by using a screwdriver, etc., of ø2 or less.

<table>
<thead>
<tr>
<th>SQ2000</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image5" alt="Image of SQ2000" /></td>
</tr>
</tbody>
</table>

Light/Surge Voltage Suppressor
Indicator lights are all positioned on one side for both single solenoid and double solenoid types.

For double, 3 position, and 4 position dual 3 port types, 2 colors are used to indicate the energization of A side or B side.

<table>
<thead>
<tr>
<th>SQ1000</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image6" alt="Image of SQ1000" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SQ2000</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image7" alt="Image of SQ2000" /></td>
</tr>
</tbody>
</table>

Single Solenoid Type (SQ1000/2000)

<table>
<thead>
<tr>
<th>Positive common spec.</th>
<th>Negative common spec.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOL, A (–) +COM</td>
<td>SOL, A (–) –COM</td>
</tr>
<tr>
<td>SOL, A (–) Varistor</td>
<td>SOL, A (–) Varistor</td>
</tr>
</tbody>
</table>

Quick response type

Note) With quick response type, approximately ~40 V of coil surge voltage is generated when the valve is switched OFF.

Double Type (SQ1000/2000)

3 Position Type (SQ1000/2000)

4 Position Dual 3 Port Type (SQ1000/2000)

Continuous Duty
If a valve is energized continuously for a long period of time, the rise in temperature due to heat-up of the coil assembly may cause a decline in solenoid valve performance, reduce service life, or have adverse effects on peripheral equipment. When the valve is continuously energized, use the standard type (0.4 W) at ambient temperature of 40°C or less with proper heat radiation. In particular, if three or more adjacent stations on the manifold are energized simultaneously for extended periods of time or if the valves on A side and B side of the dual 3 port valve are energized simultaneously for a long period of time, take special care as the temperature rise will be greater.

Caution

Continuous Duty

Be sure to read before handling. Refer to back cover for Safety Instructions, “Handling Precautions for SMC Products” (M-E03-3) and the Operation Manual for 3/4/5 Port Solenoid Valves Precautions.

Please download it via our website, http://www.smcworld.com
**Caution**

**Mounting**
- Insert the hook of the valve into the bracket on the manifold block, then push the valve down into place and tighten the mounting screw.
- Tighten the screw with the appropriate tightening torque shown below.

| SQ1000  | 0.17 to 0.23 N-m |
| SQ2000  | 0.25 to 0.35 N-m |

- When pushing the valve down, press it on the area near the manual override. Be careful not to push the solenoid cover.

**Removing**
- Loosen the valve mounting screw, lift the valve from the solenoid cover side and remove it by sliding it in the direction of arrow ③.

If it is difficult to loosen the screw, loosen it while pressing the valve gently on the area near the manual override.

**Replacement of Cylinder Port Fittings**

**Caution**

The cylinder port fittings are a cassette for easy replacement. Fittings are secured with a clip that is inserted from the top side of the valve. Remove the clip with a flat head screwdriver, etc., to replace the fittings.

To mount a fitting, insert the fitting assembly until it stops and reinsert the clip to its designated position.

<table>
<thead>
<tr>
<th>Applicable tubing O.D. (mm)</th>
<th>Fitting assembly part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ1000</td>
<td>VVQ1000-50A-C3</td>
</tr>
<tr>
<td>3.2</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>VVQ1000-50A-C4</td>
</tr>
<tr>
<td>6</td>
<td>VVQ1000-50A-C6</td>
</tr>
<tr>
<td>8</td>
<td>VVQ1000-51A-C4</td>
</tr>
<tr>
<td>SQ2000</td>
<td>VVQ1000-51A-C4</td>
</tr>
<tr>
<td>3.2</td>
<td>VVQ1000-51A-C6</td>
</tr>
<tr>
<td>8</td>
<td>VVQ1000-51A-C8</td>
</tr>
</tbody>
</table>

- Part numbers above are for one fitting; however, order them in 10 piece units.

**Caution**

Use caution that O-rings must be free from scratches and dust. Otherwise, air leakage may result.

**Mounting and Removal of Valves**

**Caution**

**Removing Manifold from DIN Rail**

1. Loosen the end plate clamping screws on both sides until they turn freely. (The screws do not come out.)
2. Remove the manifold from the DIN rail by lifting it from the solenoid cover side.

When a manifold contains a large number of stations and it is difficult to remove all at once, separate the manifold into several sections before removing it.

**Mounting and Removal of Manifold with DIN Rail**

**Caution**

**Mounting Manifold on DIN Rail**

The procedure is the reverse of that above. After tightening the clamping screw on one side, push on the opposite end plate so that there are no gaps between the manifold blocks and then tighten the other clamping screw.

- Proper tightening torque: 0.5 to 0.7 N·m (SQ1000, SQ2000)
- Tightening torque 0.5 to 0.7 N·m

Confirm that the DIN rail clasps are securely hooked into the DIN rail.

**Built-in Silencer Replacement Element**

**Caution**

A filter element is built into the manifold base end plate. When the element becomes dirty and clogged, this will cause trouble such as a drop in the cylinder speed, etc. Therefore, replace the element regularly.

**Element part no.**

<table>
<thead>
<tr>
<th>Type</th>
<th>Element part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Built-in silencer</td>
<td>SSQ1000-SE</td>
</tr>
<tr>
<td>Direct exhaust</td>
<td>SSQ2000-SE</td>
</tr>
</tbody>
</table>

- Part numbers above are for a set of ten elements.

To replace an element, remove the cover on the top side of the end plate and remove the old element with a flat head screwdriver, etc.

**How to Calculate the Flow Rate**

For obtaining the flow rate, refer to Best Pneumatics No.1.
Safety Instructions

Caution: Indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

Warning: Indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

Danger: Indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

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, consumption 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. An application which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

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. 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. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog for the particular products. 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

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

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