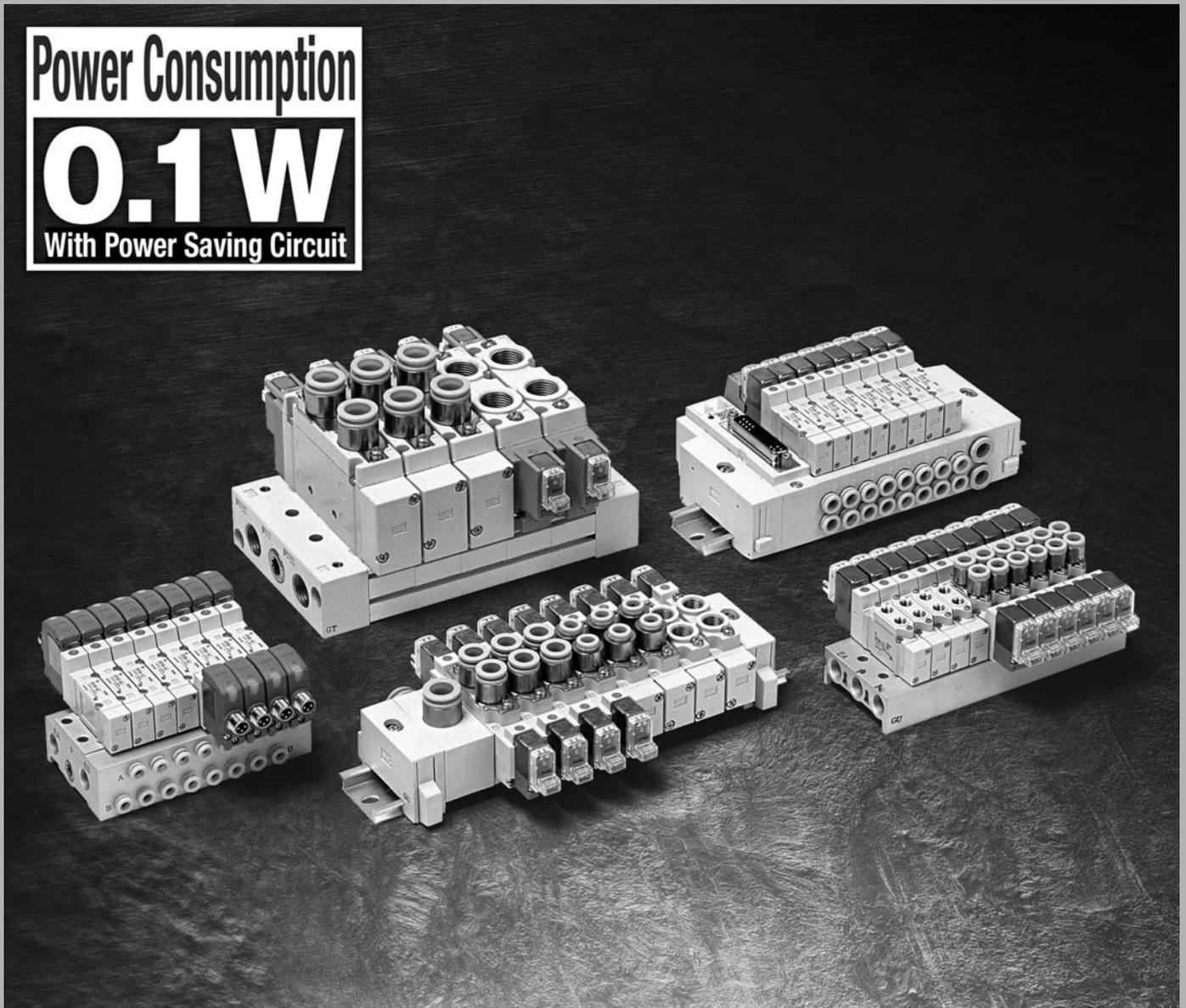


# 5 Port Solenoid Valve

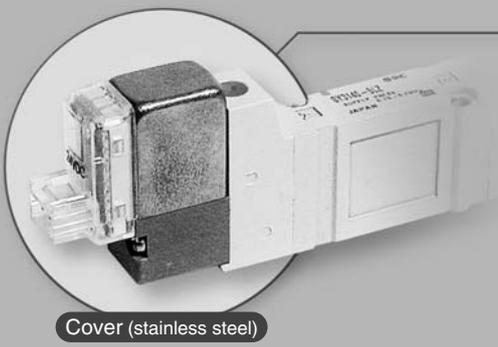
## Series SY3000/5000/7000/9000

Rubber Seal

Power Consumption  
**0.1 W**  
With Power Saving Circuit



- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7



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

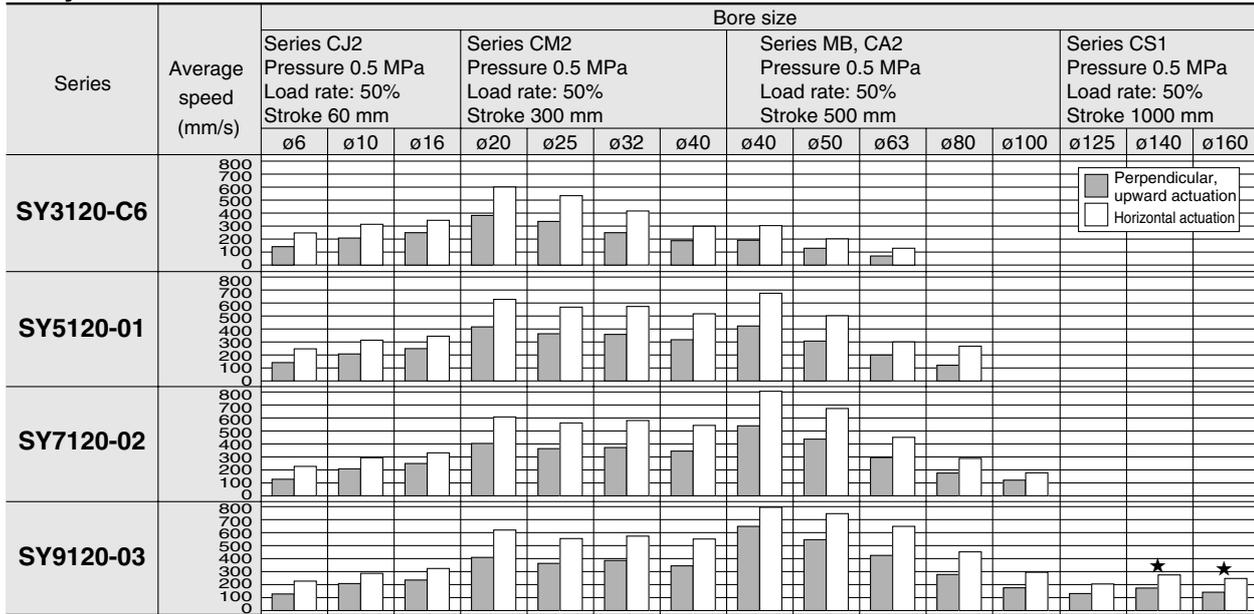
• **Flow Characteristics**

| Series        | Flow characteristics         |      |      |
|---------------|------------------------------|------|------|
|               | C [dm <sup>3</sup> /(s·bar)] | b    | Cv   |
| <b>SY3000</b> | 1.1                          | 0.28 | 0.29 |
| <b>SY5000</b> | 2.8                          | 0.37 | 0.90 |
| <b>SY7000</b> | 4.5                          | 0.28 | 1.4  |
| <b>SY9000</b> | 10                           | 0.29 | 2.5  |

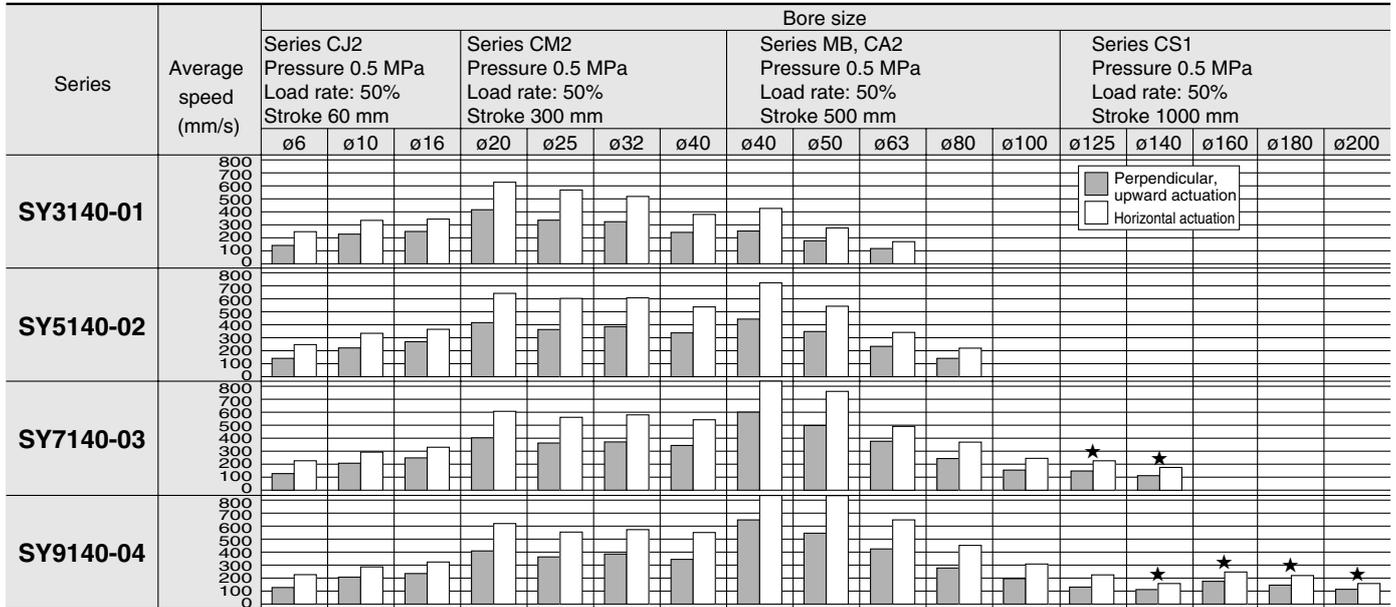
# Cylinder Speed Chart

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

## Body Ported



## Base Mounted



- \* Cylinder is in extending. Speed controller is meter-out, which is directly connected with cylinder and its needle is fully opened.
- \* Average speed of cylinder is obtained by dividing the full stroke time by the stroke.
- \* Load factor: (Load weight x 9.8) / Theoretical force) x 100%
- \* The histograms with ★ marked are the case when piping is done by using steel.

## Conditions

| Body ported | Series CJ2                                           | Series CM2                            | Series MB, CA2                          | Series CS1                   |
|-------------|------------------------------------------------------|---------------------------------------|-----------------------------------------|------------------------------|
| SY3120-C6   | Tubing bore x Length<br>Speed controller<br>Silencer | T0604 x 1 m<br>AS2051F-06<br>AN120-M5 | —<br>—<br>—                             | —<br>—<br>—                  |
| SY5120-01   | Tubing bore x Length<br>Speed controller<br>Silencer | T0604 x 1 m<br>AS3001F-06<br>AN101-01 | T0806 x 1 m<br>AS3001F-08<br>—          | —<br>—<br>—                  |
| SY7120-02   | Tubing bore x Length<br>Speed controller<br>Silencer | T0604 x 1 m<br>AS3001F-06<br>AN110-01 | T1075 x 1 m<br>AS4001F-10<br>—          | —<br>—<br>—                  |
| SY9120-03   | Tubing bore x Length<br>Speed controller<br>Silencer | T0604 x 1 m<br>AS3001F-06<br>AN200-02 | T1075 x 1 m<br>AS4001F-10<br>AS4001F-12 | T1209 x 1 m<br>—<br>AN202-02 |

## Conditions [When using SGP (steel pipe)]

| Body ported | Series CS1                                           |
|-------------|------------------------------------------------------|
| SY9120-03   | Tubing bore x Length<br>Speed controller<br>Silencer |

## Conditions

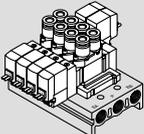
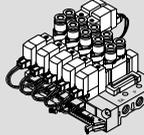
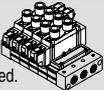
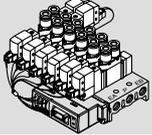
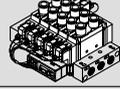
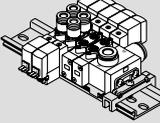
| Base mounted | Series CJ2                                           | Series CM2                            | Series MB, CA2                          | Series CS1            |
|--------------|------------------------------------------------------|---------------------------------------|-----------------------------------------|-----------------------|
| SY3140-01    | Tubing bore x Length<br>Speed controller<br>Silencer | T0604 x 1 m<br>AS3001F-06<br>AN110-01 | —<br>—<br>—                             | —<br>—<br>—           |
| SY5140-02    | Tubing bore x Length<br>Speed controller<br>Silencer | T0604 x 1 m<br>AS3001F-06<br>AN101-01 | T0806 x 1 m<br>AS3001F-08<br>—          | —<br>—<br>—           |
| SY7140-03    | Tubing bore x Length<br>Speed controller<br>Silencer | T0604 x 1 m<br>AS3001F-06<br>AN200-02 | T1075 x 1 m<br>AS4001F-10<br>—          | T1209 x 1 m<br>—<br>— |
| SY9140-04    | Tubing bore x Length<br>Speed controller<br>Silencer | T0604 x 1 m<br>AS3001F-06<br>AN200-02 | T1075 x 1 m<br>AS4001F-10<br>AS4001F-12 | T1209 x 1 m<br>—<br>— |

## Conditions [When using SGP (steel pipe)]

| Base mounted | Series CS1                                           |
|--------------|------------------------------------------------------|
| SY7140-03    | Tubing bore x Length<br>Speed controller<br>Silencer |
| SY9140-04    | Tubing bore x Length<br>Speed controller<br>Silencer |



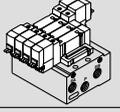
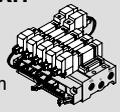
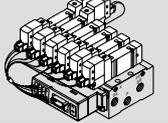
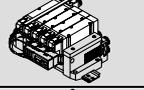
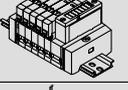
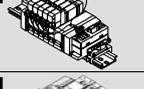
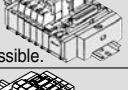
# Manifold Variations

| Manifold Variations                                                                                  |                                                                                                                                        |                                                                                    |                            | Wiring            |                             |                                           |                                        |                                                  |                                          |           | Common specifications |                 |
|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------|-------------------|-----------------------------|-------------------------------------------|----------------------------------------|--------------------------------------------------|------------------------------------------|-----------|-----------------------|-----------------|
|                                                                                                      |                                                                                                                                        |                                                                                    |                            | Connection        |                             |                                           |                                        |                                                  |                                          |           | Positive common       | Negative common |
|                                                                                                      |                                                                                                                                        |                                                                                    |                            | Individual wiring | Flat ribbon cable (26 pins) | Flat ribbon cable (20 pins) connector box | Plug-in type D-sub connector (25 pins) | Plug-in type flat ribbon cable (26, 20, 10 pins) | Plug-in type terminal block (9, 18 pins) | PC wiring |                       |                 |
| Valve Series                                                                                         |                                                                                                                                        |                                                                                    |                            | 5 port            |                             |                                           |                                        |                                                  |                                          |           |                       |                 |
| Body ported                                                                                          | <b>Bar stock type Individual wiring</b><br>■ Direct piping to the main unit of a valve. Combination of different fittings is possible. |   | <b>Type 20</b><br>P. 144   | SY3□20            | ●                           | —                                         | —                                      | —                                                | —                                        | —         | —                     | —               |
|                                                                                                      |                                                                                                                                        |                                                                                    |                            | SY5□20            | —                           | —                                         | —                                      | —                                                | —                                        | —         | —                     | —               |
|                                                                                                      |                                                                                                                                        |                                                                                    |                            | SY7□20            | —                           | —                                         | —                                      | —                                                | —                                        | —         | —                     | —               |
|                                                                                                      | <b>Bar stock type Flat ribbon cable</b><br>■ A 26 pins MIL connector permits One-touch wiring of external cables in a bundle.          |   | <b>Type 20P</b><br>P. 154  | SY3□20            | —                           | ●                                         | —                                      | —                                                | —                                        | —         | —                     | ●               |
|                                                                                                      |                                                                                                                                        |                                                                                    |                            | SY5□20            | —                           | —                                         | —                                      | —                                                | —                                        | —         | —                     | ●               |
|                                                                                                      |                                                                                                                                        |                                                                                    |                            | SY7□20            | —                           | —                                         | —                                      | —                                                | —                                        | —         | —                     | ●               |
|                                                                                                      | <b>Stacking type Individual wiring</b><br>■ Manifold stations can be increased or decreased.                                           |   | <b>Type 23</b><br>P. 150   | SY9□20            | ●                           | —                                         | —                                      | —                                                | —                                        | —         | —                     | —               |
|                                                                                                      |                                                                                                                                        |                                                                                    |                            | SY9□20            | —                           | ●                                         | —                                      | —                                                | —                                        | —         | —                     | —               |
|                                                                                                      | <b>Stacking type Flat ribbon cable</b><br>■ Manifold stations can be increased or decreased.                                           |   | <b>Type 23P</b><br>P. 160  | SY9□20            | —                           | ●                                         | —                                      | —                                                | —                                        | —         | —                     | ●               |
|                                                                                                      |                                                                                                                                        |                                                                                    |                            | SY9□20            | —                           | —                                         | —                                      | —                                                | —                                        | —         | —                     | —               |
|                                                                                                      | <b>Bar stock type EX510 gateway system</b><br>■ Can be used with a serial transmission system.                                         |  | <b>Type 20SA</b><br>P. 164 | SY3□20            | —                           | —                                         | —                                      | —                                                | —                                        | —         | ●                     | —               |
|                                                                                                      |                                                                                                                                        |                                                                                    |                            | SY5□20            | —                           | —                                         | —                                      | —                                                | —                                        | —         | —                     | —               |
| SY7□20                                                                                               |                                                                                                                                        |                                                                                    |                            | —                 | —                           | —                                         | —                                      | —                                                | —                                        | —         | —                     | —               |
| <b>Stacking type EX510 gateway system</b><br>■ Can be used with a serial transmission system.        |                                                     | <b>Type 23SA</b><br>P. 170                                                         | SY9□20                     | —                 | —                           | —                                         | —                                      | —                                                | —                                        | ●         | —                     |                 |
| <b>Cassette type Individual wiring</b><br>■ Size and weight reduced by eliminating the manifold base |                                                     | <b>Type 60</b><br>P. 178                                                           | SY3□60                     | ●                 | —                           | —                                         | —                                      | —                                                | —                                        | —         | —                     |                 |
|                                                                                                      |                                                                                                                                        |                                                                                    | SY5□60                     | ●                 | —                           | —                                         | —                                      | —                                                | —                                        | —         | —                     |                 |
|                                                                                                      |                                                                                                                                        |                                                                                    | SY7□60                     | ●                 | —                           | —                                         | —                                      | —                                                | —                                        | —         | —                     |                 |

● Standard ● Option ▲ Made to order (Refer to page "Made to Order".)



# Manifold Variations

| Manifold Variations                                                                                                                                                                          |                                                                                                                                                                                                            |                                                                                     |                            | Valve Series | Wiring            |                             |                                           |                                        |                                                  |                                          |           |                          |                 |                 |   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------|--------------|-------------------|-----------------------------|-------------------------------------------|----------------------------------------|--------------------------------------------------|------------------------------------------|-----------|--------------------------|-----------------|-----------------|---|
|                                                                                                                                                                                              |                                                                                                                                                                                                            |                                                                                     |                            |              | Connection        |                             |                                           |                                        |                                                  |                                          |           | Common specifications    |                 |                 |   |
|                                                                                                                                                                                              |                                                                                                                                                                                                            |                                                                                     |                            |              | Individual wiring | Flat ribbon cable (26 pins) | Flat ribbon cable (20 pins) connector box | Plug-in type D-sub connector (25 pins) | Plug-in type flat ribbon cable (26, 20, 10 pins) | Plug-in type terminal block (9, 18 pins) | PC wiring | Serial transmission unit | Positive common | Negative common |   |
| Base mounted                                                                                                                                                                                 | <b>Compact bar stock type Individual wiring</b><br>■ The base mounting facilitates maintenance after valves are changed.                                                                                   |    | Type <b>41</b><br>P. 198   | SY3□40       | ●                 | —                           | —                                         | —                                      | —                                                | —                                        | —         | —                        | —               | —               |   |
|                                                                                                                                                                                              |                                                                                                                                                                                                            |                                                                                     |                            | SY5□40       | —                 | ●                           | —                                         | —                                      | —                                                | —                                        | —         | —                        | ●               | —               |   |
|                                                                                                                                                                                              | <b>Compact bar stock type Flat ribbon cable</b><br>■ A 26 pins MIL connector permits one-touch wiring of external cables in a bundle.                                                                      |    | Type <b>41P</b><br>P. 214  | SY3□40       | —                 | ●                           | —                                         | —                                      | —                                                | —                                        | —         | —                        | —               | ●               | — |
|                                                                                                                                                                                              |                                                                                                                                                                                                            |                                                                                     |                            | SY5□40       | —                 | —                           | —                                         | —                                      | —                                                | —                                        | —         | —                        | —               | —               | ● |
|                                                                                                                                                                                              | <b>Bar stock type/Common external EXH Individual wiring</b><br>■ The base mounting facilitates maintenance after valves are changed.<br>■ Vacuum/low pressure combination system is possible.              |    | Type <b>42</b><br>P. 198   | SY3□40       | ●                 | —                           | —                                         | —                                      | —                                                | —                                        | —         | —                        | —               | —               | — |
|                                                                                                                                                                                              |                                                                                                                                                                                                            |                                                                                     |                            | SY5□40       | —                 | —                           | —                                         | —                                      | —                                                | —                                        | —         | —                        | —               | —               | — |
|                                                                                                                                                                                              |                                                                                                                                                                                                            |                                                                                     |                            | SY7□40       | —                 | —                           | —                                         | —                                      | —                                                | —                                        | —         | —                        | —               | —               | — |
|                                                                                                                                                                                              | <b>Bar stock type/Common external EXH Flat ribbon cable</b><br>■ A 26 pins MIL connector permits one-touch wiring of external cables in a bundle.<br>■ Vacuum/low pressure combination system is possible. |    | Type <b>42P</b><br>P. 214  | SY3□40       | —                 | ●                           | —                                         | —                                      | —                                                | —                                        | —         | —                        | —               | ●               | — |
|                                                                                                                                                                                              |                                                                                                                                                                                                            |                                                                                     |                            | SY5□40       | —                 | —                           | —                                         | —                                      | —                                                | —                                        | —         | —                        | —               | —               | ● |
|                                                                                                                                                                                              |                                                                                                                                                                                                            |                                                                                     |                            | SY7□40       | —                 | —                           | —                                         | —                                      | —                                                | —                                        | —         | —                        | —               | —               | ● |
|                                                                                                                                                                                              | <b>Stacking type Individual wiring</b><br>■ Manifold stations can be increased or decreased.                                                                                                               |   | Type <b>43</b><br>P. 208   | SY9□40       | ●                 | —                           | —                                         | —                                      | —                                                | —                                        | —         | —                        | —               | —               | — |
|                                                                                                                                                                                              | <b>Stacking type Flat ribbon cable</b><br>■ Manifold stations can be increased or decreased.                                                                                                               |  | Type <b>43P</b><br>P. 222  | SY9□40       | —                 | ●                           | —                                         | —                                      | —                                                | —                                        | —         | —                        | —               | ●               | — |
|                                                                                                                                                                                              | <b>Bar stock type EX510 gateway system</b><br>■ Can be used with a serial transmission system.                                                                                                             |  | Type <b>42SA</b><br>P. 228 | SY3□40       | —                 | —                           | —                                         | —                                      | —                                                | —                                        | —         | ●                        | —               | —               | — |
|                                                                                                                                                                                              |                                                                                                                                                                                                            |                                                                                     |                            | SY5□40       | —                 | —                           | —                                         | —                                      | —                                                | —                                        | —         | —                        | —               | —               | — |
|                                                                                                                                                                                              |                                                                                                                                                                                                            |                                                                                     |                            | SY7□40       | —                 | —                           | —                                         | —                                      | —                                                | —                                        | —         | —                        | —               | —               | — |
|                                                                                                                                                                                              | <b>Stacking type EX510 gateway system</b><br>■ Can be used with a serial transmission system.                                                                                                              |  | Type <b>43SA</b><br>P. 233 | SY9□40       | —                 | —                           | —                                         | —                                      | —                                                | —                                        | —         | ●                        | —               | —               | — |
| <b>Stacking type/DIN rail mounted Individual wiring</b><br>■ Stations can be increased on the DIN rail. Integral mounting of other electric parts is possible, too.                          |                                                                                                                         | Type <b>45</b><br>P. 244                                                            | SY3□40                     | ●            | —                 | —                           | —                                         | —                                      | —                                                | —                                        | —         | —                        | —               | —               |   |
|                                                                                                                                                                                              |                                                                                                                                                                                                            |                                                                                     | SY5□40                     | —            | —                 | —                           | —                                         | —                                      | —                                                | —                                        | —         | —                        | —               | —               |   |
| <b>Stacking type/DIN rail mounted Connector box</b><br>■ Stations can be increased or decreased on the DIN rail. The provided connector box permits one-touch connection of electric cables. |                                                                                                                         | Type <b>45<sup>A</sup><sub>NA</sub></b><br>P. 256                                   | SY3□40                     | —            | —                 | ●                           | —                                         | —                                      | —                                                | ●                                        | —         | ●                        | ●               | —               |   |
|                                                                                                                                                                                              |                                                                                                                                                                                                            |                                                                                     | SY5□40                     | —            | —                 | —                           | —                                         | —                                      | —                                                | —                                        | —         | —                        | —               | —               |   |
| <b>Stacking type/DIN rail mounted EX510 gateway system</b><br>■ Can be used with a serial transmission system.                                                                               |                                                                                                                         | Type <b>45S6A</b><br>P. 264                                                         | SY3□40                     | —            | —                 | —                           | —                                         | —                                      | —                                                | —                                        | ●         | —                        | —               | —               |   |
|                                                                                                                                                                                              |                                                                                                                                                                                                            |                                                                                     | SY5□40                     | —            | —                 | —                           | —                                         | —                                      | —                                                | —                                        | —         | —                        | —               | —               |   |
| <b>Stacking type/DIN rail mounted Plug-in</b><br>■ Stations can be increased or decreased on the DIN rail.<br>■ A variety of centralized wiring methods are possible.                        |                                                                                                                         | Type <b>45</b><br>P. 272                                                            | SY3□40                     | —            | —                 | —                           | ●                                         | ●                                      | ●                                                | ●                                        | ●         | ●                        | ●               | ●               |   |
|                                                                                                                                                                                              |                                                                                                                                                                                                            |                                                                                     | SY5□40                     | —            | —                 | —                           | —                                         | —                                      | —                                                | —                                        | —         | —                        | —               | —               |   |
| <b>Stacking type/DIN rail mounted EX510 gateway system</b><br>■ Can be used with a serial transmission system.                                                                               |                                                                                                                         | Type <b>45S6B</b><br>P. 312                                                         | SY3□40                     | —            | —                 | —                           | —                                         | —                                      | —                                                | —                                        | ●         | —                        | —               | —               |   |
|                                                                                                                                                                                              |                                                                                                                                                                                                            |                                                                                     | SY5□40                     | —            | —                 | —                           | —                                         | —                                      | —                                                | —                                        | —         | —                        | —               | —               |   |

● Standard ● Option ▲ Made to order (Refer to page "Made to Order".)



# 5 Port Solenoid Valve Body Ported/Single Unit

# Series SY3000/5000/7000/9000



## How to Order

SY **5** **1** **20** **5** **L** **01**

**Series**

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |
| 7 | SY7000 |
| 9 | SY9000 |

**Type of actuation**

|   |                                |
|---|--------------------------------|
| 1 | 2 position single<br>          |
| 2 | 2 position double<br>          |
| 3 | 3 position closed center<br>   |
| 4 | 3 position exhaust center<br>  |
| 5 | 3 position pressure center<br> |

**Coil specifications**

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

\* Power saving circuit is not available in the case of D, DO or W□ type.

**For DC**

|   |        |
|---|--------|
| 5 | 24 VDC |
| 6 | 12 VDC |
| V | 6 VDC  |
| S | 5 VDC  |
| R | 3 VDC  |

**Rated voltage**

**For AC (50/60 Hz)**

|   |                   |
|---|-------------------|
| 1 | 100 VAC           |
| 2 | 200 VAC           |
| 3 | 110 VAC [115 VAC] |
| 4 | 220 VAC [230 VAC] |

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

**Electrical entry**

|                                            |                                   |                                   |                       |                                       |
|--------------------------------------------|-----------------------------------|-----------------------------------|-----------------------|---------------------------------------|
| 24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC |                                   |                                   |                       | 24, 12 VDC/<br>100, 110, 200, 220 VAC |
| <b>Grommet</b>                             | <b>L plug connector</b>           | <b>M plug connector</b>           | <b>DIN terminal</b>   |                                       |
| G: Lead wire length 300 mm                 | L: With lead wire (Length 300 mm) | M: With lead wire (Length 300 mm) | MN: Without lead wire | D, Y: With connector                  |
|                                            |                                   |                                   |                       |                                       |
| H: Lead wire length 600 mm                 | LN: Without lead wire             | LO: Without connector             | MO: Without connector | DO, YO: Without connector             |
|                                            |                                   |                                   |                       |                                       |

24, 12, 6, 5, 3 VDC

**M8 connector**

WO: Without connector cable

W□: With connector cable (Note)

\* LN, MN type: with 2 sockets.  
\* For DIN terminal of SY3000 series, refer to page 337.  
\* "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). For details, refer to page 336.  
\* For connector cable of M8 connector, refer to page 339.  
\* M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 331 for details.  
\* Refer to page 336 for the lead wire length of L and M plug connectors.  
\* Refer to page 337 for the connector assembly with cover for L and M plug connectors.

Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.

**A, B port size**  
**Thread piping**

| Symbol | Port size | Applicable series |
|--------|-----------|-------------------|
| M5     | M5 x 0.8  | SY3000            |
| 01     | 1/8       | SY5000            |
| 02     | 1/4       | SY7000            |
| 03     | 3/8       | SY9000            |

**One-touch fitting (Metric size)**

| Symbol | Port size                 | Applicable series |
|--------|---------------------------|-------------------|
| C4     | One-touch fitting for ø4  | SY3000            |
| C6     | One-touch fitting for ø6  | SY5000            |
| C8     | One-touch fitting for ø8  | SY7000            |
| C10    | One-touch fitting for ø10 | SY9000            |
| C8     | One-touch fitting for ø8  | SY9000            |
| C10    | One-touch fitting for ø10 | SY9000            |
| C12    | One-touch fitting for ø12 | SY9000            |

**One-touch fitting (Inch size)**

| Symbol | Port size                     | Applicable series |
|--------|-------------------------------|-------------------|
| N3     | One-touch fitting for ø 5/32" | SY3000            |
| N7     | One-touch fitting for ø 1/4"  | SY3000            |
| N3     | One-touch fitting for ø 5/32" | SY5000            |
| N7     | One-touch fitting for ø 1/4"  | SY5000            |
| N9     | One-touch fitting for ø 5/16" | SY7000            |
| N9     | One-touch fitting for ø 5/16" | SY7000            |
| N11    | One-touch fitting for ø 3/8"  | SY9000            |
| N9     | One-touch fitting for ø 5/16" | SY9000            |
| N11    | One-touch fitting for ø 3/8"  | SY9000            |

**Manual override**

|                                       |                                              |                                            |
|---------------------------------------|----------------------------------------------|--------------------------------------------|
| <b>Nil:</b> Non-locking push type<br> | <b>D:</b> Push-turn locking slotted type<br> | <b>E:</b> Push-turn locking lever type<br> |
|---------------------------------------|----------------------------------------------|--------------------------------------------|

**Light/surge voltage suppressor**

**Electrical entry for G, H, L, M, W**

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

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

**Electrical entry for D, Y**

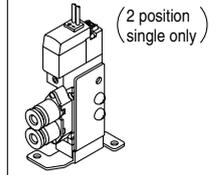
| Symbol | Description                            |
|--------|----------------------------------------|
| Nil    | Without light/surge voltage suppressor |
| S      | With surge voltage suppressor          |
| Z      | With light/surge voltage suppressor    |

\* DOZ and YOZ are not available.  
\* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

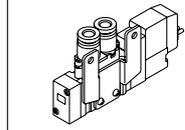
Note) When placing an order for body ported solenoid valve as a single unit, mounting screw for manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to page 173.)

**Bracket**

**Nil:** Without bracket  
**F1:** With foot bracket (2 position single only)



**F2:** With side bracket



\* SY9000 has no bracket.

**Thread type**

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

\* Except for M5

**Made to Order**

|     |                                                 |
|-----|-------------------------------------------------|
| Nil | —                                               |
| X20 | Body ported external pilot (Refer to page 332.) |
| X90 | Main valve fluoro rubber (Refer to page 332.)   |

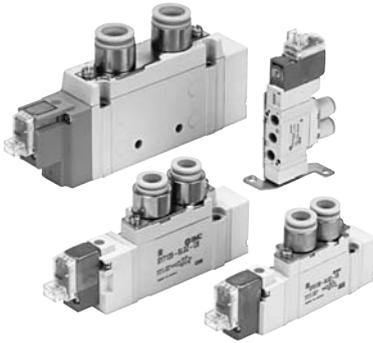
**CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

\* For DC only except DIN terminal.

# Body Ported Series SY3000/5000/7000/9000

## Specifications



| Series                                                          |                           | SY3000                                                                              | SY5000 | SY7000 | SY9000 |
|-----------------------------------------------------------------|---------------------------|-------------------------------------------------------------------------------------|--------|--------|--------|
| Fluid                                                           |                           | Air                                                                                 |        |        |        |
| Internal pilot                                                  | 2 position single         | 0.15 to 0.7                                                                         |        |        |        |
| Operating pressure range (MPa)                                  | 2 position double         | 0.1 to 0.7                                                                          |        |        |        |
|                                                                 | 3 position                | 0.2 to 0.7                                                                          |        |        |        |
| Ambient and fluid temperature (°C)                              |                           | -10 to 50 (No freezing.)                                                            |        |        |        |
| Max. operating frequency (Hz)                                   | 2 position single, double | 10                                                                                  | 5      | 5      | 5      |
|                                                                 | 3 position                | 3                                                                                   | 3      | 3      | 3      |
| Manual override (Manual operation)                              |                           | Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type |        |        |        |
| Pilot exhaust method                                            |                           | Common exhaust type for main and pilot valve                                        |        |        |        |
| Lubrication                                                     |                           | Not required                                                                        |        |        |        |
| Mounting orientation                                            |                           | Unrestricted                                                                        |        |        |        |
| Impact/Vibration resistance (m/s <sup>2</sup> ) <sup>Note</sup> |                           | 150/30                                                                              |        |        |        |
| Enclosure                                                       |                           | Dust proof (* DIN terminal and M8 connector: IP65)                                  |        |        |        |



\* Based on IEC60529

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

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)



**Made to Order**

(For details, refer to pages 324 to 332.)

## Solenoid Specifications

|                               |             |                                                                  |                                                                          |                                                                          |  |
|-------------------------------|-------------|------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------|--|
| Electrical entry              |             | Grommet (G), (H)<br>L plug connector (L)<br>M plug connector (M) |                                                                          | DIN terminal (D), (Y)<br>M8 connector (W)                                |  |
|                               |             | G, H, L, M, W                                                    |                                                                          | D, Y                                                                     |  |
| Coil rated voltage (V)        | DC          | 24, 12, 6, 5, 3                                                  |                                                                          |                                                                          |  |
|                               | AC 50/60 Hz | 100, 110, 200, 220                                               |                                                                          |                                                                          |  |
| Allowable voltage fluctuation |             | ±10% of rated voltage *                                          |                                                                          |                                                                          |  |
| Power consumption (W)         | DC          | Standard                                                         | 0.35 (With indicator light: 0.4 DIN terminal with indicator light: 0.45) |                                                                          |  |
|                               |             | With power saving circuit                                        | 0.1 (With indicator light only)                                          |                                                                          |  |
| Apparent power (VA) *         | AC          | 100 V                                                            | 0.78 (With indicator light: 0.81)                                        | 0.78 (With indicator light: 0.87)                                        |  |
|                               |             | 110 V<br>[115 V]                                                 | 0.86 (With indicator light: 0.89)<br>[0.94 (With indicator light: 0.97)] | 0.86 (With indicator light: 0.97)<br>[0.94 (With indicator light: 1.07)] |  |
|                               |             | 200 V                                                            | 1.18 (With indicator light: 1.22)                                        | 1.15 (With indicator light: 1.30)                                        |  |
|                               |             | 220 V<br>[230 V]                                                 | 1.30 (With indicator light: 1.34)<br>[1.42 (With indicator light: 1.46)] | 1.27 (With indicator light: 1.46)<br>[1.39 (With indicator light: 1.60)] |  |
|                               |             | Surge voltage suppressor                                         | Diode (Varistor is for DIN terminal and Non-polar type.)                 |                                                                          |  |
| Indicator light               |             | LED (AC of DIN connector is neon light.)                         |                                                                          |                                                                          |  |



\* In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.

\* For 115 VAC and 230 VAC, the allowable voltage is -15% to +5% of rated voltage.

\* S, Z and T type (with power saving circuit) should be used within the following allowable voltage fluctuation range due to a voltage drop caused by the internal circuit.

S and Z type: 24 VDC: -7% to +10%

12 VDC: -4% to +10%

T type: 24 VDC: -8% to +10%

12 VDC: -6% to +10%

## Response Time



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

### SY3000

| Type of actuation | Response time (ms) (at the pressure of 0.5 MPa) |                                     |            |
|-------------------|-------------------------------------------------|-------------------------------------|------------|
|                   | Without light/surge voltage suppressor          | With light/surge voltage suppressor |            |
|                   |                                                 | Type S, Z                           | Type R, U  |
| 2 position single | 12 or less                                      | 15 or less                          | 12 or less |
| 2 position double | 10 or less                                      | 13 or less                          | 10 or less |
| 3 position        | 15 or less                                      | 20 or less                          | 16 or less |

### SY5000

| Type of actuation | Response time (ms) (at the pressure of 0.5 MPa) |                                     |            |
|-------------------|-------------------------------------------------|-------------------------------------|------------|
|                   | Without light/surge voltage suppressor          | With light/surge voltage suppressor |            |
|                   |                                                 | Type S, Z                           | Type R, U  |
| 2 position single | 19 or less                                      | 26 or less                          | 19 or less |
| 2 position double | 18 or less                                      | 22 or less                          | 18 or less |
| 3 position        | 32 or less                                      | 38 or less                          | 32 or less |

### SY7000

| Type of actuation | Response time (ms) (at the pressure of 0.5 MPa) |                                     |            |
|-------------------|-------------------------------------------------|-------------------------------------|------------|
|                   | Without light/surge voltage suppressor          | With light/surge voltage suppressor |            |
|                   |                                                 | Type S, Z                           | Type R, U  |
| 2 position single | 31 or less                                      | 38 or less                          | 33 or less |
| 2 position double | 27 or less                                      | 30 or less                          | 28 or less |
| 3 position        | 50 or less                                      | 56 or less                          | 50 or less |

### SY9000

| Type of actuation | Response time (ms) (at the pressure of 0.5 MPa) |                                     |            |
|-------------------|-------------------------------------------------|-------------------------------------|------------|
|                   | Without light/surge voltage suppressor          | With light/surge voltage suppressor |            |
|                   |                                                 | Type S, Z                           | Type R, U  |
| 2 position single | 35 or less                                      | 41 or less                          | 35 or less |
| 2 position double | 35 or less                                      | 41 or less                          | 35 or less |
| 3 position        | 62 or less                                      | 64 or less                          | 62 or less |

# Series SY3000/5000/7000/9000

## Flow Characteristics/Mass

### Series SY3000

| Valve model     | Type of actuation |                | Port size              |                                  | Flow characteristics       |                                  |      |                            |             |             | Mass (g)     |                          |                      |    |    |    |    |    |
|-----------------|-------------------|----------------|------------------------|----------------------------------|----------------------------|----------------------------------|------|----------------------------|-------------|-------------|--------------|--------------------------|----------------------|----|----|----|----|----|
|                 |                   |                | 1, 5, 3<br>(P, EA, EB) | 4, 2<br>(A, B)                   | 1→4/2 (P→A/B)              |                                  |      | 4/2→5/3 (A/B→EA/EB)        |             |             | Gro-<br>mmet | L/M<br>plug<br>connector | W<br>M8<br>connector |    |    |    |    |    |
|                 |                   |                |                        |                                  | C (dm <sup>3</sup> /s-bar) | b                                | Cv   | C (dm <sup>3</sup> /s-bar) | b           | Cv          |              |                          |                      |    |    |    |    |    |
| SY3□20<br>-□-M5 | 2 position        | Single         | M5 x 0.8               | M5 x 0.8                         | 1.9                        | 0.35                             | 0.49 | 2.4                        | 0.39        | 0.61        | 70           | 72                       | 93                   | 76 | 82 |    |    |    |
|                 |                   | Double         |                        |                                  |                            |                                  |      |                            |             |             |              |                          |                      |    |    |    |    |    |
|                 | 3 position        | Closed center  |                        |                                  | 0.48                       | 0.46                             | 0.13 | 0.47                       | 0.43        | 0.13        | 71           | 76                       | 84                   |    |    |    |    |    |
|                 |                   | Exhaust center |                        |                                  | 0.47                       | 0.42                             | 0.13 | 0.47 (0.44)                | 0.41 (0.37) | 0.13 (0.12) |              |                          |                      |    |    |    |    |    |
| SY3□20<br>-□-C4 | 2 position        | Single         |                        |                                  | M5 x 0.8                   | C4<br>(One-touch fitting for ø4) | 1.9  | 0.35                       | 0.49        | 2.4         | 0.39         | 0.61                     | 60                   | 63 | 67 | 78 | 83 | 91 |
|                 |                   | Double         |                        |                                  |                            |                                  |      |                            |             |             |              |                          |                      |    |    |    |    |    |
|                 | 3 position        | Closed center  |                        |                                  |                            |                                  | 0.72 | 0.29                       | 0.18        | 0.64        | 0.34         | 0.17                     | 81                   | 86 | 94 |    |    |    |
|                 |                   | Exhaust center |                        |                                  |                            |                                  | 0.59 | 0.28                       | 0.15        | 0.59 (0.41) | 0.30 (0.37)  | 0.15 (0.11)              |                      |    |    |    |    |    |
| SY3□20<br>-□-C6 | 2 position        | Single         | M5 x 0.8               | C6<br>(One-touch fitting for ø6) |                            |                                  | 1.9  | 0.35                       | 0.49        | 2.4         | 0.39         | 0.61                     | 56                   | 59 | 63 | 74 | 79 | 87 |
|                 |                   | Double         |                        |                                  |                            |                                  |      |                            |             |             |              |                          |                      |    |    |    |    |    |
|                 | 3 position        | Closed center  |                        |                                  |                            |                                  | 0.76 | 0.30                       | 0.19        | 0.65        | 0.39         | 0.17                     | 77                   | 82 | 90 |    |    |    |
|                 |                   | Exhaust center |                        |                                  |                            |                                  | 0.76 | 0.55                       | 0.24        | 0.64 (0.42) | 0.31 (0.36)  | 0.17 (0.11)              |                      |    |    |    |    |    |
| SY3□20<br>-□-C6 | 2 position        | Single         |                        |                                  | M5 x 0.8                   | C6<br>(One-touch fitting for ø6) | 1.9  | 0.35                       | 0.49        | 2.4         | 0.39         | 0.61                     | 56                   | 59 | 63 | 74 | 79 | 87 |
|                 |                   | Double         |                        |                                  |                            |                                  |      |                            |             |             |              |                          |                      |    |    |    |    |    |
|                 | 3 position        | Closed center  |                        |                                  |                            |                                  | 0.76 | 0.30                       | 0.19        | 0.65        | 0.39         | 0.17                     | 77                   | 82 | 90 |    |    |    |
|                 |                   | Exhaust center |                        |                                  |                            |                                  | 0.76 | 0.55                       | 0.24        | 0.64 (0.42) | 0.31 (0.36)  | 0.17 (0.11)              |                      |    |    |    |    |    |
| SY3□20<br>-□-C6 | 2 position        | Single         | M5 x 0.8               | C6<br>(One-touch fitting for ø6) |                            |                                  | 1.9  | 0.35                       | 0.49        | 2.4         | 0.39         | 0.61                     | 56                   | 59 | 63 | 74 | 79 | 87 |
|                 |                   | Double         |                        |                                  |                            |                                  |      |                            |             |             |              |                          |                      |    |    |    |    |    |
|                 | 3 position        | Closed center  |                        |                                  |                            |                                  | 0.76 | 0.30                       | 0.19        | 0.65        | 0.39         | 0.17                     | 77                   | 82 | 90 |    |    |    |
|                 |                   | Exhaust center |                        |                                  |                            |                                  | 0.76 | 0.55                       | 0.24        | 0.64 (0.42) | 0.31 (0.36)  | 0.17 (0.11)              |                      |    |    |    |    |    |
| SY3□20<br>-□-C6 | 2 position        | Single         |                        |                                  | M5 x 0.8                   | C6<br>(One-touch fitting for ø6) | 1.9  | 0.35                       | 0.49        | 2.4         | 0.39         | 0.61                     | 56                   | 59 | 63 | 74 | 79 | 87 |
|                 |                   | Double         |                        |                                  |                            |                                  |      |                            |             |             |              |                          |                      |    |    |    |    |    |
|                 | 3 position        | Closed center  |                        |                                  |                            |                                  | 0.76 | 0.30                       | 0.19        | 0.65        | 0.39         | 0.17                     | 77                   | 82 | 90 |    |    |    |
|                 |                   | Exhaust center |                        |                                  |                            |                                  | 0.76 | 0.55                       | 0.24        | 0.64 (0.42) | 0.31 (0.36)  | 0.17 (0.11)              |                      |    |    |    |    |    |
| SY3□20<br>-□-C6 | 2 position        | Single         | M5 x 0.8               | C6<br>(One-touch fitting for ø6) |                            |                                  | 1.9  | 0.35                       | 0.49        | 2.4         | 0.39         | 0.61                     | 56                   | 59 | 63 | 74 | 79 | 87 |
|                 |                   | Double         |                        |                                  |                            |                                  |      |                            |             |             |              |                          |                      |    |    |    |    |    |
|                 | 3 position        | Closed center  |                        |                                  |                            |                                  | 0.76 | 0.30                       | 0.19        | 0.65        | 0.39         | 0.17                     | 77                   | 82 | 90 |    |    |    |
|                 |                   | Exhaust center |                        |                                  |                            |                                  | 0.76 | 0.55                       | 0.24        | 0.64 (0.42) | 0.31 (0.36)  | 0.17 (0.11)              |                      |    |    |    |    |    |

Note) [ ]: denotes normal position.

### Series SY7000

| Valve model      | Type of actuation |                | Port size              |                                    | Flow characteristics       |                                    |      |                            |             |             | Mass (g)     |                          |                 |                      |     |     |     |
|------------------|-------------------|----------------|------------------------|------------------------------------|----------------------------|------------------------------------|------|----------------------------|-------------|-------------|--------------|--------------------------|-----------------|----------------------|-----|-----|-----|
|                  |                   |                | 1, 5, 3<br>(P, EA, EB) | 4, 2<br>(A, B)                     | 1→4/2 (P→A/B)              |                                    |      | 4/2→5/3 (A/B→EA/EB)        |             |             | Gro-<br>mmet | L/M<br>plug<br>connector | DIN<br>terminal | W<br>M8<br>connector |     |     |     |
|                  |                   |                |                        |                                    | C (dm <sup>3</sup> /s-bar) | b                                  | Cv   | C (dm <sup>3</sup> /s-bar) | b           | Cv          |              |                          |                 |                      |     |     |     |
| SY7□20<br>-□-02  | 2 position        | Single         | 1/4                    | 1/4                                | 4.1                        | 0.23                               | 0.93 | 3.3                        | 0.33        | 0.81        | 101          | 104                      | 125             | 108                  | 133 |     |     |
|                  |                   | Double         |                        |                                    |                            |                                    |      |                            |             |             |              |                          |                 |                      |     |     |     |
|                  | 3 position        | Closed center  |                        |                                    | 2.9                        | 0.31                               | 0.70 | 2.4                        | 0.38        | 0.63        | 128          | 133                      | 175             | 141                  |     |     |     |
|                  |                   | Exhaust center |                        |                                    | 2.5                        | 0.39                               | 0.65 | 3.4 (2.1)                  | 0.35 (0.38) | 0.82 (0.54) |              |                          |                 |                      |     |     |     |
| SY7□20<br>-□-C8  | 2 position        | Single         |                        |                                    | 1/4                        | C8<br>(One-touch fitting for ø8)   | 4.1  | 0.23                       | 0.93        | 3.3         | 0.33         | 0.81                     | 107             | 110                  | 131 | 114 | 140 |
|                  |                   | Double         |                        |                                    |                            |                                    |      |                            |             |             |              |                          |                 |                      |     |     |     |
|                  | 3 position        | Closed center  |                        |                                    |                            |                                    | 3.2  | 0.26                       | 0.77        | 3.2         | 0.37         | 0.82                     | 134             | 140                  | 182 | 148 |     |
|                  |                   | Exhaust center |                        |                                    |                            |                                    | 2.6  | 0.24                       | 0.63        | 2.4         | 0.31         | 0.62                     |                 |                      |     |     |     |
| SY7□20<br>-□-C10 | 2 position        | Single         | 1/4                    | C10<br>(One-touch fitting for ø10) |                            |                                    | 4.1  | 0.23                       | 0.93        | 3.3         | 0.33         | 0.81                     | 103             | 105                  | 126 | 109 | 135 |
|                  |                   | Double         |                        |                                    |                            |                                    |      |                            |             |             |              |                          |                 |                      |     |     |     |
|                  | 3 position        | Closed center  |                        |                                    |                            |                                    | 3.8  | 0.26                       | 0.86        | 3.2         | 0.34         | 0.82                     | 130             | 135                  | 177 | 143 |     |
|                  |                   | Exhaust center |                        |                                    |                            |                                    | 2.8  | 0.27                       | 0.67        | 2.4         | 0.21         | 0.59                     |                 |                      |     |     |     |
| SY7□20<br>-□-C10 | 2 position        | Single         |                        |                                    | 1/4                        | C10<br>(One-touch fitting for ø10) | 4.1  | 0.23                       | 0.93        | 3.3         | 0.33         | 0.81                     | 103             | 105                  | 126 | 109 | 135 |
|                  |                   | Double         |                        |                                    |                            |                                    |      |                            |             |             |              |                          |                 |                      |     |     |     |
|                  | 3 position        | Closed center  |                        |                                    |                            |                                    | 3.8  | 0.26                       | 0.86        | 3.2         | 0.34         | 0.82                     | 130             | 135                  | 177 | 143 |     |
|                  |                   | Exhaust center |                        |                                    |                            |                                    | 2.8  | 0.27                       | 0.67        | 2.4         | 0.21         | 0.59                     |                 |                      |     |     |     |
| SY7□20<br>-□-C10 | 2 position        | Single         | 1/4                    | C10<br>(One-touch fitting for ø10) |                            |                                    | 4.1  | 0.23                       | 0.93        | 3.3         | 0.33         | 0.81                     | 103             | 105                  | 126 | 109 | 135 |
|                  |                   | Double         |                        |                                    |                            |                                    |      |                            |             |             |              |                          |                 |                      |     |     |     |
|                  | 3 position        | Closed center  |                        |                                    |                            |                                    | 3.8  | 0.26                       | 0.86        | 3.2         | 0.34         | 0.82                     | 130             | 135                  | 177 | 143 |     |
|                  |                   | Exhaust center |                        |                                    |                            |                                    | 2.8  | 0.27                       | 0.67        | 2.4         | 0.21         | 0.59                     |                 |                      |     |     |     |
| SY7□20<br>-□-C10 | 2 position        | Single         |                        |                                    | 1/4                        | C10<br>(One-touch fitting for ø10) | 4.1  | 0.23                       | 0.93        | 3.3         | 0.33         | 0.81                     | 103             | 105                  | 126 | 109 | 135 |
|                  |                   | Double         |                        |                                    |                            |                                    |      |                            |             |             |              |                          |                 |                      |     |     |     |
|                  | 3 position        | Closed center  |                        |                                    |                            |                                    | 3.8  | 0.26                       | 0.86        | 3.2         | 0.34         | 0.82                     | 130             | 135                  | 177 | 143 |     |
|                  |                   | Exhaust center |                        |                                    |                            |                                    | 2.8  | 0.27                       | 0.67        | 2.4         | 0.21         | 0.59                     |                 |                      |     |     |     |
| SY7□20<br>-□-C10 | 2 position        | Single         | 1/4                    | C10<br>(One-touch fitting for ø10) |                            |                                    | 4.1  | 0.23                       | 0.93        | 3.3         | 0.33         | 0.81                     | 103             | 105                  | 126 | 109 | 135 |
|                  |                   | Double         |                        |                                    |                            |                                    |      |                            |             |             |              |                          |                 |                      |     |     |     |
|                  | 3 position        | Closed center  |                        |                                    |                            |                                    | 3.8  | 0.26                       | 0.86        | 3.2         | 0.34         | 0.82                     | 130             | 135                  | 177 | 143 |     |
|                  |                   | Exhaust center |                        |                                    |                            |                                    | 2.8  | 0.27                       | 0.67        | 2.4         | 0.21         | 0.59                     |                 |                      |     |     |     |

Note) [ ]: denotes normal position.

### Series SY5000

| Valve model     | Type of actuation |                | Port size              |                                  | Flow characteristics       |                                  |      |                            |             |             | Mass (g)     |                          |                 |                      |     |     |     |
|-----------------|-------------------|----------------|------------------------|----------------------------------|----------------------------|----------------------------------|------|----------------------------|-------------|-------------|--------------|--------------------------|-----------------|----------------------|-----|-----|-----|
|                 |                   |                | 1, 5, 3<br>(P, EA, EB) | 4, 2<br>(A, B)                   | 1→4/2 (P→A/B)              |                                  |      | 4/2→5/3 (A/B→EA/EB)        |             |             | Gro-<br>mmet | L/M<br>plug<br>connector | DIN<br>terminal | W<br>M8<br>connector |     |     |     |
|                 |                   |                |                        |                                  | C (dm <sup>3</sup> /s-bar) | b                                | Cv   | C (dm <sup>3</sup> /s-bar) | b           | Cv          |              |                          |                 |                      |     |     |     |
| SY5□20<br>-□-01 | 2 position        | Single         | 1/8                    | 1/8                              | 1.9                        | 0.35                             | 0.49 | 2.4                        | 0.39        | 0.61        | 70           | 72                       | 93              | 76                   | 82  |     |     |
|                 |                   | Double         |                        |                                  |                            |                                  |      |                            |             |             |              |                          |                 |                      |     |     |     |
|                 | 3 position        | Closed center  |                        |                                  | 1.7                        | 0.43                             | 0.45 | 1.8                        | 0.35        | 0.46        | 93           | 98                       | 140             | 106                  |     |     |     |
|                 |                   | Exhaust center |                        |                                  | 1.5                        | 0.44                             | 0.41 | 2.5 (1.5)                  | 0.32 (0.43) | 0.59 (0.40) |              |                          |                 |                      |     |     |     |
| SY5□20<br>-□-C4 | 2 position        | Single         |                        |                                  | 1/8                        | C4<br>(One-touch fitting for ø4) | 1.9  | 0.35                       | 0.49        | 2.4         | 0.39         | 0.61                     | 94              | 96                   | 117 | 100 | 125 |
|                 |                   | Double         |                        |                                  |                            |                                  |      |                            |             |             |              |                          |                 |                      |     |     |     |
|                 | 3 position        | Closed center  |                        |                                  |                            |                                  | 0.75 | 0.43                       | 0.20        | 0.85        | 0.64         | 0.30                     | 117             | 122                  | 164 | 130 |     |
|                 |                   | Exhaust center |                        |                                  |                            |                                  | 0.74 | 0.40                       | 0.19        | 0.84 (0.84) | 0.57 (0.53)  | 0.28 (0.27)              |                 |                      |     |     |     |
| SY5□20<br>-□-C6 | 2 position        | Single         | 1/8                    | C6<br>(One-touch fitting for ø6) |                            |                                  | 1.9  | 0.35                       | 0.49        | 2.4         | 0.39         | 0.61                     | 88              | 91                   | 112 | 95  | 119 |
|                 |                   | Double         |                        |                                  |                            |                                  |      |                            |             |             |              |                          |                 |                      |     |     |     |
|                 | 3 position        | Closed center  |                        |                                  |                            |                                  | 1.5  | 0.33                       | 0.33        | 2.0         | 0.37         | 0.52                     | 111             | 116                  | 158 | 124 |     |
|                 |                   | Exhaust center |                        |                                  |                            |                                  | 1.3  | 0.31                       | 0.33        | 1.8 (1.4)   | 0.35 (0.37)  | 0.44 (0.35)              |                 |                      |     |     |     |
| SY5□20<br>-□-C8 | 2 position        | Single         |                        |                                  | 1/8                        | C8<br>(One-touch fitting for ø8) | 1.9  | 0.35                       | 0.49        | 2.4         | 0.39         | 0.61                     | 80              | 82                   | 103 | 86  | 111 |
|                 |                   | Double         |                        |                                  |                            |                                  |      |                            |             |             |              |                          |                 |                      |     |     |     |
|                 | 3 position        | Closed center  |                        |                                  |                            |                                  | 1.9  | 0.21                       | 0.45        | 2.3         | 0.29         | 0.57                     | 103             | 108                  | 150 | 116 |     |
|                 |                   | Exhaust center |                        |                                  |                            |                                  | 1.6  | 0.29                       | 0.39        | 1.7 (1.5)   | 0.38 (0.41)  | 0.46 (0.43)              |                 |                      |     |     |     |
| SY5□20<br>-□-C8 | 2 position        | Single         | 1/8                    | C8<br>(One-touch fitting for ø8) |                            |                                  | 1.9  | 0.35                       | 0.49        | 2.4         | 0.39         | 0.61                     | 80              | 82                   | 103 | 86  | 111 |
|                 |                   | Double         |                        |                                  |                            |                                  |      |                            |             |             |              |                          |                 |                      |     |     |     |
|                 | 3 position        | Closed center  |                        |                                  |                            |                                  | 1.9  | 0.21                       | 0.45        | 2.3         | 0.29         | 0.57                     | 103             | 108                  | 150 | 116 |     |
|                 |                   | Exhaust center |                        |                                  |                            |                                  | 1.6  | 0.29                       | 0.39        | 1.7 (1.5)   | 0.38 (0.41)  | 0.46 (0.43)              |                 |                      |     |     |     |
| SY5□20<br>-□-C8 | 2 position        | Single         |                        |                                  | 1/8                        | C8<br>(One-touch fitting for ø8) | 1.9  | 0.35                       | 0.49        | 2.4         | 0.39         | 0.61                     | 80              | 82                   | 103 | 86  | 111 |
|                 |                   | Double         |                        |                                  |                            |                                  |      |                            |             |             |              |                          |                 |                      |     |     |     |
|                 | 3 position        | Closed center  |                        |                                  |                            |                                  | 1.9  | 0.21                       | 0.45        | 2.3         | 0.29         | 0.57                     | 103             | 108                  | 150 | 116 |     |
|                 |                   | Exhaust center |                        |                                  |                            |                                  | 1.6  | 0.29                       | 0.39        | 1.7 (1.5)   | 0.38 (0.41)  | 0.46 (0.43)              |                 |                      |     |     |     |
| SY5□20<br>-□-C8 | 2 position        | Single         | 1/8                    | C8<br>(One-touch fitting for ø8) |                            |                                  | 1.9  | 0.35                       | 0.49        | 2.4         | 0.39         | 0.61                     | 80              | 82                   | 103 | 86  | 111 |
|                 |                   | Double         |                        |                                  |                            |                                  |      |                            |             |             |              |                          |                 |                      |     |     |     |
|                 | 3 position        | Closed center  |                        |                                  |                            |                                  | 1.9  | 0.21                       | 0.45        | 2.3         | 0.29         | 0.57                     | 103             | 108                  | 150 | 116 |     |
|                 |                   | Exhaust center |                        |                                  |                            |                                  | 1.6  | 0.29                       | 0.39        | 1.7 (1.5)   | 0.38 (0.41)  | 0.46 (0.43)              |                 |                      |     |     |     |

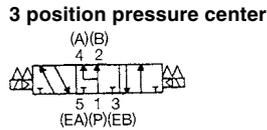
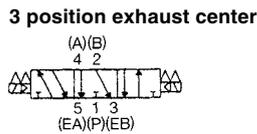
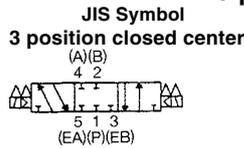
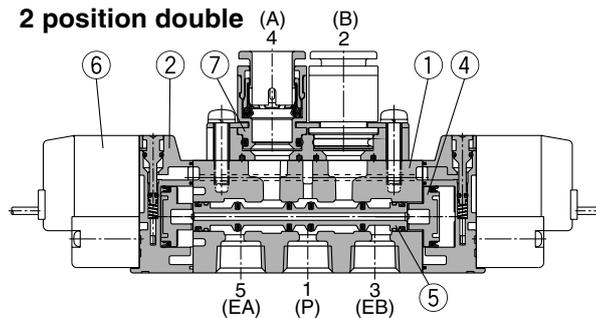
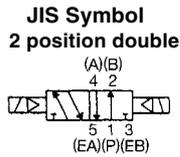
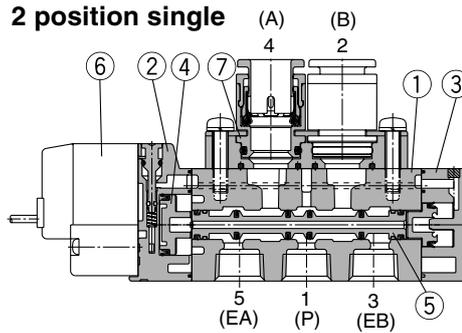
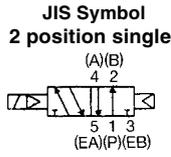
Note) [ ]: denotes normal position.

### Series SY9000

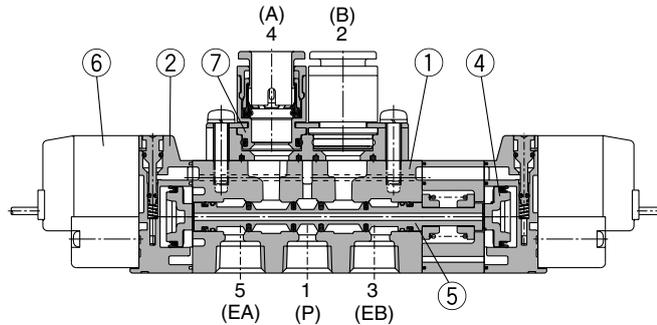
| Valve model     | Type of actuation |                | Port size              |                                  | Flow characteristics       |      |     |                            |             |            | Mass (g)     |                          |                 |                      |     |     |     |
|-----------------|-------------------|----------------|------------------------|----------------------------------|----------------------------|------|-----|----------------------------|-------------|------------|--------------|--------------------------|-----------------|----------------------|-----|-----|-----|
|                 |                   |                | 1, 5, 3<br>(P, EA, EB) | 4, 2<br>(A, B)                   | 1→4/2 (P→A/B)              |      |     | 4/2→5/3 (A/B→EA/EB)        |             |            | Gro-<br>mmet | L/M<br>plug<br>connector | DIN<br>terminal | W<br>M8<br>connector |     |     |     |
|                 |                   |                |                        |                                  | C (dm <sup>3</sup> /s-bar) | b    | Cv  | C (dm <sup>3</sup> /s-bar) | b           | Cv         |              |                          |                 |                      |     |     |     |
| SY9□20<br>-□-02 | 2 position        | Single         | 1/4                    | 1/4                              | 7.0                        | 0.33 | 1.7 | 7.6                        | 0.35        | 2.0        | 241          | 244                      | 265             | 248                  | 274 |     |     |
|                 |                   | Double         |                        |                                  |                            |      |     |                            |             |            |              |                          |                 |                      |     |     |     |
|                 | 3 position        | Closed center  |                        |                                  | 6.7                        | 0.37 | 1.7 | 6.4                        | 0.34        | 1.6        | 284          | 290                      | 332             | 298                  |     |     |     |
|                 |                   | Exhaust center |                        |                                  | 6.4                        | 0.36 | 1.6 | 8.3 (4.1)                  | 0.41 (0.27) | 2.2 (0.91) |              |                          |                 |                      |     |     |     |
| SY9□20<br>-□-03 | 2 position        | Single         |                        |                                  | 3/8                        | 3/8  | 8.0 | 0.27                       | 1.8         | 8.0        | 0.33         | 2.0                      | 236             | 239                  | 260 | 243 | 269 |
|                 |                   | Double         |                        |                                  |                            |      |     |                            |             |            |              |                          |                 |                      |     |     |     |
|                 | 3 position        | Closed center  |                        |                                  |                            |      | 8.0 | 0.29                       | 1.9         | 8.0        | 0.33         | 2.0                      | 279             | 285                  | 327 | 293 |     |
|                 |                   | Exhaust center |                        |                                  |                            |      | 8.0 | 0.33                       | 1.9         | 8.7 (8.3)  | 0.34 (0.40)  | 2.2 (2.3)                |                 |                      |     |     |     |
| SY9□20<br>-□-C8 | 2 position        | Single         | 1/4                    | C8<br>(One-touch fitting for ø8) |                            |      | 4.3 | 0.28                       | 0.96        | 7.1        | 0.32         | 1.7                      | 293             | 296                  | 317 | 300 | 326 |
|                 |                   | Double         |                        |                                  |                            |      |     |                            |             |            |              |                          |                 |                      |     |     |     |
|                 | 3 position        | Closed center  |                        |                                  |                            |      | 4.3 | 0.31                       | 0.99        | 6.1        | 0.28         | 1.4                      | 336             | 342                  | 384 | 350 |     |
|                 |                   | Exhaust center |                        |                                  |                            |      | 4.3 | 0.3                        | 0.99        | 7.4 (3.8)  | 0.36 (0.29)  | 1.9 (0.86)               |                 |                      |     |     |     |

## Construction

### Series SY



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



(This figure shows a closed center type.)

### Component Parts

| No. | Description          | Material                                         | Note                    |
|-----|----------------------|--------------------------------------------------|-------------------------|
| 1   | Body                 | Aluminum die-casted<br>(SY3000: Zinc die-casted) | White                   |
| 2   | Adapter plate        | Resin                                            | White<br>(SY9000: Gray) |
| 3   | End plate            | Resin                                            | White                   |
| 4   | Piston               | Resin                                            | -                       |
| 5   | Spool valve assembly | Aluminum, H-NBR                                  | -                       |

### Replacement Parts

| No. | Description            | Part no.                                                  |
|-----|------------------------|-----------------------------------------------------------|
| 6   | Pilot valve assembly   | Refer to "How to Order Pilot Valve Assembly" on page 112. |
| 7   | M5 port block assembly | Refer to "How to Order Port Block Assembly" on page 113.  |

### Bracket Assembly No.

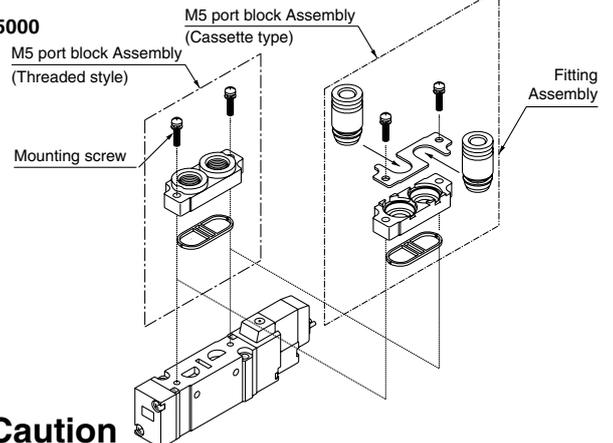
| Description      | Part no.                                        |
|------------------|-------------------------------------------------|
| Bracket (For F1) | SX <sup>3</sup> 000-16-2A (with mounting screw) |
| Bracket (For F2) | SX <sup>3</sup> 000-16-1A (with mounting screw) |

\* SY9000 has no bracket.

### How to Change Port Block Assembly

If using body port type, both A and B port sizes can be changed by replacing the port block assembly mounted on the body. When changing this block assembly, the correct screw torque must be achieved to avoid possible air leakage.

#### For SY5000



### Caution

#### Mounting screw tightening torques

SY3000 (M2): 0.12 N·m  
SY<sup>5</sup>000 (M3): 0.6 N·m  
SY9000 (M4): 1.4 N·m

\* Refer to "How to Order Port Block Assembly" on page 113 for part no.

# Series SY3000/5000/7000/9000

## How to Order Pilot Valve Assembly

V111  - 5 G

### Coil specifications

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

\* Power saving circuit is not available in the case of D, DO or W  type.

### Rated voltage

|   |                                                              |
|---|--------------------------------------------------------------|
| 5 | 24 VDC                                                       |
| 6 | 12 VDC                                                       |
| V | 6 VDC                                                        |
| S | 5 VDC                                                        |
| R | 3 VDC                                                        |
| 1 | 100 VAC <sup>50/60</sup> Hz                                  |
| 2 | 200 VAC <sup>50/60</sup> Hz                                  |
| 3 | 110 VAC <sup>50/60</sup> Hz<br>[115 VAC <sup>50/60</sup> Hz] |
| 4 | 220 VAC <sup>50/60</sup> Hz<br>[230 VAC <sup>50/60</sup> Hz] |

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

### Light/surge voltage suppressor

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

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

### Electrical entry

|                            |                           |                                         |
|----------------------------|---------------------------|-----------------------------------------|
| G                          | Grommet, 300 mm lead wire |                                         |
| H                          | Grommet, 600 mm lead wire |                                         |
| L                          | L plug connector          | With lead wire                          |
| LN                         |                           | Without lead wire                       |
| LO                         | M plug connector          | Without connector                       |
| M                          |                           | With lead wire                          |
| MN                         | M8 connector              | Without lead wire                       |
| MO                         |                           | Without connector                       |
| WO                         | connector                 | Without connector cable                 |
| W <input type="checkbox"/> |                           | With connector cable <sup>Note 1)</sup> |

\* For connector cable of M8 connector, refer to page 339.  
Note 1) Enter the cable length symbols in . Please be sure to fill in the blank referring to page 340.

### ■ DIN terminal type

V115 - 5 D

### Rated voltage

|   |                                                              |
|---|--------------------------------------------------------------|
| 5 | 24 VDC                                                       |
| 6 | 12 VDC                                                       |
| 1 | 100 VAC <sup>50/60</sup> Hz                                  |
| 2 | 200 VAC <sup>50/60</sup> Hz                                  |
| 3 | 110 VAC <sup>50/60</sup> Hz<br>[115 VAC <sup>50/60</sup> Hz] |
| 4 | 220 VAC <sup>50/60</sup> Hz<br>[230 VAC <sup>50/60</sup> Hz] |

\* DC specifications of type D and DO is only available with 12 and 24 VDC.

### Light/surge voltage suppressor

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

\* DOZ and YOZ are not available.  
\* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

### Electrical entry

|    |                   |                   |
|----|-------------------|-------------------|
| D  | DIN terminal      | With connector    |
| DO | terminal (Type D) | Without connector |
| Y  | DIN terminal      | With connector    |
| YO | terminal (Type Y) | Without connector |

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

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

## How to Order Port Block Assembly

**SY**   **000 - 6A -**    

**Series**

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |
| 7 | SY7000 |
| 9 | SY9000 |

**• Thread type**

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

\* Except for M5

**• A, B port size  
Thread piping**

| Symbol | Port size | Applicable series |
|--------|-----------|-------------------|
| M5     | M5 x 0.8  | SY3000            |
| 01     | 1/8       | SY5000            |
| 02     | 1/4       | SY7000            |
| 02     | 1/4       | SY9000            |
| 03     | 3/8       |                   |

**One-touch fitting (Metric size)**

| Symbol | Port size                 | Applicable series |
|--------|---------------------------|-------------------|
| C4     | One-touch fitting for ø4  | SY3000            |
| C6     | One-touch fitting for ø6  |                   |
| C4     | One-touch fitting for ø4  | SY5000            |
| C6     | One-touch fitting for ø6  |                   |
| C8     | One-touch fitting for ø8  | SY7000            |
| C10    | One-touch fitting for ø10 |                   |
| C8     | One-touch fitting for ø8  | SY9000            |
| C10    | One-touch fitting for ø10 |                   |
| C12    | One-touch fitting for ø12 |                   |

**One-touch fitting (Inch size)**

| Symbol | Port size                     | Applicable series |
|--------|-------------------------------|-------------------|
| N3     | One-touch fitting for ø 5/32" | SY3000            |
| N7     | One-touch fitting for ø 1/4"  |                   |
| N3     | One-touch fitting for ø 5/32" | SY5000            |
| N7     | One-touch fitting for ø 1/4"  |                   |
| N9     | One-touch fitting for ø 5/16" | SY7000            |
| N9     | One-touch fitting for ø 5/16" |                   |
| N11    | One-touch fitting for ø 3/8"  | SY9000            |
| N9     | One-touch fitting for ø 5/16" |                   |
| N11    | One-touch fitting for ø 3/8"  |                   |

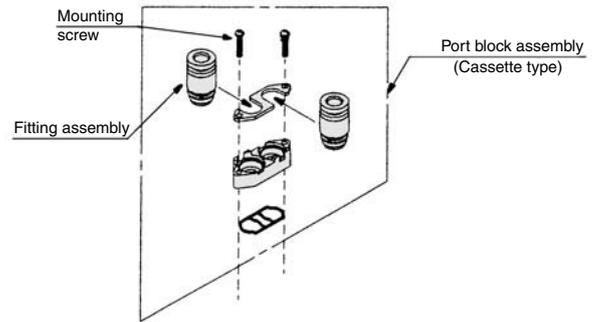
\* Only replacement of the fittings assembly is possible.

**Metric size**

|        |                           |                 |
|--------|---------------------------|-----------------|
| SY3000 | One-touch fitting for ø4  | VVQ1000-50A-C4  |
|        | One-touch fitting for ø6  | VVQ1000-50A-C6  |
| SY5000 | One-touch fitting for ø4  | VVQ1000-51A-C4  |
|        | One-touch fitting for ø6  | VVQ1000-51A-C6  |
| SY7000 | One-touch fitting for ø8  | VVQ2000-51A-C8  |
|        | One-touch fitting for ø10 | VVQ2000-51A-C10 |
| SY9000 | One-touch fitting for ø8  | VVQ4000-50B-C8  |
|        | One-touch fitting for ø12 | VVQ4000-50B-C12 |

**Inch size**

|        |                               |                 |
|--------|-------------------------------|-----------------|
| SY3000 | One-touch fitting for ø 5/32" | VVQ1000-50A-N3  |
|        | One-touch fitting for ø 1/4"  | VVQ1000-50A-N7  |
| SY5000 | One-touch fitting for ø 5/32" | VVQ1000-51A-N3  |
|        | One-touch fitting for ø 1/4"  | VVQ1000-51A-N7  |
| SY7000 | One-touch fitting for ø 5/16" | VVQ2000-51A-N9  |
|        | One-touch fitting for ø 3/8"  | VVQ2000-51A-N11 |
| SY9000 | One-touch fitting for ø 5/16" | VVQ4000-50B-N9  |
|        | One-touch fitting for ø 3/8"  | VVQ4000-50B-N11 |



- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

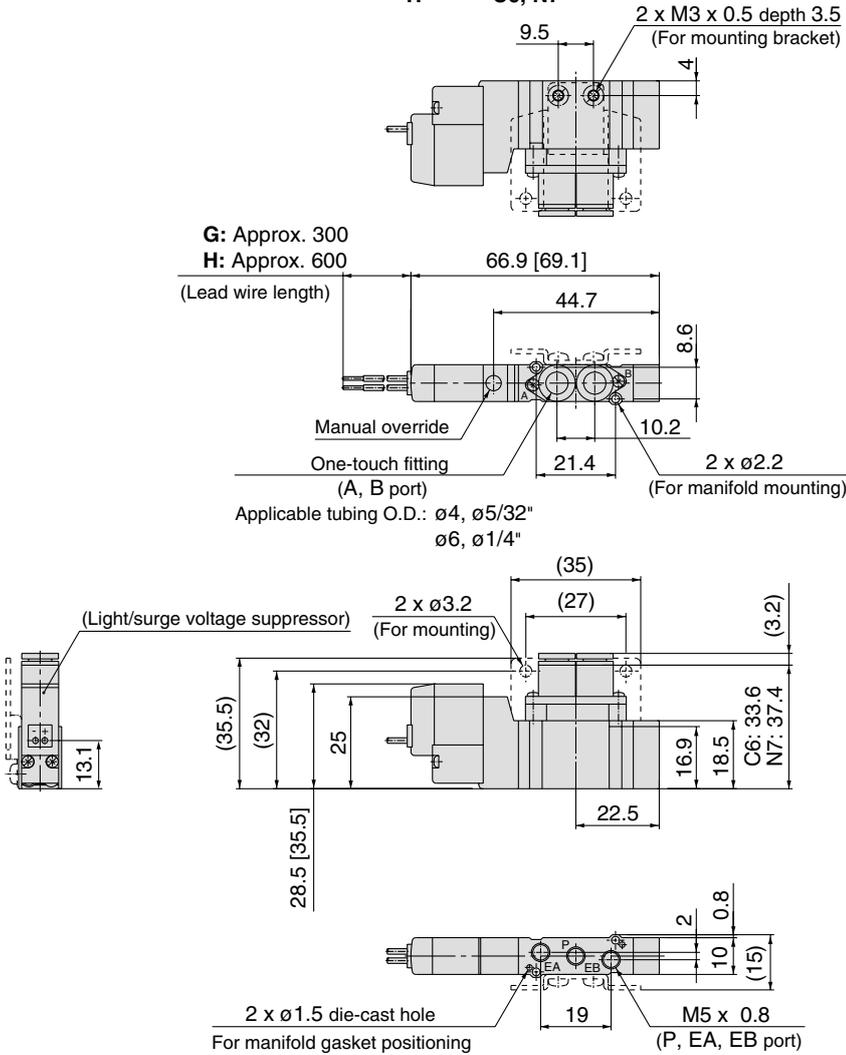
# Series SY3000/5000/7000/9000

## Dimensions: Series SY3000



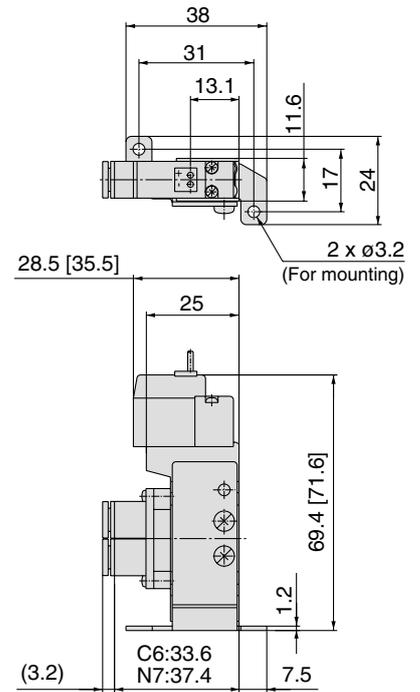
### 2 position single

Grommet (G), (H): SY3120-□<sub>G</sub>□□-C4, N3(-F2)  
C6, N7

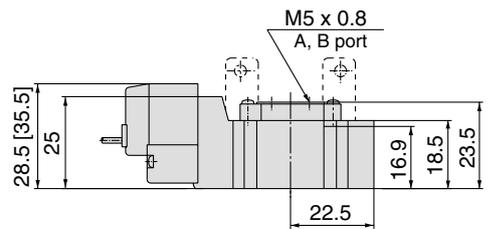


### Foot bracket

SY3120-□<sub>G</sub>□□-C4, N3(-F1)  
C6, N7

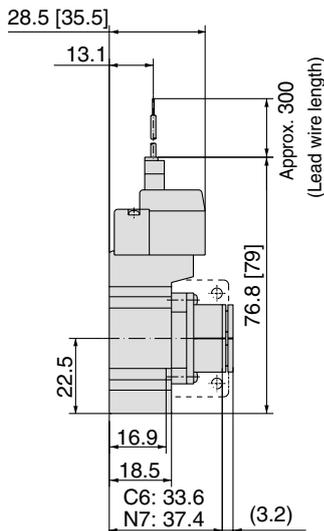


### SY3120-□<sub>G</sub>□□-M5(-F2)



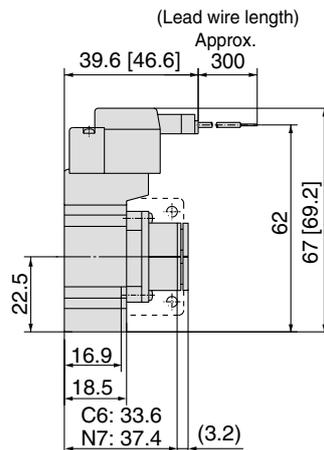
### L plug connector (L):

SY3120-□L□□-C4, N3(-F1)  
C6, N7



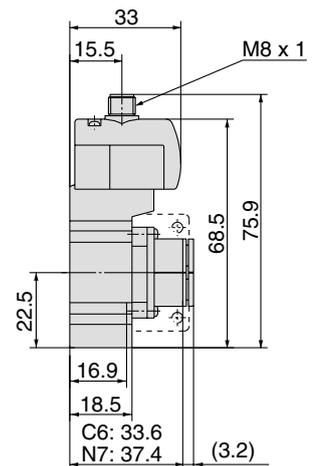
### M plug connector (M):

SY3120-□M□□-C4, N3(-F1)  
C6, N7



### M8 connector (WO):

SY3120-□WO□□-C4, N3(-F1)  
C6, N7



Note) Refer to page 340 for dimensions of connector types.

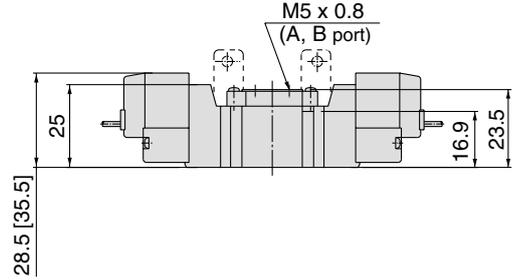
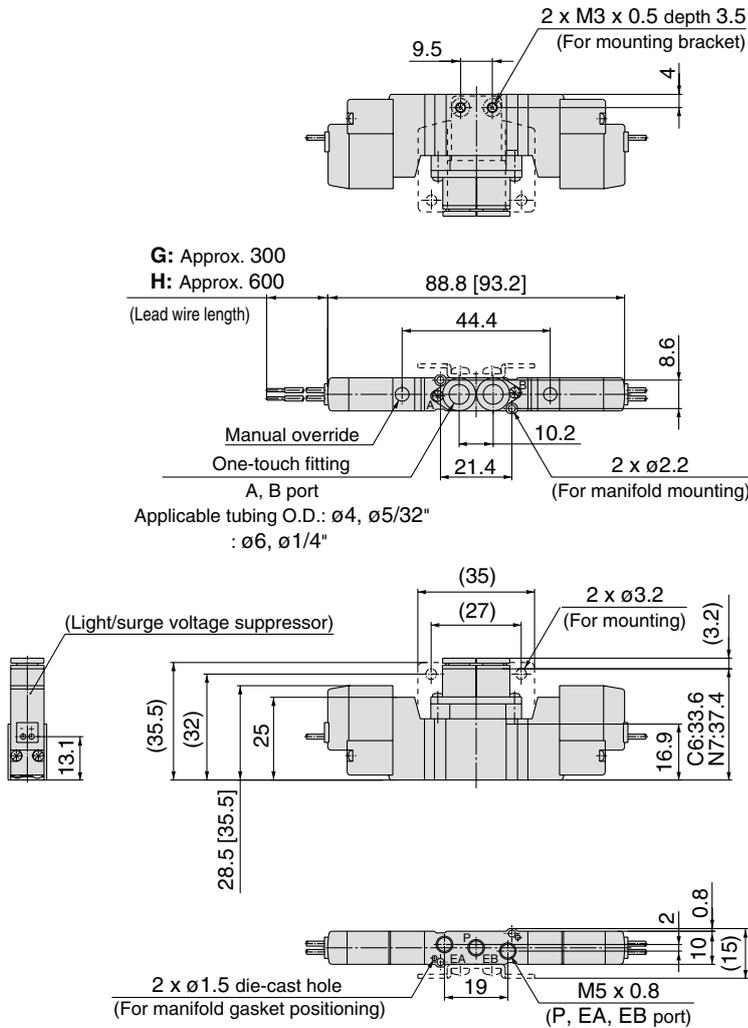
## Dimensions: Series SY3000



2 position double

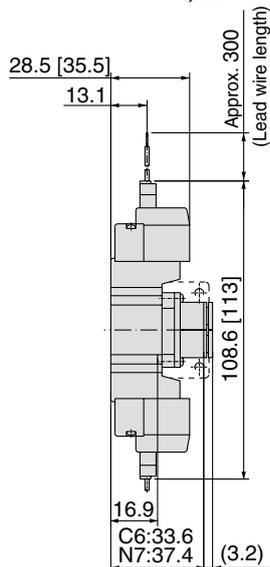
Grommet (G), (H): SY3220-□<sup>G</sup>□□-<sup>C4, N3</sup><sub>C6, N7</sub>(-F2)

SY3220-□<sup>G</sup>□□-M5(-F2)

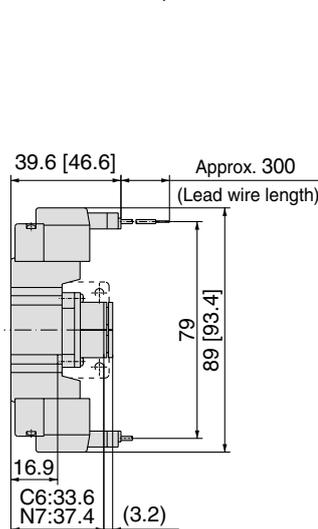


- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

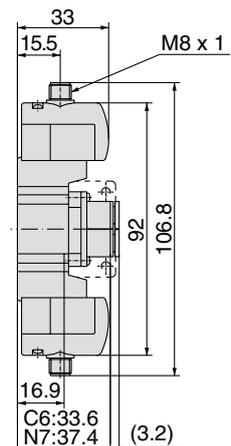
**L plug connector (L):**  
SY3220-□L□□-<sup>C4, N3</sup><sub>C6, N7</sub>(-F2)



**M plug connector (M):**  
SY3220-□M□□-<sup>C4, N3</sup><sub>C6, N7</sub>(-F2)



**M8 connector (WO):**  
SY3220-WO□□-<sup>C4, N3</sup><sub>C6, N7</sub>(-F2)



Note) Refer to page 340 for dimensions of connector types.

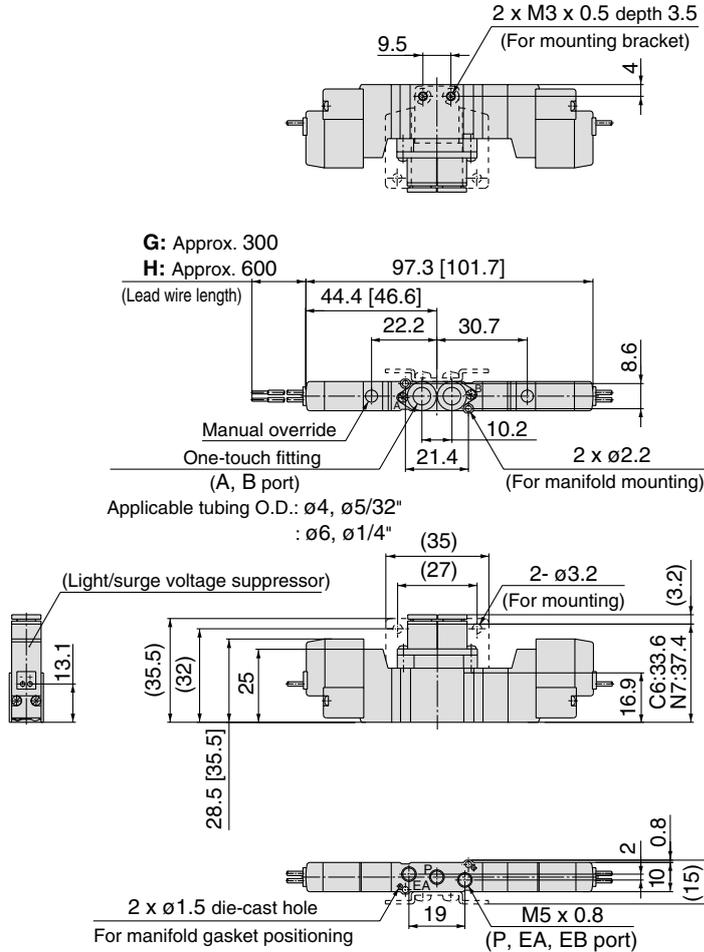
# Series SY3000/5000/7000/9000

## Dimensions: Series SY3000

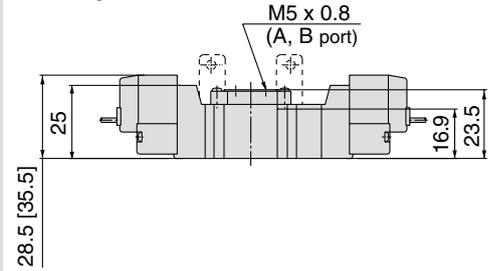


3 position closed center / exhaust center / pressure center

Grommet (G), (H): SY3<sup>3</sup>/<sub>4</sub>20-□<sup>G</sup>□□-C<sub>4</sub>, N<sub>3</sub> (-F2)  
C<sub>6</sub>, N<sub>7</sub>

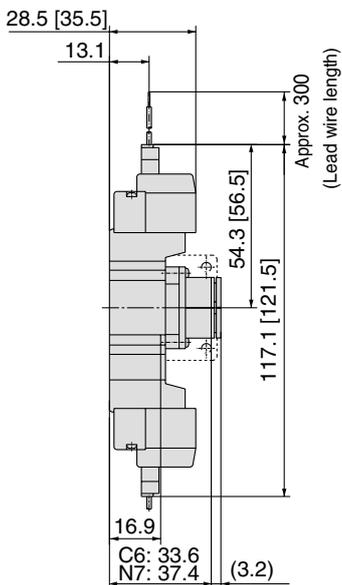


SY3<sup>3</sup>/<sub>4</sub>20-□<sup>G</sup>□□-M5(-F2)



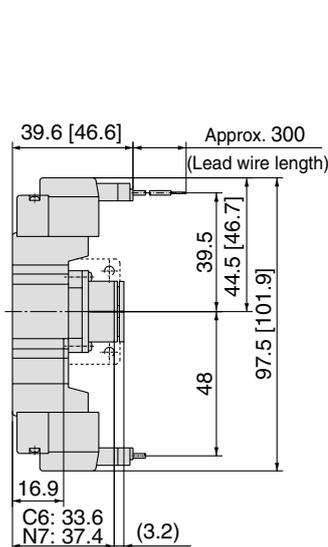
L plug connector (L):

SY3<sup>3</sup>/<sub>4</sub>20-□L□□-C<sub>4</sub>, N<sub>3</sub> (-F2)  
C<sub>6</sub>, N<sub>7</sub>



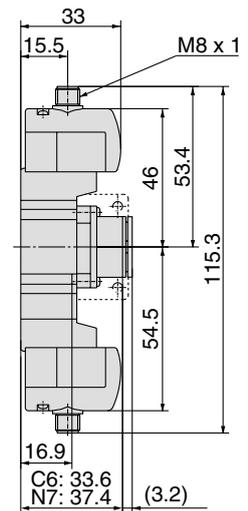
M plug connector (M):

SY3<sup>3</sup>/<sub>4</sub>20-□M□□-C<sub>4</sub>, N<sub>3</sub> (-F2)  
C<sub>6</sub>, N<sub>7</sub>



M8 connector (WO):

SY3<sup>3</sup>/<sub>4</sub>20-□WO□□-C<sub>4</sub>, N<sub>3</sub> (-F2)  
C<sub>6</sub>, N<sub>7</sub>



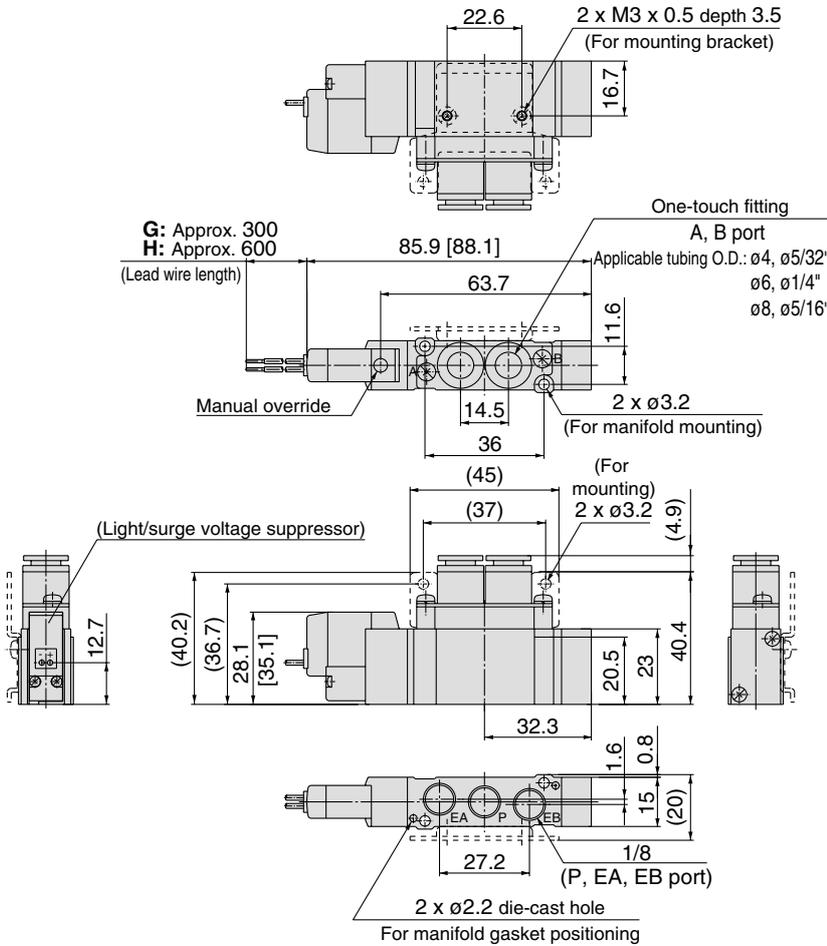
Note) Refer to page 340 for dimensions of connector types.

## Dimensions: Series SY5000



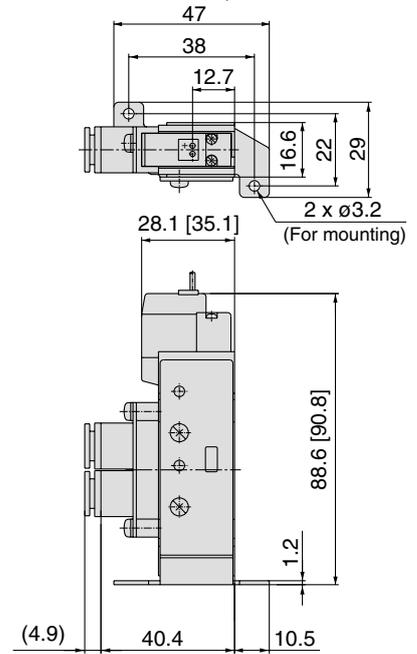
### 2 position single

Grommet (G), (H): SY5120-□<sup>G</sup>□<sup>H</sup>□<sup>C4, N3</sup>□<sup>C6, N7</sup>□<sup>C8, N9</sup>(-F<sub>2</sub>)

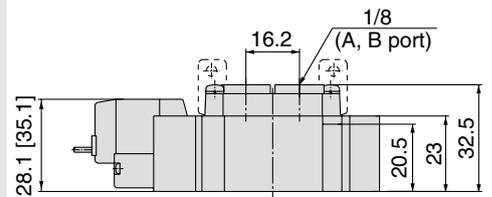


### Foot bracket

SY5120-□<sup>G</sup>□<sup>H</sup>□<sup>C4, N3</sup>□<sup>C6, N7</sup>□<sup>C8, N9</sup>(-F<sub>1</sub>)

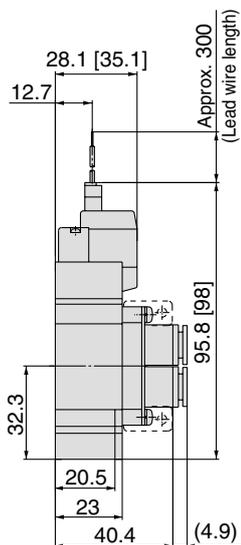


SY5120-□<sup>G</sup>□<sup>H</sup>□<sup>C4, N3</sup>□<sup>C6, N7</sup>□<sup>C8, N9</sup>(-F<sub>1</sub>)-01□(-F<sub>1</sub>)



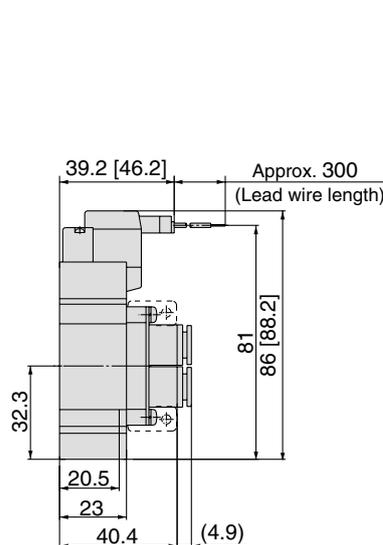
### L plug connector (L):

SY5120-□L□<sup>C4, N3</sup>□<sup>C6, N7</sup>□<sup>C8, N9</sup>(-F<sub>2</sub>)



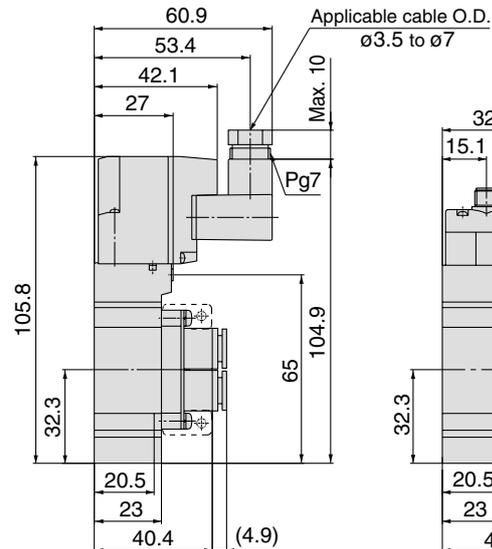
### M plug connector (M):

SY5120-□M□<sup>C4, N3</sup>□<sup>C6, N7</sup>□<sup>C8, N9</sup>(-F<sub>2</sub>)



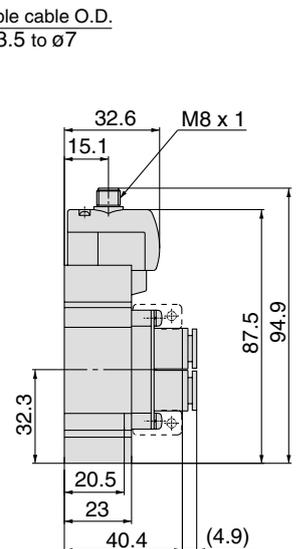
### DIN terminal (D, Y):

SY5120-□<sup>D</sup>□<sup>Y</sup>□<sup>C4, N3</sup>□<sup>C6, N7</sup>□<sup>C8, N9</sup>(-F<sub>2</sub>)



### M8 connector (WO):

SY5120-□WO□<sup>C4, N3</sup>□<sup>C6, N7</sup>□<sup>C8, N9</sup>(-F<sub>2</sub>)



Note) Refer to page 340 for dimensions of connector types.

- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

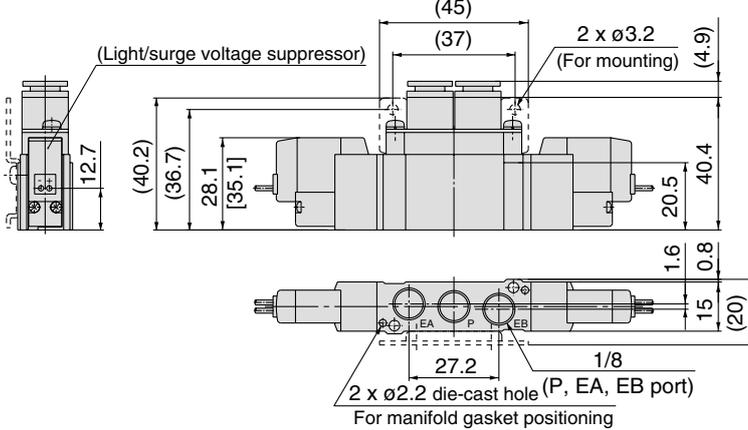
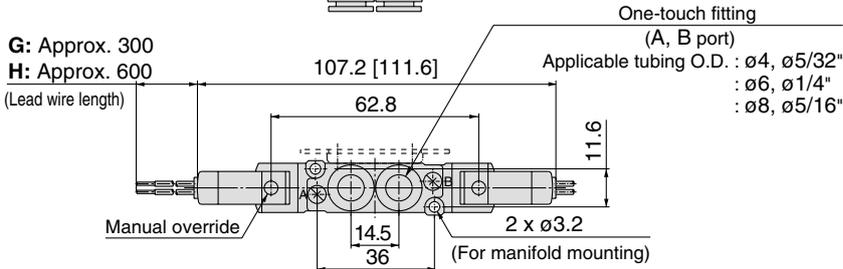
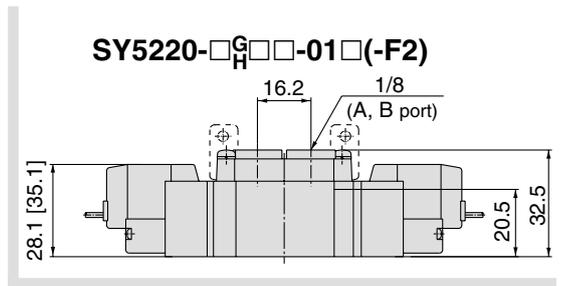
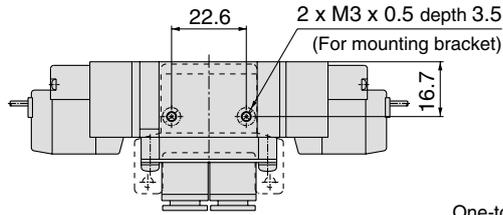
# Series SY3000/5000/7000/9000

## Dimensions: Series SY5000



2 position double

Grommet (G), (H): SY5220-□<sup>C4, N3</sup><sub>G</sub>□□-□<sup>C6, N7</sup><sub>H</sub>□□(-F2)  
 C8, N9



**L plug connector (L):**

SY5220-□<sup>C4, N3</sup><sub>L</sub>□□-□<sup>C6, N7</sup><sub>L</sub>□□(-F2)  
 C8, N9

**M plug connector (M):**

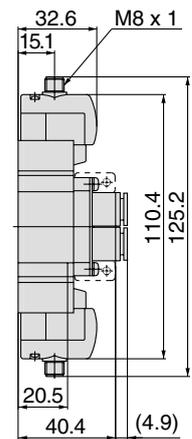
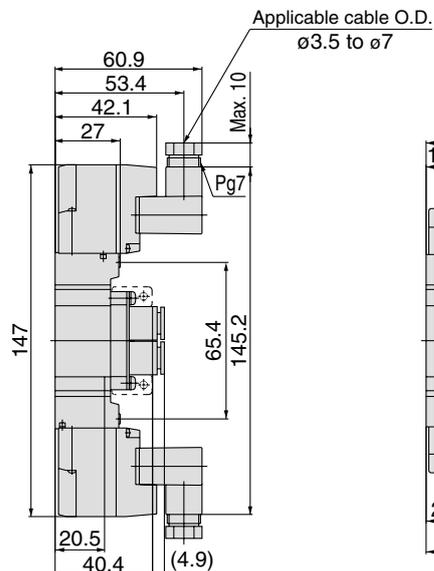
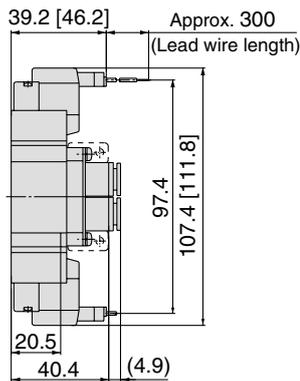
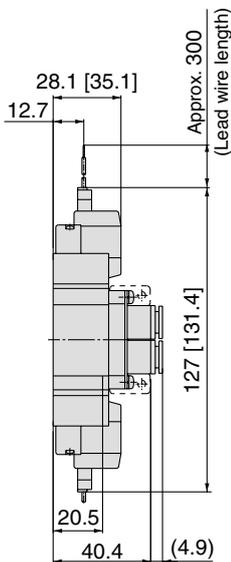
SY5220-□<sup>C4, N3</sup><sub>M</sub>□□-□<sup>C6, N7</sup><sub>M</sub>□□(-F2)  
 C8, N9

**DIN terminal (D, Y):**

SY5220-□<sup>C4, N3</sup><sub>D</sub>□□-□<sup>C6, N7</sup><sub>D</sub>□□(-F2)  
 C8, N9

**M8 connector (WO):**

SY5220-□<sup>C4, N3</sup><sub>WO</sub>□□-□<sup>C6, N7</sup><sub>WO</sub>□□(-F2)  
 C8, N9



Note) Refer to page 340 for dimensions of connector types.

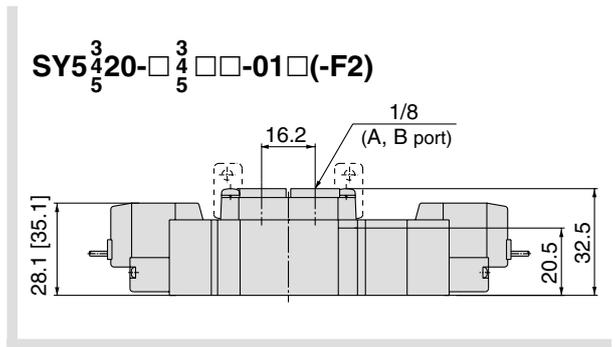
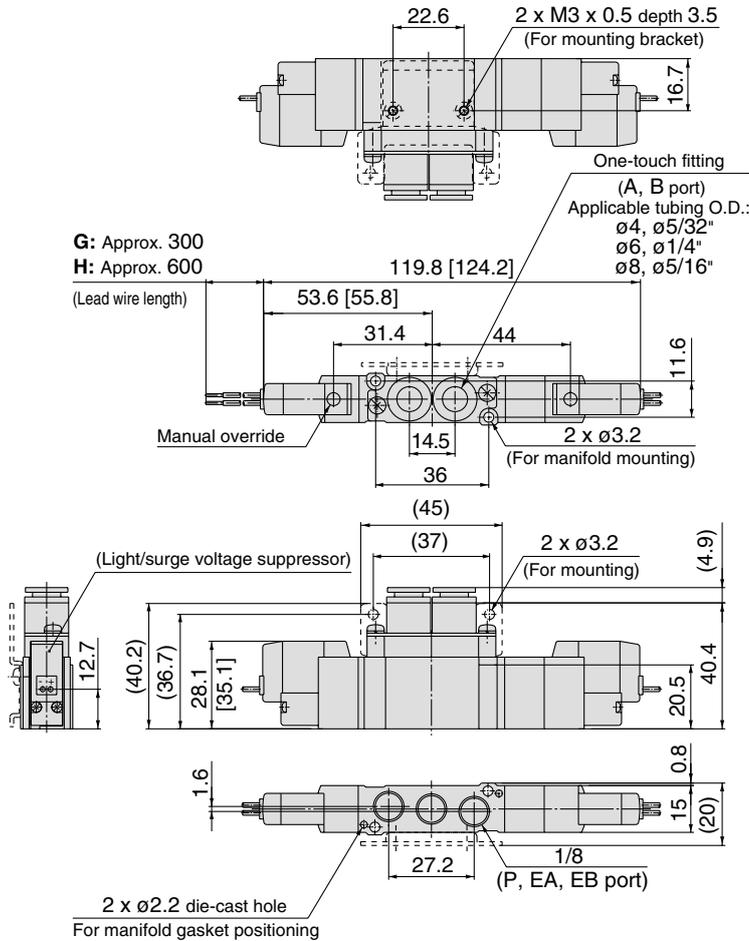
## Dimensions: Series SY5000



3 position closed center / exhaust center / pressure center

Grommet (G), (H): SY5<sup>3</sup><sub>5</sub>420-□<sup>3</sup><sub>4</sub>□<sup>3</sup><sub>5</sub>-C<sub>4</sub>, N<sub>3</sub>-C<sub>6</sub>, N<sub>7</sub>□(-F2)  
C<sub>8</sub>, N<sub>9</sub>

SY5<sup>3</sup><sub>5</sub>420-□<sup>3</sup><sub>4</sub>□<sup>3</sup><sub>5</sub>-01□(-F2)



- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

L plug connector (L):

SY5<sup>3</sup><sub>5</sub>420-□<sup>3</sup><sub>4</sub>□<sup>3</sup><sub>5</sub>-L□<sup>3</sup><sub>4</sub>-C<sub>4</sub>, N<sub>3</sub>-C<sub>6</sub>, N<sub>7</sub>□(-F2)  
C<sub>8</sub>, N<sub>9</sub>

M plug connector (M):

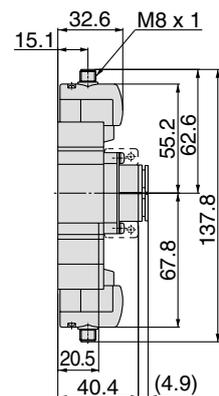
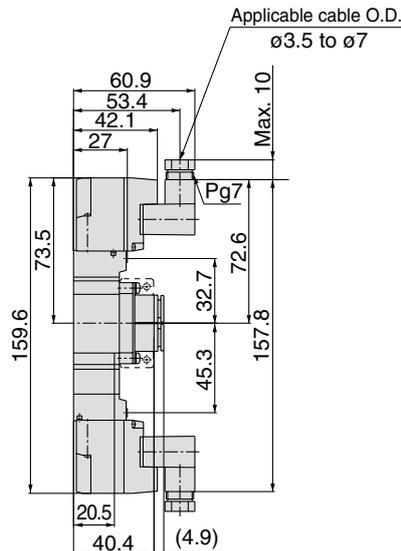
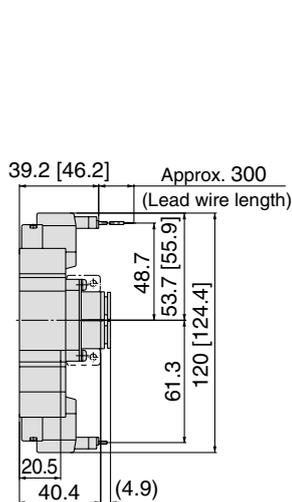
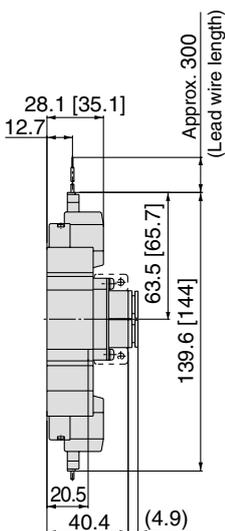
SY5<sup>3</sup><sub>5</sub>420-□<sup>3</sup><sub>4</sub>□<sup>3</sup><sub>5</sub>-M□<sup>3</sup><sub>4</sub>-C<sub>4</sub>, N<sub>3</sub>-C<sub>6</sub>, N<sub>7</sub>□(-F2)  
C<sub>8</sub>, N<sub>9</sub>

DIN terminal (D, Y):

SY5<sup>3</sup><sub>5</sub>420-□<sup>3</sup><sub>4</sub>□<sup>3</sup><sub>5</sub>-D□<sup>3</sup><sub>4</sub>-C<sub>4</sub>, N<sub>3</sub>-C<sub>6</sub>, N<sub>7</sub>□(-F2)  
C<sub>8</sub>, N<sub>9</sub>

M8 connector (WO):

SY5<sup>3</sup><sub>5</sub>420-□<sup>3</sup><sub>4</sub>□<sup>3</sup><sub>5</sub>-WO□<sup>3</sup><sub>4</sub>-C<sub>4</sub>, N<sub>3</sub>-C<sub>6</sub>, N<sub>7</sub>□(-F2)  
C<sub>8</sub>, N<sub>9</sub>



Note) Refer to page 340 for dimensions of connector types.

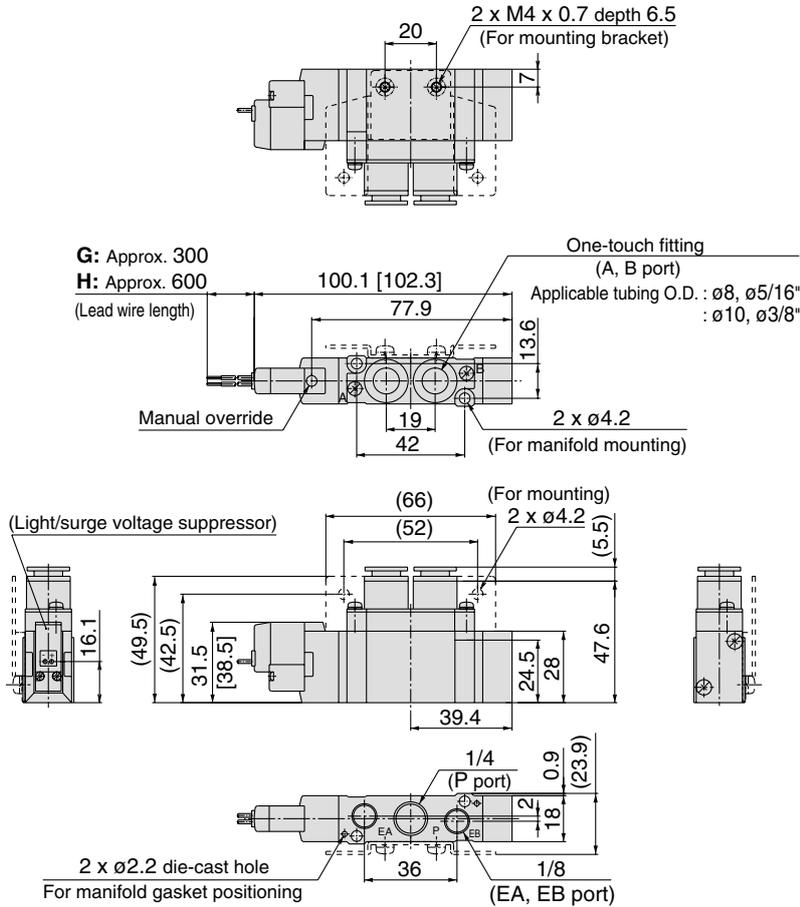
# Series SY3000/5000/7000/9000

## Dimensions: Series SY7000

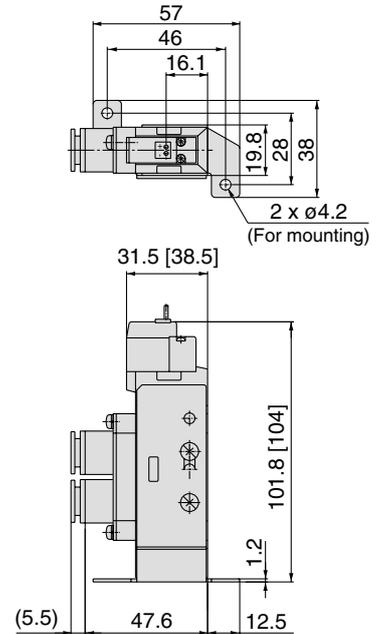


### 2 position single

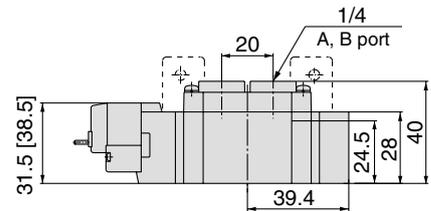
Grommet (G), (H): SY7120-□<sub>G</sub>□<sub>H</sub>□-C<sub>8, N<sub>9</sub></sub>  
C<sub>10, N<sub>11</sub></sub>□(-F<sub>2</sub>)



SY7120-□<sub>G</sub>□<sub>H</sub>□-C<sub>8, N<sub>9</sub></sub>  
C<sub>10, N<sub>11</sub></sub>□-F<sub>1</sub>

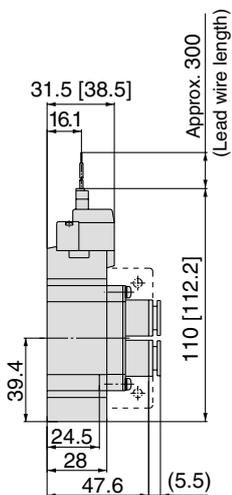


SY7120-□<sub>G</sub>□<sub>H</sub>□-02□(-F<sub>2</sub>)



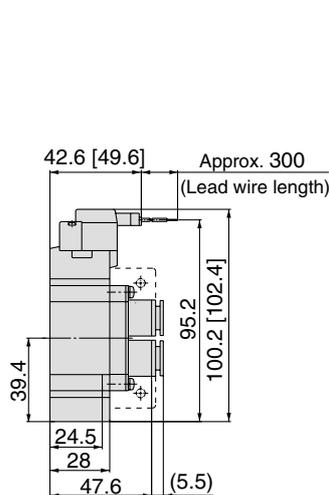
### L plug connector (L):

SY7120-□<sub>L</sub>□<sub>L</sub>□-C<sub>8, N<sub>9</sub></sub>  
C<sub>10, N<sub>11</sub></sub>□(-F<sub>2</sub><sup>1</sup>)



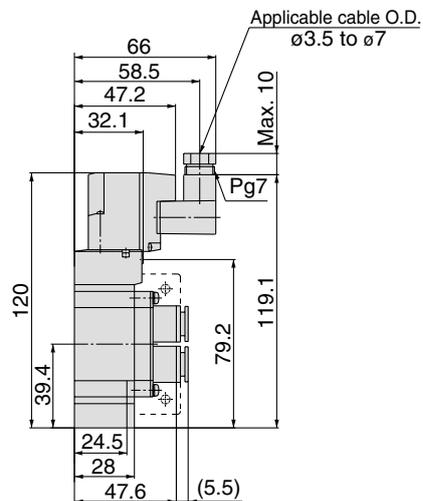
### M plug connector (M):

SY7120-□<sub>M</sub>□<sub>M</sub>□-C<sub>8, N<sub>9</sub></sub>  
C<sub>10, N<sub>11</sub></sub>□(-F<sub>2</sub><sup>1</sup>)



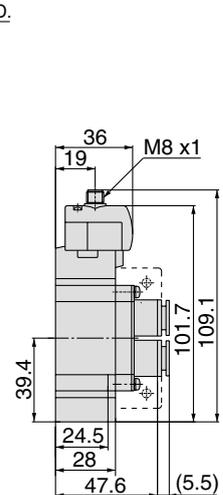
### DIN terminal (D, Y):

SY7120-□<sub>D</sub>□<sub>Y</sub>□-C<sub>8, N<sub>9</sub></sub>  
C<sub>10, N<sub>11</sub></sub>□(-F<sub>2</sub><sup>1</sup>)



### M8 connector (WO):

SY7120-□<sub>WO</sub>□<sub>WO</sub>□-C<sub>8, N<sub>9</sub></sub>  
C<sub>10, N<sub>11</sub></sub>□(-F<sub>2</sub><sup>1</sup>)



Note) Refer to page 340 for dimensions of connector types.

# Body Ported Series SY3000/5000/7000/9000

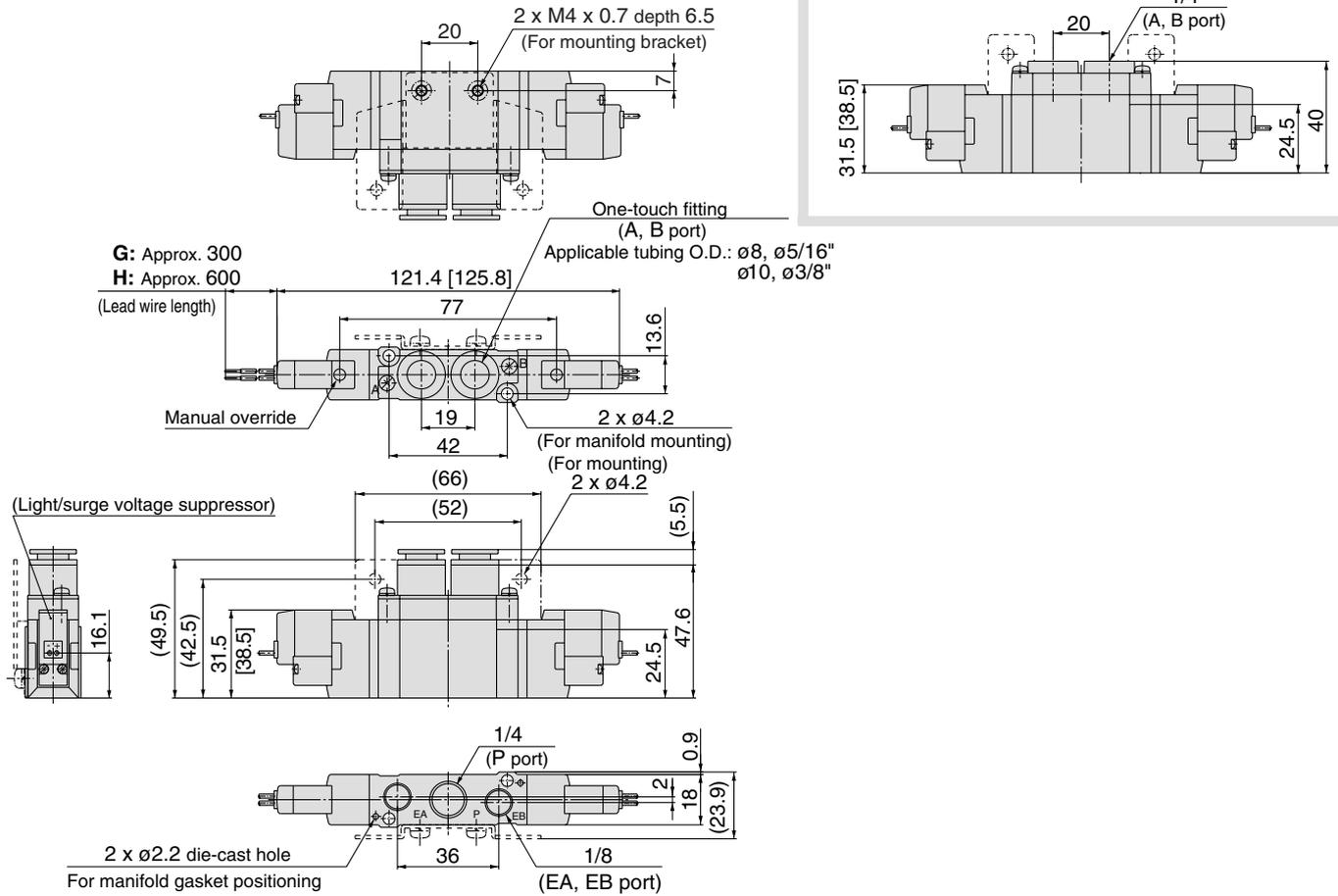
## Dimensions: Series SY7000



2 position double

Grommet (G), (H): SY7220-□<sub>G</sub>□□-C8, N9 C10, N11 □(-F2)

SY7220-□<sub>G</sub>□□-02□(-F2)



- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

L plug connector (L):

SY7220-□L□□-C8, N9 C10, N11 □(-F2)

M plug connector (M):

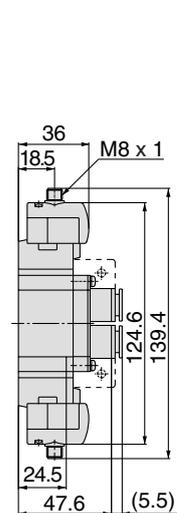
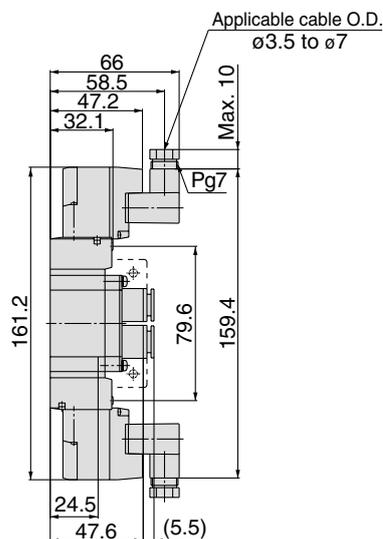
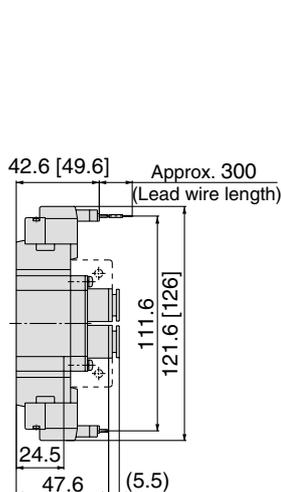
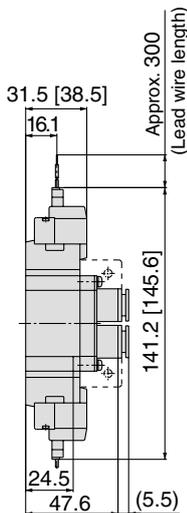
SY7220-□M□□-C8, N9 C10, N11 □(-F2)

DIN terminal (D, Y):

SY7220-□D□□-C8, N9 C10, N11 □(-F2)

M8 connector (WO):

SY7220-□WO□□-C8, N9 C10, N11 □(-F2)



Note) Refer to page 340 for dimensions of connector types.

# Series SY3000/5000/7000/9000

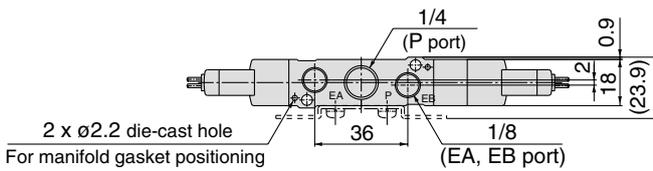
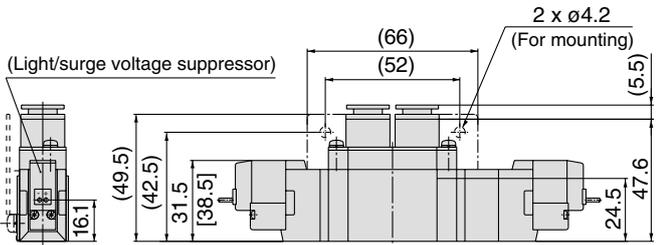
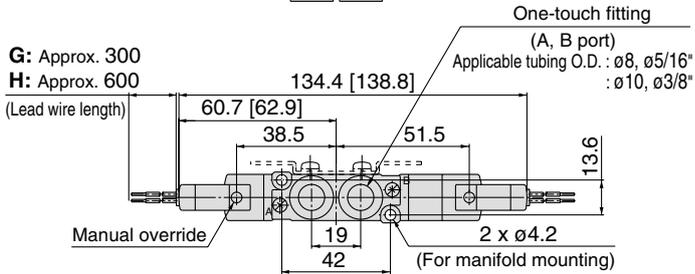
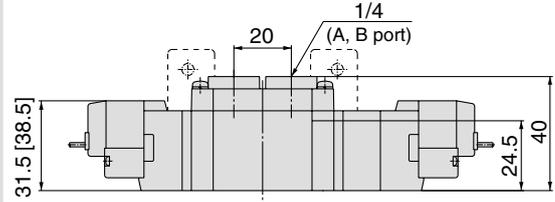
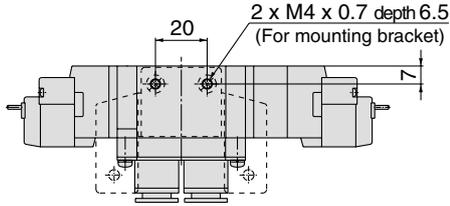


## Dimensions: Series SY7000

3 position closed center / exhaust center / pressure center

Grommet (G), (H): SY7<sup>3</sup>/<sub>5</sub>20-□<sup>G</sup>□□-C8, N9  
C10, N11 □(-F2)

SY7<sup>3</sup>/<sub>5</sub>20-□<sup>G</sup>□□-02□(-F2)



L plug connector (L):

SY7<sup>3</sup>/<sub>5</sub>20-□<sup>L</sup>□□-C8, N9  
C10, N11 □(-F2)

M plug connector (M):

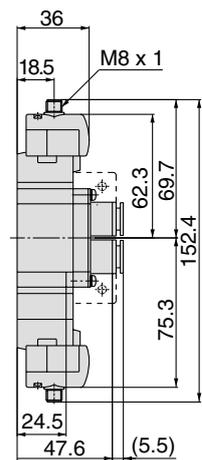
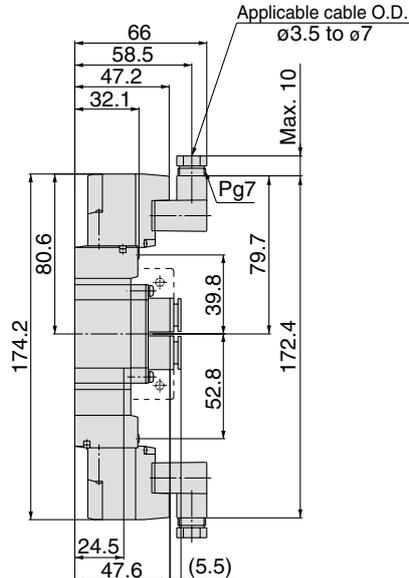
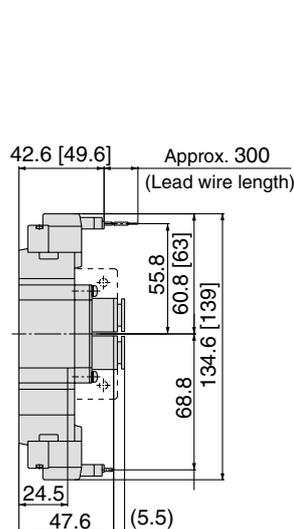
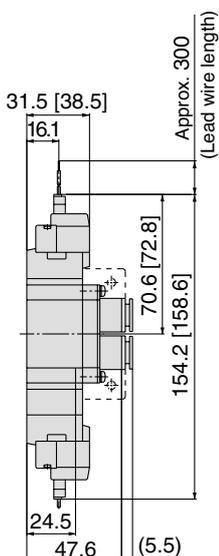
SY7<sup>3</sup>/<sub>5</sub>20-□<sup>M</sup>□□-C8, N9  
C10, N11 □(-F2)

DIN terminal (D, Y):

SY7<sup>3</sup>/<sub>5</sub>20-□<sup>D</sup>□□-C8, N9  
C10, N11 □(-F2)

M8 connector (WO):

SY7<sup>3</sup>/<sub>5</sub>20-□<sup>WO</sup>□□-C8, N9  
C10, N11 □(-F2)



Note) Refer to page 340 for dimensions of connector types.

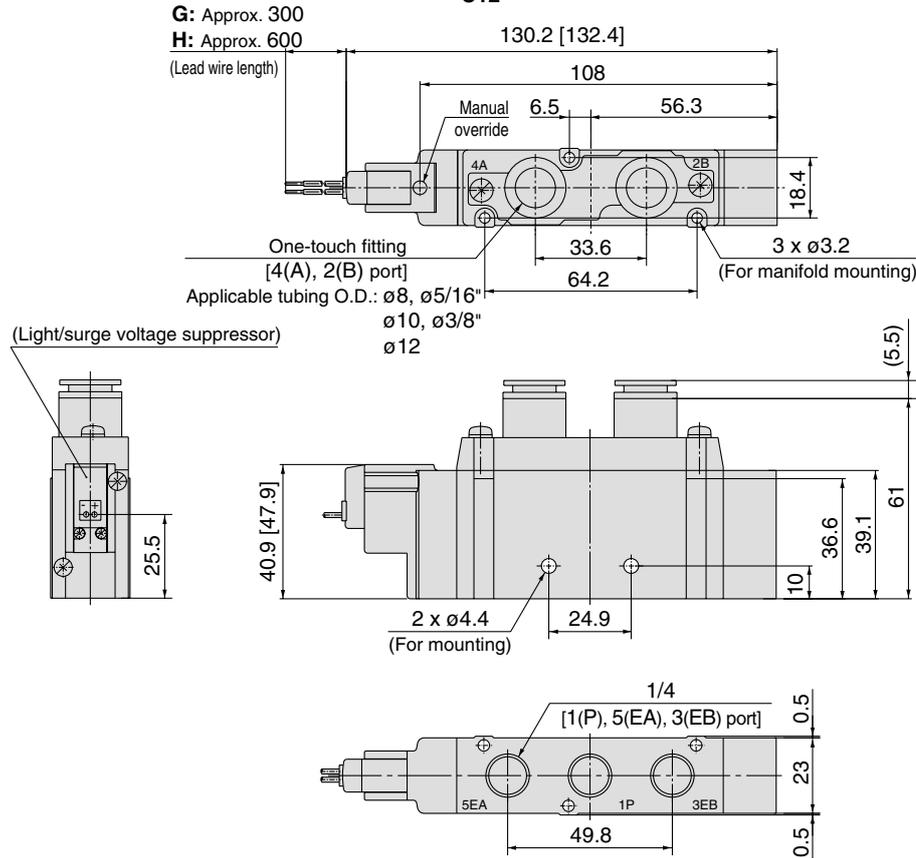
# Body Ported Series SY3000/5000/7000/9000



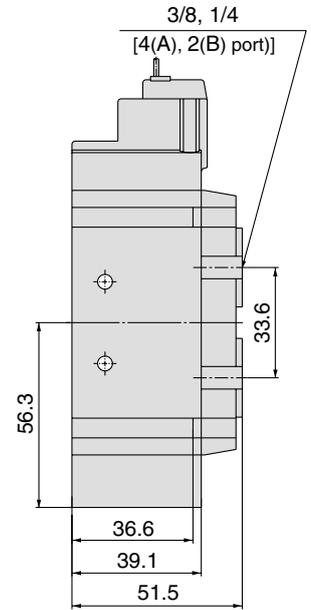
## Dimensions: Series SY9000

### 2 position single

Grommet (G), (H): SY9120-□<sup>G</sup>□□□-C8, N9  
 □□□-C10, N11□  
 □□□-C12



SY9120-□<sup>G</sup>□□□-02□

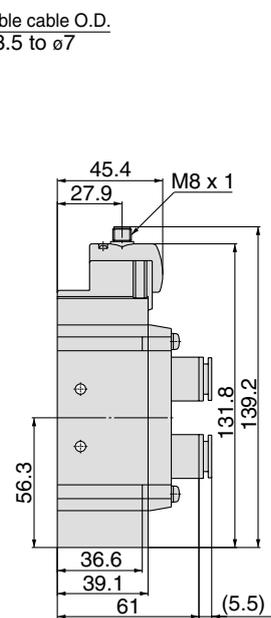
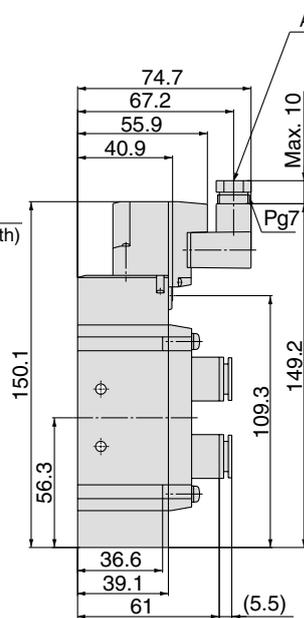
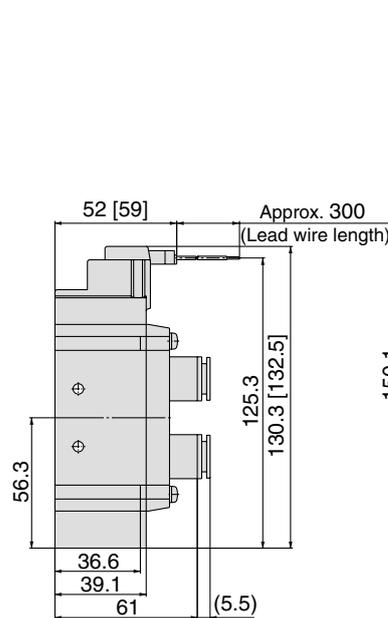
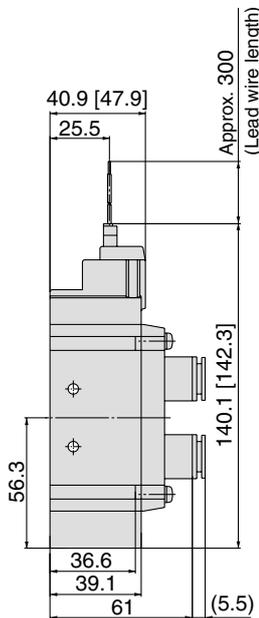


**L plug connector (L):**  
 SY9120-□L□□□-C8, N9  
 □□□-C10, N11□  
 □□□-C12

**M plug connector (M):**  
 SY9120-□M□□□-C8, N9  
 □□□-C10, N11□  
 □□□-C12

**DIN terminal (D, Y):**  
 SY9120-□D□□□-C8, N9  
 □□□-C10, N11□  
 □□□-C12

**M8 connector (WO):**  
 SY9120-□WO□□□-C8, N9  
 □□□-C10, N11□  
 □□□-C12



- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

Note) Refer to page 340 for dimensions of connector types.

# Series SY3000/5000/7000/9000



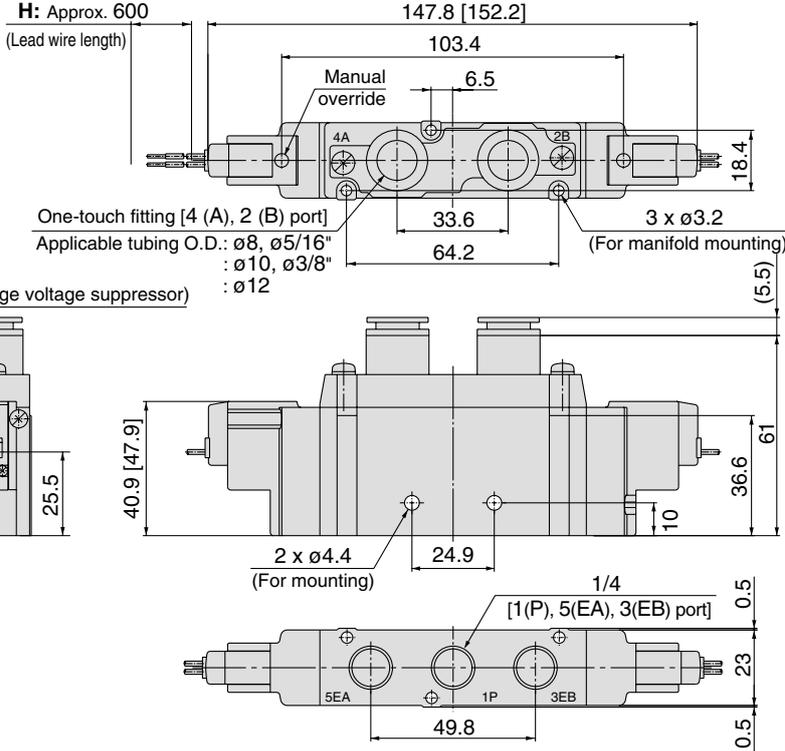
## Dimensions: Series SY9000

### 2 position double

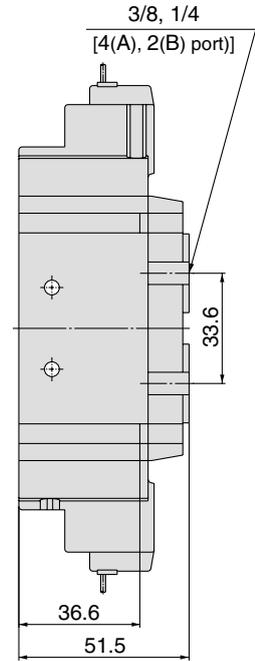
Grommet (G), (H): SY9220-□<sup>G</sup>□<sup>H</sup>□<sup>C8, N9</sup>□<sup>C10, N11</sup>□<sup>C12</sup>

G: Approx. 300

H: Approx. 600



SY9220-□<sup>G</sup>□<sup>H</sup>□<sup>C8, N9</sup>□<sup>C10, N11</sup>□<sup>C12</sup>-02□<sup>03</sup>□



### L plug connector (L):

SY9220-□<sup>L</sup>□<sup>C8, N9</sup>□<sup>C10, N11</sup>□<sup>C12</sup>

### M plug connector (M):

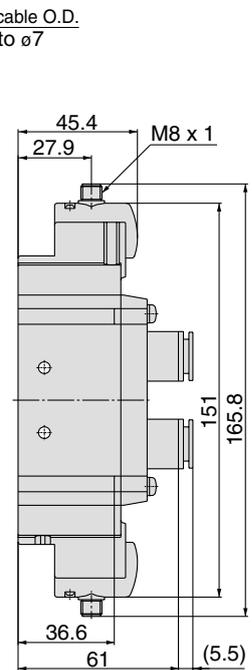
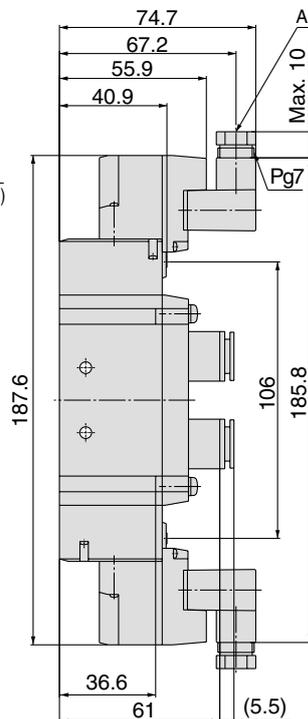
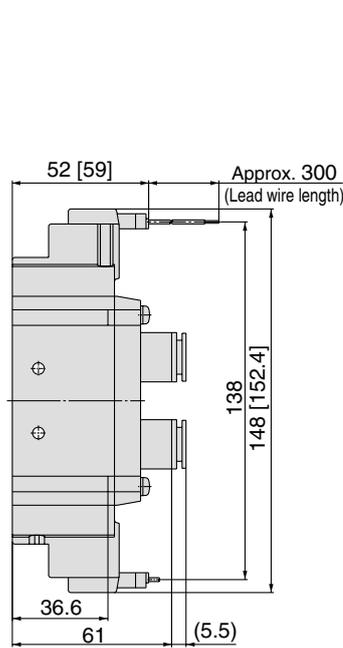
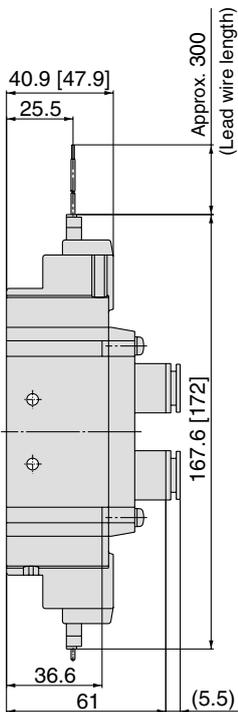
SY9220-□<sup>M</sup>□<sup>C8, N9</sup>□<sup>C10, N11</sup>□<sup>C12</sup>

### DIN terminal (D, Y):

SY9220-□<sup>D</sup>□<sup>Y</sup>□<sup>C8, N9</sup>□<sup>C10, N11</sup>□<sup>C12</sup>

### M8 connector (WO):

SY9220-□<sup>WO</sup>□<sup>C8, N9</sup>□<sup>C10, N11</sup>□<sup>C12</sup>



Note) Refer to page 340 for dimensions of connector types.

# Body Ported Series SY3000/5000/7000/9000

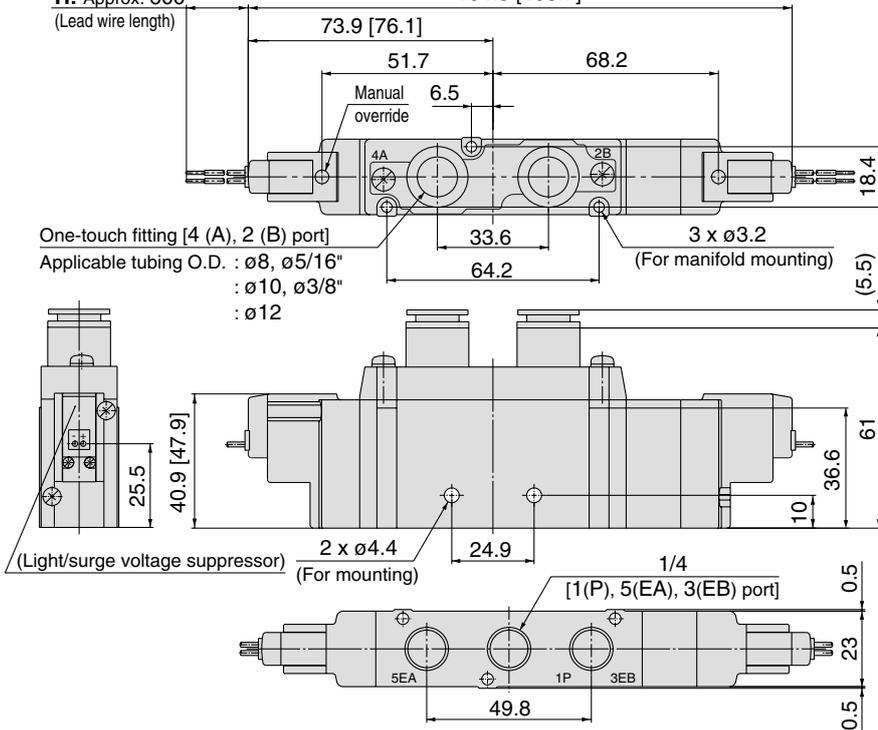


## Dimensions: Series SY9000

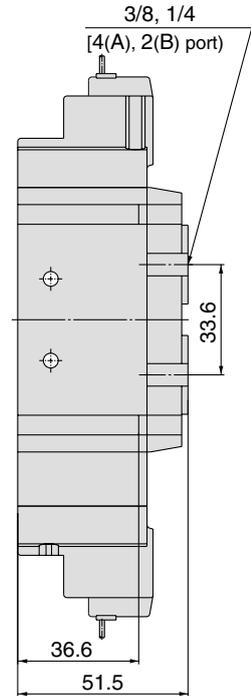
3 position closed center / exhaust center / pressure center

Grommet (G), (H): SY9<sup>3</sup>/<sub>5</sub>420-□<sup>G</sup>□□-C<sub>8, N9</sub>□□-C<sub>10, N11</sub>□□  
C<sub>12</sub>

G: Approx. 300  
H: Approx. 600  
(Lead wire length) 164.3 [168.7]



SY9<sup>3</sup>/<sub>5</sub>420-□<sup>G</sup>□□-<sup>02</sup>/<sub>03</sub>□□

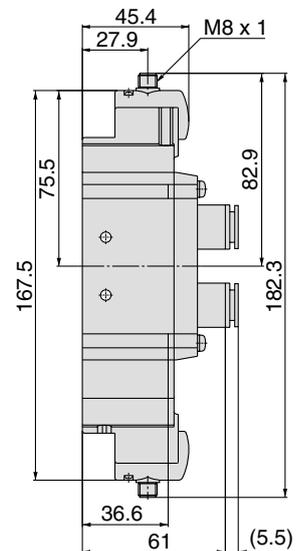
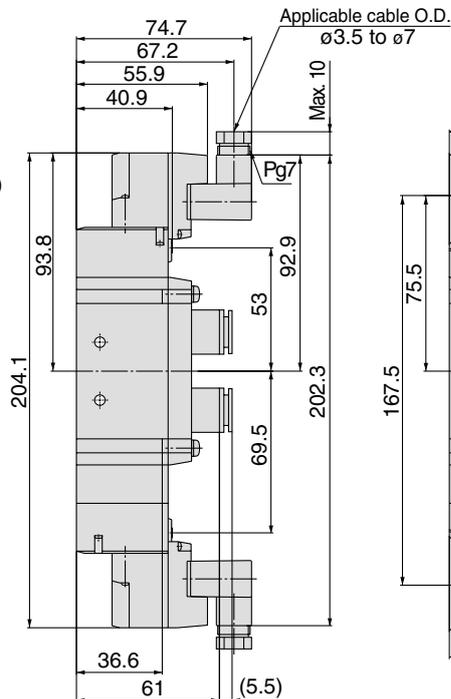
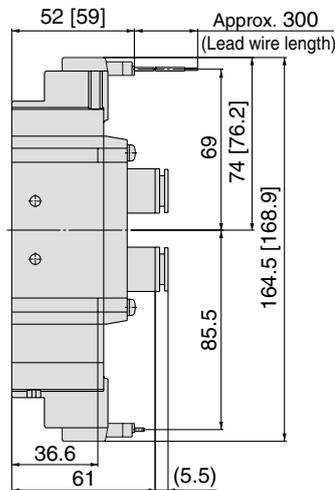
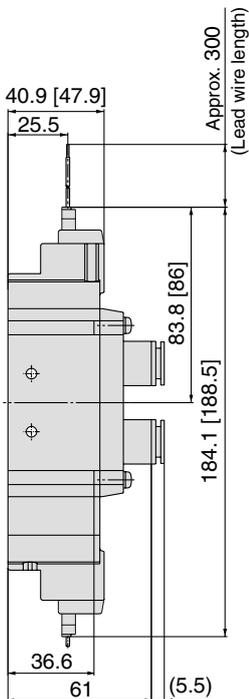


L plug connector (L): SY9<sup>3</sup>/<sub>5</sub>420-□<sup>L</sup>□□-C<sub>8, N9</sub>□□-C<sub>10, N11</sub>□□  
C<sub>12</sub>

M plug connector (M): SY9<sup>3</sup>/<sub>5</sub>420-□<sup>M</sup>□□-C<sub>8, N9</sub>□□-C<sub>10, N11</sub>□□  
C<sub>12</sub>

DIN terminal (D, Y): SY9<sup>3</sup>/<sub>5</sub>420-□<sup>D</sup>□□-C<sub>8, N9</sub>□□-C<sub>10, N11</sub>□□  
C<sub>12</sub>

M8 connector (WO): SY9<sup>3</sup>/<sub>5</sub>420-□<sup>WO</sup>□□-C<sub>8, N9</sub>□□-C<sub>10, N11</sub>□□  
C<sub>12</sub>



- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

Note) Refer to page 340 for dimensions of connector types.

# 5 Port Solenoid Valve Base Mounted/Single Unit



# Series SY3000/5000/7000/9000

## How to Order

**SY 5 2 40** **5 L**

**Series**

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |
| 7 | SY7000 |
| 9 | SY9000 |

**Type of actuation**

|   |                                                                     |
|---|---------------------------------------------------------------------|
| 1 | 2 position single<br>(A)(B)<br>4 2<br>5 1 3<br>(EA)(P)(EB)          |
| 2 | 2 position double<br>(A)(B)<br>4 2<br>5 1 3<br>(EA)(P)(EB)          |
| 3 | 3 position closed center<br>(A)(B)<br>4 2<br>5 1 3<br>(EA)(P)(EB)   |
| 4 | 3 position exhaust center<br>(A)(B)<br>4 2<br>5 1 3<br>(EA)(P)(EB)  |
| 5 | 3 position pressure center<br>(A)(B)<br>4 2<br>5 1 3<br>(EA)(P)(EB) |

**Pilot type**

|     |                |
|-----|----------------|
| Nil | Internal pilot |
| R   | External pilot |

**Coil specifications**

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

\* Power saving circuit is not available in the case of D, Y, DO, YO or W□ type.

**Rated voltage**

**For DC**

|   |        |
|---|--------|
| 5 | 24 VDC |
| 6 | 12 VDC |
| V | 6 VDC  |
| S | 5 VDC  |
| R | 3 VDC  |

**For AC (50/60 Hz)**

|   |                   |
|---|-------------------|
| 1 | 100 VAC           |
| 2 | 200 VAC           |
| 3 | 110 VAC [115 VAC] |
| 4 | 220 VAC [230 VAC] |

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

**Port size**

| Symbol | Port size             | Applicable series |
|--------|-----------------------|-------------------|
| Nil    | Without sub-plate     |                   |
| 01     | 1/8<br>With sub-plate | SY3000            |
| 02     | 1/4<br>With sub-plate | SY5000<br>SY7000  |
| 03     | 3/8<br>With sub-plate | SY7000<br>SY9000  |
| 04     | 1/2<br>With sub-plate | SY9000            |

**Thread type**

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

**Made to Order**

|     |                                               |
|-----|-----------------------------------------------|
| Nil | —                                             |
| X90 | Main valve fluoro rubber (Refer to page 332.) |

**CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

\* For DC only except DIN terminal.

**Manual override**

|                                   |                                          |                                        |
|-----------------------------------|------------------------------------------|----------------------------------------|
| <b>Nil:</b> Non-locking push type | <b>D:</b> Push-turn locking slotted type | <b>E:</b> Push-turn locking lever type |
|-----------------------------------|------------------------------------------|----------------------------------------|

**Light/surge voltage suppressor**

**Electrical entry for G, H, L, M, W**

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

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

**Electrical entry for D, Y**

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

\* DOZ and YOZ are not available.  
\* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

**Electrical entry**

| 24, 12, 6, 5, 3 VDC / 100, 110, 200, 220 VAC |                                   |                                   |                       | 24, 12 VDC/<br>100, 110, 200, 220 VAC   | 24, 12, 6, 5, 3 VDC             |
|----------------------------------------------|-----------------------------------|-----------------------------------|-----------------------|-----------------------------------------|---------------------------------|
| Grommet                                      | L plug connector                  | M plug connector                  | DIN terminal          | (Except SY3000)<br>D, Y: With connector | M8 connector                    |
| G: Lead wire length 300 mm                   | L: With lead wire (Length 300 mm) | M: With lead wire (Length 300 mm) | MN: Without lead wire | WO: Without connector cable             |                                 |
|                                              |                                   |                                   |                       |                                         |                                 |
| H: Lead wire length 600 mm                   | LN: Without lead wire             | LO: Without connector             | MO: Without connector | DO, YO: Without connector               | W□: With connector cable (Note) |
|                                              |                                   |                                   |                       |                                         |                                 |

\* LN, MN type: with 2 sockets.  
\* For DIN terminal of SY3000 series, refer to page 337.  
\* "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). For details, refer to page 336.  
\* For connector cable of M8 connector, refer to page 339.  
\* M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 331 for details.  
\* Refer to page 336 for the lead wire length of L and M plug connectors.  
\* Refer to page 337 for the connector assembly with cover for L and M plug connectors.  
Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.

# Base Mounted *Series SY3000/5000/7000/9000*

## Specifications



**Made to Order**  
(For details, refer to pages 324 to 332.)

| Series                                                           |                            | SY3000                                                                                 | SY5000          | SY7000 | SY9000 |
|------------------------------------------------------------------|----------------------------|----------------------------------------------------------------------------------------|-----------------|--------|--------|
| Fluid                                                            |                            | Air                                                                                    |                 |        |        |
| Internal pilot<br>Operating pressure<br>range (MPa)              | 2 position single          | 0.15 to 0.7                                                                            |                 |        |        |
|                                                                  | 2 position double          | 0.1 to 0.7                                                                             |                 |        |        |
|                                                                  | 3 position                 | 0.2 to 0.7                                                                             |                 |        |        |
| External pilot<br>Operating pressure<br>range (MPa)              | Operating pressure range   |                                                                                        | -100 kPa to 0.7 |        |        |
|                                                                  | Pilot<br>pressure<br>range | 2 position single                                                                      | 0.25 to 0.7     |        |        |
|                                                                  |                            | 2 position double                                                                      | 0.25 to 0.7     |        |        |
|                                                                  | 3 position                 | 0.25 to 0.7                                                                            |                 |        |        |
| Ambient and fluid temperature (°C)                               |                            | -10 to 50 (No freezing.)                                                               |                 |        |        |
| Max. operating<br>frequency (Hz)                                 | 2 position single, double  | 10                                                                                     | 5               | 5      | 5      |
|                                                                  | 3 position                 | 3                                                                                      | 3               | 3      | 3      |
| Manual override<br>(Manual operation)                            |                            | Non-locking push type,<br>Push-turn locking slotted type, Push-turn locking lever type |                 |        |        |
| Pilot exhaust<br>method                                          | Internal pilot             | Common exhaust type for main and pilot valve                                           |                 |        |        |
|                                                                  | External pilot             | Pilot valve individual exhaust                                                         |                 |        |        |
| Lubrication                                                      |                            | Not required                                                                           |                 |        |        |
| Mounting orientation                                             |                            | Unrestricted                                                                           |                 |        |        |
| Impact/Vibration resistance (m/s <sup>2</sup> ) <sup>Note)</sup> |                            | 150/30                                                                                 |                 |        |        |
| Enclosure                                                        |                            | Dust proof (* DIN terminal and M8 connector: IP65)                                     |                 |        |        |



\* Based on IEC60529

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

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)

## Response Time



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

### SY3000

| Type of<br>actuation | Response time (ms)<br>(at the pressure of 0.5 MPa) |                                     |            |
|----------------------|----------------------------------------------------|-------------------------------------|------------|
|                      | Without light/surge<br>voltage suppressor          | With light/surge voltage suppressor |            |
|                      |                                                    | Type S, Z                           | Type R, U  |
| 2 position single    | 12 or less                                         | 15 or less                          | 12 or less |
| 2 position double    | 10 or less                                         | 13 or less                          | 10 or less |
| 3 position           | 15 or less                                         | 20 or less                          | 16 or less |

### SY5000

| Type of<br>actuation | Response time (ms)<br>(at the pressure of 0.5 MPa) |                                     |            |
|----------------------|----------------------------------------------------|-------------------------------------|------------|
|                      | Without light/surge<br>voltage suppressor          | With light/surge voltage suppressor |            |
|                      |                                                    | Type S, Z                           | Type R, U  |
| 2 position single    | 19 or less                                         | 26 or less                          | 19 or less |
| 2 position double    | 18 or less                                         | 22 or less                          | 18 or less |
| 3 position           | 32 or less                                         | 38 or less                          | 32 or less |

### SY7000

| Type of<br>actuation | Response time (ms)<br>(at the pressure of 0.5 MPa) |                                     |            |
|----------------------|----------------------------------------------------|-------------------------------------|------------|
|                      | Without light/surge<br>voltage suppressor          | With light/surge voltage suppressor |            |
|                      |                                                    | Type S, Z                           | Type R, U  |
| 2 position single    | 31 or less                                         | 38 or less                          | 33 or less |
| 2 position double    | 27 or less                                         | 30 or less                          | 28 or less |
| 3 position           | 50 or less                                         | 56 or less                          | 50 or less |

### SY9000

| Type of<br>actuation | Response time (ms)<br>(at the pressure of 0.5 MPa) |                                     |            |
|----------------------|----------------------------------------------------|-------------------------------------|------------|
|                      | Without light/surge<br>voltage suppressor          | With light/surge voltage suppressor |            |
|                      |                                                    | Type S, Z                           | Type R, U  |
| 2 position single    | 35 or less                                         | 41 or less                          | 35 or less |
| 2 position double    | 35 or less                                         | 41 or less                          | 35 or less |
| 3 position           | 62 or less                                         | 64 or less                          | 62 or less |

## Solenoid Specifications

| Electrical entry              | Grommet (G), (H)<br>L plug connector (L)<br>M plug connector (M) |                           | DIN terminal (D), (Y)<br>M8 connector (W)                                  |                                                                          |
|-------------------------------|------------------------------------------------------------------|---------------------------|----------------------------------------------------------------------------|--------------------------------------------------------------------------|
|                               | G, H, L, M, W                                                    |                           | D, Y                                                                       |                                                                          |
| Coil rated<br>voltage (V)     | DC                                                               | 24, 12, 6, 5, 3           |                                                                            | 24, 12                                                                   |
|                               | AC 50/60 Hz                                                      | 100, 110, 200, 220        |                                                                            |                                                                          |
| Allowable voltage fluctuation | ±10% of rated voltage*                                           |                           |                                                                            |                                                                          |
| Power<br>consumption (W)      | DC                                                               | Standard                  | 0.35 (With indicator light: 0.4 DIN terminal with indicator light: 0.45)   |                                                                          |
|                               |                                                                  | With power saving circuit | 0.1 (With indicator light only)                                            |                                                                          |
| Apparent power<br>(VA)*       | AC                                                               | 100 V                     | 0.78 (With indicator light: 0.81)                                          | 0.78 (With indicator light: 0.87)                                        |
|                               |                                                                  | 110 V                     | 0.86 (With indicator light: 0.89)                                          | 0.86 (With indicator light: 0.97)                                        |
|                               |                                                                  | [115 V]                   | [0.94 (With indicator light: 0.97)]                                        | [0.94 (With indicator light: 1.07)]                                      |
|                               |                                                                  | 200 V                     | 1.18 (With indicator light: 1.22)                                          | 1.15 (With indicator light: 1.30)                                        |
|                               |                                                                  | 220 V<br>[230 V]          | [1.30 (With indicator light: 1.34)]<br>[1.42 (With indicator light: 1.46)] | 1.27 (With indicator light: 1.46)<br>[1.39 (With indicator light: 1.60)] |
| Surge voltage suppressor      | Diode (Varistor is for DIN terminal and Non-polar type.)         |                           |                                                                            |                                                                          |
| Indicator light               | LED (AC of DIN connector is neon light.)                         |                           |                                                                            |                                                                          |



\* In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.

\* For 115 VAC and 230 VAC, the allowable voltage is -15% to +5% of rated voltage.

\* S, Z and T type (with power saving circuit) should be used within the following allowable voltage fluctuation range due to a voltage drop caused by the internal circuit.

S and Z type: 24 VDC: -7% to +10%

12 VDC: -4% to +10%

T type: 24 VDC: -8% to +10%

12 VDC: -6% to +10%

# Series SY3000/5000/7000/9000

## Flow Characteristics/Mass

### Series SY3000

| Valve model | Type of actuation |                | Port size      | Flow characteristics <sup>Note 1)</sup> |      |      |                            |                |                | Mass (g) <sup>Note 2)</sup> |                                       |                   |
|-------------|-------------------|----------------|----------------|-----------------------------------------|------|------|----------------------------|----------------|----------------|-----------------------------|---------------------------------------|-------------------|
|             |                   |                |                | 1 → 4/2 (P → A/B)                       |      |      | 4/2 → 5/3 (A/B → EA/EB)    |                |                | Grommet                     | L plug connector,<br>M plug connector | W<br>M8 connector |
|             |                   |                |                | C (dm <sup>3</sup> /s·bar)              | b    | Cv   | C (dm <sup>3</sup> /s·bar) | b              | Cv             |                             |                                       |                   |
| SY3□40-□-01 | 2 position        | Single         | 1/8            | 1.0                                     | 0.30 | 0.24 | 1.1                        | 0.30           | 0.26           | 84 (50)                     | 85 (53)                               | 89 (57)           |
|             |                   | Double         |                |                                         |      |      |                            |                |                | 102 (68)                    | 107 (73)                              | 115 (81)          |
|             | 3 position        | Closed center  |                | 0.77                                    | 0.28 | 0.18 | 0.85                       | 0.30           | 0.19           | 104 (69)                    | 109 (74)                              | 117 (82)          |
|             |                   | Exhaust center |                | 0.73                                    | 0.31 | 0.18 | 1.1<br>[0.55]              | 0.26<br>[0.52] | 0.24<br>[0.16] |                             |                                       |                   |
|             | Pressure center   | 1.2<br>[0.51]  | 0.24<br>[0.45] | 0.29<br>[0.14]                          | 0.89 | 0.47 | 0.24                       |                |                |                             |                                       |                   |

Note 1) [ ] : denotes the normal position. Note 2) ( ) : denotes without sub-plate.

### Series SY5000

| Valve model | Type of actuation |                | Port size      | Flow characteristics <sup>Note 1)</sup> |      |      |                            |                |                | Mass (g) <sup>Note 2)</sup> |                                       |              |                   |
|-------------|-------------------|----------------|----------------|-----------------------------------------|------|------|----------------------------|----------------|----------------|-----------------------------|---------------------------------------|--------------|-------------------|
|             |                   |                |                | 1 → 4/2 (P → A/B)                       |      |      | 4/2 → 5/3 (A/B → EA/EB)    |                |                | Grommet                     | L plug connector,<br>M plug connector | DIN terminal | W<br>M8 connector |
|             |                   |                |                | C (dm <sup>3</sup> /s·bar)              | b    | Cv   | C (dm <sup>3</sup> /s·bar) | b              | Cv             |                             |                                       |              |                   |
| SY5□40-□-02 | 2 position        | Single         | 1/4            | 2.4                                     | 0.41 | 0.64 | 2.8                        | 0.29           | 0.66           | 121 (58)                    | 123 (61)                              | 154 (92)     | 127 (65)          |
|             |                   | Double         |                |                                         |      |      |                            |                |                | 139 (76)                    | 144 (81)                              | 186 (123)    | 152 (89)          |
|             | 3 position        | Closed center  |                | 1.8                                     | 0.47 | 0.50 | 1.8                        | 0.40           | 0.47           | 144 (82)                    | 150 (87)                              | 192 (129)    | 158 (95)          |
|             |                   | Exhaust center |                | 1.4                                     | 0.55 | 0.44 | 3.0<br>[1.2]               | 0.33<br>[0.48] | 0.72<br>[0.37] |                             |                                       |              |                   |
|             | Pressure center   | 3.3<br>[0.84]  | 0.36<br>[0.60] | 0.85<br>[0.28]                          | 1.8  | 0.40 | 0.48                       |                |                |                             |                                       |              |                   |

Note 1) [ ] : denotes the normal position. Note 2) ( ) : denotes without sub-plate.

### Series SY7000

| Valve model | Type of actuation |                | Port size      | Flow characteristics <sup>Note 1)</sup> |      |      |                            |                |               | Mass (g) <sup>Note 2)</sup> |                                       |              |                   |
|-------------|-------------------|----------------|----------------|-----------------------------------------|------|------|----------------------------|----------------|---------------|-----------------------------|---------------------------------------|--------------|-------------------|
|             |                   |                |                | 1 → 4/2 (P → A/B)                       |      |      | 4/2 → 5/3 (A/B → EA/EB)    |                |               | Grommet                     | L plug connector,<br>M plug connector | DIN terminal | W<br>M8 connector |
|             |                   |                |                | C (dm <sup>3</sup> /s·bar)              | b    | Cv   | C (dm <sup>3</sup> /s·bar) | b              | Cv            |                             |                                       |              |                   |
| SY7□40-□-02 | 2 position        | Single         | 1/4            | 4.1                                     | 0.41 | 1.1  | 4.1                        | 0.29           | 1.0           | 218 (89)                    | 221 (92)                              | 242 (113)    | 225 (96)          |
|             |                   | Double         |                |                                         |      |      |                            |                |               | 237 (108)                   | 242 (113)                             | 284 (155)    | 250 (121)         |
|             | 3 position        | Closed center  |                | 3.0                                     | 0.43 | 0.80 | 2.6                        | 0.41           | 0.72          | 239 (110)                   | 245 (116)                             | 287 (158)    | 253 (124)         |
|             |                   | Exhaust center |                | 2.6                                     | 0.42 | 0.71 | 4.7<br>[1.7]               | 0.35<br>[0.48] | 1.1<br>[0.49] |                             |                                       |              |                   |
|             | Pressure center   | 5.3<br>[2.3]   | 0.39<br>[0.49] | 1.3<br>[0.65]                           | 2.2  | 0.49 | 0.63                       |                |               |                             |                                       |              |                   |
| SY7□40-□-03 | 2 position        | Single         | 3/8            | 4.9                                     | 0.29 | 1.2  | 4.5                        | 0.27           | 1.1           | 218 (89)                    | 221 (92)                              | 242 (113)    | 225 (96)          |
|             |                   | Double         |                |                                         |      |      |                            |                |               | 237 (108)                   | 242 (113)                             | 284 (155)    | 250 (121)         |
|             | 3 position        | Closed center  |                | 3.0                                     | 0.40 | 0.80 | 2.6                        | 0.45           | 0.73          | 239 (110)                   | 245 (116)                             | 287 (158)    | 253 (124)         |
|             |                   | Exhaust center |                | 2.6                                     | 0.42 | 0.71 | 4.8<br>[1.7]               | 0.35<br>[0.48] | 1.1<br>[0.49] |                             |                                       |              |                   |
|             | Pressure center   | 5.3<br>[2.3]   | 0.31<br>[0.51] | 1.3<br>[0.64]                           | 2.3  | 0.45 | 0.66                       |                |               |                             |                                       |              |                   |

Note 1) [ ] : denotes the normal position. Note 2) ( ) : denotes without sub-plate.

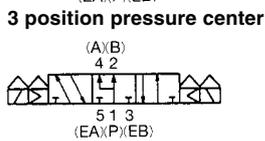
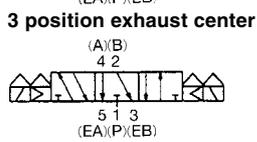
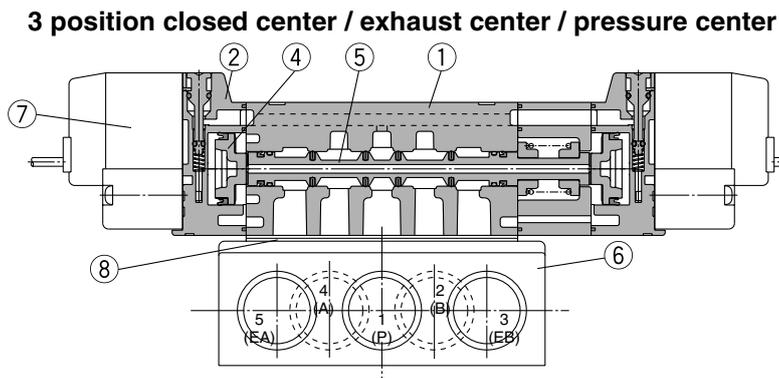
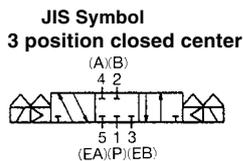
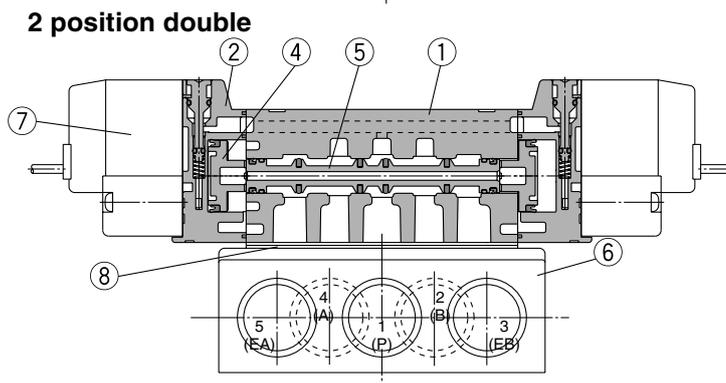
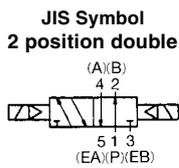
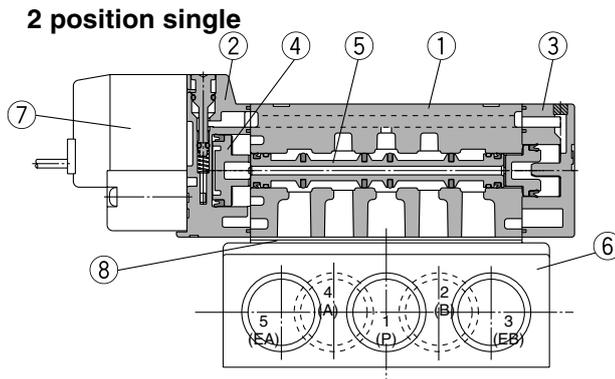
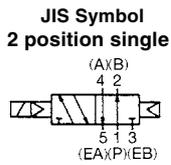
### Series SY9000

| Valve model | Type of actuation |                | Port size      | Flow characteristics <sup>Note 1)</sup> |      |      |                            |                |               | Mass (g) <sup>Note 2)</sup> |                                       |              |                   |
|-------------|-------------------|----------------|----------------|-----------------------------------------|------|------|----------------------------|----------------|---------------|-----------------------------|---------------------------------------|--------------|-------------------|
|             |                   |                |                | 1 → 4/2 (P → A/B)                       |      |      | 4/2 → 5/3 (A/B → EA/EB)    |                |               | Grommet                     | L plug connector,<br>M plug connector | DIN terminal | W<br>M8 connector |
|             |                   |                |                | C (dm <sup>3</sup> /s·bar)              | b    | Cv   | C (dm <sup>3</sup> /s·bar) | b              | Cv            |                             |                                       |              |                   |
| SY9□40-□-03 | 2 position        | Single         | 3/8            | 7.9                                     | 0.34 | 2.0  | 9.6                        | 0.43           | 2.6           | 469(172)                    | 472(175)                              | 493(196)     | 476(179)          |
|             |                   | Double         |                |                                         |      |      |                            |                |               | 488(191)                    | 494(197)                              | 535(239)     | 502(205)          |
|             | 3 position        | Closed center  |                | 7.5                                     | 0.33 | 1.8  | 7.3                        | 0.30           | 1.7           | 512(215)                    | 518(221)                              | 560(263)     | 526(229)          |
|             |                   | Exhaust center |                | 7.2                                     | 0.34 | 1.7  | 13<br>[4.0]                | 0.23<br>[0.41] | 2.8<br>[0.95] |                             |                                       |              |                   |
|             | Pressure center   | 12<br>[3.3]    | 0.26<br>[0.41] | 2.8<br>[0.84]                           | 6.7  | 0.40 | 1.9                        |                |               |                             |                                       |              |                   |
| SY9□40-□-04 | 2 position        | Single         | 1/2            | 8.0                                     | 0.48 | 2.2  | 10                         | 0.29           | 2.5           | 448 (172)                   | 453 (175)                             | 472          | 457(179)          |
|             |                   | Double         |                |                                         |      |      |                            |                |               | 467 (191)                   | 473 (197)                             | 515          | 481(205)          |
|             | 3 position        | Closed center  |                | 7.6                                     | 0.32 | 1.8  | 7.3                        | 0.32           | 1.8           | 491 (215)                   | 497 (221)                             | 539          | 505(229)          |
|             |                   | Exhaust center |                | 7.3                                     | 0.42 | 2.0  | 13<br>[4.7]                | 0.32<br>[0.54] | 3.6<br>[1.5]  |                             |                                       |              |                   |
|             | Pressure center   | 12<br>[3.3]    | 0.33<br>[0.51] | 3.3<br>[0.94]                           | 7.4  | 0.33 | 1.9                        |                |               |                             |                                       |              |                   |

Note 1) [ ] : denotes the normal position. Note 2) ( ) : denotes without sub-plate.

## Construction

### Series SY



(This figure shows a closed center type.)

### Component Parts

| No. | Description          | Material                                         | Note                    |
|-----|----------------------|--------------------------------------------------|-------------------------|
| 1   | Body                 | Aluminum die-casted<br>(SY3000: Zinc die-casted) | White                   |
| 2   | Adapter plate        | Resin                                            | White<br>(SY9000: Gray) |
| 3   | End plate            | Resin                                            | White                   |
| 4   | Piston               | Resin                                            | -                       |
| 5   | Spool valve assembly | Aluminum, H-NBR                                  | -                       |

### Replacement Parts

| No. | Description                  | Part No.                                                  |                    |                                                    |                                                    | Note                                       |
|-----|------------------------------|-----------------------------------------------------------|--------------------|----------------------------------------------------|----------------------------------------------------|--------------------------------------------|
|     |                              | SY3□40                                                    | SY5□40             | SY7□40                                             | SY9□40                                             |                                            |
| 6   | Sub-plate <sup>Note)</sup>   | SY3000-27-1[*](-Q)                                        | SY5000-27-1[*](-Q) | 1/4: SY7000-27-1[*](-Q)<br>3/8: SY7000-27-2[*](-Q) | 3/8: SY9000-27-1[*](-Q)<br>1/2: SY9000-27-2[*](-Q) | Aluminum die-casted                        |
| 7   | Pilot valve assembly         | Refer to "How to Order Pilot Valve Assembly" on page 130. |                    |                                                    |                                                    |                                            |
| 8   | Gasket                       | SY3000-11-25                                              | SY5000-11-15       | SY7000-11-11                                       | SY9000-11-2                                        | H-NBR                                      |
| -   | Round head combination screw | SY3000-23-4<br>(M2 x 21)                                  | M3 x 26            | M4 x 31                                            | SY9000-18-2<br>(M3 x 42)                           | For valve mounting<br>(Matt nickel plated) |

\* Thread type

Note) For CE-compliant, suffix "Q" at the end of part no.

### ⚠ Caution

Mounting screw tightening torques

**M2: 0.16 N·m**  
**M3: 0.8 N·m**  
**M4: 1.4 N·m**

SJ  
SY  
SV  
SYJ  
SZ  
VP4  
S0700  
VQ  
VQ4  
VQ5  
VQC  
VQZ  
SQ  
VFS  
VFR  
VQ7

# Series SY3000/5000/7000/9000

## How to Order Pilot Valve Assembly

V111  - 5 G

### Coil specifications

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

\* Power saving circuit is not available in the case of D, DO or W□ type.

### Rated voltage

|   |                                                              |
|---|--------------------------------------------------------------|
| 5 | 24 VDC                                                       |
| 6 | 12 VDC                                                       |
| V | 6 VDC                                                        |
| S | 5 VDC                                                        |
| R | 3 VDC                                                        |
| 1 | 100 VAC <sup>50/60</sup> Hz                                  |
| 2 | 200 VAC <sup>50/60</sup> Hz                                  |
| 3 | 110 VAC <sup>50/60</sup> Hz<br>[115 VAC <sup>50/60</sup> Hz] |
| 4 | 220 VAC <sup>50/60</sup> Hz<br>[230 VAC <sup>50/60</sup> Hz] |

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

### Light/surge voltage suppressor

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

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

### Electrical entry

|    |                           |                                         |
|----|---------------------------|-----------------------------------------|
| G  | Grommet, 300 mm lead wire |                                         |
| H  | Grommet, 600 mm lead wire |                                         |
| L  |                           | With lead wire                          |
| LN | L plug connector          | Without lead wire                       |
| LO |                           | Without connector                       |
| M  |                           | With lead wire                          |
| MN | M plug connector          | Without lead wire                       |
| MO |                           | Without connector                       |
| WO | M8                        | Without connector cable                 |
| W□ | connector                 | With connector cable <sup>Note 1)</sup> |

\* For connector cable of M8 connector, refer to page 339.  
Note 1) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.

## DIN terminal type

V115 - 5 D

### Rated voltage

|   |                                                              |
|---|--------------------------------------------------------------|
| 5 | 24 VDC                                                       |
| 6 | 12 VDC                                                       |
| 1 | 100 VAC <sup>50/60</sup> Hz                                  |
| 2 | 200 VAC <sup>50/60</sup> Hz                                  |
| 3 | 110 VAC <sup>50/60</sup> Hz<br>[115 VAC <sup>50/60</sup> Hz] |
| 4 | 220 VAC <sup>50/60</sup> Hz<br>[230 VAC <sup>50/60</sup> Hz] |

\* DC specifications of type D, Y, DO and YO is only available with 12 and 24 VDC.

### Light/surge voltage suppressor

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

\* DOZ and YOZ are not available.  
\* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

### Electrical entry

|    |              |                   |
|----|--------------|-------------------|
| D  | DIN terminal | With connector    |
| DO | (Type D)     | Without connector |
| Y  | DIN terminal | With connector    |
| YO | (Type Y)     | Without connector |

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

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

**How to Order Interface Regulator**

**Series SY3000**

**ARBY3000-05-P-2**

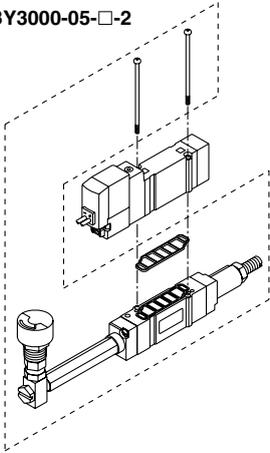
Pressure gauge connection port ●

|    |                            |
|----|----------------------------|
| 05 | Pressure gauge (G15-10-01) |
| M1 | Plug (M-5P)                |

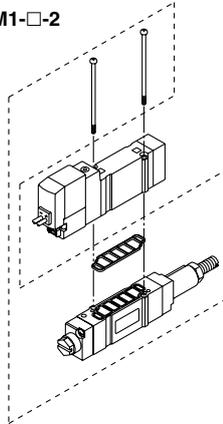
● Regulating port

|    |                                               |
|----|-----------------------------------------------|
| P  | P port                                        |
| A1 | A port (P controlled type, A port regulation) |
| B1 | B port (P controlled type, B port regulation) |

ARBY3000-05-□-2



ARBY3000-M1-□-2



**Series SY5000**

**ARBY5000-00-P-2**

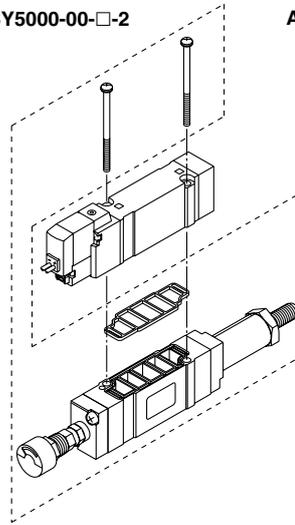
Pressure gauge connection port ●

|    |                            |
|----|----------------------------|
| 00 | Pressure gauge (G15-10-01) |
| M1 | Plug (M-5P)                |

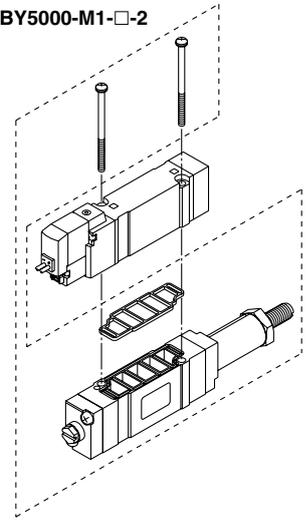
● Regulating port

|    |                                               |
|----|-----------------------------------------------|
| P  | P port                                        |
| A1 | A port (P controlled type, A port regulation) |
| B1 | B port (P controlled type, B port regulation) |

ARBY5000-00-□-2



ARBY5000-M1-□-2



**Series SY7000**

**ARBY7000-00-P-2**

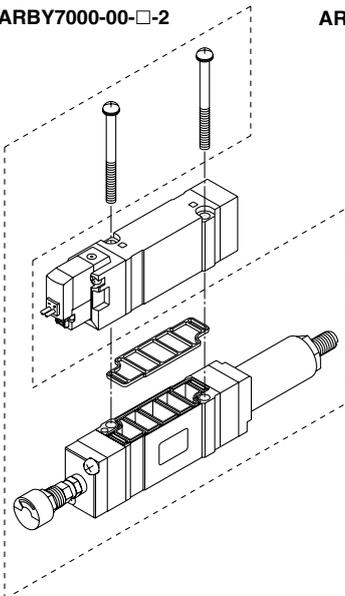
Pressure gauge connection port ●

|    |                            |
|----|----------------------------|
| 00 | Pressure gauge (G15-10-01) |
| M1 | Plug (M-5P)                |

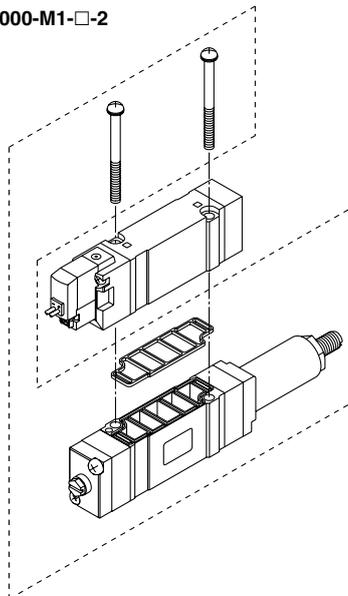
● Regulating port

|    |                                               |
|----|-----------------------------------------------|
| P  | P port                                        |
| A1 | A port (P controlled type, A port regulation) |
| B1 | B port (P controlled type, B port regulation) |

ARBY7000-00-□-2



ARBY7000-M1-□-2



- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

Note) ARBY is not CE-compliant.

**Accessory**

| Series   | Round head combination screw     | Gasket      |
|----------|----------------------------------|-------------|
| ARBY3000 | SY3000-23-10<br>(M2 x 36)        | SX3000-57-4 |
| ARBY5000 | M3 x 48.5,<br>Matt nickel plated | SX5000-57-6 |
| ARBY7000 | M4 x 57,<br>Matt nickel plated   | SX7000-57-4 |

**Caution**

Mounting screw  
tightening torques

- M2: 0.16 N·m
- M3: 0.8 N·m
- M4: 1.4 N·m

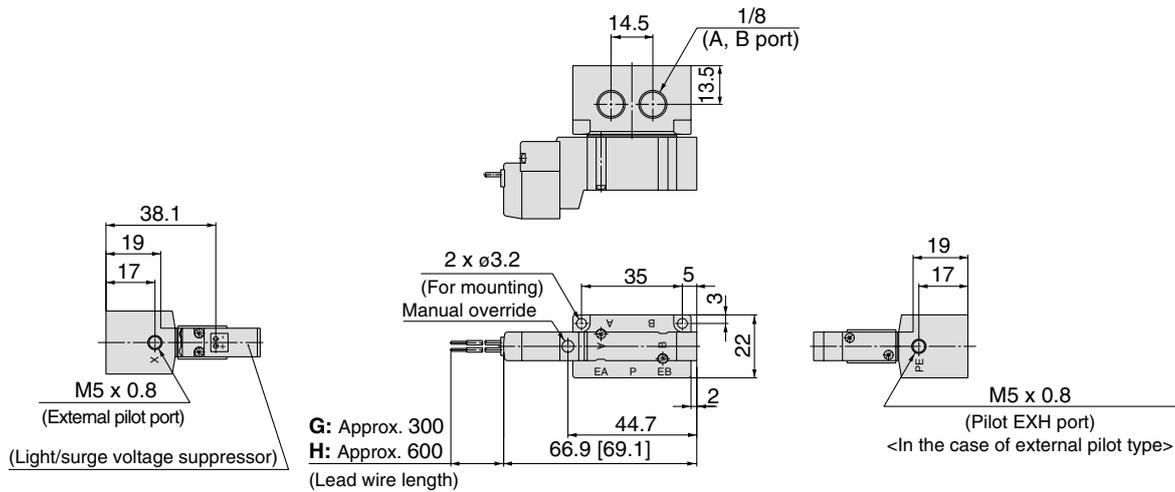
# Series SY3000/5000/7000/9000



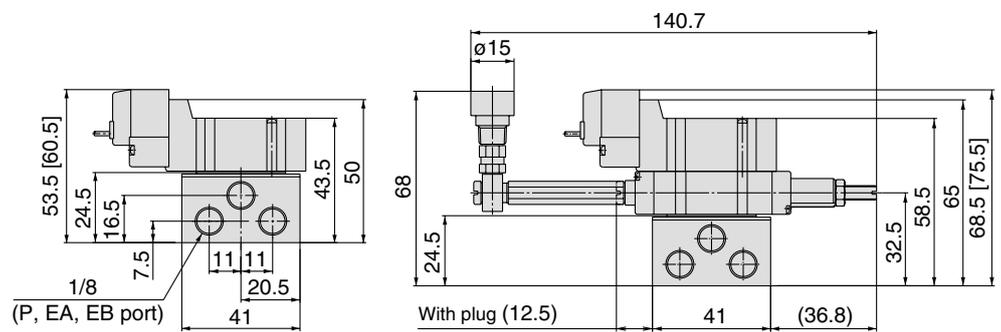
## Dimensions: Series SY3000

2 position single

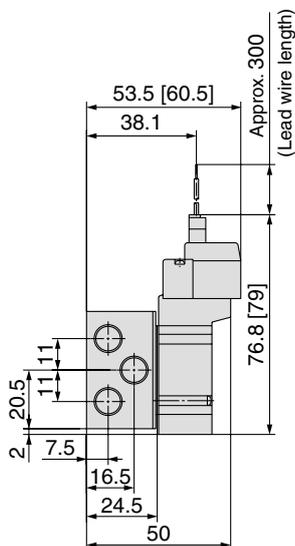
Grommet (G), (H): SY3140(R)-□<sup>G</sup>□□-01□



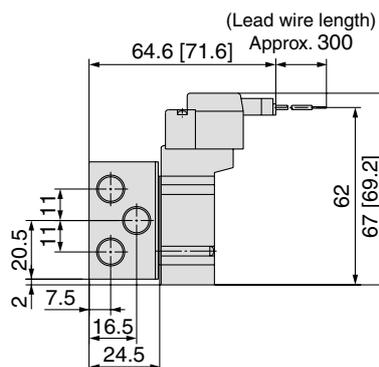
### With interface regulator



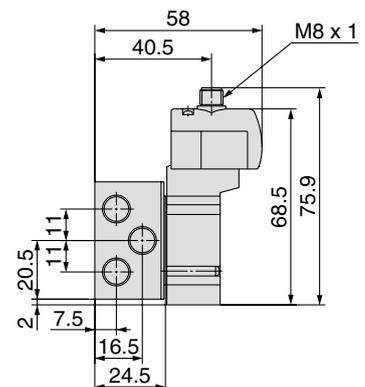
**L plug connector (L):**  
SY3140(R)-□L□□-01□



**M plug connector (M):**  
SY3140(R)-□M□□-01□



**M8 connector (WO):**  
SY3140(R)-□WO□□-01□



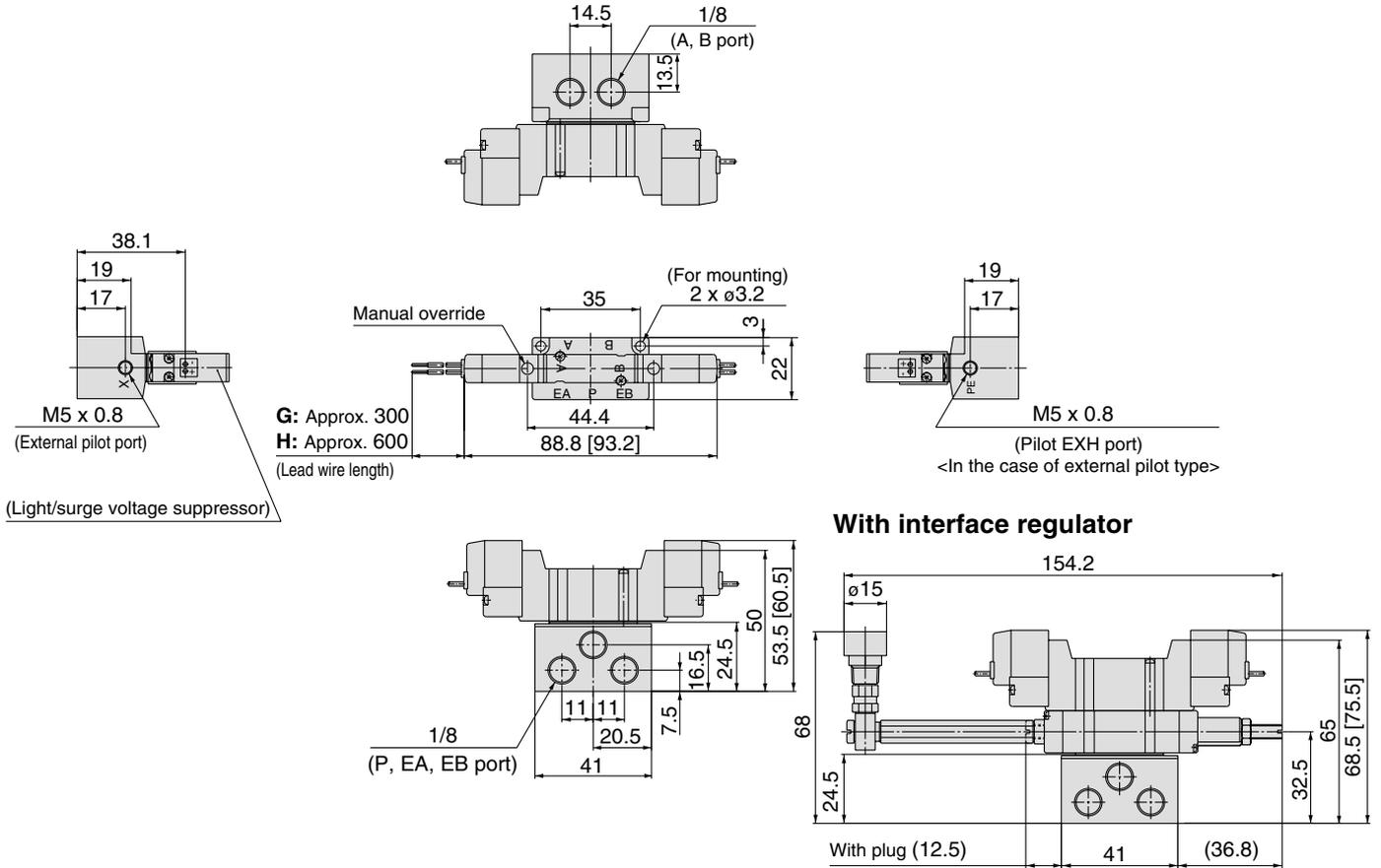
Note) Refer to page 340 for dimensions of connector types.

## Dimensions: Series SY3000

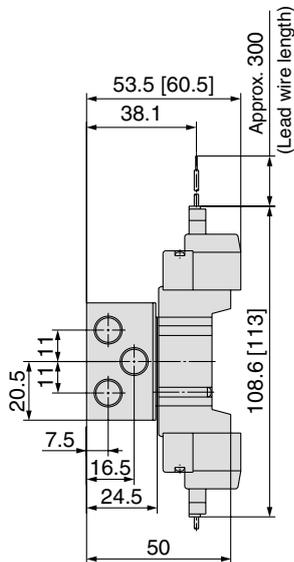


2 position double

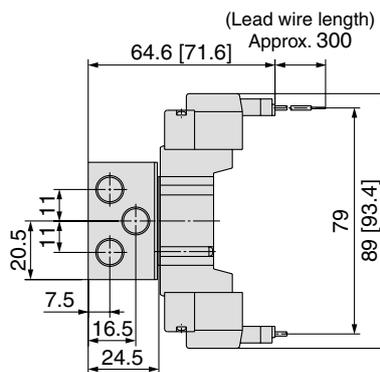
Grommet (G), (H): SY3240(R)-□<sup>G</sup>□□-01□



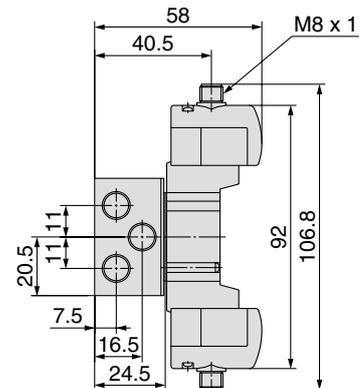
L plug connector (L):  
SY3240(R)-□L□□-01□



M plug connector (M):  
SY3240(R)-□M□□-01□



M8 connector (WO):  
SY3240(R)-□WO□□-01□



Note) Refer to page 340 for dimensions of connector types.

|       |
|-------|
| SJ    |
| SY    |
| SV    |
| SYJ   |
| SZ    |
| VP4   |
| S0700 |
| VQ    |
| VQ4   |
| VQ5   |
| VQC   |
| VQZ   |
| SQ    |
| VFS   |
| VFR   |
| VQ7   |

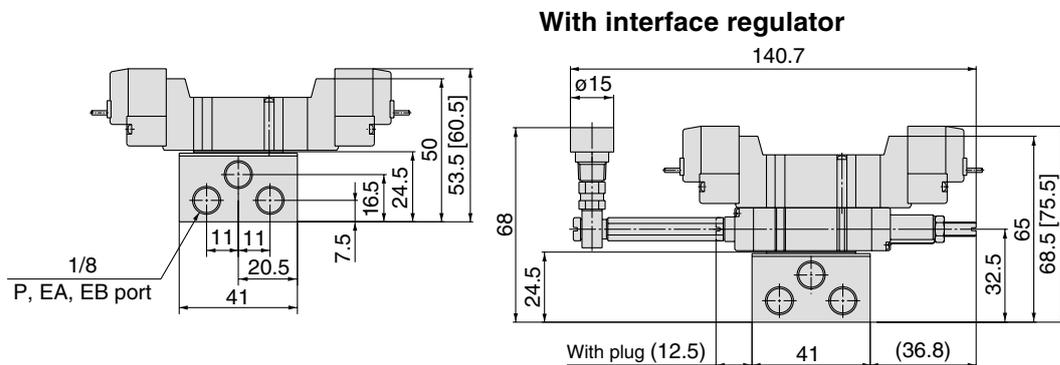
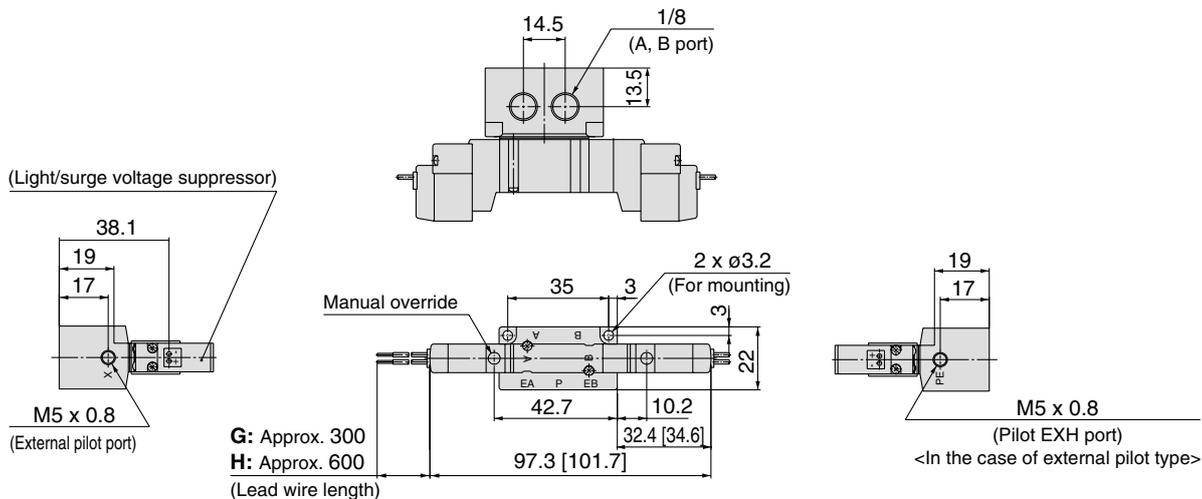
# Series SY3000/5000/7000/9000



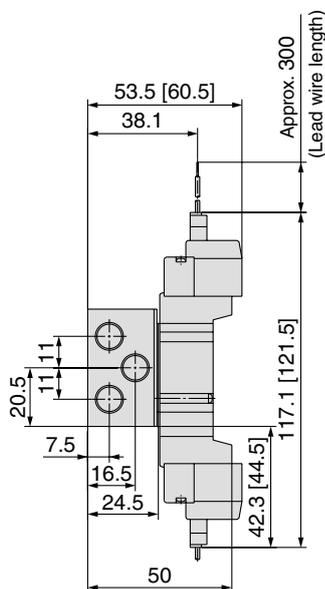
## Dimensions: Series SY3000

3 position closed center / exhaust center / pressure center

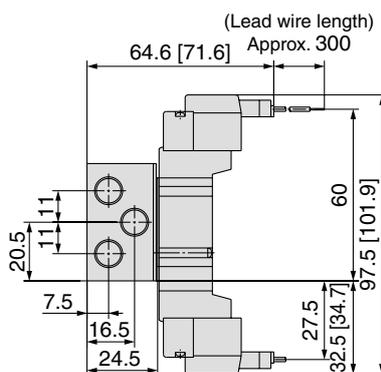
Grommet (G), (H): SY3<sup>3</sup>/<sub>5</sub>40(R)-□<sup>G</sup>□□-01□



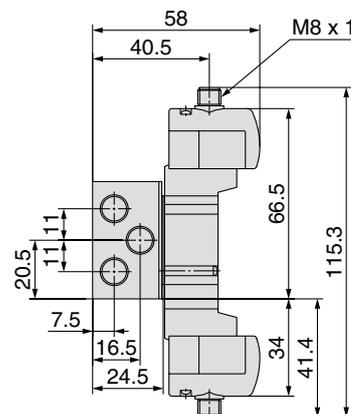
L plug connector (L):  
SY3<sup>3</sup>/<sub>5</sub>40(R)-□L□□-01□



M plug connector (M):  
SY3<sup>3</sup>/<sub>5</sub>40(R)-□M□□-01□



M8 connector (WO):  
SY3<sup>3</sup>/<sub>5</sub>40(R)-□WO□□-01□



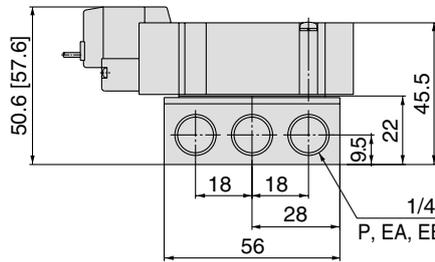
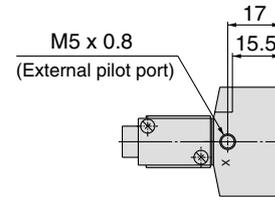
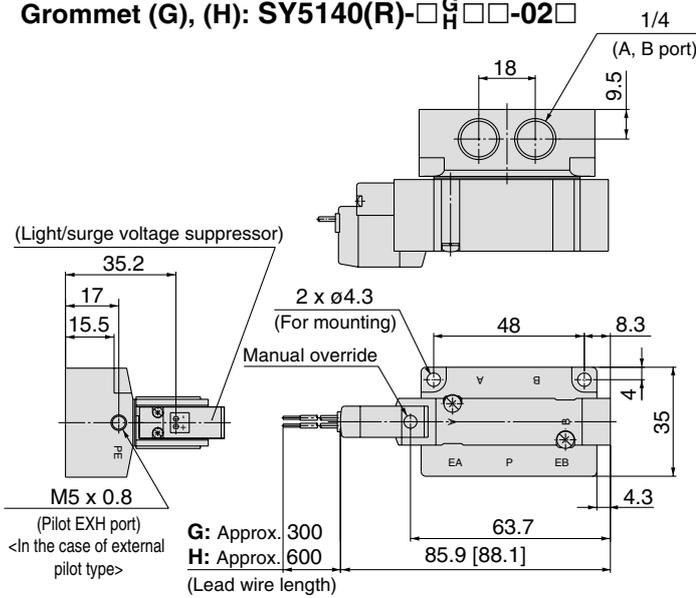
Note) Refer to page 340 for dimensions of connector types.

**Dimensions: Series SY5000**

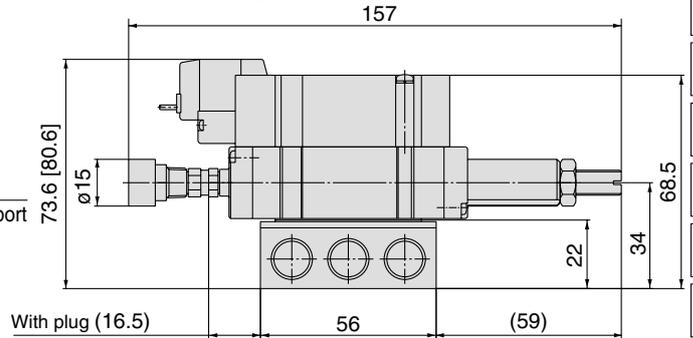


**2 position single**

**Grommet (G), (H): SY5140(R)-□<sup>G</sup>□□-02□**



**With interface regulator**

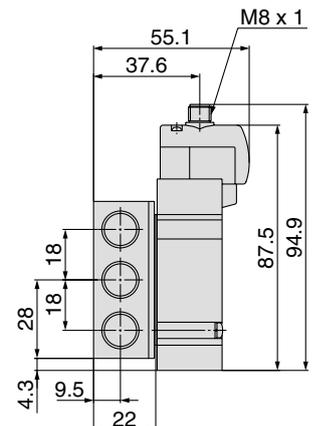
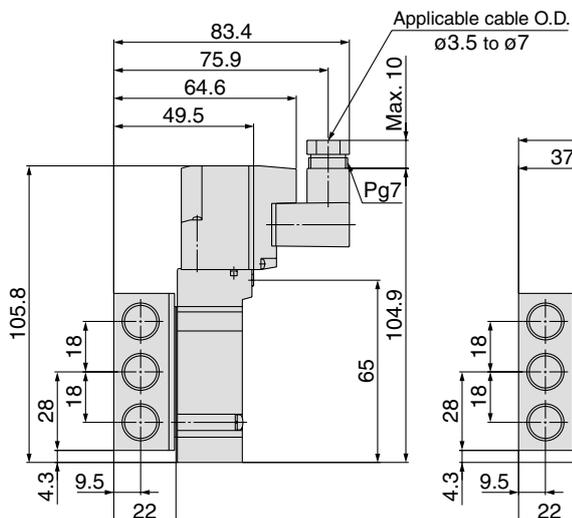
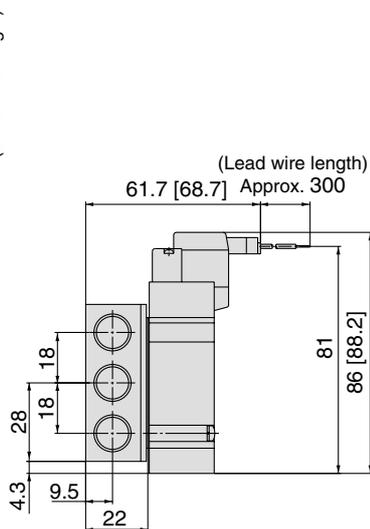
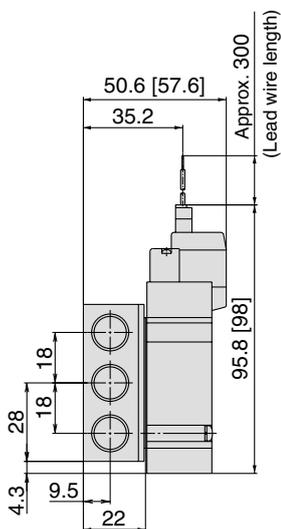


**L plug connector (L): SY5140(R)-□L□□-02□**

**M plug connector (M): SY5140(R)-□M□□-02□**

**DIN terminal (D, Y): SY5140(R)-□<sup>D</sup>□□-02□**

**M8 connector (WO): SY5140(R)-□WO□□-02□**



Note) Refer to page 340 for dimensions of connector types.

|           |
|-----------|
| SJ        |
| <b>SY</b> |
| SV        |
| SYJ       |
| SZ        |
| VP4       |
| S0700     |
| VQ        |
| VQ4       |
| VQ5       |
| VQC       |
| VQZ       |
| SQ        |
| VFS       |
| VFR       |
| VQ7       |

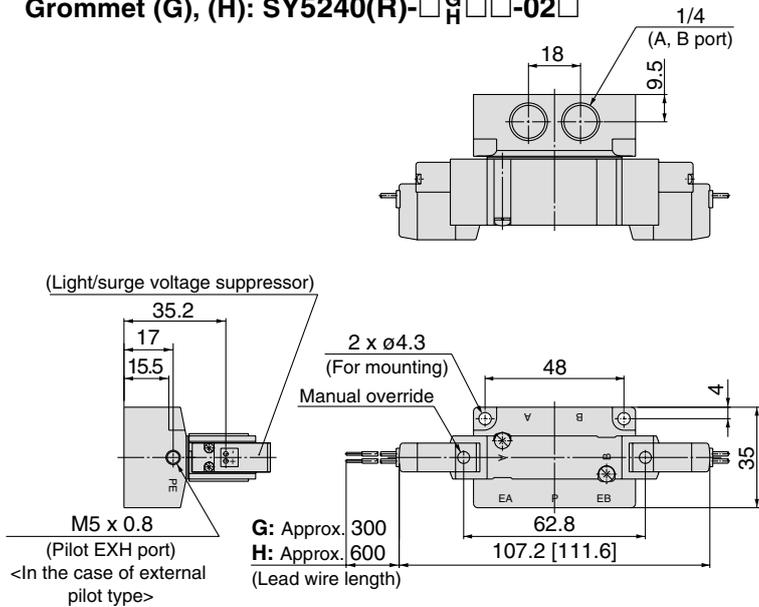
# Series SY3000/5000/7000/9000

## Dimensions: Series SY5000

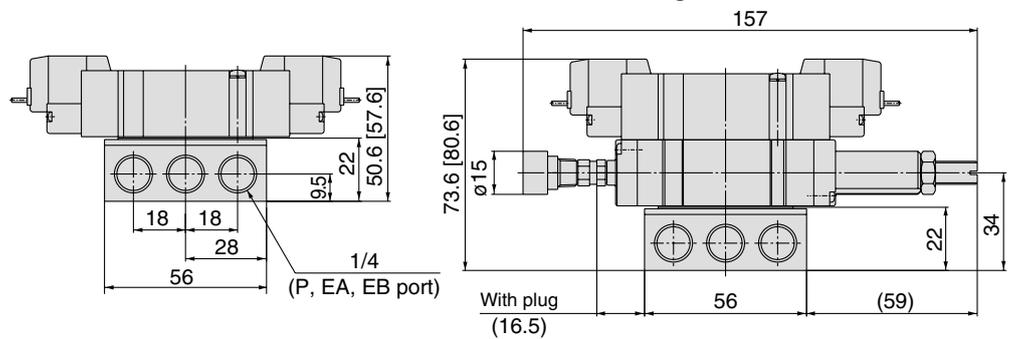


2 position double

Grommet (G), (H): SY5240(R)-□<sup>G</sup><sub>H</sub>□□-02□



With interface regulator

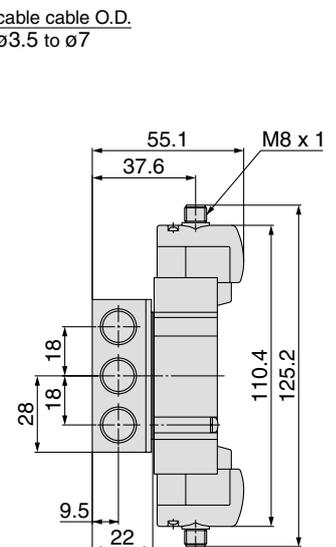
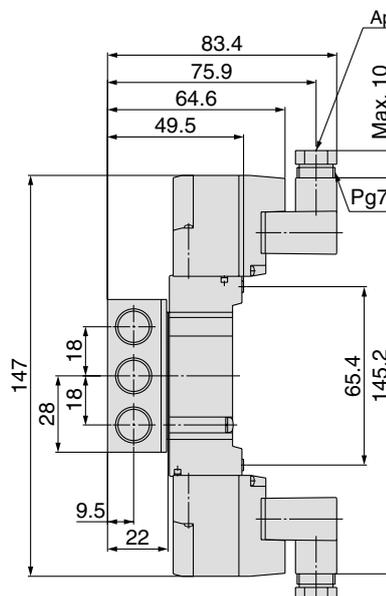
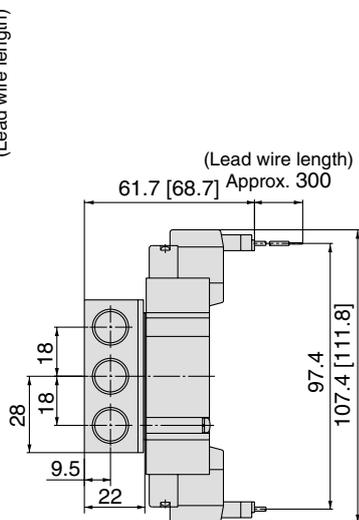
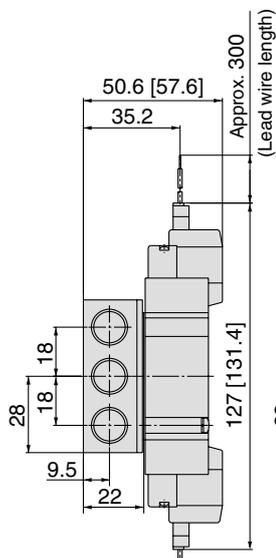


L plug connector (L): SY5240(R)-□L□□-02□

M plug connector (M): SY5240(R)-□M□□-02□

DIN terminal (D, Y): SY5240(R)-□<sup>D</sup><sub>Y</sub>□□-02□

M8 connector (WO): SY5240(R)-□WO□□-02□



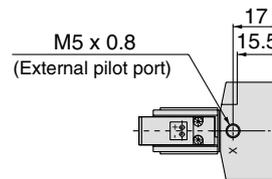
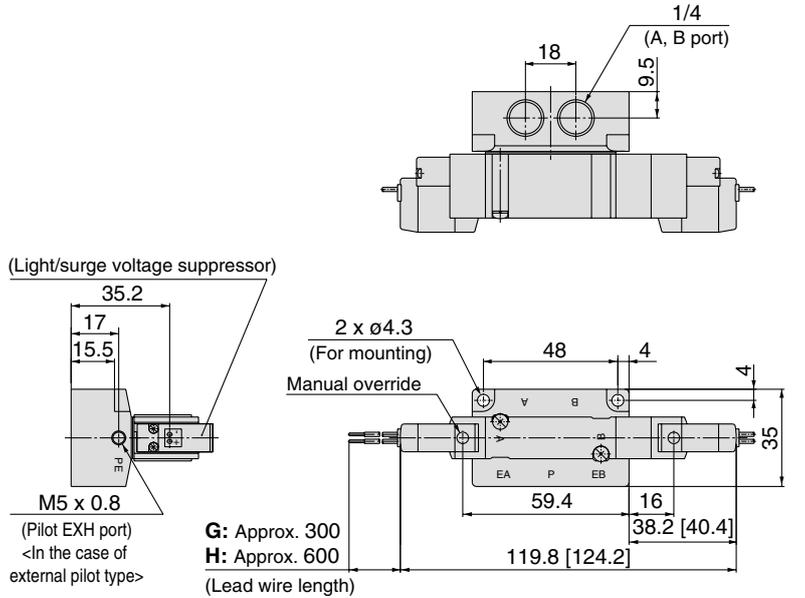
Note) Refer to page 340 for dimensions of connector types.

## Dimensions: Series SY5000

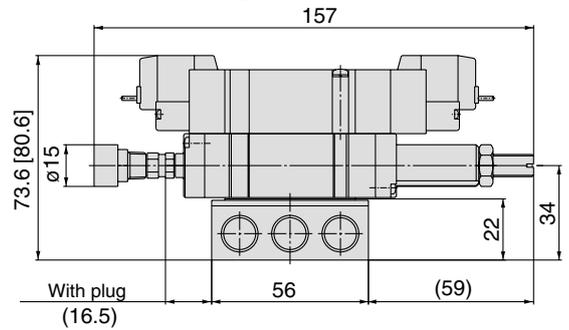


3 position closed center / exhaust center / pressure center

Grommet (G), (H): SY5<sup>3</sup>/<sub>5</sub>40(R)-□<sup>G</sup>□□-02□



### With interface regulator

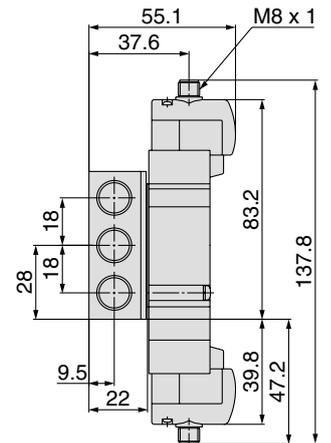
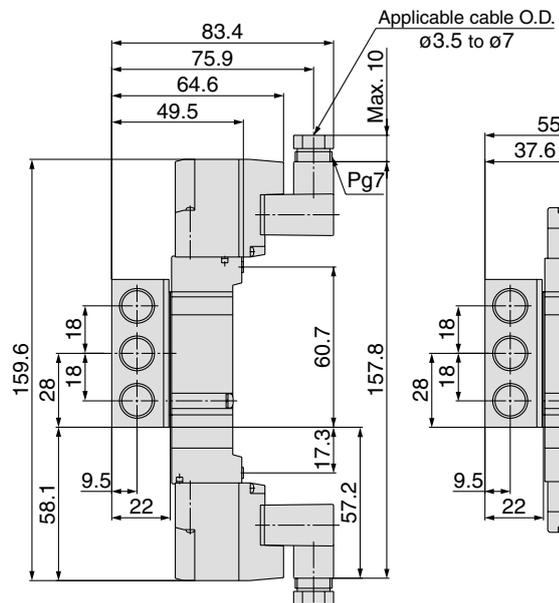
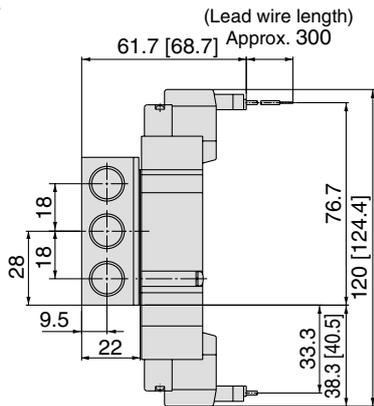
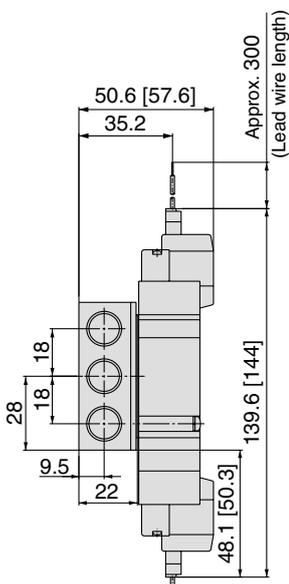


L plug connector (L):  
SY5<sup>3</sup>/<sub>5</sub>40(R)-□L□□-02□

M plug connector (M):  
SY5<sup>3</sup>/<sub>5</sub>40(R)-□M□□-02□

DIN terminal (D, Y):  
SY5<sup>3</sup>/<sub>5</sub>40(R)-□<sup>D</sup>□□-02□

M8 connector (WO):  
SY5<sup>3</sup>/<sub>5</sub>40(R)-□WO□□-02□



Note) Refer to page 340 for dimensions of connector types.

|           |
|-----------|
| SJ        |
| <b>SY</b> |
| SV        |
| SYJ       |
| SZ        |
| VP4       |
| S0700     |
| VQ        |
| VQ4       |
| VQ5       |
| VQC       |
| VQZ       |
| SQ        |
| VFS       |
| VFR       |
| VQ7       |

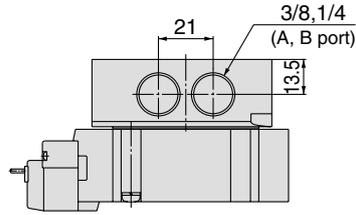
# Series SY3000/5000/7000/9000



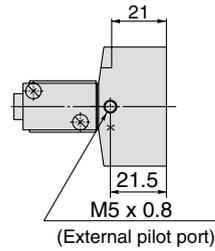
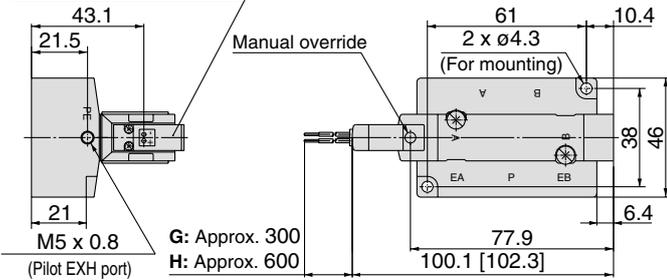
## Dimensions: Series SY7000

2 position single

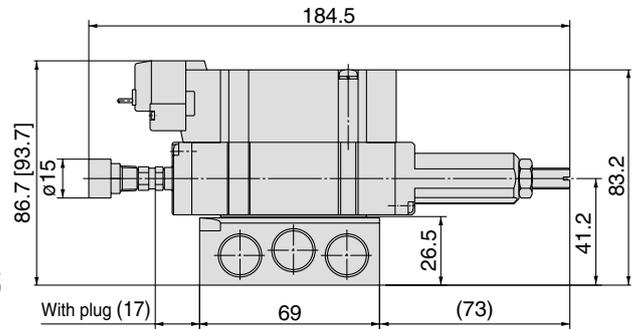
Grommet (G), (H): SY7140(R)-□<sub>G</sub>□□-02□  
□<sub>H</sub>□□-03□



(Light/surge voltage suppressor)

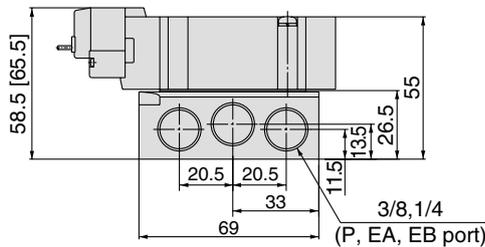


With interface regulator



M5 x 0.8  
(Pilot EXH port)  
<In the case of external pilot type>

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

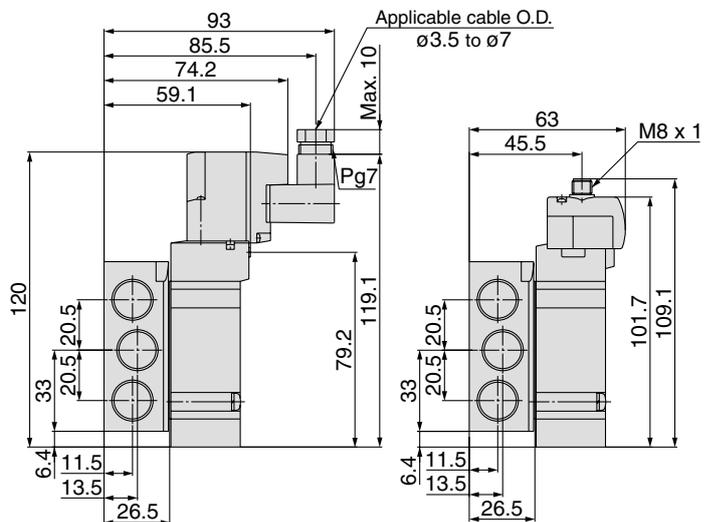
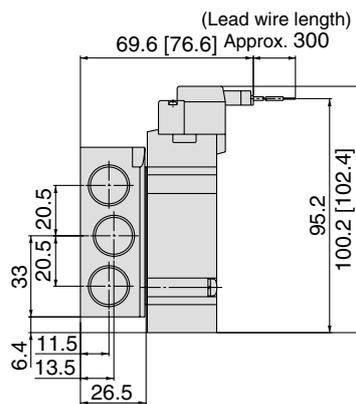
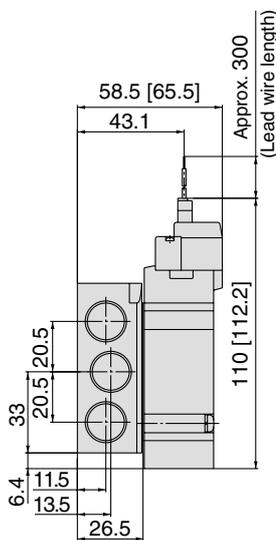


L plug connector (L):  
SY7140(R)-□L□□-02□  
□

M plug connector (M):  
SY7140(R)-□M□□-02□  
□

DIN terminal (D, Y):  
SY7140(R)-□D□□-02□  
□

M8 connector (WO):  
SY7140(R)-□WO□□-02□  
□



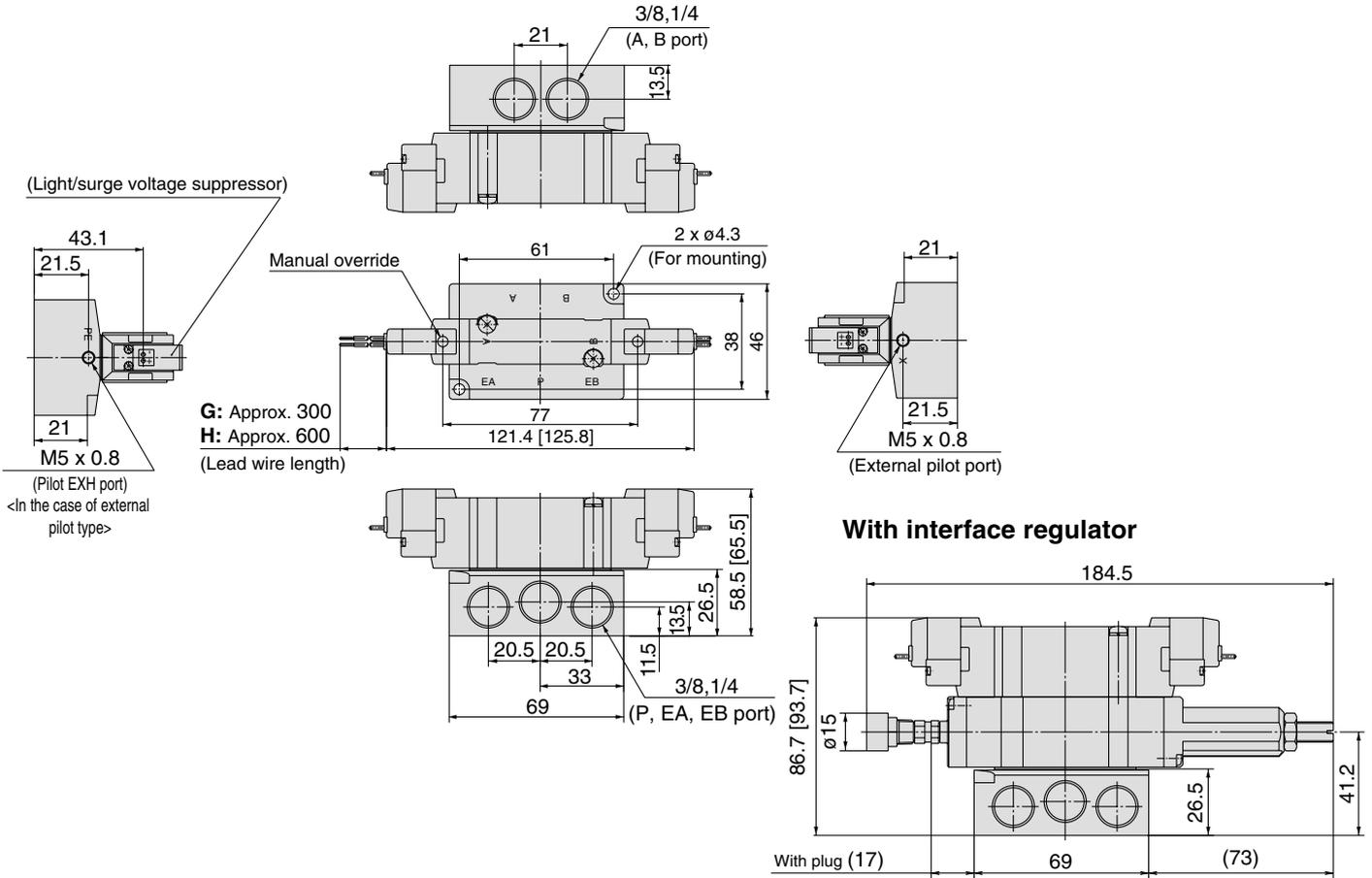
Note) Refer to page 340 for dimensions of connector types.

## Dimensions: Series SY7000



2 position double

Grommet (G), (H): SY7240(R)-□<sup>G</sup>□□-02□<sub>03</sub>



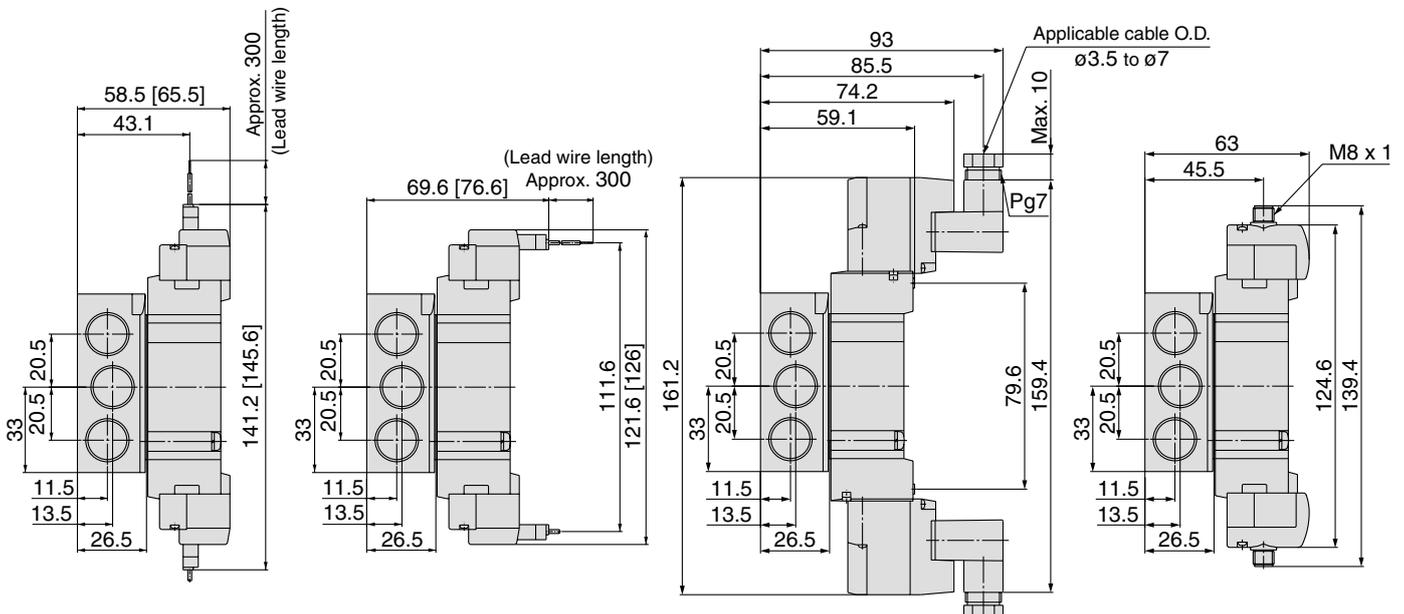
- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

L plug connector (L): SY7240(R)-□L□□-02□<sub>03</sub>

M plug connector (M): SY7240(R)-□M□□-02□<sub>03</sub>

DIN terminal (D, Y): SY7240(R)-□<sup>D</sup>□□-02□<sub>03</sub>

M8 connector (WO): SY7240(R)-□WO□□-02□<sub>03</sub>



Note) Refer to page 340 for dimensions of connector types.

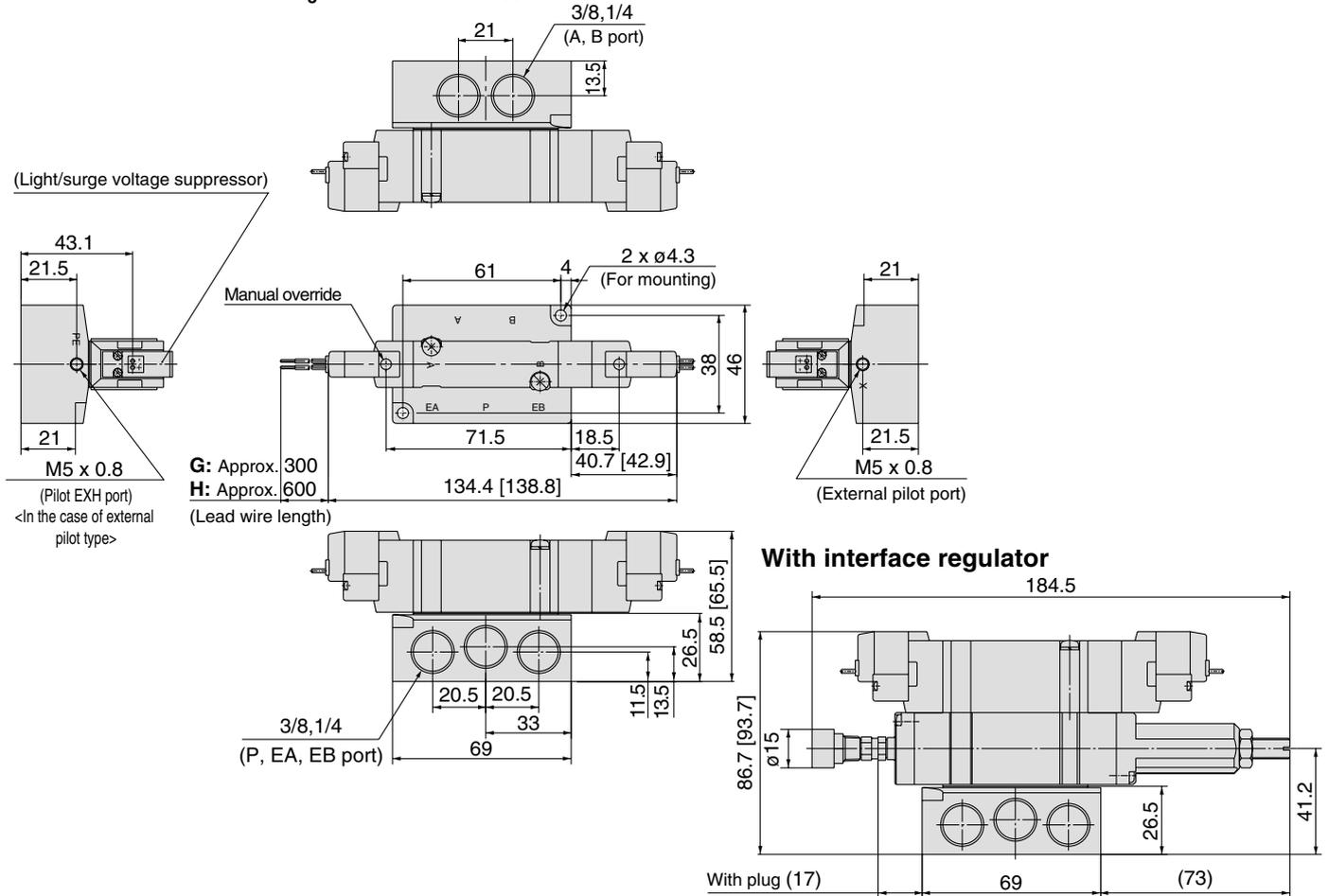
# Series SY3000/5000/7000/9000



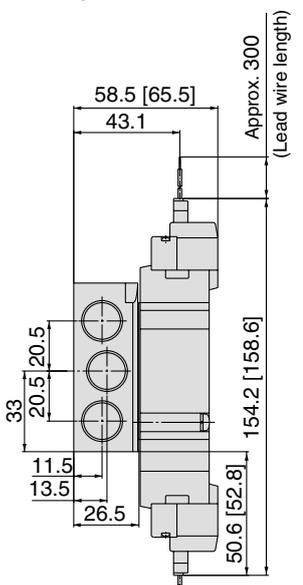
## Dimensions: Series SY7000

3 position closed center / exhaust center / pressure center

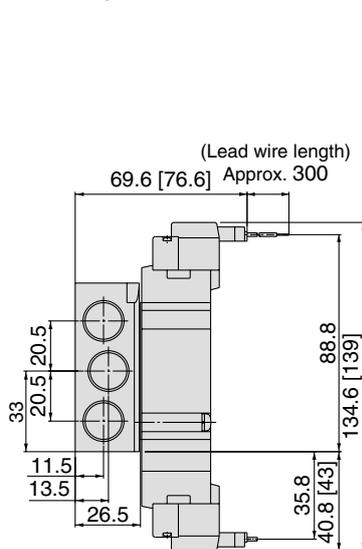
Grommet (G), (H): SY7<sup>3</sup>/<sub>5</sub>40(R)-□<sub>G</sub>□□-02□<sub>03</sub>□



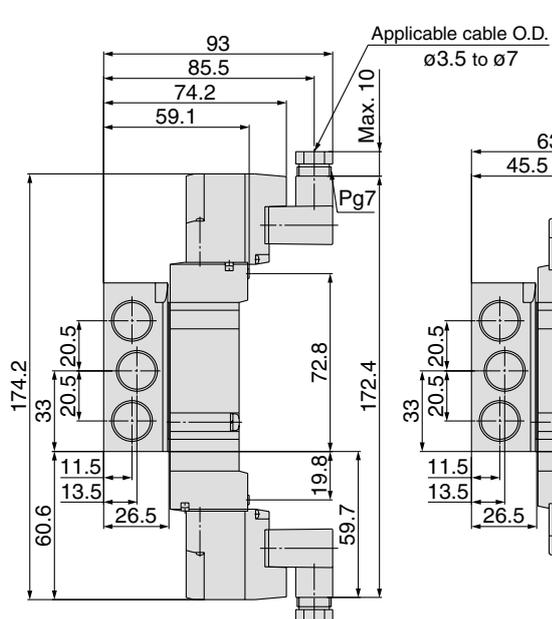
L plug connector (L):  
SY7<sup>3</sup>/<sub>5</sub>40(R)-□L□□-02□<sub>03</sub>□



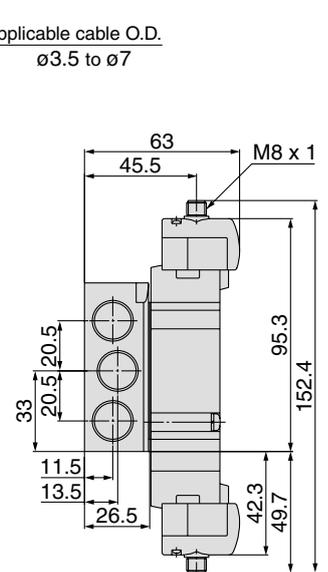
M plug connector (M):  
SY7<sup>3</sup>/<sub>5</sub>40(R)-□M□□-02□<sub>03</sub>□



DIN terminal (D, Y):  
SY7<sup>3</sup>/<sub>5</sub>40(R)-□<sub>D</sub>□□-02□<sub>03</sub>□



M8 connector (WO):  
SY7<sup>3</sup>/<sub>5</sub>40(R)-□WO□□-02□<sub>03</sub>□



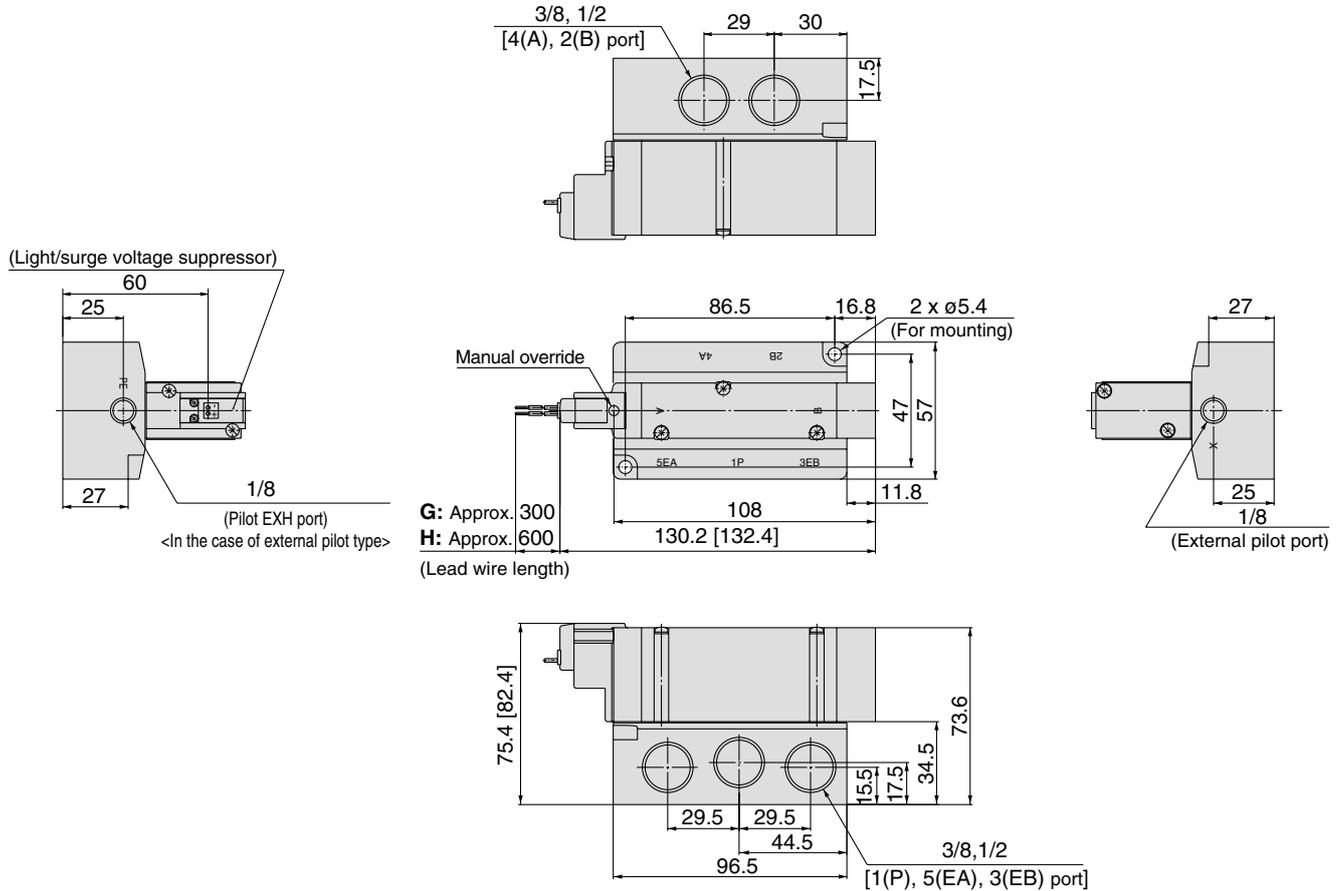
Note) Refer to page 340 for dimensions of connector types.

## Dimensions: Series SY9000



2 position single

Grommet (G), (H): SYJ9140-□<sup>G</sup><sub>H</sub>□□-03□

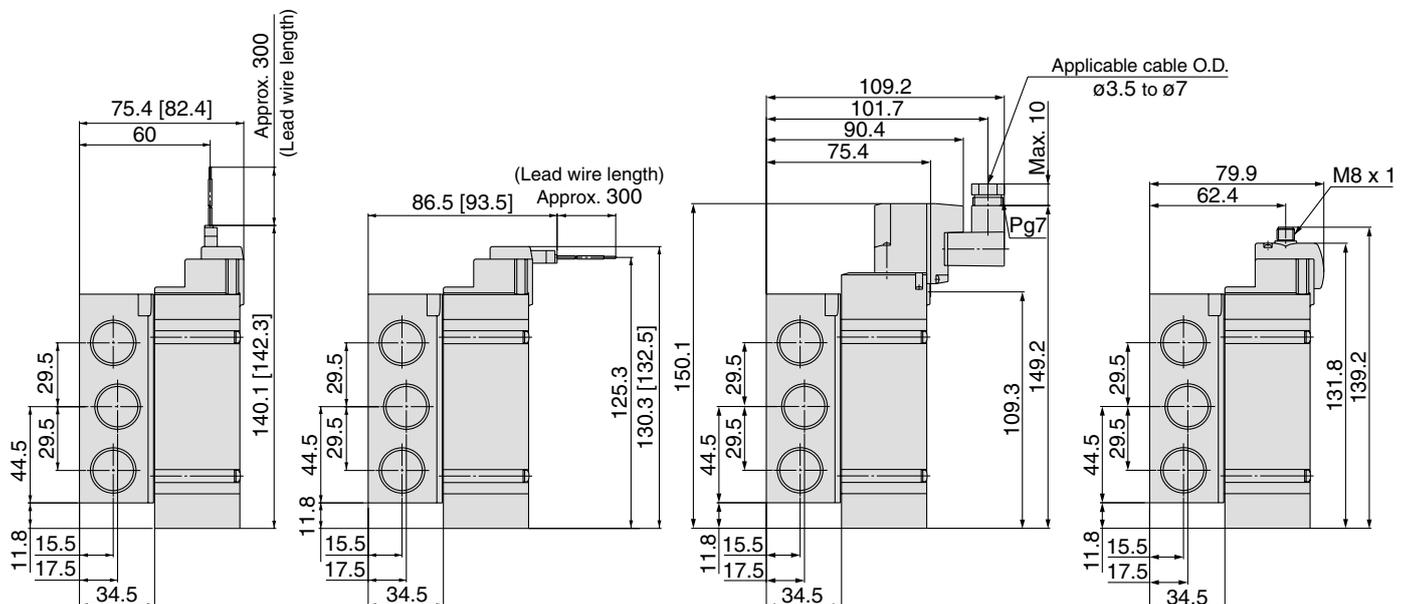


**L plug connector (L):**  
 SY9140(R)-□L□□-03□

**M plug connector (M):**  
 SY9140(R)-□M□□-03□

**DIN terminal (D, Y):**  
 SY9140(R)-□<sup>D</sup><sub>Y</sub>□□-03□

**M8 connector (WO):**  
 SY9140(R)-□WO□□-03□



Note) Refer to page 340 for dimensions of connector types.

|           |
|-----------|
| SJ        |
| <b>SY</b> |
| SV        |
| SYJ       |
| SZ        |
| VP4       |
| S0700     |
| VQ        |
| VQ4       |
| VQ5       |
| VQC       |
| VQZ       |
| SQ        |
| VFS       |
| VFR       |
| VQ7       |

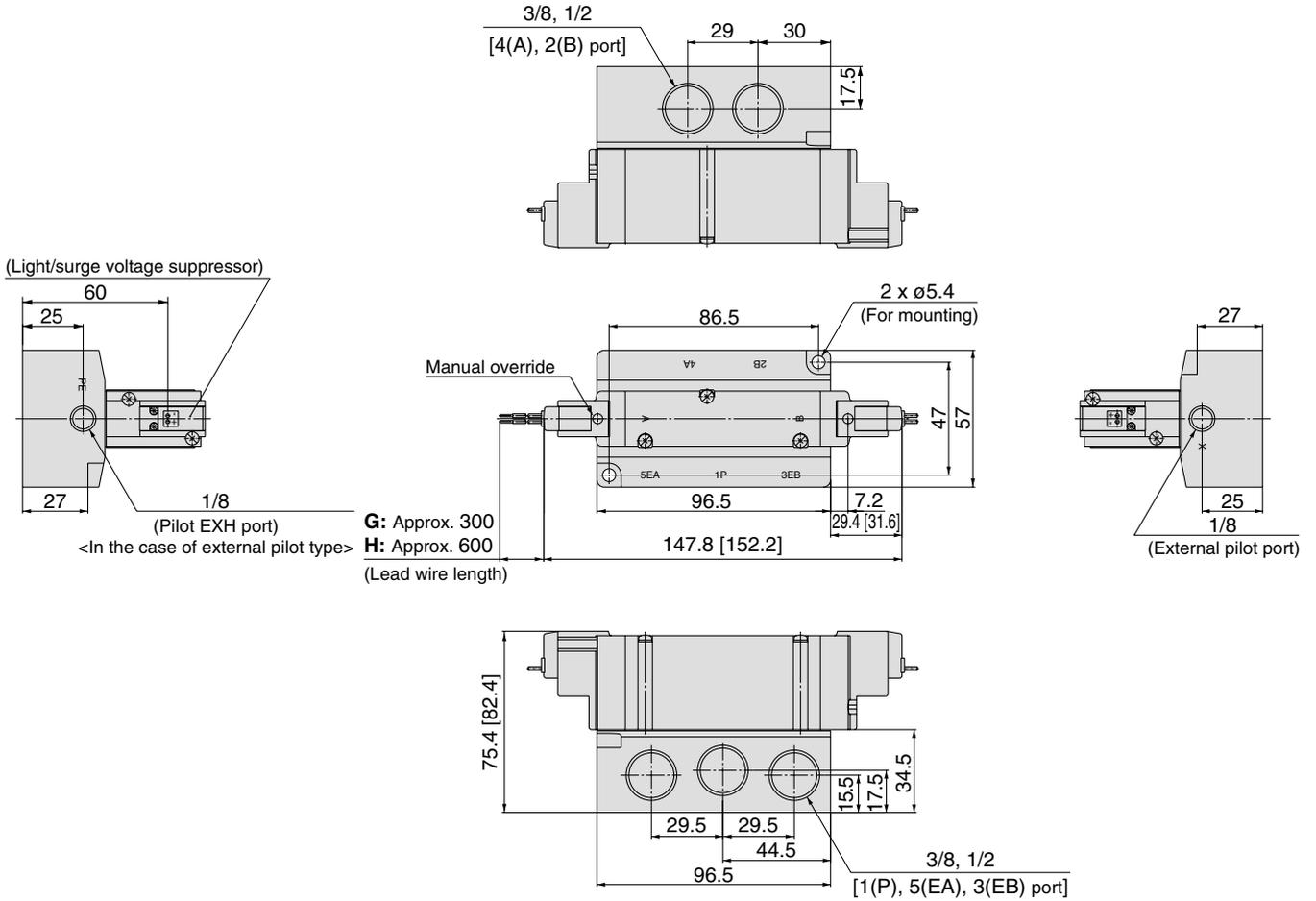
# Series SY3000/5000/7000/9000

## Dimensions: Series SY9000



2 position double

Grommet (G), (H): SY9240(R)-□G□□□-03□□

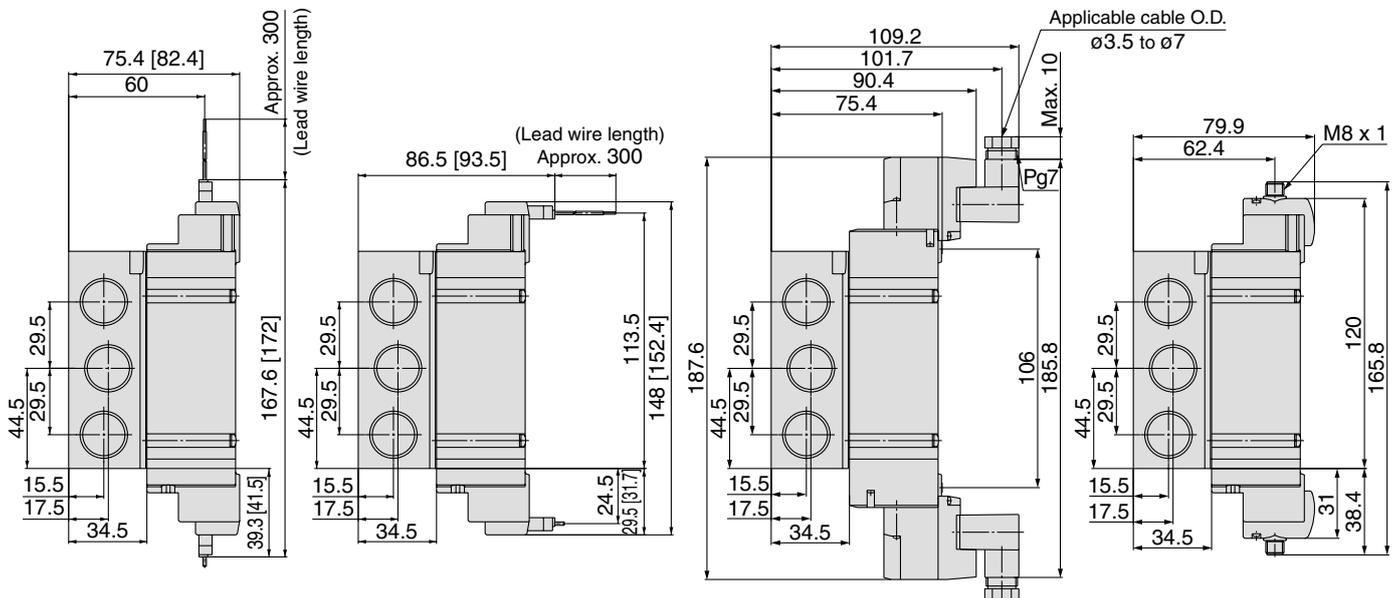


L plug connector (L):  
SY9240(R)-□L□□□-03□□

M plug connector (M):  
SY9240(R)-□M□□□-03□□

DIN terminal (D, Y):  
SY9240(R)-□D□□□-03□□

M8 connector (WO):  
SY9240(R)-□WO□□□-03□□



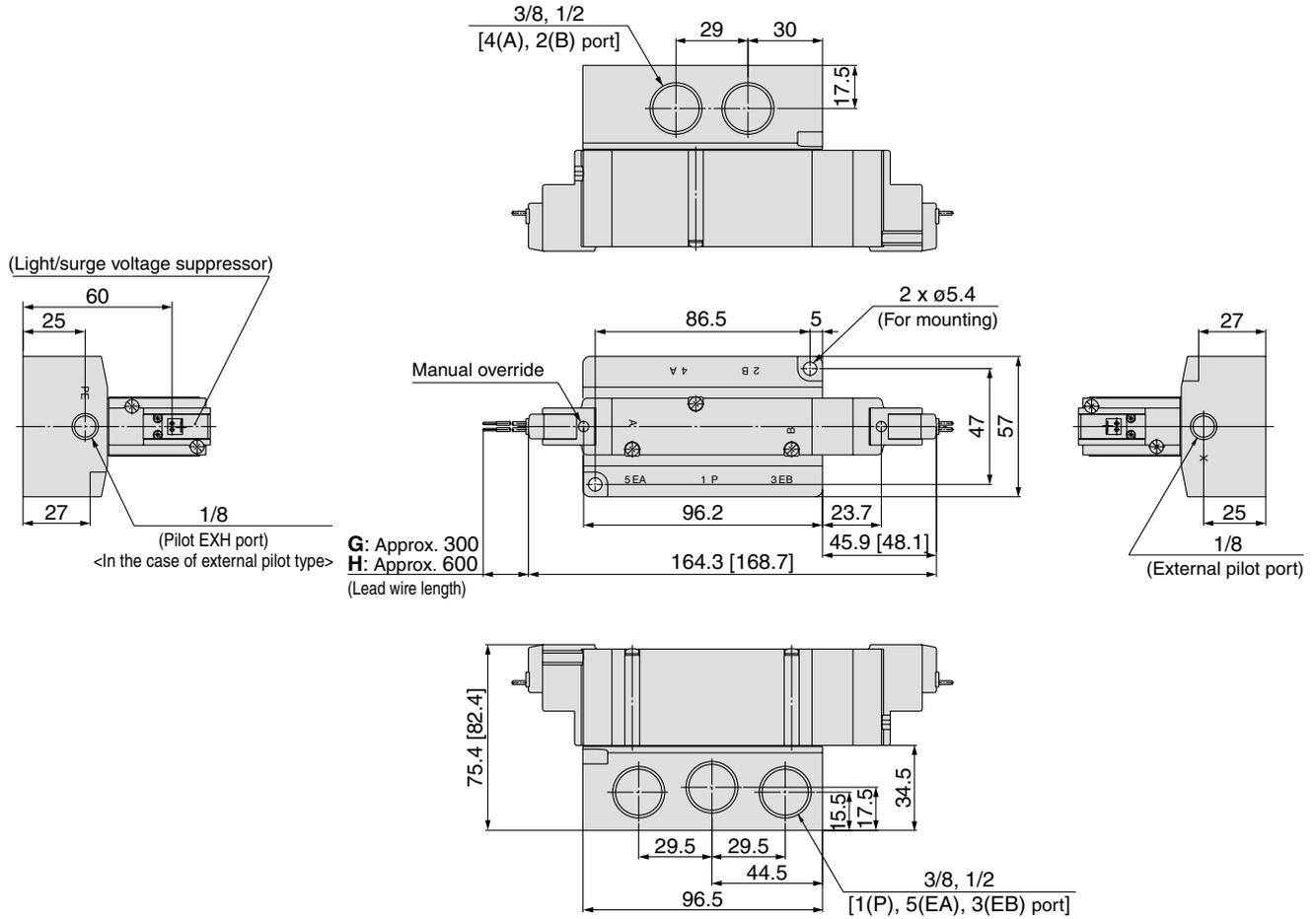
Note) Refer to page 340 for dimensions of connector types.

## Dimensions: Series SY9000



3 position closed center / exhaust center / pressure center

Grommet (G), (H): SY9<sup>3</sup><sub>5</sub>40-□□□□-<sup>03</sup><sub>04</sub>□

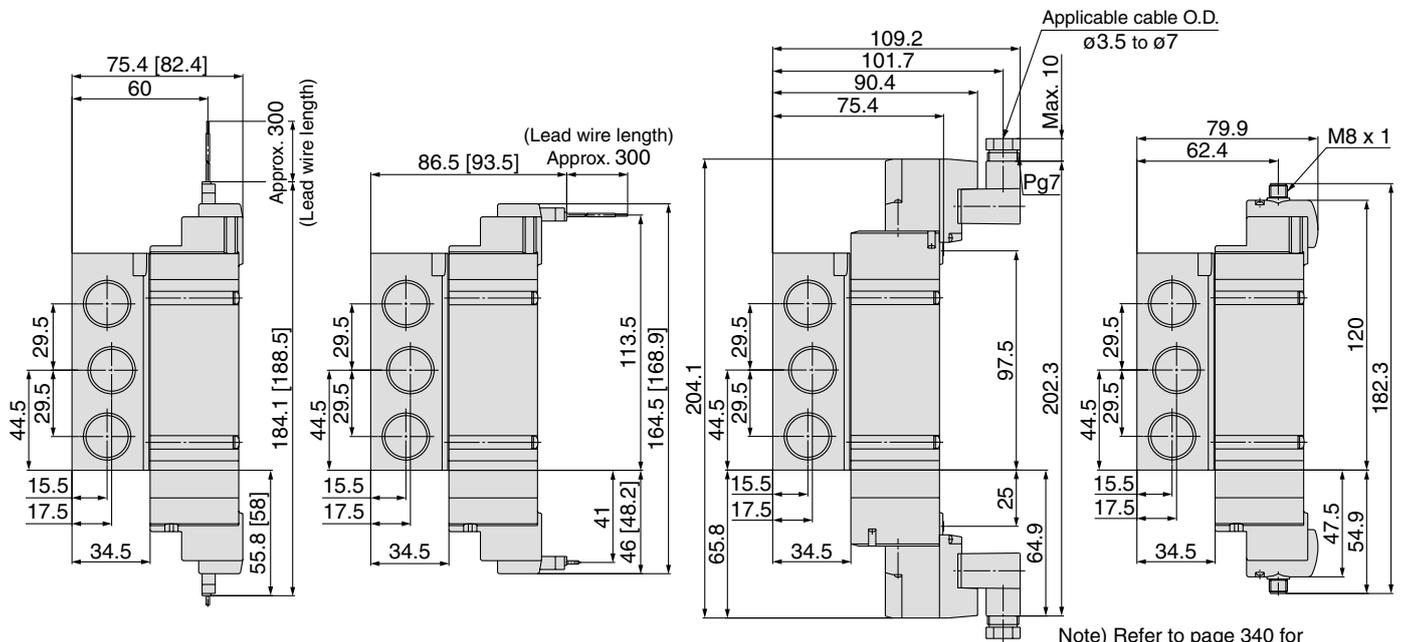


L plug connector (L):  
SY9<sup>3</sup><sub>5</sub>40(R)-□L□□-<sup>03</sup><sub>04</sub>□

M plug connector (M):  
SY9<sup>3</sup><sub>5</sub>40(R)-□M□□-<sup>03</sup><sub>04</sub>□

DIN terminal (D, Y):  
SY9<sup>3</sup><sub>5</sub>40(R)-□D□□-<sup>03</sup><sub>04</sub>□

M8 connector (WO):  
SY9<sup>3</sup><sub>5</sub>40(R)-□WO□□-<sup>03</sup><sub>04</sub>□



Note) Refer to page 340 for dimensions of connector types.

|           |
|-----------|
| SJ        |
| <b>SY</b> |
| SV        |
| SYJ       |
| SZ        |
| VP4       |
| S0700     |
| VQ        |
| VQ4       |
| VQ5       |
| VQC       |
| VQZ       |
| SQ        |
| VFS       |
| VFR       |
| VQ7       |

# 5 Port Solenoid Valve Body Ported Manifold Bar Stock Type/Individual Wiring

## Series SY3000/5000/7000

Type **20**



### How to Order Manifold

SS5Y **5** - 20 - **05** - [ ] - [ ]

#### Manifold series

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |
| 7 | SY7000 |

#### Stations

|    |             |
|----|-------------|
| 02 | 2 stations  |
| ⋮  | ⋮           |
| 20 | 20 stations |



\* This also includes the number of blanking plate assemblies.

#### Thread type

|     |      |
|-----|------|
| Nil | Rc   |
| 00F | G    |
| 00N | NPT  |
| 00T | NPTF |

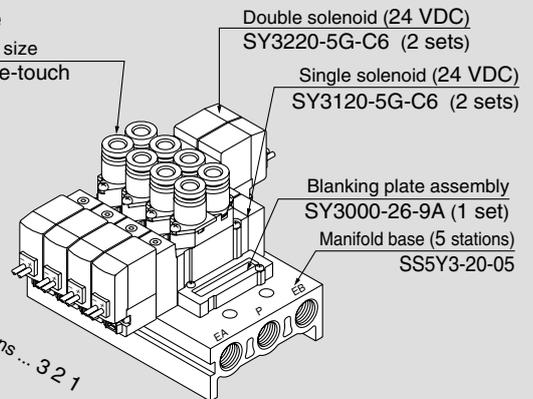
#### CE-compliant

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

### How to Order Manifold Assembly (Example)

#### Example

Cylinder port size  
C6: With one-touch  
fitting for ø6

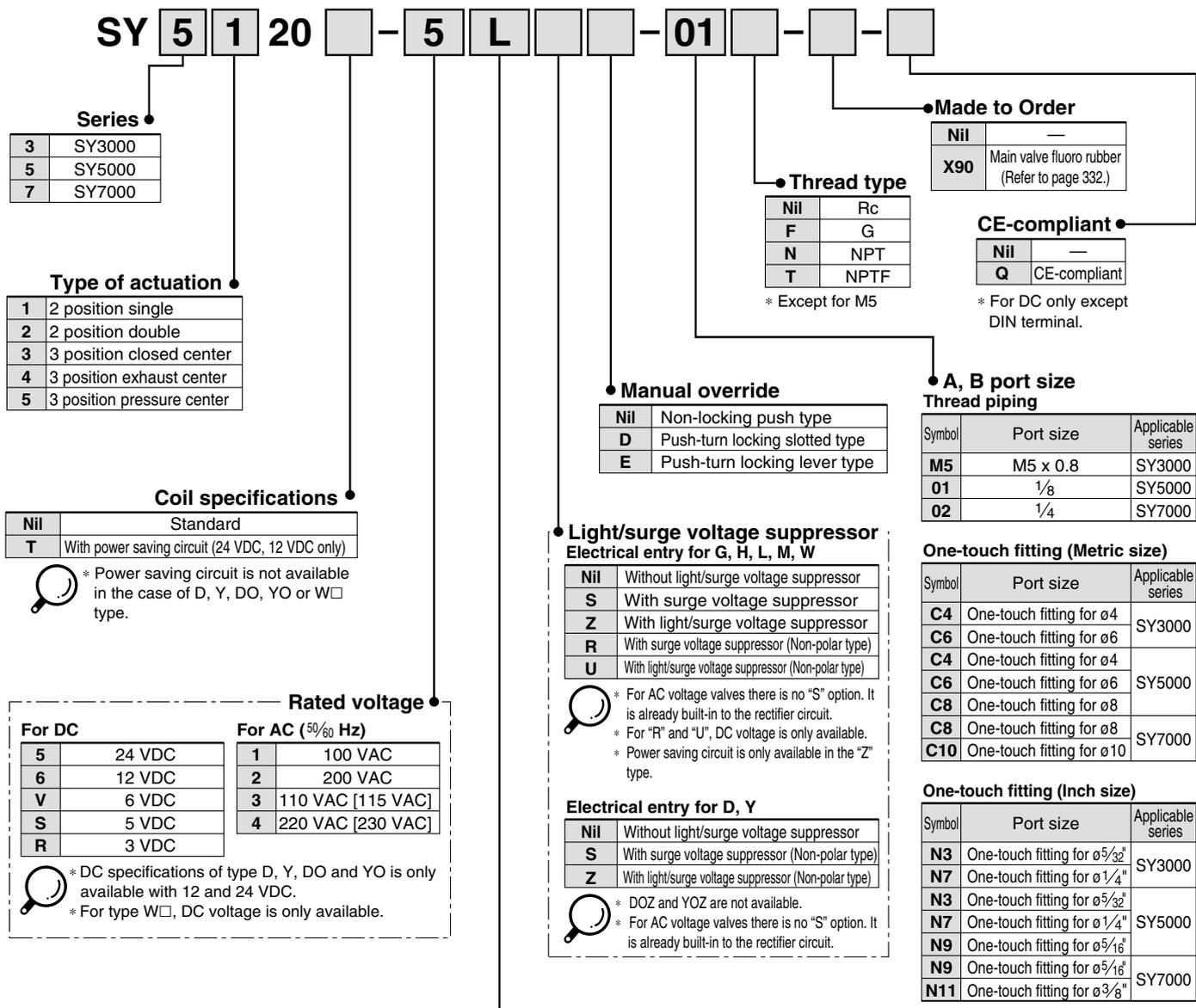


- SS5Y3-20-05 ..... 1 set (Type 20, 5-station manifold base part no.)
- \* SY3000-26-9A ..... 1 set (Blanking plate assembly part no.)
- \* SY3120-5G-C6 ... 2 sets (Single solenoid part no.)
- \* SY3220-5G-C6 ... 2 sets (Double solenoid part no.)

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

Add the valve and option part number under the manifold base part number.  
In the case of complex arrangement, specify them on the manifold specification sheet.

## How to Order Valve



**Series**

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |
| 7 | SY7000 |

**Type of actuation**

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

**Coil specifications**

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

\* Power saving circuit is not available in the case of D, Y, DO, YO or W□ type.

**Rated voltage**

| For DC |        | For AC (50/60 Hz) |                   |
|--------|--------|-------------------|-------------------|
| 5      | 24 VDC | 1                 | 100 VAC           |
| 6      | 12 VDC | 2                 | 200 VAC           |
| V      | 6 VDC  | 3                 | 110 VAC [115 VAC] |
| S      | 5 VDC  | 4                 | 220 VAC [230 VAC] |
| R      | 3 VDC  |                   |                   |

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

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

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

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

**Electrical entry for D, Y**

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

\* DOZ and YOZ are not available.  
\* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

**Made to Order**

|     |                                               |
|-----|-----------------------------------------------|
| Nil | —                                             |
| X90 | Main valve fluoro rubber (Refer to page 332.) |

**Thread type**

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

\* Except for M5

**CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

\* For DC only except DIN terminal.

**A, B port size Thread piping**

| Symbol | Port size | Applicable series |
|--------|-----------|-------------------|
| M5     | M5 x 0.8  | SY3000            |
| 01     | 1/8       | SY5000            |
| 02     | 1/4       | SY7000            |

**One-touch fitting (Metric size)**

| Symbol | Port size                 | Applicable series |
|--------|---------------------------|-------------------|
| C4     | One-touch fitting for ø4  | SY3000            |
| C6     | One-touch fitting for ø6  |                   |
| C4     | One-touch fitting for ø4  | SY5000            |
| C6     | One-touch fitting for ø6  |                   |
| C8     | One-touch fitting for ø8  | SY7000            |
| C10    | One-touch fitting for ø10 |                   |

**One-touch fitting (Inch size)**

| Symbol | Port size                    | Applicable series |
|--------|------------------------------|-------------------|
| N3     | One-touch fitting for ø5/32" | SY3000            |
| N7     | One-touch fitting for ø1/4"  |                   |
| N3     | One-touch fitting for ø5/32" | SY5000            |
| N7     | One-touch fitting for ø1/4"  |                   |
| N9     | One-touch fitting for ø5/16" | SY7000            |
| N9     | One-touch fitting for ø5/16" |                   |
| N11    | One-touch fitting for ø3/8"  |                   |

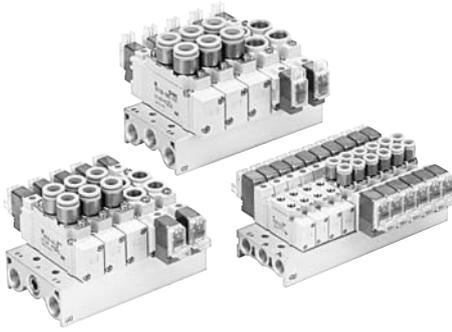
**Electrical entry**

| 24, 12, 6, 5, 3 VDC/<br>100, 110, 200, 220 VAC           |                                                                                     |                                                                                     | 24, 12 VDC/<br>100, 110, 200,<br>220 VAC                                                 | 24, 12, 6, 5, 3 VDC                                            |
|----------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| Grommet                                                  | L plug connector                                                                    | M plug connector                                                                    | DIN terminal                                                                             | M8 connector                                                   |
| G: Lead wire length 300 mm<br>H: Lead wire length 600 mm | L: With lead wire (Length 300 mm)<br>LN: Without lead wire<br>LO: Without connector | M: With lead wire (Length 300 mm)<br>MN: Without lead wire<br>MO: Without connector | D: With connector<br>DO: Without connector<br>Y: With connector<br>YO: Without connector | WO: Without connector cable<br>W□: With connector cable (Note) |

\* LN, MN type: with 2 sockets.  
\* For DIN terminal of SY3000 series, refer to page 337.  
\* "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). For details, refer to page 336.  
\* For connector cable of M8 connector, refer to page 339.  
\* M8 thread conforming to IEC60947-5-2 standard is also available. Refer to page 331 for details.  
\* Refer to page 336 for the lead wire length of L and M plug connectors.  
\* Refer to page 337 for the connector assembly with cover for L and M plug connectors.  
Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.

Note) When placing an order for body ported solenoid valve as a single unit, mounting screw for manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to page 173.)

- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7



## Manifold Specifications

|                                         |                                    |                                                                            |                                                                                                        |     |                                                                         |     |
|-----------------------------------------|------------------------------------|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-----|-------------------------------------------------------------------------|-----|
| Model                                   | <b>SS5Y3-20(-Q)</b>                |                                                                            | <b>SS5Y5-20(-Q)</b>                                                                                    |     | <b>SS5Y7-20(-Q)</b>                                                     |     |
| Applicable valve                        | <b>SY3□20</b>                      |                                                                            | <b>SY5□20</b>                                                                                          |     | <b>SY7□20</b>                                                           |     |
| Manifold type                           | Single base/B mount                |                                                                            |                                                                                                        |     |                                                                         |     |
| P (SUP)/R (EXH)                         | Common SUP, Common EXH             |                                                                            |                                                                                                        |     |                                                                         |     |
| Valve stations                          | 2 to 20 stations <sup>Note1)</sup> |                                                                            |                                                                                                        |     |                                                                         |     |
| A, B port location                      | Valve                              |                                                                            |                                                                                                        |     |                                                                         |     |
| Port size                               | P, EA, EB port                     | 1/8                                                                        |                                                                                                        | 1/4 |                                                                         | 1/4 |
|                                         | A, B port                          | M5 x 0.8<br>C4 (One-touch fitting for ø4)<br>C6 (One-touch fitting for ø6) | 1/8<br>C4 (One-touch fitting for ø4)<br>C6 (One-touch fitting for ø6)<br>C8 (One-touch fitting for ø8) |     | 1/4<br>C8 (One-touch fitting for ø8)<br>C10 (One-touch fitting for ø10) |     |
| Manifold base mass W (g)<br>n: Stations | W = 13n + 35                       |                                                                            | W = 36n + 64                                                                                           |     | W = 43n + 64                                                            |     |

- Note 1) For more than 10 stations (more than 5 stations in case of SS5Y7), supply pressure to P port on both sides and exhaust from EA/EB port on both sides.  
 Note 2) Refer to "Manifold Option" on page 173.

## Flow Characteristics

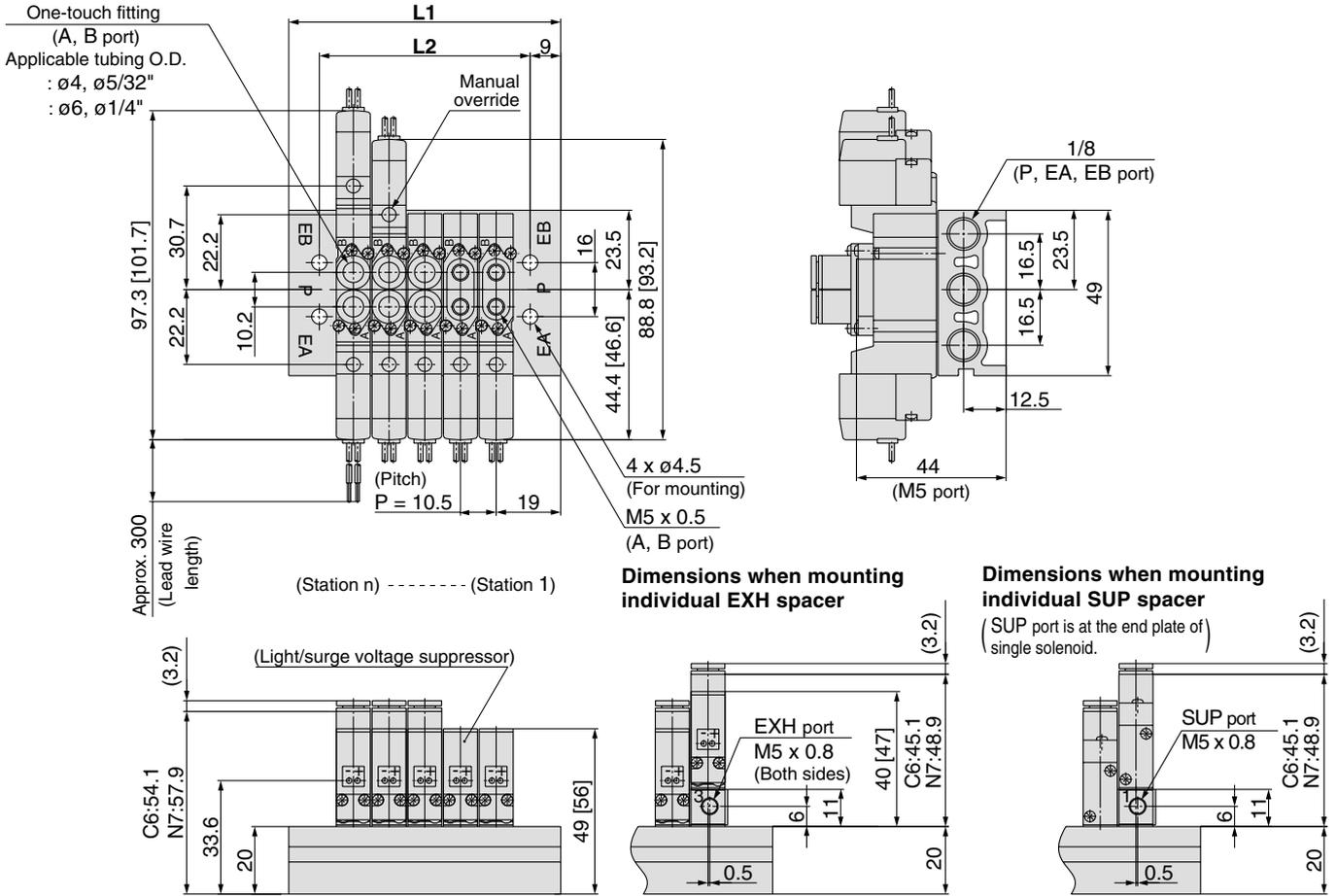
| Model               | Port size              |                | Flow characteristics         |      |      |                              |      |      |
|---------------------|------------------------|----------------|------------------------------|------|------|------------------------------|------|------|
|                     | 1, 5, 3<br>(P, EA, EB) | 4, 2<br>(A, B) | 1 → 4/2 (P → A/B)            |      |      | 4/2 → 5/3 (A/B → EA/EB)      |      |      |
|                     |                        |                | C (dm <sup>3</sup> /(s·bar)) | b    | Cv   | C (dm <sup>3</sup> /(s·bar)) | b    | Cv   |
| <b>SS5Y3-20(-Q)</b> | 1/8                    | C6             | 0.72                         | 0.29 | 0.18 | 0.80                         | 0.36 | 0.21 |
| <b>SS5Y5-20(-Q)</b> | 1/4                    | C8             | 1.9                          | 0.28 | 0.48 | 2.2                          | 0.20 | 0.53 |
| <b>SS5Y7-20(-Q)</b> | 1/4                    | C10            | 3.6                          | 0.31 | 0.93 | 3.6                          | 0.27 | 0.88 |

- Note) The value is for manifold base with 5 stations and individually operated 2 position type.

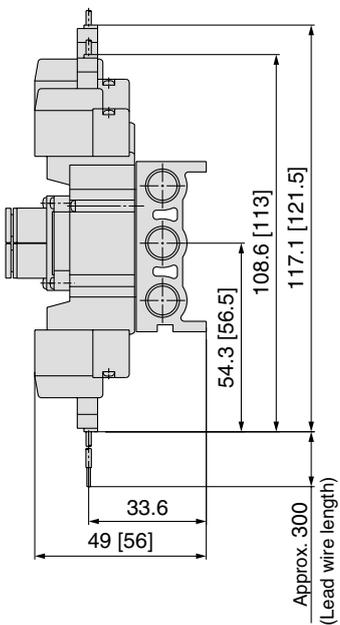
**SY3000: SS5Y3-20-Stations** -



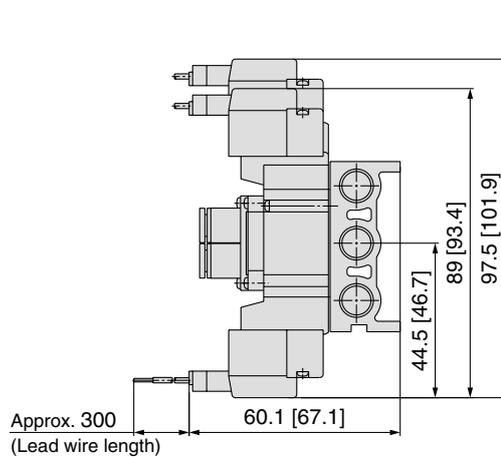
**Grommet (G)**



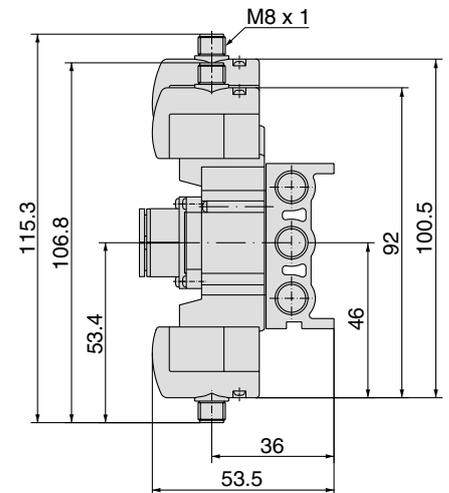
**L plug connector (L)**



**M plug connector (M)**



**M8 connector (WO)**



Note) Refer to page 340 for dimensions of connector types.

| Stations n | 2 stations | 3  | 4    | 5  | 6    | 7   | 8     | 9   | 10    | 11  | 12    | 13  | 14    | 15  | 16    | 17  | 18    | 19  | 20 stations |
|------------|------------|----|------|----|------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------------|
| L1         | 48.5       | 59 | 69.5 | 80 | 90.5 | 101 | 111.5 | 122 | 132.5 | 143 | 153.5 | 164 | 174.5 | 185 | 195.5 | 206 | 216.5 | 227 | 237.5       |
| L2         | 30.5       | 41 | 51.5 | 62 | 72.5 | 83  | 93.5  | 104 | 114.5 | 125 | 135.5 | 146 | 156.5 | 167 | 177.5 | 188 | 198.5 | 209 | 219.5       |

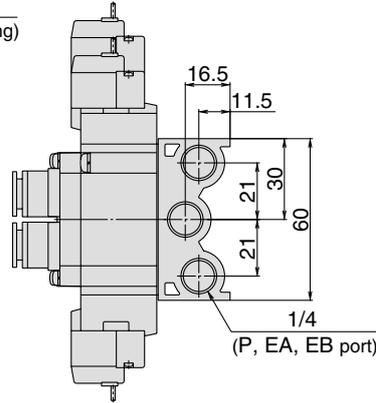
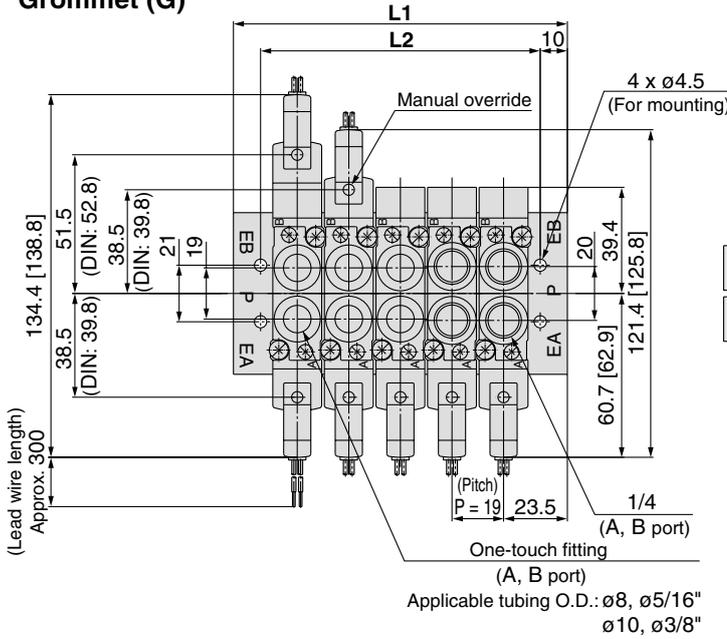
- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7



**SY7000: SS5Y7-20-Stations** -

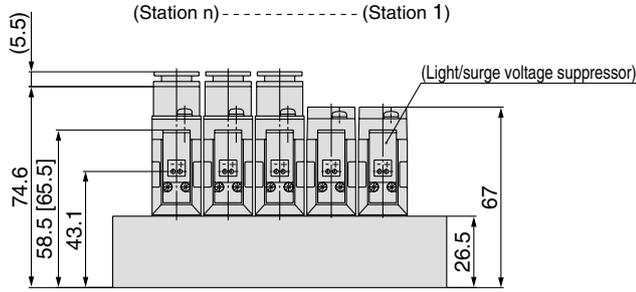
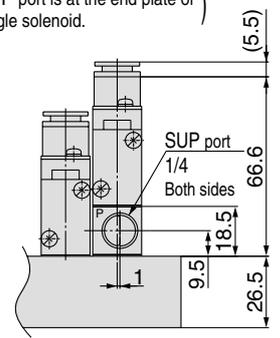
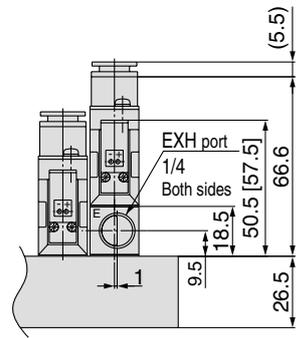


**Grommet (G)**



**Dimensions when mounting individual EXH spacer**

**Dimensions when mounting individual SUP spacer**  
(SUP port is at the end plate of) single solenoid.

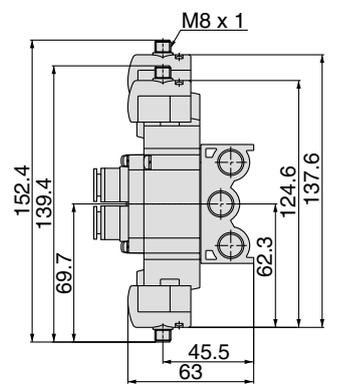
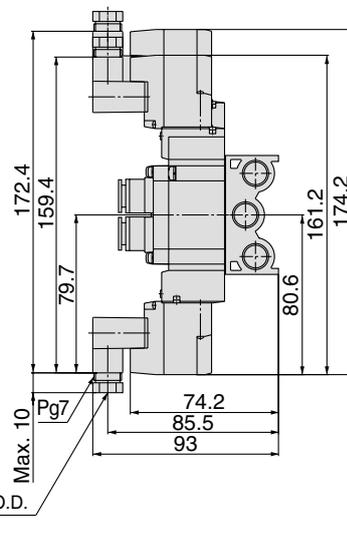
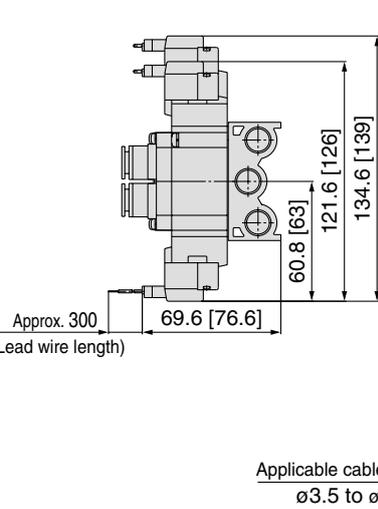
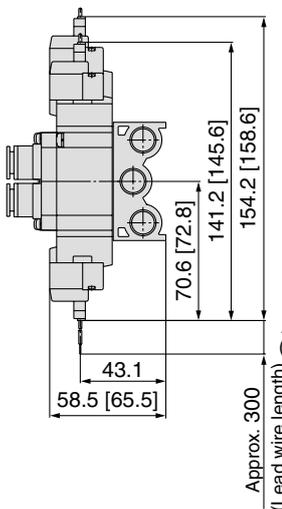


**L plug connector (L)**

**M plug connector (M)**

**DIN terminal (D, Y)**

**M8 connector (WO)**



Note) Refer to page 340 for dimensions of connector types.

| Stations n | 2 stations | 3  | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20 stations |
|------------|------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------|
| L1         | 66         | 85 | 104 | 123 | 142 | 161 | 180 | 199 | 218 | 237 | 256 | 275 | 294 | 313 | 332 | 351 | 370 | 389 | 408         |
| L2         | 46         | 65 | 84  | 103 | 122 | 141 | 160 | 179 | 198 | 217 | 236 | 255 | 274 | 293 | 312 | 331 | 350 | 369 | 388         |

- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

# 5 Port Solenoid Valve Body Ported Manifold Stacking Type/Individual Wiring



Type **23**

## Series SY9000

### How to Order Manifold

**SS5Y 9-23-05** - [ ] - [ ] - [ ]

**Manifold series**  
9 SY9000

**Valve stations**

| Symbol | Stations    |
|--------|-------------|
| 02     | 2 stations  |
| ⋮      | ⋮           |
| 20     | 20 stations |

\* This also includes the number of blanking plate assemblies.

**Thread type**

|     |      |
|-----|------|
| Nil | Rc   |
| 00F | G    |
| 00N | NPT  |
| 00T | NPTF |

**Option**

| Symbol | Mounting                                                                                                              |
|--------|-----------------------------------------------------------------------------------------------------------------------|
| Nil    | Direct mounting                                                                                                       |
| D      | DIN rail mounting (with DIN rail)                                                                                     |
| D0     | DIN rail mounting (without DIN rail)                                                                                  |
| D*     | When a longer DIN rail is desired than the specified stations, specify the station number to be required into * mark. |

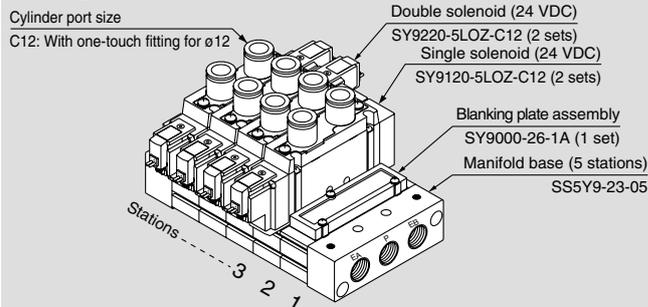
**CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

\* Type 23 manifold of Series SY9000 is concurrently used for the internal and external pilot.

### How to Order Manifold Assembly (Example)

#### Example

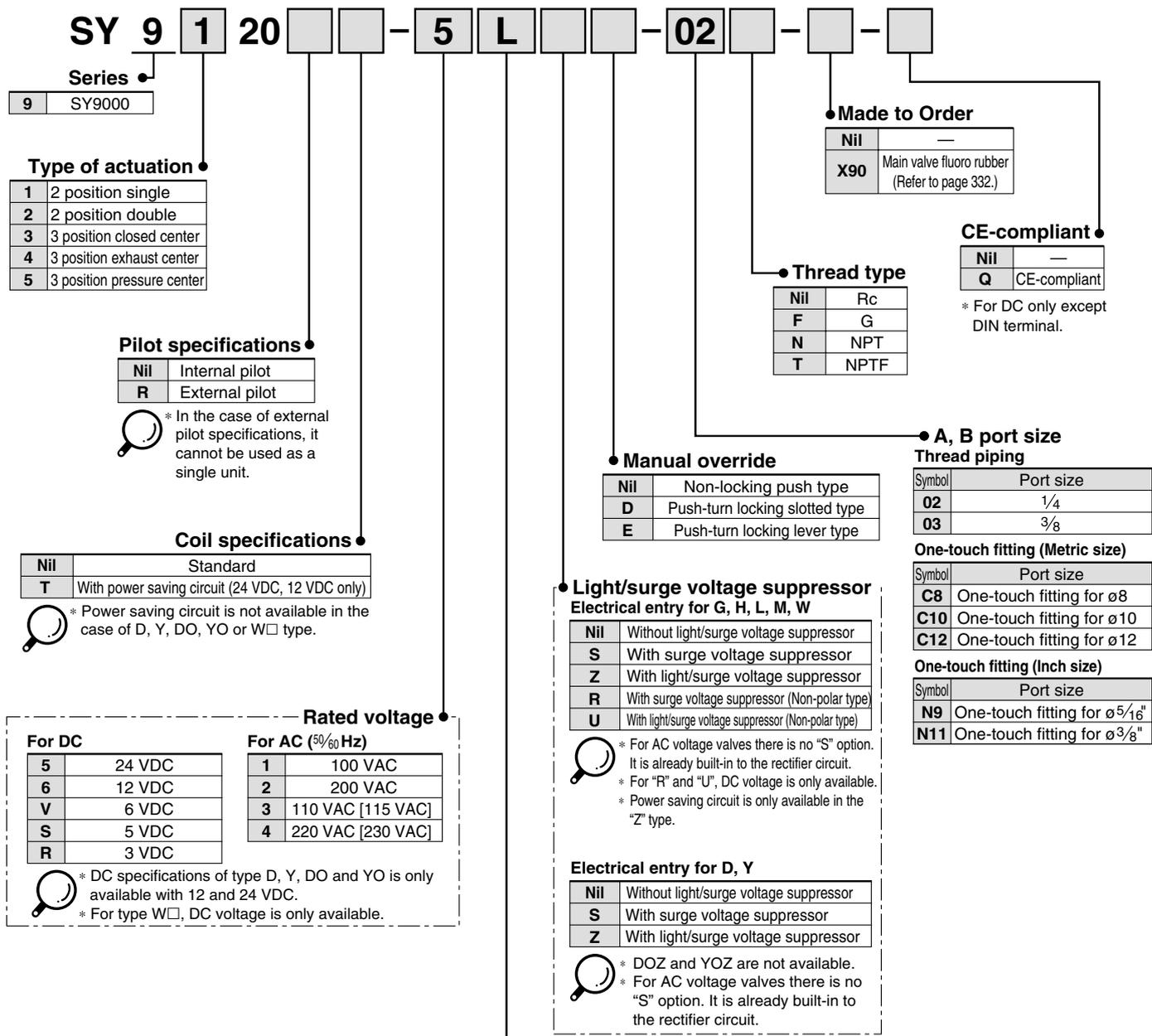


**SS5Y9-23-05** ..... 1 set (Type 23, 5-station manifold base part no.)  
 \* **SY9000-26-1A** ..... 1 set (Blanking plate assembly part no.)  
 \* **SY9120-5LOZ-C12** ... 2 sets (Single solenoid part no.)  
 \* **SY9220-5LOZ-C12** ... 2 sets (Double solenoid part no.)

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

Add the valve and option part number under the manifold base part number. In the case of complex arrangement, specify them on the manifold specification sheet.

## How to Order Valve



- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

**Series**

|   |        |
|---|--------|
| 9 | SY9000 |
|---|--------|

**Type of actuation**

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

**Pilot specifications**

|     |                |
|-----|----------------|
| Nil | Internal pilot |
| R   | External pilot |

\* In the case of external pilot specifications, it cannot be used as a single unit.

**Coil specifications**

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

\* Power saving circuit is not available in the case of D, Y, DO, YO or W□ type.

**Rated voltage**

| For DC |        | For AC (50/60 Hz) |                   |
|--------|--------|-------------------|-------------------|
| 5      | 24 VDC | 1                 | 100 VAC           |
| 6      | 12 VDC | 2                 | 200 VAC           |
| V      | 6 VDC  | 3                 | 110 VAC [115 VAC] |
| S      | 5 VDC  | 4                 | 220 VAC [230 VAC] |
| R      | 3 VDC  |                   |                   |

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

**Made to Order**

|     |                                               |
|-----|-----------------------------------------------|
| Nil | —                                             |
| X90 | Main valve fluoro rubber (Refer to page 332.) |

**Thread type**

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

**CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

\* For DC only except DIN terminal.

**Manual override**

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

**A, B port size Thread piping**

| Symbol | Port size |
|--------|-----------|
| 02     | 1/4       |
| 03     | 3/8       |

**One-touch fitting (Metric size)**

| Symbol | Port size                 |
|--------|---------------------------|
| C8     | One-touch fitting for ø8  |
| C10    | One-touch fitting for ø10 |
| C12    | One-touch fitting for ø12 |

**One-touch fitting (Inch size)**

| Symbol | Port size                    |
|--------|------------------------------|
| N9     | One-touch fitting for ø5/16" |
| N11    | One-touch fitting for ø3/8"  |

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

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

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

**Electrical entry for D, Y**

|     |                                        |
|-----|----------------------------------------|
| Nil | Without light/surge voltage suppressor |
| S   | With surge voltage suppressor          |
| Z   | With light/surge voltage suppressor    |

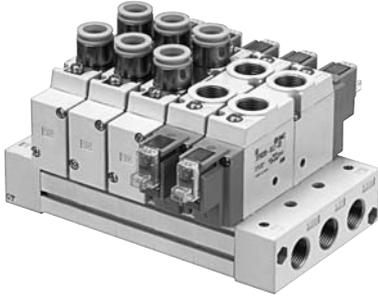
\* DOZ and YOZ are not available.  
\* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

**Electrical entry**

| 24, 12, 6, 5, 3 VDC/<br>100, 110, 200, 220 VAC           |                                                                                     |                                                                                     | 24, 12 VDC/<br>100, 110, 200,<br>220 VAC                                                 | 24, 12, 6,<br>5, 3 VDC                                                   |
|----------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| Grommet                                                  | L plug connector                                                                    | M plug connector                                                                    | DIN terminal                                                                             | M8 connector                                                             |
| G: Lead wire length 300 mm<br>H: Lead wire length 600 mm | L: With lead wire (Length 300 mm)<br>LN: Without lead wire<br>LO: Without connector | M: With lead wire (Length 300 mm)<br>MN: Without lead wire<br>MO: Without connector | D: With connector<br>DO: Without connector<br>Y: With connector<br>YO: Without connector | WO: Without connector cable<br>W□: With connector cable <sup>Note)</sup> |

\* LN, MN type: with 2 sockets.  
\* "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). For details, refer to page 336.  
\* For connector cable of M8 connector, refer to page 339.  
\* M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 331 for details.  
\* Refer to page 336 for the lead wire length of L and M plug connectors.  
\* Refer to page 337 for the connector assembly with cover for L and M plug connectors.  
Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.

Note) When placing an order for body ported solenoid valve as a single unit, mounting screw for manifold and gasket are not attached. Order them separately, if necessary. For details, refer to page 173.



## Manifold Specifications

|                                         |                                    |                                                                                                                   |
|-----------------------------------------|------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Model                                   | <b>SS5Y9-23(-Q)</b>                |                                                                                                                   |
| Applicable valve                        | <b>SY9□20</b>                      |                                                                                                                   |
| Manifold type                           | Stacking type                      |                                                                                                                   |
| P (SUP)/R (EXH)                         | Common SUP, Common EXH             |                                                                                                                   |
| Valve stations                          | 2 to 20 stations <sup>Note1)</sup> |                                                                                                                   |
| A, B port location                      | Valve                              |                                                                                                                   |
| Port size                               | P, EA, EB port                     | 3/8                                                                                                               |
|                                         | A, B port                          | 1/4<br>3/8<br>C8 (One-touch fitting for ø8)<br>C10 (One-touch fitting for ø10)<br>C12 (One-touch fitting for ø12) |
| Manifold base mass W (g)<br>n: Stations | W = 66n + 246                      |                                                                                                                   |

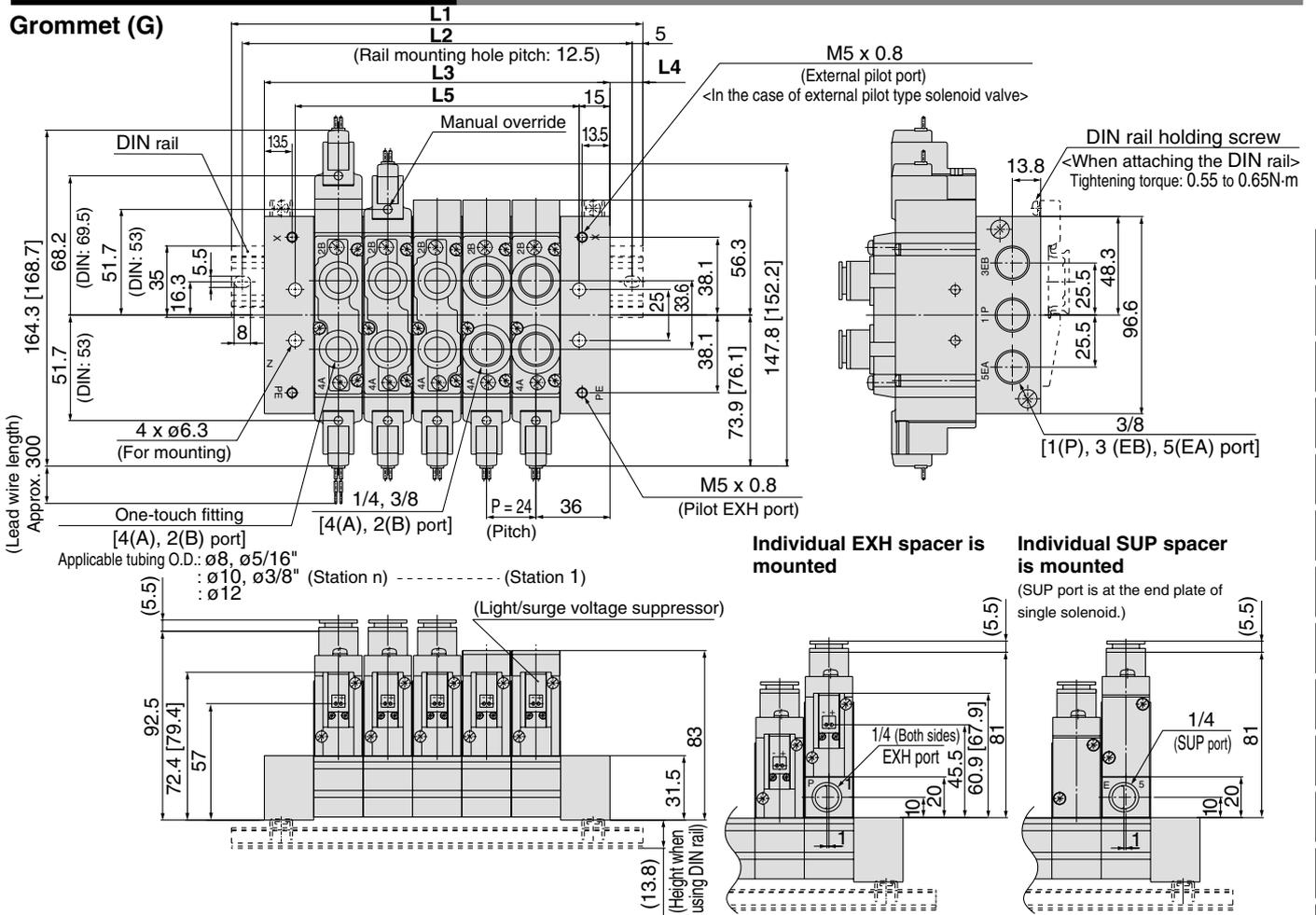
-  Note 1) For more than 10 stations, supply pressure to P port on both sides and exhaust from EA/EB port on both sides.  
Note 2) Refer to "Manifold Option" on page 173.

## Flow Characteristics

| Model               | Port size              |                | Flow characteristics         |      |     |                              |      |     |
|---------------------|------------------------|----------------|------------------------------|------|-----|------------------------------|------|-----|
|                     | 1, 5, 3<br>(P, EA, EB) | 4, 2<br>(A, B) | 1 → 4/2 (P → A/B)            |      |     | 4/2 → 5/3 (A/B → EA/EB)      |      |     |
|                     |                        |                | C (dm <sup>3</sup> /(s·bar)) | b    | Cv  | C (dm <sup>3</sup> /(s·bar)) | b    | Cv  |
| <b>SS5Y9-23(-Q)</b> | 3/8                    | C12            | 6.3                          | 0.20 | 1.5 | 8.2                          | 0.28 | 1.9 |

-  Note) The value is for manifold base with 5 stations and individually operated 2 position type.

**SY9000: SS5Y9-23-Stations** - (D)

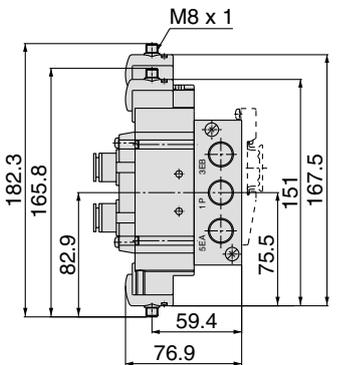
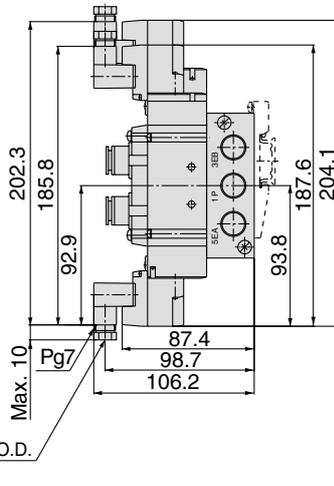
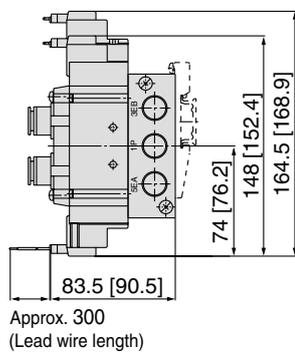
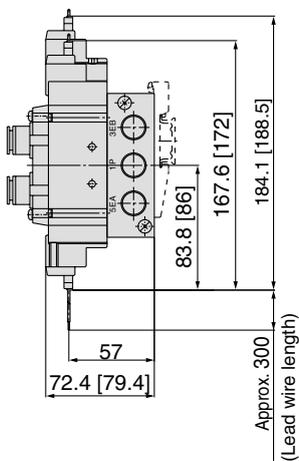


**L plug connector (L)**

**M plug connector (M)**

**DIN terminal (D, Y)**

**M8 connector (WO)**



Note) Refer to page 340 for dimensions of connector types.

| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 123        | 148   | 173   | 198   | 223   | 248   | 273   | 298   | 323   | 335.5 | 360.5 | 385.5 | 410.5 | 435.5 | 460.5 | 485.5 | 510.5 | 535.5 | 560.5       |
| <b>L2</b>  | 112.5      | 137.5 | 162.5 | 187.5 | 212.5 | 237.5 | 262.5 | 287.5 | 312.5 | 325   | 350   | 375   | 400   | 425   | 450   | 475   | 500   | 525   | 550         |
| <b>L3</b>  | 96         | 120   | 144   | 168   | 192   | 216   | 240   | 264   | 288   | 312   | 336   | 360   | 384   | 408   | 432   | 456   | 480   | 504   | 528         |
| <b>L4</b>  | 13.5       | 14    | 14.5  | 15    | 15.5  | 16    | 16.5  | 17    | 17.5  | 12    | 12.5  | 13    | 13.5  | 14    | 14.5  | 15    | 15.5  | 16    | 16.5        |
| <b>L5</b>  | 66         | 90    | 114   | 138   | 162   | 186   | 210   | 234   | 258   | 282   | 306   | 330   | 354   | 378   | 402   | 426   | 450   | 474   | 498         |

Note) In the case of direct mounting without DIN rail, total width of manifold is L3.

- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

# 5 Port Solenoid Valve Body Ported Manifold Bar Stock Type/Flat Ribbon Cable

## Series SY3000/5000/7000

Type **20P**

### How to Order Manifold

**SS5Y 5 - 20P - 05 -** [ ] - [ ]

**Manifold series**

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |
| 7 | SY7000 |

**Stations**

|    |             |
|----|-------------|
| 03 | 3 stations  |
| ⋮  | ⋮           |
| 12 | 12 stations |

Note) SS5Y3 has 4 to 12 stations.

**Thread type**

|     |      |
|-----|------|
| Nil | Rc   |
| 00F | G    |
| 00N | NPT  |
| 00T | NPTF |

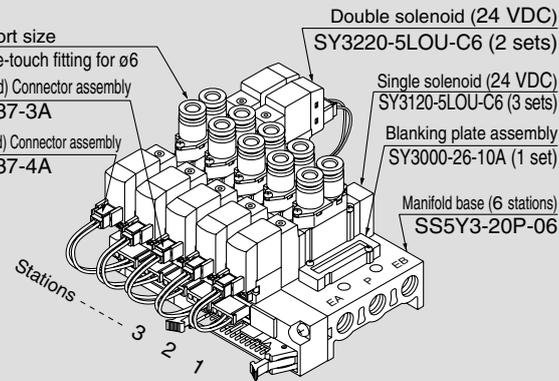
**CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

\* For DC only.

### How to Order Manifold Assembly (Example)

**Example**



**Example**

SS5Y3-20P-06 ..... 1 set (Type 20P, 6-station manifold part no.)

\* SX3000-26-10A ..... 1 set (Blanking plate assembly part no.)

\* SY3120-5LOU-C6 ... 3 sets (Single solenoid part no.)

\* SY3220-5LOU-C6 ... 2 sets (Double solenoid part no.)

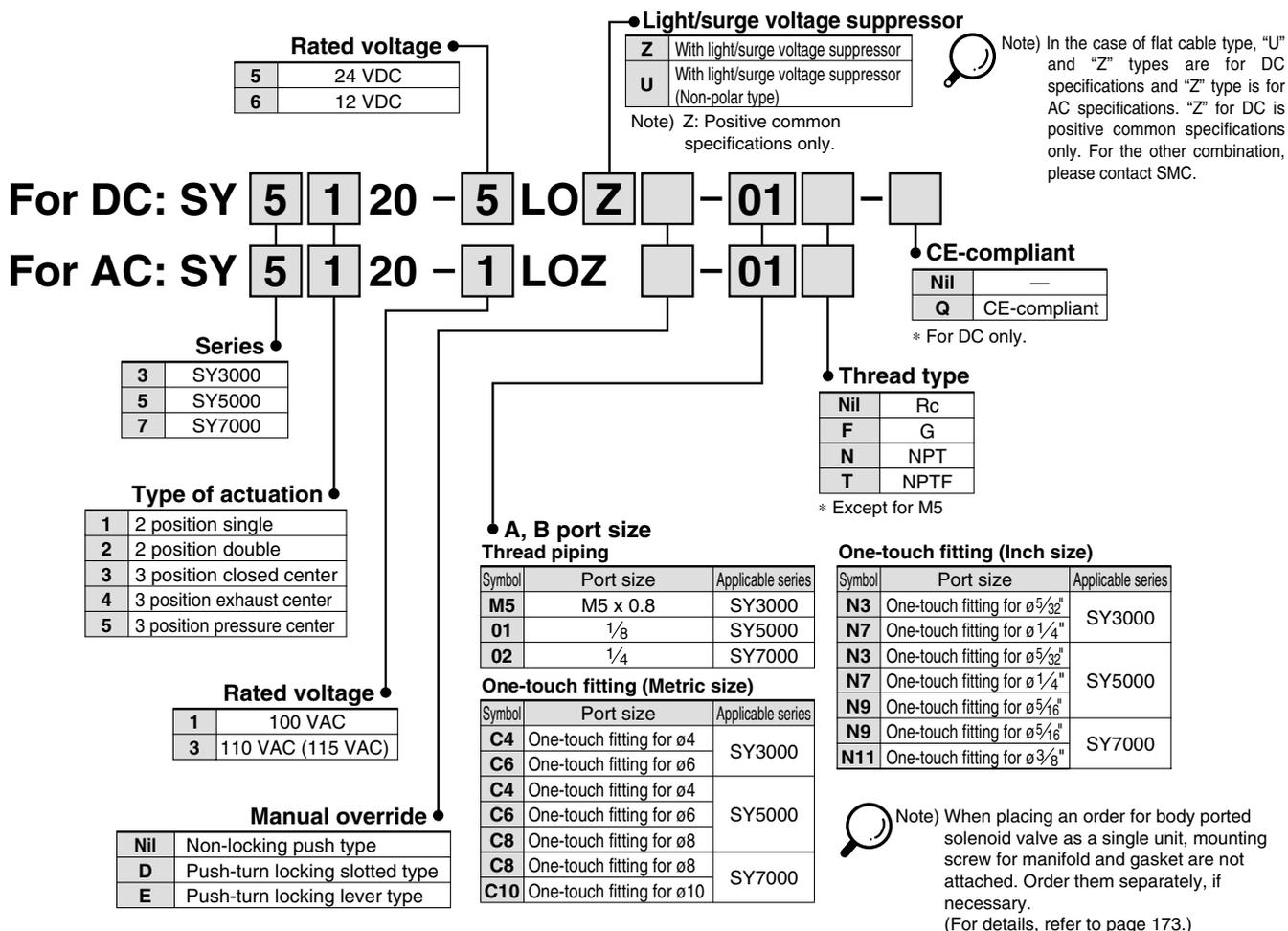
\* SY3000-37-3A ..... 3 sets (Connector assembly part no.)

\* SY3000-37-4A ..... 2 sets (Connector assembly part no.)

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

Add the valve and option part number under the manifold base part number. In the case of complex arrangement, specify them on the manifold specification sheet.

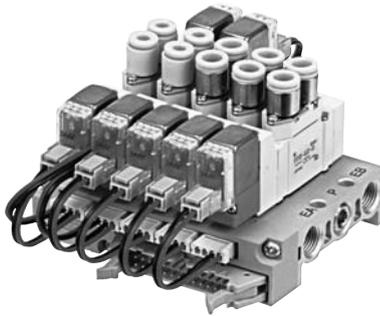
**How to Order Valve**



- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

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

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



## Manifold Specifications

| Model                                   | SS5Y3-20P(-Q)                                                                                       | SS5Y5-20P(-Q)                                                               | SS5Y7-20P(-Q)                                                                                          |                                                                         |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| Applicable valve                        | SY3□20                                                                                              | SY5□20                                                                      | SY7□20                                                                                                 |                                                                         |
| Manifold type                           | Single base/B mount                                                                                 |                                                                             |                                                                                                        |                                                                         |
| P (SUP)/R (EXH)                         | Common SUP, Common EXH                                                                              |                                                                             |                                                                                                        |                                                                         |
| Valve stations                          | 4 to 12 stations <sup>(1)</sup>                                                                     | 3 to 12 stations <sup>Note 1)</sup>                                         |                                                                                                        |                                                                         |
| A, B port location                      | Valve                                                                                               |                                                                             |                                                                                                        |                                                                         |
| Port size                               | P, EA, EB port                                                                                      | 1/8                                                                         | 1/4                                                                                                    | 1/4                                                                     |
|                                         | A, B port                                                                                           | M5 x 0.8,<br>C4 (One-touch fitting for ø4)<br>C6 (One-touch fitting for ø6) | 1/8<br>C4 (One-touch fitting for ø4)<br>C6 (One-touch fitting for ø6)<br>C8 (One-touch fitting for ø8) | 1/4<br>C8 (One-touch fitting for ø8)<br>C10 (One-touch fitting for ø10) |
| Manifold base mass W (g)<br>n: Stations | W = 19n + 45                                                                                        | W = 43n + 77                                                                | W = 51n + 81                                                                                           |                                                                         |
| Applicable flat ribbon cable connector  | Flat ribbon cable connector, Socket: 26 pins MIL type with strain relief, Conforming to MIL-C-83503 |                                                                             |                                                                                                        |                                                                         |
| Internal wiring                         | In common between +COM and -COM (Z type: +COM only).                                                |                                                                             |                                                                                                        |                                                                         |
| Rated voltage <sup>Note 4)</sup>        | 12, 24 VDC 100, 110 VAC                                                                             |                                                                             |                                                                                                        |                                                                         |



Note 1) For more than 10 stations (more than 5 stations in case of SS5Y7), supply pressure to P port on both sides and exhaust from EA/EB port on both sides.

Note 2) The withstand voltage specification for the wiring unit section is JIS C 0704, Grade 1 or its equivalent.

Note 3) Refer to "Manifold Option" on page 173.

Note 4) CE-compliant: For DC only.

## Flow Characteristics

| Model     | Port size              |                | Flow characteristics         |      |      |                              |      |      |
|-----------|------------------------|----------------|------------------------------|------|------|------------------------------|------|------|
|           | 1, 5, 3<br>(P, EA, EB) | 4, 2<br>(A, B) | 1 → 4/2 (P → A/B)            |      |      | 4/2 → 5/3 (A/B → EA/EB)      |      |      |
|           |                        |                | C [dm <sup>3</sup> /(s·bar)] | b    | Cv   | C [dm <sup>3</sup> /(s·bar)] | b    | Cv   |
| SS5Y3-20P | 1/8                    | C6             | 0.72                         | 0.29 | 0.18 | 0.80                         | 0.36 | 0.21 |
| SS5Y5-20P | 1/4                    | C8             | 1.9                          | 0.28 | 0.48 | 2.2                          | 0.20 | 0.53 |
| SS5Y7-20P | 1/4                    | C10            | 3.6                          | 0.31 | 0.93 | 3.6                          | 0.27 | 0.88 |



Note) The value is for manifold base with 5 stations and individually operated 2 position type.

## How to Order Connector Assembly

### For 12, 24 VDC

| Specifications                          | For SY3000   | For SY5000/7000 |
|-----------------------------------------|--------------|-----------------|
| For single solenoid:                    | SY3000-37-3A | SY5000-37-3A    |
| Double solenoid, 3 position type        | SY3000-37-4A | SY5000-37-4A    |
| Single with spacer assembly             | SY5000-37-3A | SY5000-37-5A    |
| Double, 3 position with spacer assembly | SY3000-37-6A | SY5000-37-6A    |

### For 100 VAC

| Specifications                          | For SY3000    | For SY5000/7000 |
|-----------------------------------------|---------------|-----------------|
| For single solenoid:                    | SY3000-37-32A | SY5000-37-15A   |
| Double solenoid, 3 position type        | SY3000-37-33A | SY5000-37-16A   |
| Single with spacer assembly             | SY5000-37-15A | SY5000-37-17A   |
| Double, 3 position with spacer assembly | SY3000-37-34A | SY5000-37-18A   |

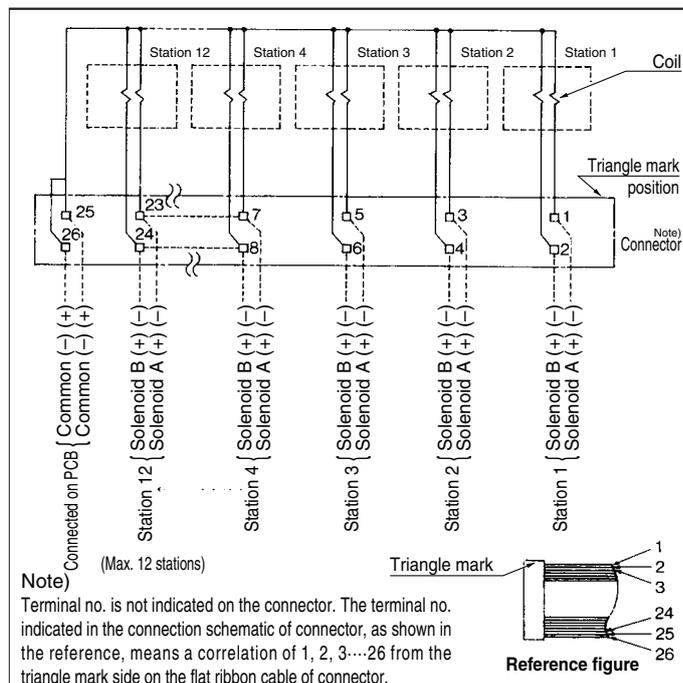
### For 100 VAC (115 VAC)

| Specifications                          | For SY3000    | For SY5000/7000 |
|-----------------------------------------|---------------|-----------------|
| For single solenoid:                    | SY3000-37-35A | SY5000-37-19A   |
| Double solenoid, 3 position type        | SY3000-37-36A | SY5000-37-20A   |
| Single with spacer assembly             | SY5000-37-19A | SY5000-37-21A   |
| Double, 3 position with spacer assembly | SY3000-37-37A | SY5000-37-22A   |

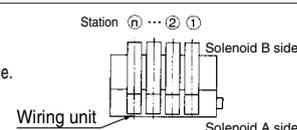
## Caution

- For non-polar (U) valves, the electrical DC connections can be used with either positive and negative COM. For type (Z), only use with positive COM as the valve does not operate correctly when used with negative COM.

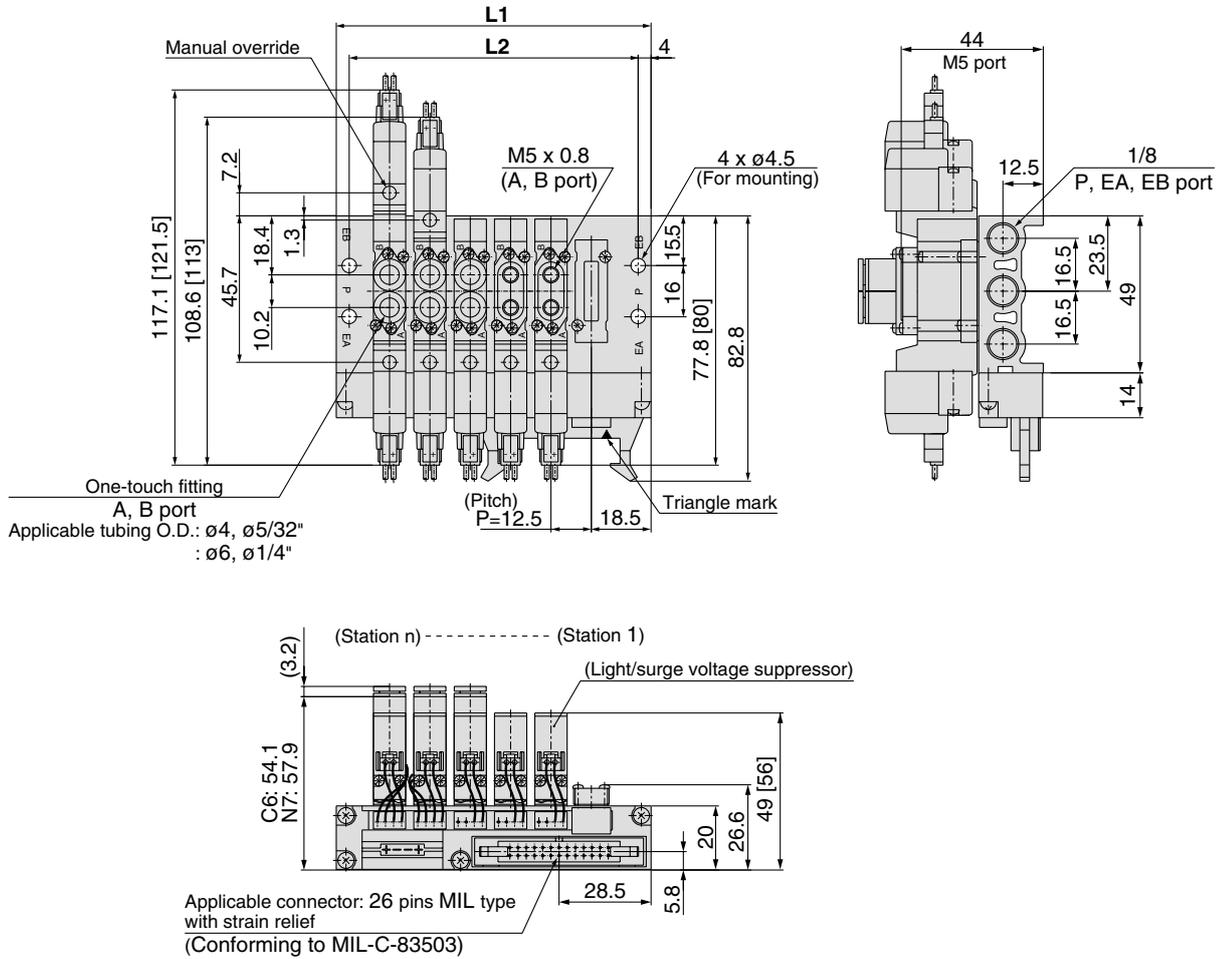
## Internal Wiring of Manifold (Non-polar type)



- For more than 10 stations, both poles of the common should be wired.
- For single solenoid, connect to the solenoid A side.
- The maximum number of stations that can be accommodated is 12. For more stations, please contact SMC.

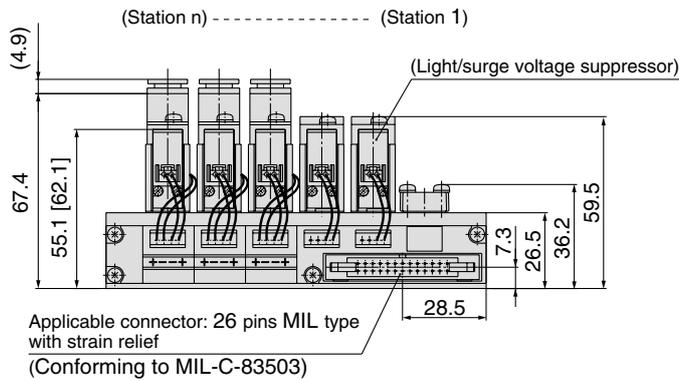
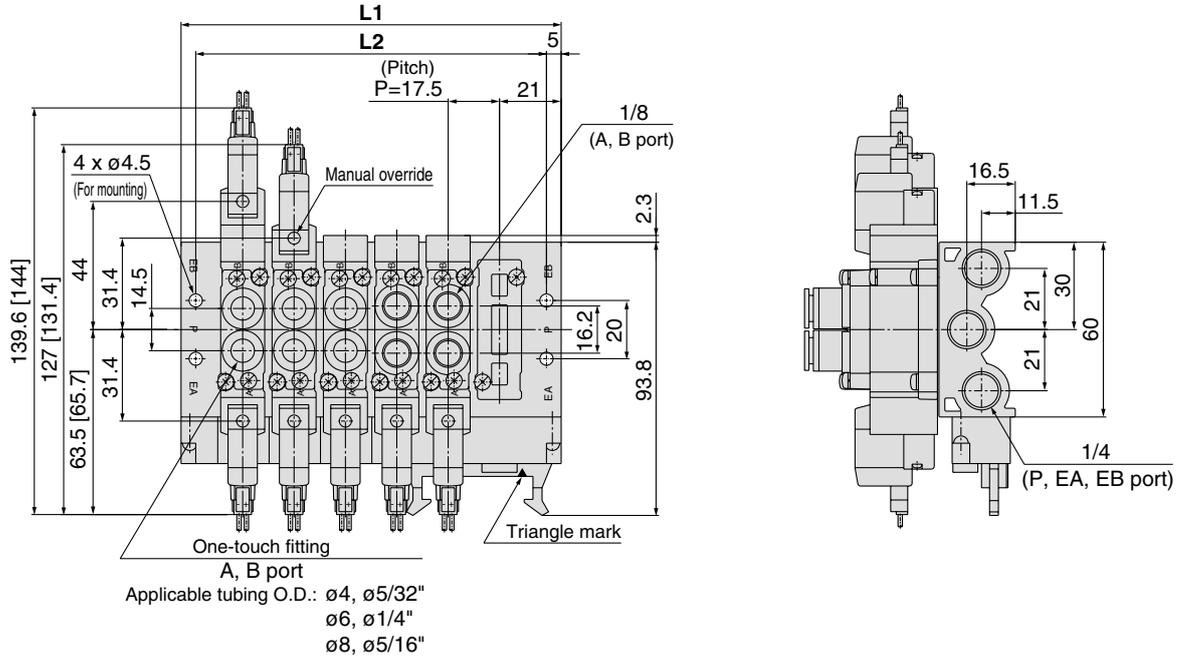


**SY3000: SS5Y3-20P- Stations**



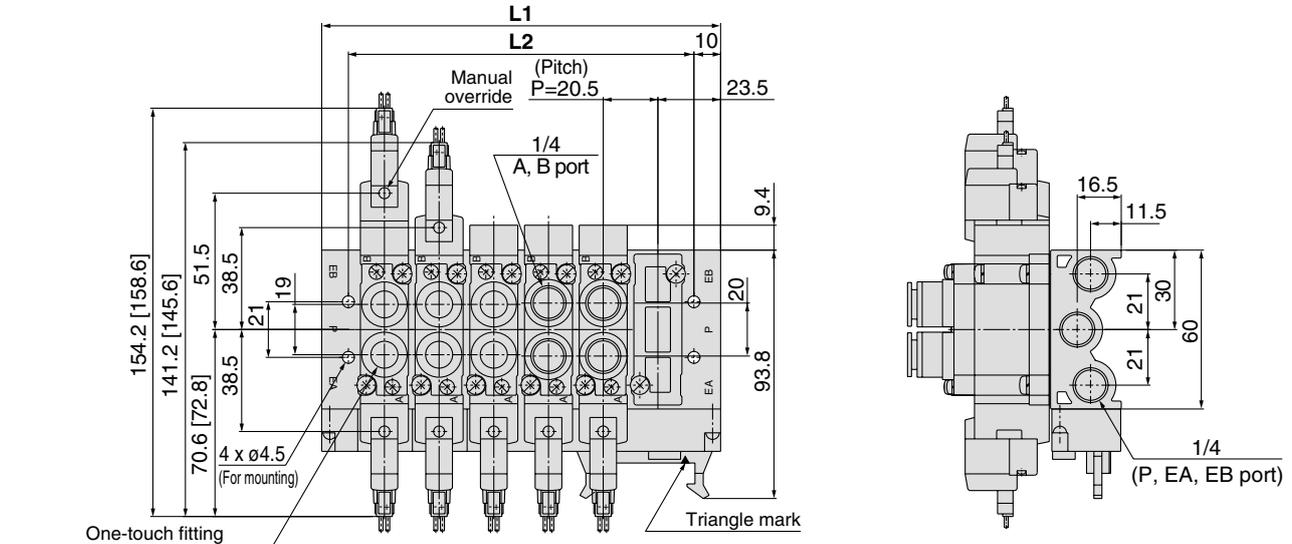
- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

| Stations n | 4    | 5  | 6    | 7   | 8     | 9   | 10    | 11  | 12    |
|------------|------|----|------|-----|-------|-----|-------|-----|-------|
| <b>L1</b>  | 72.5 | 85 | 97.5 | 110 | 122.5 | 135 | 147.5 | 160 | 172.5 |
| <b>L2</b>  | 64.5 | 77 | 89.5 | 102 | 114.5 | 127 | 139.5 | 152 | 164.5 |

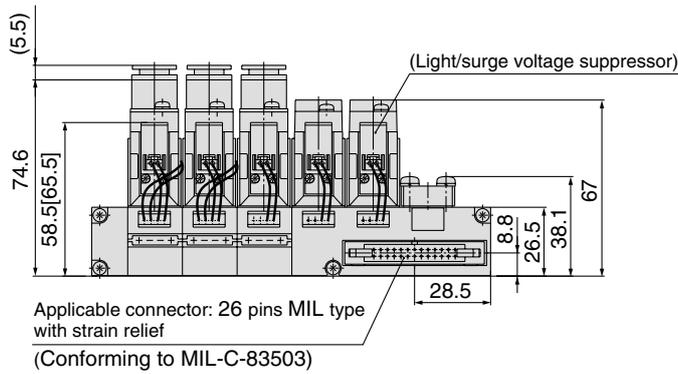


| Stations n | 3  | 4    | 5   | 6     | 7   | 8     | 9   | 10    | 11  | 12    |
|------------|----|------|-----|-------|-----|-------|-----|-------|-----|-------|
| <b>L1</b>  | 77 | 94.5 | 112 | 129.5 | 147 | 164.5 | 182 | 199.5 | 217 | 234.5 |
| <b>L2</b>  | 67 | 84.5 | 102 | 119.5 | 137 | 154.5 | 172 | 189.5 | 207 | 224.5 |

**SY7000: SS5Y7-20P- Stations**



A, B port  
Applicable tubing O.D.: ø8, ø5/16"  
ø10, ø3/8" (Station n) ----- (Station 1)



| Stations n | 3  | 4     | 5   | 6     | 7   | 8     | 9   | 10    | 11  | 12    |
|------------|----|-------|-----|-------|-----|-------|-----|-------|-----|-------|
| <b>L1</b>  | 88 | 108.5 | 129 | 149.5 | 170 | 190.5 | 211 | 231.5 | 252 | 272.5 |
| <b>L2</b>  | 68 | 88.5  | 109 | 129.5 | 150 | 170.5 | 191 | 211.5 | 232 | 252.5 |

- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

# 5 Port Solenoid Valve Body Ported Manifold Stacking Type/Flat Ribbon Cable

## Series SY9000



Type **23P**

### How to Order Manifold

**SS5Y 9 - 23P - 05** - [ ] - [ ] - [ ]

- Manifold series**  
9 SY9000
- Thread type**  

|     |      |
|-----|------|
| Nil | Rc   |
| 00F | G    |
| 00N | NPT  |
| 00T | NPTF |
- Valve stations**  

| Symbol | Stations    |
|--------|-------------|
| 04     | 4 stations  |
| ⋮      | ⋮           |
| 12     | 12 stations |

\* This also includes the number of blanking plate assemblies.
- Option**  

| Symbol | Mounting                                                                                                              |
|--------|-----------------------------------------------------------------------------------------------------------------------|
| Nil    | Direct mounting                                                                                                       |
| D      | DIN rail mounting (with DIN rail)                                                                                     |
| D0     | DIN rail mounting (without DIN rail)                                                                                  |
| D *    | When a longer DIN rail is desired than the specified stations, specify the station number to be required into * mark. |
- CE-compliant**  

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

\* For DC only.

\* Type 23P manifold of Series SY9000 is concurrently used for the internal and external pilot.

### How to Order Manifold Assembly (Example)

**Example**

(Single solenoid) Connector assembly SY9000-37-1A  
(Double solenoid) Connector assembly SY9000-37-2A

**SS5Y9-23P-05** ..... 1 set (Type 23, 5-station manifold base part no.)  
 \* **SY9000-26-3A** ..... 1 set (Blanking plate assembly part no.)  
 \* **SY9120-5LOU-C12** ... 2 sets (Single solenoid part no.)  
 \* **SY9220-5LOU-C12** ... 2 sets (Double solenoid part no.)  
 \* **SY9000-37-1A** ..... 2 sets (Connector assembly part no.)  
 \* **SY9000-37-2A** ..... 2 sets (Connector assembly part no.)

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

Add the valve and option part number under the manifold base part number. In the case of complex arrangement, specify them on the manifold specification sheet.

### How to Order Valve

**For DC: SY 9 1 20 [ ] - 5 LO Z [ ] - 02 [ ] - [ ]**  
**For AC: SY 9 1 20 [ ] - 1 LO Z [ ] - 02 [ ] - [ ]**

- Rated voltage**  

|   |        |
|---|--------|
| 5 | 24 VDC |
| 6 | 12 VDC |
- Light/surge voltage suppressor**  

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

Note) Z: Positive common specifications only.
- CE-compliant**  

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |
- Thread type**  

|     |      |
|-----|------|
| Nil | Rc   |
| F   | G    |
| N   | NPT  |
| T   | NPTF |
- A, B port size Thread piping**  

| Symbol | Port size |
|--------|-----------|
| 02     | 1/4       |
| 03     | 3/8       |
- One-touch fitting (Metric size)**  

| Symbol | Port size                 |
|--------|---------------------------|
| C8     | One-touch fitting for ø8  |
| C10    | One-touch fitting for ø10 |
| C12    | One-touch fitting for ø12 |
- One-touch fitting (Inch size)**  

| Symbol | Port size                    |
|--------|------------------------------|
| N9     | One-touch fitting for ø5/16" |
| N11    | One-touch fitting for ø3/8"  |
- Series**  
9 SY9000
- Type of actuation**  

|   |                            |
|---|----------------------------|
| 1 | 2 position single          |
| 2 | 2 position double          |
| 3 | 3 position closed center   |
| 4 | 3 position exhaust center  |
| 5 | 3 position pressure center |
- Pilot specifications**  

|     |                |
|-----|----------------|
| Nil | Internal pilot |
| R   | External pilot |

\* Type 23P manifolds can be used for both internal and external pilots.
- Rated voltage**  

|   |                   |
|---|-------------------|
| 1 | 100 VAC           |
| 3 | 110 VAC (115 VAC) |
- Manual override**  

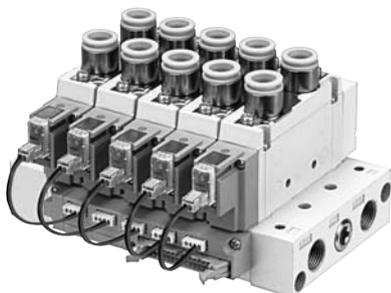
|     |                                |
|-----|--------------------------------|
| Nil | Non-locking push type          |
| D   | Push-turn locking slotted type |
| E   | Push-turn locking lever type   |

Note) In the case of flat cable type, "U" and "Z" types are for DC specifications and "Z" type is for AC specifications. "Z" type for DC is positive common specification only. For the other combination, please contact SMC.  
 Note) When placing an order for body ported solenoid valve as a single unit, mounting screw for manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to page 173.)

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

• **Clean appearance**

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



### Manifold Specifications

|                                               |                                                                                                |                                                                                                     |
|-----------------------------------------------|------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Model                                         | <b>SS5Y9-23P(-Q)</b>                                                                           |                                                                                                     |
| Applicable valve                              | <b>SY9□20</b>                                                                                  |                                                                                                     |
| Manifold type                                 | Stacking type                                                                                  |                                                                                                     |
| <b>P (SUP)/R (EXH)</b>                        | Common SUP, Common EXH                                                                         |                                                                                                     |
| <b>Valve stations</b>                         | 4 to 12 stations <sup>Note1)</sup>                                                             |                                                                                                     |
| <b>A, B port location</b>                     | Valve                                                                                          |                                                                                                     |
| <b>Port size</b>                              | P, EA, EB port                                                                                 | 3/8<br>1/4<br>3/8                                                                                   |
|                                               | A, B port                                                                                      | C8 (One-touch fitting for ø8)<br>C10 (One-touch fitting for ø10)<br>C12 (One-touch fitting for ø12) |
| <b>Manifold base mass W (g)</b>               | W = 73n + 259                                                                                  |                                                                                                     |
| <b>n: Stations</b>                            |                                                                                                |                                                                                                     |
| <b>Applicable flat ribbon cable connector</b> | Flat ribbon cable connector, Socket: 26 pins MIL with strain relief, Conforming to MIL-C-83503 |                                                                                                     |
| <b>Internal wiring</b>                        | In common between +COM and -COM (Z type: +COM only)                                            |                                                                                                     |
| <b>Rated voltage</b> <sup>Note4)</sup>        | 12, 24 VDC, 100, 110 VAC                                                                       |                                                                                                     |

- Note 1) For more than 10 stations, supply pressure to P port on both sides and exhaust from EA/EB port on both sides.
- Note 2) The withstand voltage specification for the wiring unit section is JIS C 0704, Grade 1 or its equivalent.
- Note 3) Refer to "Manifold Option" on page 173.
- Note 4) CE-compliant: For DC only.

### How to Order Connector Assembly

#### For 12, 24 VDC

| Specifications                          | For SY9000   |
|-----------------------------------------|--------------|
| For single solenoid                     | SY9000-37-1A |
| Double solenoid 3 position              | SY9000-37-2A |
| Single with spacer assembly             | SY9000-37-3A |
| Double, 3 position with spacer assembly | SY9000-37-4A |

#### For 100 VAC

| Specifications                          | For SY9000   |
|-----------------------------------------|--------------|
| For single solenoid                     | SY9000-37-1B |
| Double solenoid 3 position              | SY9000-37-2B |
| Single with spacer assembly             | SY9000-37-3B |
| Double, 3 position with spacer assembly | SY9000-37-4B |

#### For 110 VAC (115 VAC)

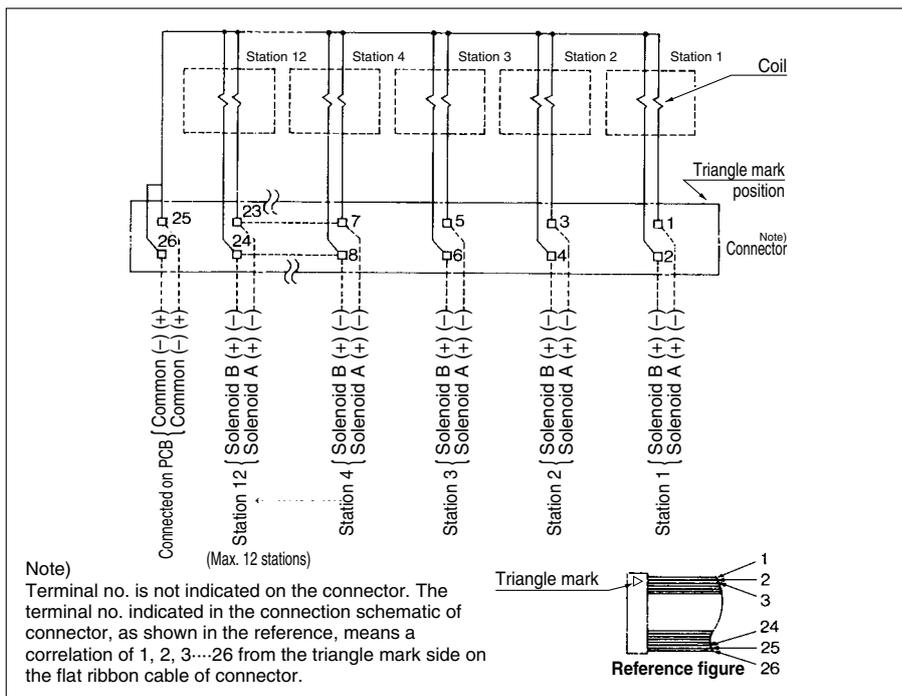
| Specifications                          | For SY9000   |
|-----------------------------------------|--------------|
| For single solenoid                     | SY9000-37-1C |
| Double solenoid 3 position              | SY9000-37-2C |
| Single with spacer assembly             | SY9000-37-3C |
| Double, 3 position with spacer assembly | SY9000-37-4C |

### Flow Characteristics

| Model                | Port size              |                | Flow characteristics         |      |     |                              |      |     |
|----------------------|------------------------|----------------|------------------------------|------|-----|------------------------------|------|-----|
|                      | 1, 5, 3<br>(P, EA, EB) | 4, 2<br>(A, B) | 1 → 4/2 (P → A/B)            |      |     | 4/2 → 5/3 (A/B → EA/EB)      |      |     |
|                      |                        |                | C (dm <sup>3</sup> /(s·bar)) | b    | Cv  | C (dm <sup>3</sup> /(s·bar)) | b    | Cv  |
| <b>SS5Y9-23P(-Q)</b> | 3/8                    | C12            | 6.3                          | 0.20 | 1.5 | 8.2                          | 0.28 | 1.9 |

- Note) The value is for manifold base with 5 stations and individually operated 2 position type.

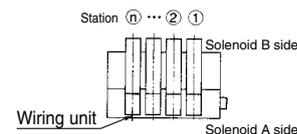
### Internal Wiring of Manifold (Non-polar type)



### Caution

- For non-polar (U) valves, the electrical DC connections can be used with either positive and negative COM. For type (Z), only use with positive COM as the valve does not operate correctly when used with negative COM.

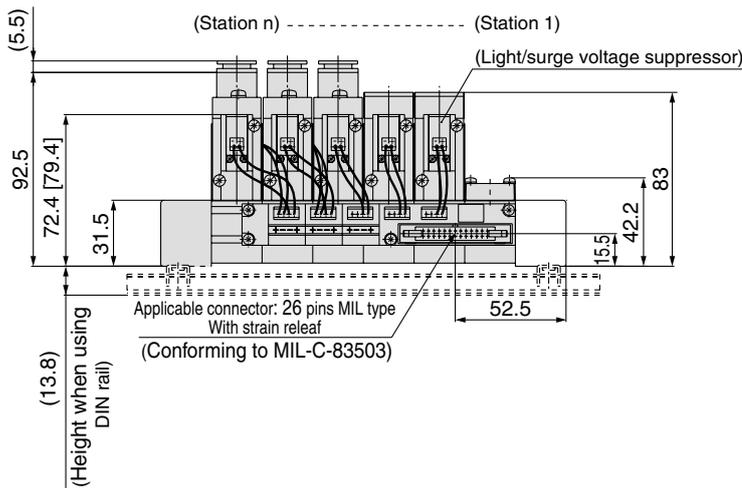
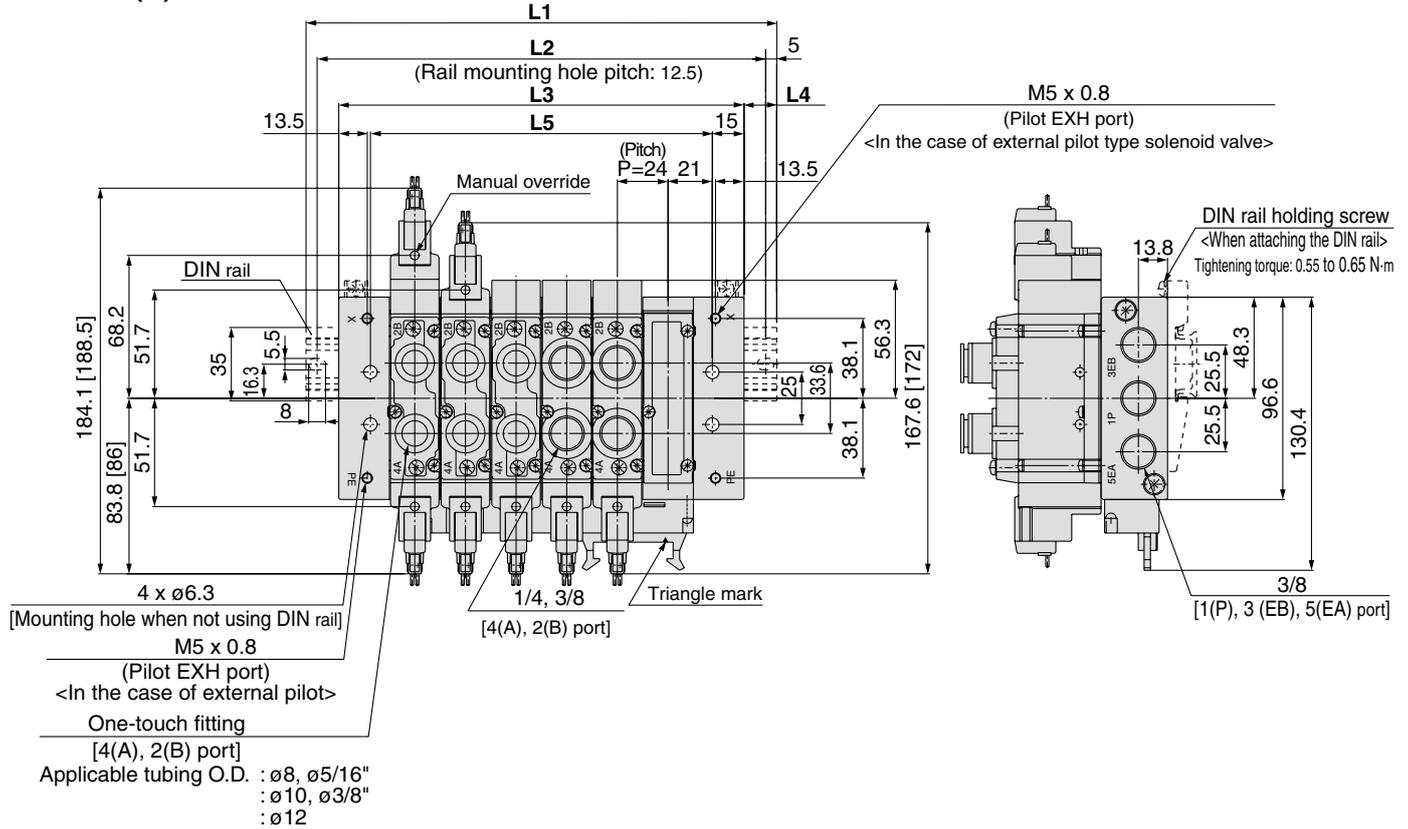
- For more than 10 stations, both poles of the common should be wired.
- For single solenoid, connect to the solenoid A side.
- The maximum number of stations that can be accommodated is 12. For more stations, please contact SMC.



SJ  
SY  
SV  
SYJ  
SZ  
VP4  
S0700  
VQ  
VQ4  
VQ5  
VQC  
VQZ  
SQ  
VFS  
VFR  
VQ7

**SY9000: SS5Y9-23P- Stations -(D)**

**Grommet (G)**



| Stations n | 4 stations | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 173        | 198   | 223   | 248   | 273   | 298   | 323   | 335.5 | 360.5       |
| <b>L2</b>  | 162.5      | 187.5 | 212.5 | 237.5 | 262.5 | 287.5 | 312.5 | 325   | 350         |
| <b>L3</b>  | 144        | 168   | 192   | 216   | 240   | 264   | 288   | 312   | 336         |
| <b>L4</b>  | 14.5       | 15    | 15.5  | 16    | 16.5  | 17    | 17.5  | 12    | 12.5        |
| <b>L5</b>  | 114        | 138   | 162   | 186   | 210   | 234   | 258   | 282   | 306         |

Note) In the case of direct mounting without DIN rail, total width of manifold is L3.

# EX510 Gateway System Serial Transmission System Body Ported Manifold/Integrated Base Series SY3000/5000/7000

Type **20SA**



## How to Order Manifold

SS5Y **3** - 20SA **□** - **04** - **□** - **□**

### Manifold series

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |
| 7 | SY7000 |

### SI unit

|     |                    |
|-----|--------------------|
| Nil | NPN output (+COM.) |
| N   | PNP output (-COM.) |

### SI unit part no.

| Symbol | SI unit specifications | SI unit part no. | Page           |
|--------|------------------------|------------------|----------------|
| Nil    | NPN output (+COM.)     | EX510-S001       | P.1715 to 1717 |
| N      | PNP output (-COM.)     | EX510-S101       |                |

For details of "Gateway System Serial Transmission System, Series EX510", refer to pages 1696 through to 1724.

### CE-compliant

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

### P, R port thread type

|     |      |
|-----|------|
| Nil | Rc   |
| 00F | G    |
| 00N | NPT  |
| 00T | NPTF |

### Valve stations

| Symbol | Stations    | Note                                                                        |
|--------|-------------|-----------------------------------------------------------------------------|
| 03     | 3 stations  | Double wiring <sup>Note 1)</sup>                                            |
| :      | :           |                                                                             |
| 08     | 8 stations  | Specified layout <sup>Note 2)</sup><br>(Compatible with 16 solenoid valves) |
| 03     | 3 stations  |                                                                             |
| :      | :           |                                                                             |
| 16     | 16 stations |                                                                             |

• SS5Y3 can be set from 4 stations.

• The number of the blanking plate assembly is also included.

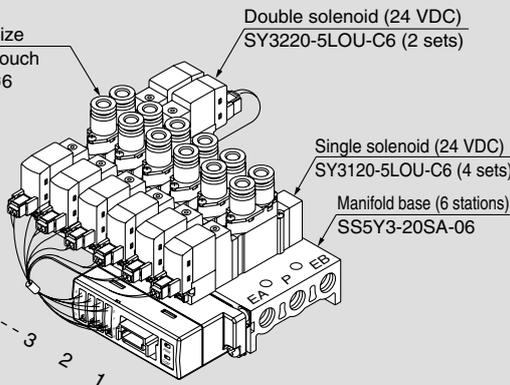
Note 1) Double wiring: Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate wiring specifications on the manifold specification sheet. (Note that double and 3 position valves cannot be used where single solenoid wiring has been specified.)

## How to Order Manifold Assembly (Example)

### Example

Cylinder port size  
C6: With one-touch  
fitting for ø6



SS5Y3-20SA-06 .....1 set (20SA type 6-station manifold part no.)  
\* SY3120-5LOU-C6...4 sets (Single solenoid part no.)  
\* SY3220-5LOU-C6...2 sets (Double solenoid part no.)

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

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. For a manifold for an EX510, the length of the lead wire for a connector assembly depends on the number of stations. Therefore, the manifold assembly is shipped with the valves (including blanking plates) and connector assembly mounted on it, as the standard specification. Be sure to specify the part nos. of the solenoid valves to be mounted.

**How to Order Valves**

**SY 3 1 20 - 5 LO Z [ ] - M5 [ ] - [ ]**

**Series**

|          |        |
|----------|--------|
| <b>3</b> | SY3000 |
| <b>5</b> | SY5000 |
| <b>7</b> | SY7000 |

**Type of actuation**

|          |                            |
|----------|----------------------------|
| <b>1</b> | 2 position single          |
| <b>2</b> | 2 position double          |
| <b>3</b> | 3 position closed center   |
| <b>4</b> | 3 position exhaust center  |
| <b>5</b> | 3 position pressure center |

**Rated voltage: 24 VDC**

**Light/surge voltage suppressor**

|          |                                                         |
|----------|---------------------------------------------------------|
| <b>Z</b> | With light/surge voltage suppressor                     |
| <b>U</b> | Without light/surge voltage suppressor (non-polar type) |

**Manual override**

|            |                                |
|------------|--------------------------------|
| <b>Nil</b> | Non-locking push type          |
| <b>D</b>   | Push-turn locking slotted type |
| <b>E</b>   | Push-turn locking lever type   |

**CE-compliant**

|            |              |
|------------|--------------|
| <b>Nil</b> | —            |
| <b>Q</b>   | CE-compliant |

**Thread type**

|            |      |
|------------|------|
| <b>Nil</b> | Rc   |
| <b>F</b>   | G    |
| <b>N</b>   | NPT  |
| <b>T</b>   | NPTF |

**A, B port size**

**Thread piping**

|           |          |        |
|-----------|----------|--------|
| <b>M5</b> | M5 x 0.8 | SY3000 |
| <b>01</b> | 1/8      | SY5000 |
| <b>02</b> | 1/4      | SY7000 |

**One-touch fitting (Metric size)**

|            |                           |        |
|------------|---------------------------|--------|
| <b>C4</b>  | One-touch fitting for ø4  | SY3000 |
| <b>C6</b>  | One-touch fitting for ø6  |        |
| <b>C4</b>  | One-touch fitting for ø4  | SY5000 |
| <b>C6</b>  | One-touch fitting for ø6  |        |
| <b>C8</b>  | One-touch fitting for ø8  | SY7000 |
| <b>C8</b>  | One-touch fitting for ø8  |        |
| <b>C10</b> | One-touch fitting for ø10 |        |

**One-touch fitting (Inch size)**

|            |                              |        |
|------------|------------------------------|--------|
| <b>N3</b>  | One-touch fitting for ø5/32" | SY3000 |
| <b>N7</b>  | One-touch fitting for ø1/4"  |        |
| <b>N3</b>  | One-touch fitting for ø5/32" | SY5000 |
| <b>N7</b>  | One-touch fitting for ø1/4"  |        |
| <b>N9</b>  | One-touch fitting for ø5/16" | SY7000 |
| <b>N9</b>  | One-touch fitting for ø5/16" |        |
| <b>N11</b> | One-touch fitting for ø3/8"  |        |

**SJ**

**SY**

**SV**

**SYJ**

**SZ**

**VP4**

**S0700**

**VQ**

**VQ4**

**VQ5**

**VQC**

**VQZ**

**SQ**

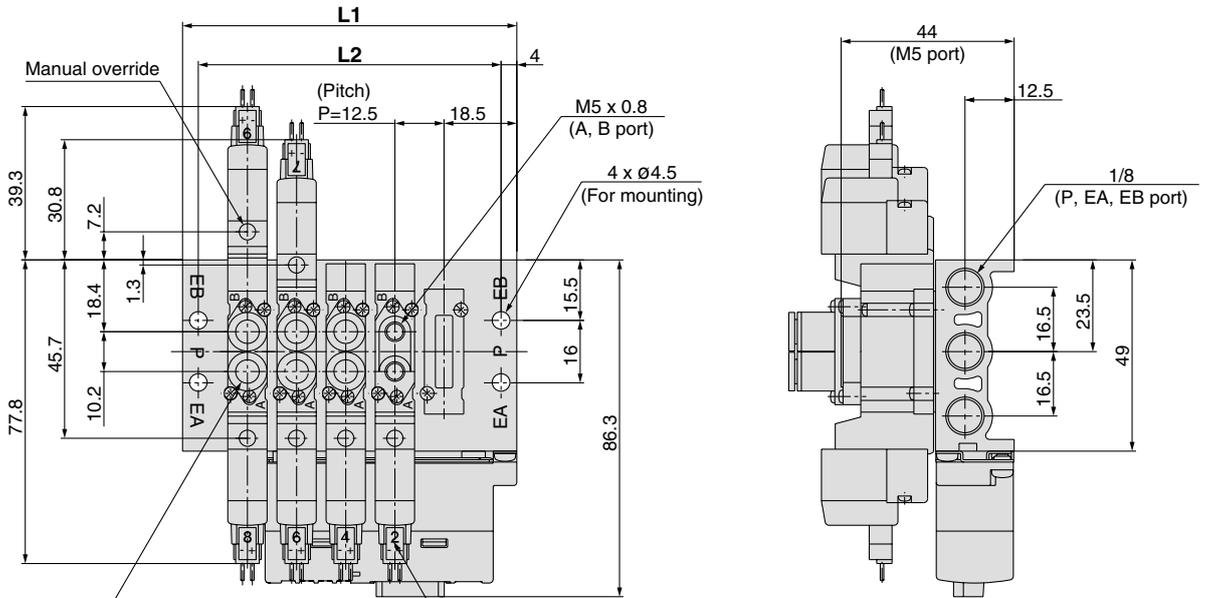
**VFS**

**VFR**

**VQ7**

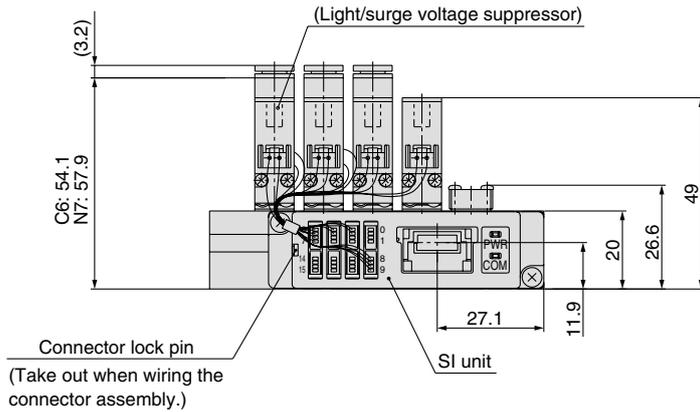
# Type **20SA** Series **SY3000/5000/7000**

**SY3000: SS5Y3-20SA**  - Stations -



One-touch fitting  
(A, B port)  
Applicable tubing O.D.:  $\varnothing 4$ ,  $\varnothing 5/32''$   
 $\varnothing 6$ ,  $\varnothing 1/4''$

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



Connector lock pin  
(Take out when wiring the  
connector assembly.)

| Stations n | 4 stations | 5  | 6    | 7   | 8     | 9   | 10    | 11  | 12    | 13  | 14    | 15  | 16 stations |
|------------|------------|----|------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------------|
| <b>L1</b>  | 72.5       | 85 | 97.5 | 110 | 122.5 | 135 | 147.5 | 160 | 172.5 | 185 | 197.5 | 210 | 222.5       |
| <b>L2</b>  | 64.5       | 77 | 89.5 | 102 | 114.5 | 127 | 139.5 | 152 | 164.5 | 177 | 189.5 | 202 | 214.5       |





# EX510 Gateway System Serial Transmission System Body Ported Manifold/Stacking Type Series SY9000

Type **23SA**



## How to Order Manifold

SS5Y9-23SA [ ] - 03 - [ ] - [ ] - [ ]

### SI unit

|     |                    |
|-----|--------------------|
| Nil | NPN output (+COM.) |
| N   | PNP output (-COM.) |

### CE-compliant

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

### Valve stations

| Symbol | Stations    | Note                                                                        |
|--------|-------------|-----------------------------------------------------------------------------|
| 03     | 3 stations  | Double wiring <sup>Note 1)</sup>                                            |
| ⋮      | ⋮           |                                                                             |
| 08     | 8 stations  | Specified layout <sup>Note 2)</sup><br>(Compatible with 16 solenoid valves) |
| 03     | 3 stations  |                                                                             |
| ⋮      | ⋮           |                                                                             |
| 16     | 16 stations |                                                                             |

- The number of the blanking plate assembly is also included.
- Note 1) Double wiring: Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
- Note 2) Specified layout: Indicate wiring specifications on the manifold specification sheet. (Note that double and 3 position valves cannot be used where single solenoid wiring has been specified.)

### Option

|     |                                                                                                                       |
|-----|-----------------------------------------------------------------------------------------------------------------------|
| Nil | Direct mounting                                                                                                       |
| D   | DIN rail mounting (With DIN rail)                                                                                     |
| DO  | DIN rail mounting (Without DIN rail)                                                                                  |
| D*  | When a longer DIN rail is desired than the specified stations, specify the station number to be required into * mark. |

### P, R port thread type

|     |      |
|-----|------|
| Nil | Rc   |
| 00F | G    |
| 00N | NPT  |
| 00T | NPTF |

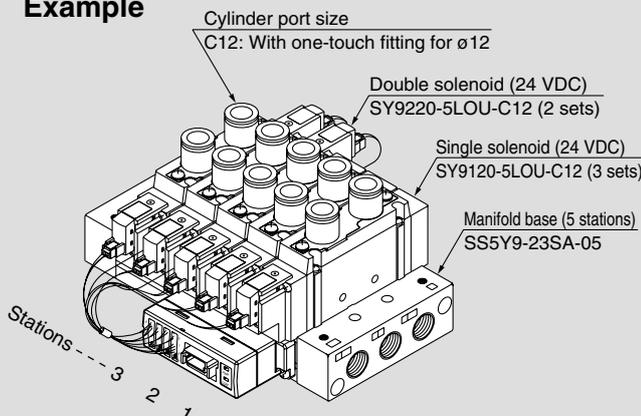
### SI unit part no.

| Symbol | SI unit specifications | SI unit part no. | Page           |
|--------|------------------------|------------------|----------------|
| Nil    | NPN output (+COM.)     | EX510-S001       | P.1715 to 1717 |
| N      | PNP output (-COM.)     | EX510-S101       |                |

For details of "Gateway System Serial Transmission System, Series EX510", refer to pages 1696 through to 1724.

## How to Order Manifold Assembly (Example)

### Example



SS5Y9-23SA-05 .....1 set (23SA type 5-station manifold part no.)  
 \* SY9120-5LOU-C12...3 sets (Single solenoid part no.)  
 \* SY9220-5LOU-C12...2 sets (Double solenoid part no.)

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

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. For a manifold for an EX510, the length of the lead wire for a connector assembly depends on the number of stations. Therefore, the manifold assembly is shipped with the valves (including blanking plates) and connector assembly mounted on it, as the standard specification. Be sure to specify the part nos. of the solenoid valves to be mounted.

**How to Order Valves**

**SY9** **1** **20** **-** **5** **LO** **Z** **-** **02** **-** **-**

**Type of actuation**

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

**Pilot specifications**

|     |                |
|-----|----------------|
| Nil | Internal pilot |
| R   | External pilot |

**Rated voltage: 24 VDC**

**Light/surge voltage suppressor**

|   |                                                         |
|---|---------------------------------------------------------|
| Z | With light/surge voltage suppressor                     |
| U | Without light/surge voltage suppressor (non-polar type) |

**Manual override**

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

**CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

**Thread type**

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

**A, B port size**

**Thread piping**

|    |     |
|----|-----|
| 02 | 1/4 |
| 03 | 3/8 |

**One-touch fitting (Metric size)**

|     |                           |
|-----|---------------------------|
| C8  | One-touch fitting for ø8  |
| C10 | One-touch fitting for ø10 |
| C12 | One-touch fitting for ø12 |

**One-touch fitting (Inch size)**

|     |                              |
|-----|------------------------------|
| N9  | One-touch fitting for ø5/16" |
| N11 | One-touch fitting for ø3/8"  |

SJ

**SY**

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

VQZ

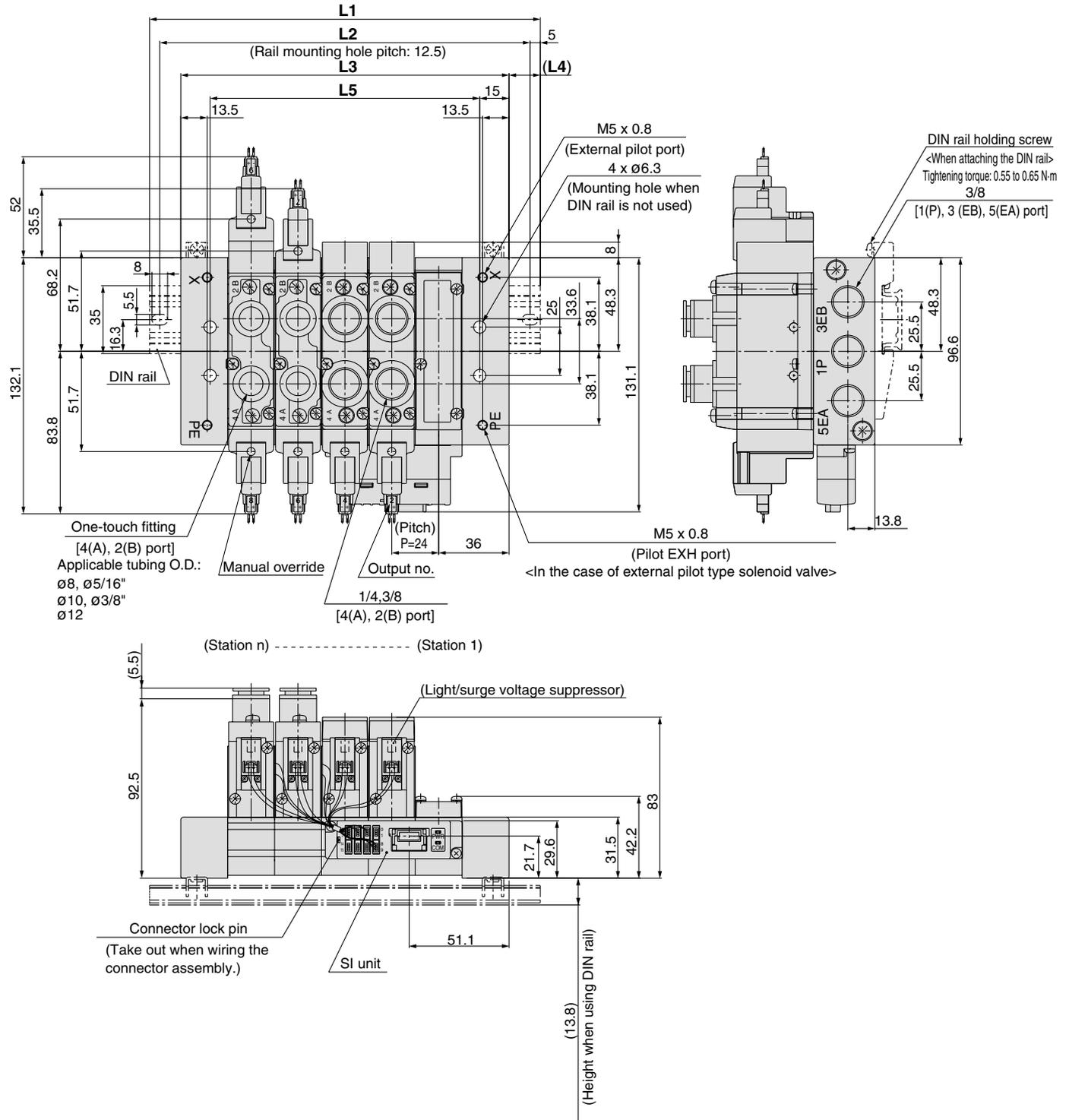
SQ

VFS

VFR

VQ7

## SY9000: SS5Y9-23SA - Stations - (-D)



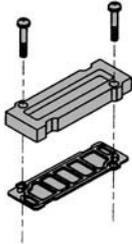
| Stations n | 3 stations | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 148        | 173   | 198   | 223   | 248   | 273   | 298   | 323   | 335.5 | 360.5 | 385.5 | 410.5 | 435.5 | 460.5       |
| <b>L2</b>  | 137.5      | 162.5 | 187.5 | 212.5 | 237.5 | 262.5 | 287.5 | 312.5 | 325   | 350   | 375   | 400   | 425   | 450         |
| <b>L3</b>  | 120        | 144   | 168   | 192   | 216   | 240   | 264   | 288   | 312   | 336   | 360   | 384   | 408   | 432         |
| <b>L4</b>  | 14         | 14.5  | 15    | 15.5  | 16    | 16.5  | 17    | 17.5  | 12    | 12.5  | 13    | 13.5  | 14    | 14.5        |
| <b>L5</b>  | 90         | 114   | 138   | 162   | 186   | 210   | 234   | 258   | 282   | 306   | 330   | 354   | 378   | 402         |

Note) In the case of direct mounting without DIN rail, total width of manifold is L3.



## Manifold Option

### ■ Type 20, 23, 20SA, 23SA Blanking plate assembly



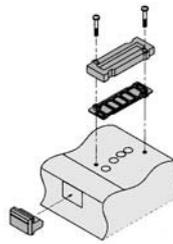
<Standard>

| Series        | Assembly part no. |
|---------------|-------------------|
| <b>SY3000</b> | SY3000-26-9A      |
| <b>SY5000</b> | SY5000-26-20A     |
| <b>SY7000</b> | SY7000-26-22A     |
| <b>SY9000</b> | SY9000-26-1A      |

<CE-compliant>

| Series        | Assembly part no. |
|---------------|-------------------|
| <b>SY3000</b> | SY3000-26-19A-Q   |
| <b>SY5000</b> | SY5000-26-1A-Q    |
| <b>SY7000</b> | SY7000-26-1A-Q    |
| <b>SY9000</b> | SY9000-26-1A-Q    |

### ■ Type 20P, 23P Blanking plate assembly



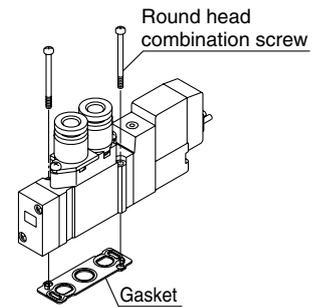
<Standard>

| Series        | Assembly part no. |
|---------------|-------------------|
| <b>SY3000</b> | SY3000-26-10A     |
| <b>SY5000</b> | SY5000-26-21A     |
| <b>SY7000</b> | SY7000-26-23A     |
| <b>SY9000</b> | SY9000-26-3A      |

<CE-compliant>

| Series        | Assembly part no. |
|---------------|-------------------|
| <b>SY3000</b> | SY3000-26-20A-Q   |
| <b>SY5000</b> | SY5000-26-3A-Q    |
| <b>SY7000</b> | SY7000-26-3A-Q    |
| <b>SY9000</b> | SY9000-26-3A-Q    |

### ■ Gasket assembly part no.

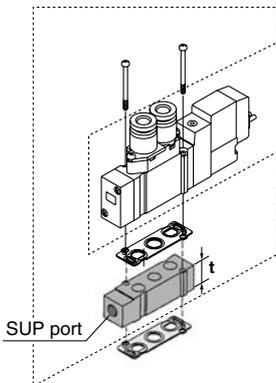


| Series        | Gasket assembly part no. |
|---------------|--------------------------|
| <b>SY3000</b> | SY3000-GS-1              |
| <b>SY5000</b> | SY5000-GS-1              |
| <b>SY7000</b> | SY7000-GS-1              |
| <b>SY9000</b> | SY9000-GS-1              |



Note) The gasket assembly includes 10 sets of mounting screws and a gasket.

### ■ Individual SUP spacer assembly

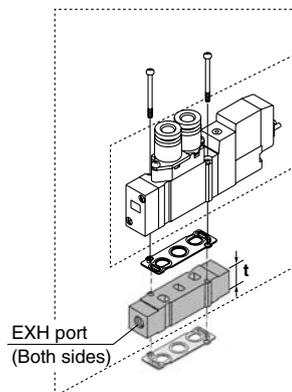


| Series        | Assembly part no. | Port size | t    |
|---------------|-------------------|-----------|------|
| <b>SY3000</b> | SY3000-38-20A(-Q) | M5 x 0.8  | 10.5 |
| <b>SY5000</b> | SY5000-38-1*A(-Q) | 1/8       | 15   |
| <b>SY7000</b> | SY7000-38-1*A(-Q) | 1/4       | 18   |
| <b>SY9000</b> | SY9000-38-1*A(-Q) | 1/4       | 20   |



Note) • The SUP port of SY3000/5000/7000 may be either on the lead wire side or on the end plate side. (An assembly is shipped under the conditions shown in the figure.)  
• The end plate side is only available to SY9000.

### ■ Individual EXH spacer assembly

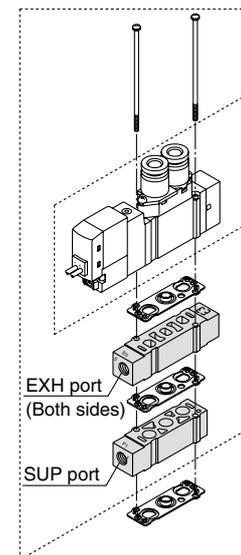


| Series        | Assembly part no. | Port size | t    |
|---------------|-------------------|-----------|------|
| <b>SY3000</b> | SY3000-39-20A(-Q) | M5 x 0.8  | 10.5 |
| <b>SY5000</b> | SY5000-39-1*A(-Q) | 1/8       | 15   |
| <b>SY7000</b> | SY7000-39-1*A(-Q) | 1/4       | 18   |
| <b>SY9000</b> | SY9000-39-1*A(-Q) | 1/4       | 20   |



Note) In case of 20P and 23P, for protection of the wiring unit section from drainage, piping at the EA port should be arranged so that it will not be directly exposed to exhaust from the valve.

### ■ Individual SUP spacer assembly + Individual EXH spacer assembly (Double spacer)



## ⚠ Caution

### Mounting screw tightening torques

**M2: 0.16 N·m**  
**M3: 0.8 N·m**  
**M4: 1.4 N·m**

## ⚠ Warning

When mounting a valve or spacer on the manifold base or sub-plate, etc., those mounting directions are determined. If mounted in the wrong direction, the equipment to be connected may cause malfunction. Refer to external dimensions, and then mount it.

### \* Thread type

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

[●: Available x: Not available]

| Series        | Individual SUP + Individual EXH Assemble part no. | Port size | Applicable manifold types |     |
|---------------|---------------------------------------------------|-----------|---------------------------|-----|
|               |                                                   |           | 20                        | 20P |
| <b>SY3000</b> | SY3000-120-1A(-Q)                                 | M5 x 0.8  | ●                         | x   |
| <b>SY5000</b> | SY5000-75-2*A(-Q)                                 | 1/8       | ●                         | x   |
| <b>SY7000</b> | SY7000-73-3*A(-Q)                                 | 1/4       | ●                         | x   |



Note) The SUP spacer's port does not have an orientation. As for the EXH ports, adjust the symbol "5" to the pilot valve side. Also, please make sure to connect the individual ports to protect the wiring section of the pilot valve from drainage, etc. The individual SUP spacer and EXH spacer can be mounted either on the upper side or lower side. (The above illustration shows the condition when the product is shipped out from a factory.)

SJ

SY

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

VQZ

SQ

VFS

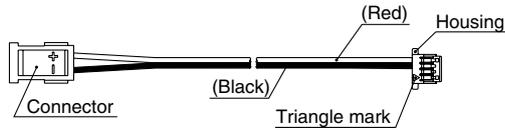
VFR

VQ7

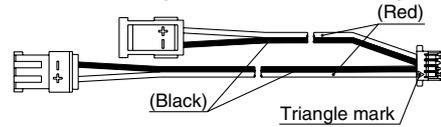
**Manifold Option**

■ Connector assembly

For single solenoid (SY3000-37-81A-□-N)



For double solenoid (SY3000-37-81A-□-□)



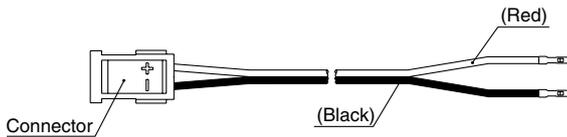
Connector assembly order no. (Can be used for the manifold without a specified layout (8 stations or less))  
Integrated type

| Model      | Part no.          | Connector mounting position            |
|------------|-------------------|----------------------------------------|
| SS5Y3-20SA | SY3000-37-81A-3-N | Single : For 1 to 4 stations           |
|            | SY3000-37-81A-3-6 | Double/3 position: For 1 to 4 stations |
|            | SY3000-37-81A-2-N | Single : For 5 to 8 stations           |
|            | SY3000-37-81A-2-4 | Double/3 position: For 5 to 8 stations |
| SS5Y5-20SA | SY3000-37-81A-3-N | Single : For 1 to 8 stations           |
|            | SY3000-37-81A-3-6 | Double/3 position: For 1 to 8 stations |
| SS5Y7-20SA | SY3000-37-81A-3-N | Single : For 1 to 4 stations           |
|            | SY3000-37-81A-3-6 | Double/3 position: For 1 to 4 stations |
|            | SY3000-37-81A-4-N | Single : For 5 to 8 stations           |
|            | SY3000-37-81A-4-7 | Double/3 position: For 5 to 8 stations |

Note) The above is for the station addition or maintenance. When ordering a connector assembly separately, a number would not be printed on the connector.

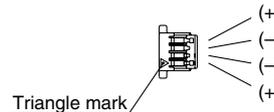
■ Connector assembly

SY3000-37-80A-□



■ Housing (8 pcs./set)

SY3000-44-3A



Connector assembly order no. (Can be used for the manifold with a specified layout)

| Model      | Part no.         | Connector mounting position        |
|------------|------------------|------------------------------------|
| SS5Y3-20SA | SY3000-37-80A-3  | For A side : For 1 to 8 stations   |
|            | SY3000-37-80A-6  | For B side                         |
|            | SY3000-37-80A-4  | For A side : For 9 to 16 stations  |
|            | SY3000-37-80A-7  | For B side                         |
| SS5Y5-20SA | SY3000-37-80A-3  | For A side : For 1 to 8 stations   |
|            | SY3000-37-80A-6  | For B side                         |
|            | SY3000-37-80A-7  | For A side : For 9 to 16 stations  |
|            | SY3000-37-80A-9  | For B side                         |
| SS5Y7-20SA | SY3000-37-80A-4  | For A side : For 1 to 8 stations   |
|            | SY3000-37-80A-7  | For B side                         |
|            | SY3000-37-80A-8  | For A side : For 9 to 16 stations  |
|            | SY3000-37-80A-11 | For B side                         |
| SS5Y9-23SA | SY3000-37-80A-6  | For A side : For 1 to 8 stations   |
|            | SY3000-37-80A-11 | For B side                         |
|            | SY3000-37-80A-9  | For A side : For 9 to 12 stations  |
|            | SY3000-37-80A-14 | For B side                         |
|            | SY3000-37-80A-13 | For A side : For 13 to 16 stations |
|            | SY3000-37-80A-18 | For B side                         |

Note 1) The above is for station addition or maintenance. When ordering a connector assembly separately, a number will not be printed on the connector.

Note 2) After inserting the connector assembly into the housing, be sure to confirm that the lead wire will not come off by lightly pulling the wire. Furthermore, do not reuse the lead wire after it has been inserted and removed.

Note 3) Wiring is set longer than the actual wiring distance.

## Manifold Option

### ■ SUP blocking disk (For SY9000)

By installing a SUP blocking disk in the pressure supply passage of a manifold valve, it is possible to supply two or more different high and low pressures to one manifold.



| Series        | Part no.     |
|---------------|--------------|
| <b>SY9000</b> | SY9000-61-2A |

### ■ EXH blocking disk (For SY9000)

By installing an EXH blocking disk in the exhaust passage of a manifold valve, it is possible to divide the valve's exhaust so that it does not affect another valve. (Two blocking disks are needed to divide both exhausts.)



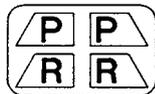
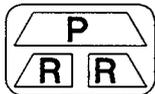
| Series        | Part no.     |
|---------------|--------------|
| <b>SY9000</b> | SY9000-61-2A |

### ■ Label for blocking disk (For SY9000)

The labels shown below are used on manifold stations containing SUP/EXH blocking disk(s) to show their location. (3 pcs. each)

#### VZ3000-123-1A

Label for SUP block disk    Label for EXH block disk    Label for SUP/EXH block disk



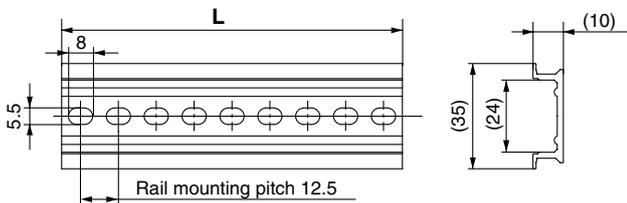
\* When a block disk is concurrently ordered by specifying on the manifold specification sheet, etc., a label will be stuck on the position where block disk is mounted.

### ■ DIN Rail Dimensions/Mass for SY9000

VZ1000-11-4-□

#### ● Refer to L dimensions

\* Fill in □ with an appropriate no. listed on the table of DIN rail dimensions shown below.

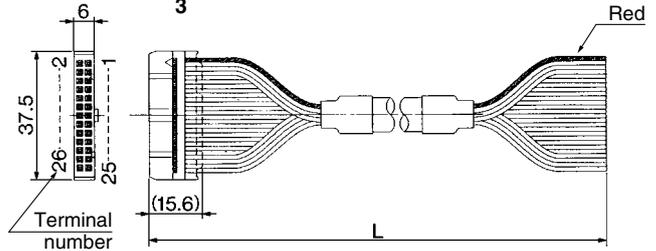


| No.         | 0    | 1     | 2    | 3     | 4     | 5     | 6    | 7     | 8     | 9     |
|-------------|------|-------|------|-------|-------|-------|------|-------|-------|-------|
| L Dimension | 98   | 110.5 | 123  | 135.5 | 148   | 160.5 | 173  | 185.5 | 198   | 210.5 |
| Mass (g)    | 24.8 | 28    | 31.1 | 34.3  | 37.4  | 40.6  | 43.8 | 46.9  | 50.1  | 53.3  |
| No.         | 10   | 11    | 12   | 13    | 14    | 15    | 16   | 17    | 18    | 19    |
| L Dimension | 223  | 235.5 | 248  | 260.5 | 273   | 285.5 | 298  | 310.5 | 323   | 335.5 |
| Mass (g)    | 56.4 | 59.6  | 62.7 | 65.9  | 69.1  | 72.2  | 75.4 | 78.6  | 81.7  | 84.9  |
| No.         | 20   | 21    | 22   | 23    | 24    | 25    | 26   | 27    | 28    | 29    |
| L Dimension | 348  | 360.5 | 373  | 385.5 | 398   | 410.5 | 423  | 435.5 | 448   | 460.5 |
| Mass (g)    | 88   | 91.2  | 94.4 | 97.5  | 100.7 | 103.9 | 107  | 110.2 | 113.3 | 116.5 |

Note) -For DIN rail, refer to page 338.  
 -Refer to L1 dimension on pages 153, 162 and 172 for lengths that correspond to the number of manifold stations.

### ■ Cable assembly (For 20P, 23P)

AXT100-FC26-<sup>1</sup>/<sub>3</sub>



### Connector Assembly for Flat Ribbon Cables

| Cable length (L) | Assembly part no. | Note                   |
|------------------|-------------------|------------------------|
| 1.5 m            | AXT100-FC26-1     | Cable 26 core x 28 AWG |
| 3 m              | AXT100-FC26-2     |                        |
| 5 m              | AXT100-FC26-3     |                        |

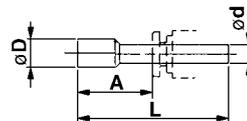
\* For other commercial connectors, use a 26 pins with strain relief conforming to MIL-C-83503.

### Connector manufacturers' example

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

### ■ Plug (white)

These are inserted in unused cylinder ports and SUP, EXH ports. Purchasing order is available in units of 10 pieces.



### Dimensions

| Applicable fittings size ød | Model   | A    | L    | D    |
|-----------------------------|---------|------|------|------|
| 4                           | KQ2P-04 | 16   | 32   | 6    |
| 6                           | KQ2P-06 | 18   | 35   | 8    |
| 8                           | KQ2P-08 | 20.5 | 39   | 10   |
| 10                          | KQ2P-10 | 22   | 43   | 12   |
| 12                          | KQ2P-12 | 24   | 44.5 | 14   |
| 1/8"                        | KQ2P-01 | 16   | 31.5 | 5    |
| 5/32"                       | KQ2P-03 | 16   | 32   | 6    |
| 1/4"                        | KQ2P-07 | 18   | 35   | 8.5  |
| 5/16"                       | KQ2P-09 | 20.5 | 39   | 10   |
| 3/8"                        | KQ2P-11 | 22   | 43   | 11.5 |

- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

**How to Increase Manifold Bases (Series SY9000 only) Manifold case can be added at any location.**

When a type 23 manifold base is added, tension bolts as well as manifold block assembly will be required. Order the tension bolt suitable for the stations after a station was increased (decreased), since the length of a tension bolt differs by the number of stations. (For changing the number of stations for a type 23P manifold, wiring unit for the stations and lead assembly will be required.)

- 1 Loosen the tension bolts ⑤ connecting the manifold base, and pull out both of 2 tension bolts.  
(When equipped with a DIN rail, loosen one DIN rail holding screw on either U side or D side.)
- 2 Separate the blocks at the location where station expansion is desired.
- 3 Mount additional manifold block assembly.
- 4 Press block-to-block so that there's no gap. After connection, insert a tension bolt for desired stations and then tighten it.

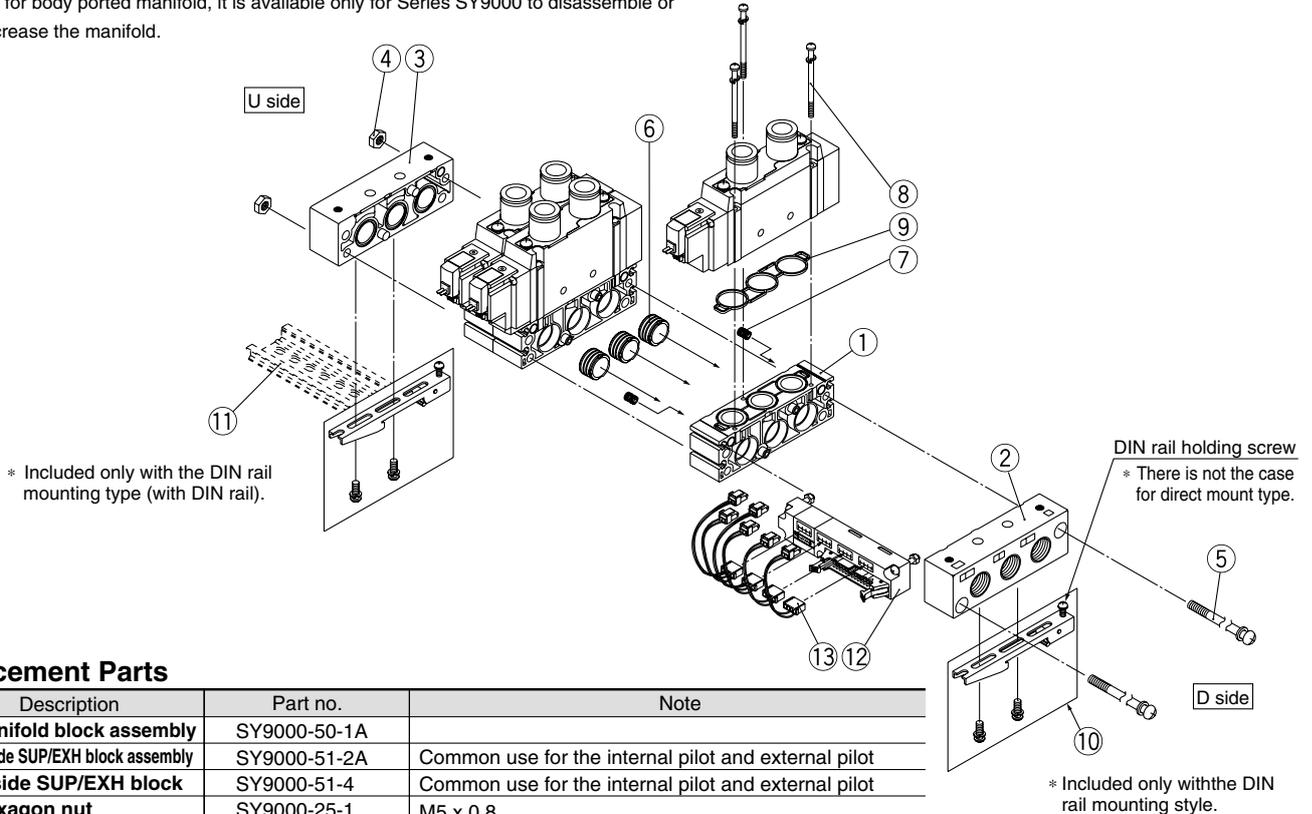
**⚠ Caution** (Tightening torque: 2.9 N·m)  
(When equipped with a DIN rail, be sure to tighten the DIN rail holding screws after tightening the tension bolts. Tightening torque: 1.4 N·m)

**⚠ Caution**

1. Be sure to shut off the power and air supplies before disassembly. Furthermore, since air may remain inside the actuator, piping and manifold, confirm that the air is completely exhausted before performing any work.
2. When disassembly and assembly are performed, air leakage may result if connections between blocks and tightening of the end block's holding screw, is inadequate.
3. By adding wiring unit assembly to type 23 manifold, it can be changed to type 23P manifold, too.

**Body Ported Manifold Exploded View, 23/23P Common**

 As for body ported manifold, it is available only for Series SY9000 to disassemble or increase the manifold.



**Replacement Parts**

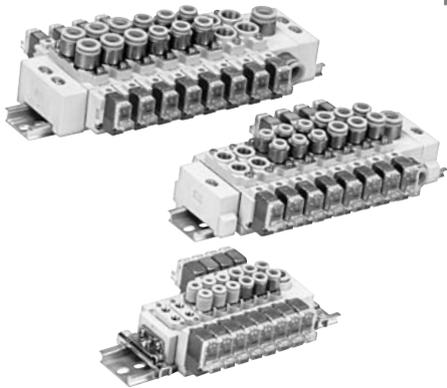
| No. | Description                   | Part no.      | Note                                                                                                                          |
|-----|-------------------------------|---------------|-------------------------------------------------------------------------------------------------------------------------------|
| 1   | Manifold block assembly       | SY9000-50-1A  |                                                                                                                               |
| 2   | D side SUP/EXH block assembly | SY9000-51-2A  | Common use for the internal pilot and external pilot                                                                          |
| 3   | U side SUP/EXH block          | SY9000-51-4   | Common use for the internal pilot and external pilot                                                                          |
| 4   | Hexagon nut                   | SY9000-25-1   | M5 x 0.8                                                                                                                      |
| 5   | Tension bolt                  | SY9000-23-□   | Since □ at the end of part number corresponds with the number of stations, fill in the same number as the number of stations. |
| 6   | Bush assembly                 | SY9000-61-1A  | Included in the Manifold block assembly and the D side SUP/EXH block assembly.                                                |
| 7   | Bush assembly                 | SY9000-61-3A  | Included in the Manifold block assembly and the D side SUP/EXH block assembly.                                                |
| 8   | Round head combination screw  | SY9000-18-2   | Included in the Manifold block assembly.                                                                                      |
| 9   | Manifold gasket               | SY9000-11-1   | Included in the Manifold block assembly.                                                                                      |
| 10  | Clamp sub assembly            | SY9000-29-1A  |                                                                                                                               |
| 11  | DIN rail                      | VZ1000-11-4-□ | Refer to page 175.                                                                                                            |
| 12  | Wiring unit assembly          | SY9000-36-□A  | Since □ in part number corresponds with the number of stations, fill in the number of stations (4 to 12).                     |
| 13  | Connector assembly            | SY9000-37-□□  | Refer to page 161.                                                                                                            |

# 5 Port Solenoid Valve Body Ported Manifold Cassette Type



Type **60**

# Series SY3000/5000/7000



## How to Order

SS5Y **3** - 60 - **05** **D** - [ ] - [ ]

| Series |        |
|--------|--------|
| 3      | SY3000 |
| 5      | SY5000 |
| 7      | SY7000 |

| Valve stations |             |
|----------------|-------------|
| 02             | 2 stations  |
| ⋮              | ⋮           |
| 20             | 20 stations |

| CE-compliant |              |
|--------------|--------------|
| Nil          | —            |
| Q            | CE-compliant |

\* For DC only.

**Option**  
When a DIN rail longer than standard is required, enter the number of manifold stations that corresponds with the length of DIN rail needed. Max. 20 stations

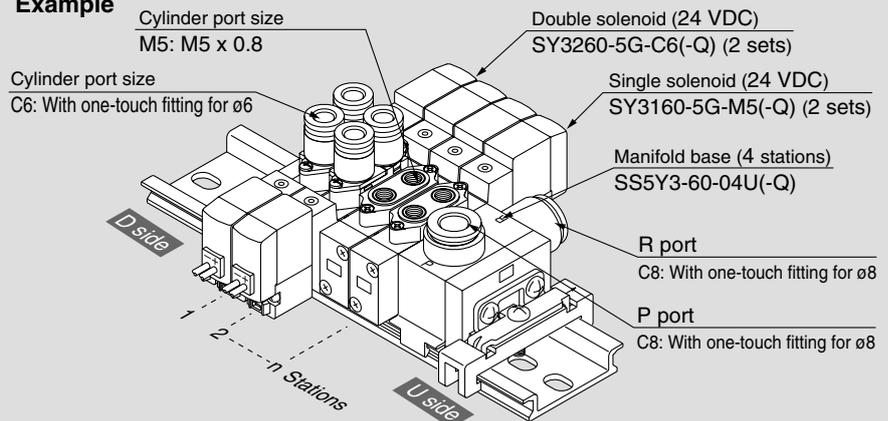
### SUP/EXH block assembly mounting position

| Symbol | Mounting position | Applicable stations |
|--------|-------------------|---------------------|
| U      | U side            | 2 to 10 stations    |
| D      | D side            | 2 to 10 stations    |
| B      | Both sides        | 2 to 20 stations    |
| M*     | Special location  |                     |

\* For special specifications, indicate separately by the manifold specification sheet.

## How to Order Manifold Assembly (Example)

### Example



SS5Y3-60-04U ..... 1 set (Type 60, 4-station manifold base part no.)  
\* SY3260-5G-C6 ..... 2 sets (Double solenoid part no.)  
\* SY3160-5G-M5 ..... 2 sets (Single solenoid part no.)

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

Add the valve and option part number under the manifold base part number. In the case of complex arrangement, specify them on the manifold specification sheet.

## Manifold Specifications

| Model                                                                                             | SS5Y3-60(-Q)                        | SS5Y5-60(-Q)                                                               | SS5Y7-60(-Q)                                                                                           |                                                                         |
|---------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| Applicable valve                                                                                  | SY3□60                              | SY5□60                                                                     | SY7□60                                                                                                 |                                                                         |
| Manifold type                                                                                     | Stacking type/DIN rail mounted      |                                                                            |                                                                                                        |                                                                         |
| P (SUP)/R (EXH)                                                                                   | Common SUP/Common EXH               |                                                                            |                                                                                                        |                                                                         |
| Valve stations                                                                                    | 2 to 20 stations <sup>Note 1)</sup> |                                                                            |                                                                                                        |                                                                         |
| A, B port location                                                                                | Valve                               |                                                                            |                                                                                                        |                                                                         |
| Port size                                                                                         | P, R port                           | C8 (One-touch fitting for ø8)                                              | C10 (One-touch fitting for ø10)                                                                        | C12 (One-touch fitting for ø12)                                         |
|                                                                                                   | A, B port                           | M5 x 0.8<br>C4 (One-touch fitting for ø4)<br>C6 (One-touch fitting for ø6) | 1/8<br>C4 (One-touch fitting for ø4)<br>C6 (One-touch fitting for ø6)<br>C8 (One-touch fitting for ø8) | 1/4<br>C8 (One-touch fitting for ø8)<br>C10 (One-touch fitting for ø10) |
| Manifold base mass W (g) <sup>Note 2)</sup><br>(n: Number of SUP/EXH blocks, m: Mass of DIN rail) | W = 13n + m + 36                    | W = 41.2n + m + 77.6                                                       | W = 65.4n + m + 128.2                                                                                  |                                                                         |

 Note 1) In cases such as those where many valves are operated simultaneously, use “-stationB (SUP/EXH block on both sides)”, applying pressure to the P ports on both sides and exhausting from the R ports on both sides.

Note 2) For DIN rail mass, refer to page 186.

## Flow Characteristics

| Model        | Port size      |              | Flow characteristics         |      |      |                              |      |      |
|--------------|----------------|--------------|------------------------------|------|------|------------------------------|------|------|
|              | 1,5/3<br>(P,R) | 4,2<br>(A,B) | 1 → 4/2(P → A/B)             |      |      | 4/2 → 5/3(A/B → R)           |      |      |
|              |                |              | C (dm <sup>3</sup> /(s·bar)) | b    | Cv   | C (dm <sup>3</sup> /(s·bar)) | b    | Cv   |
| SS5Y3-60(-Q) | C8             | M5           | 0.55                         | 0.29 | 0.14 | 0.72                         | 0.24 | 0.18 |
|              |                | C4           | 0.57                         | 0.24 | 0.14 | 0.71                         | 0.20 | 0.17 |
|              |                | C6           | 0.68                         | 0.28 | 0.17 | 0.77                         | 0.24 | 0.19 |
| SS5Y5-60(-Q) | C10            | 1/8          | 1.8                          | 0.24 | 0.44 | 2.1                          | 0.17 | 0.47 |
|              |                | C6           | 1.5                          | 0.30 | 0.37 | 2.0                          | 0.16 | 0.46 |
|              |                | C8           | 1.8                          | 0.20 | 0.45 | 2.2                          | 0.17 | 0.50 |
| SS5Y7-60(-Q) | C12            | 1/4          | 3.7                          | 0.25 | 0.96 | 3.8                          | 0.19 | 0.94 |
|              |                | C8           | 3.2                          | 0.26 | 0.81 | 4.0                          | 0.18 | 0.96 |
|              |                | C10          | 3.7                          | 0.28 | 0.98 | 4.1                          | 0.19 | 1.0  |

 Note) The value is for manifold base with 5 stations and individually operated 2 position type.

SJ  
SY  
SV  
SYJ  
SZ  
VP4  
S0700  
VQ  
VQ4  
VQ5  
VQC  
VQZ  
SQ  
VFS  
VFR  
VQ7

## How to Order Valve

SY 3 1 60 - 5 L - C6 - - -

### Series

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |
| 7 | SY7000 |

### Type of actuation

|   |                                |
|---|--------------------------------|
| 1 | 2 position single<br>          |
| 2 | 2 position double<br>          |
| 3 | 3 position closed center<br>   |
| 4 | 3 position exhaust center<br>  |
| 5 | 3 position pressure center<br> |

### Coil specifications

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

\* Power saving circuit is not available in the case of D, Y, DO, YO or W□ type.

### Rated voltage

| For DC |        |
|--------|--------|
| 5      | 24 VDC |
| 6      | 12 VDC |
| V      | 6 VDC  |
| S      | 5 VDC  |
| R      | 3 VDC  |

| For AC (50/60Hz) |                   |
|------------------|-------------------|
| 1                | 100 VAC           |
| 2                | 200 VAC           |
| 3                | 110 VAC [115 VAC] |
| 4                | 220 VAC [230 VAC] |

\* DC specifications of type D, Y, DO and YO is only available with 12 and 24 VDC.  
\* D, Y, DO and YO only available for SY5000, SY7000.  
\* For type W□, DC voltage is only available.

### Made to Order

|     |                                                 |
|-----|-------------------------------------------------|
| Nil | —                                               |
| X20 | Body ported external pilot (Refer to page 332.) |
| X90 | Main valve fluoro rubber (Refer to page 332.)   |

### A, B port size

#### Thread piping

| Symbol | Port size | Applicable series |
|--------|-----------|-------------------|
| M5     | M5 x 0.8  | SY3000            |
| O1     | 1/8       | SY5000            |
| O2     | 1/4       | SY7000            |

### Thread type

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

\* Except for M5

### CE-compliant

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

\* For DC only except DIN terminal.

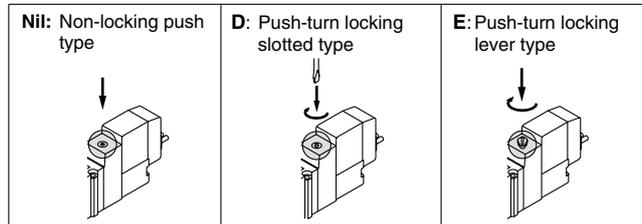
### One-touch fitting (Metric size)

| Symbol | Port size                 | Applicable series |
|--------|---------------------------|-------------------|
| C4     | One-touch fitting for ø4  | SY3000            |
| C6     | One-touch fitting for ø6  | SY3000            |
| C4     | One-touch fitting for ø4  | SY5000            |
| C6     | One-touch fitting for ø6  | SY5000            |
| C8     | One-touch fitting for ø8  | SY5000            |
| C8     | One-touch fitting for ø8  | SY7000            |
| C10    | One-touch fitting for ø10 | SY7000            |

### One-touch fitting (Inch size)

| Symbol | Port size                    | Applicable series |
|--------|------------------------------|-------------------|
| N3     | One-touch fitting for ø5/32" | SY3000            |
| N7     | One-touch fitting for ø1/4"  | SY3000            |
| N3     | One-touch fitting for ø5/32" | SY5000            |
| N7     | One-touch fitting for ø1/4"  | SY5000            |
| N9     | One-touch fitting for ø5/16" | SY5000            |
| N9     | One-touch fitting for ø5/16" | SY7000            |
| N11    | One-touch fitting for ø3/8"  | SY7000            |

### Manual override



### Light/surge voltage suppressor

#### Electrical entry for G, H, L, M, W

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

#### Electrical entry for D, Y (SY500/7000 only)

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

\* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.  
\* Power saving circuit is only available in the "Z" type.

\* DOZ and YOZ are not available.  
\* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

### Electrical entry

| 24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC |                                              |                                              |                                  | 24, 12 VDC/100, 110, 200, 220 VAC                   | 24, 12, 6, 5, 3 VDC                        |
|--------------------------------------------|----------------------------------------------|----------------------------------------------|----------------------------------|-----------------------------------------------------|--------------------------------------------|
| Grommet                                    | L plug connector                             | M plug connector                             | MN: Without lead wire            | DIN terminal (SY5000, 7000)<br>D, Y: With connector | M8 connector                               |
| <b>G:</b> Lead wire length 300 mm<br>      | <b>L:</b> With lead wire (Length 300 mm)<br> | <b>M:</b> With lead wire (Length 300 mm)<br> | <b>MN:</b> Without lead wire<br> | <b>DO, YO:</b> Connector<br>                        | <b>WO:</b> Without connector cable<br>     |
| <b>H:</b> Lead wire length 600 mm<br>      | <b>LN:</b> Without lead wire<br>             | <b>LO:</b> Without connector<br>             | <b>MO:</b> Without connector<br> |                                                     | <b>W□:</b> With connector cable (Note)<br> |

\* LN, MN type: with 2 sockets.  
\* "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). For details, refer to page 336.  
\* For connector cable of M8 connector, refer to page 339.  
\* M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 331 for details.  
\* Refer to page 336 for the lead wire length of L and M plug connectors.  
\* Refer to page 337 for the connector assembly with cover for L and M plug connectors.  
Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.

## Specifications

| Series                                              |                   | SY3000                                                                                    | SY5000 | SY7000 |
|-----------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------|--------|--------|
| <b>Fluid</b>                                        |                   | Air                                                                                       |        |        |
| Internal pilot<br>Operating pressure<br>range (MPa) | 2 position single | 0.15 to 0.7                                                                               |        |        |
|                                                     | 2 position double | 0.1 to 0.7                                                                                |        |        |
|                                                     | 3 position        | 0.2 to 0.7                                                                                |        |        |
| <b>Ambient and fluid temperature (°C)</b>           |                   | Max. 50                                                                                   |        |        |
| Max. operating<br>frequency (Hz)                    | 2 position double | 10                                                                                        | 5      | 5      |
|                                                     | 3 position        | 3                                                                                         | 3      | 3      |
| <b>Manual override<br/>(Manual operation)</b>       |                   | Non-locking push type,<br>Push-turn locking slotted type,<br>Push-turn locking lever type |        |        |
| <b>Pilot exhaust method</b>                         |                   | Common exhaust type for main and pilot valve                                              |        |        |
| <b>Lubrication</b>                                  |                   | Not required                                                                              |        |        |
| <b>Mounting position</b>                            |                   | Unrestricted                                                                              |        |        |
| <b>Impact/Vibration resistance</b> <sup>Note)</sup> |                   | 150/30                                                                                    |        |        |
| <b>Enclosure</b>                                    |                   | Dust proof (* DIN terminal, M8 connector: IP65)                                           |        |        |

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

Vibration resistance: No malfunction occurred in 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 in the initial stage)

\* Based on IEC60529

## Solenoid Specifications

|                                      |                                          |                                                                                                               |                                                                                                                                                |
|--------------------------------------|------------------------------------------|---------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Electrical entry</b>              |                                          | Grommet (G), (H)<br>L plug connector (L)<br>M plug connector (M)<br>DIN terminal (D), (Y)<br>M8 connector (W) |                                                                                                                                                |
|                                      |                                          | G, H, L, M, W                                                                                                 | D, Y                                                                                                                                           |
| <b>Coil rated<br/>voltage (V)</b>    | DC                                       | 24, 12, 6, 5, 3                                                                                               |                                                                                                                                                |
|                                      | AC <sup>50/60</sup> Hz                   | 100, 110, 200, 220                                                                                            |                                                                                                                                                |
| <b>Allowable voltage fluctuation</b> |                                          | ±10% of rated voltage *                                                                                       |                                                                                                                                                |
| <b>Power<br/>consumption<br/>(W)</b> | DC                                       | 0.35 [With indicator light: 0.4<br>(DIN terminal with indicator light: 0.45)]                                 |                                                                                                                                                |
|                                      | Standard<br>With power<br>saving circuit | 0.1 (With indicator light only)                                                                               |                                                                                                                                                |
| <b>Apparent<br/>power<br/>(VA) *</b> | AC                                       | 100 V                                                                                                         | 0.78 (With indicator light: 0.81) 0.78 (With indicator light: 0.87)                                                                            |
|                                      |                                          | 110 V<br>[115 V]                                                                                              | 0.86 (With indicator light: 0.89) 0.86 (With indicator light: 0.97)<br>[0.94 (With indicator light: 0.97)] [0.94 (With indicator light: 1.07)] |
|                                      |                                          | 200 V                                                                                                         | 1.18 (With indicator light: 1.22) 1.15 (With indicator light: 1.30)                                                                            |
|                                      |                                          | 220 V<br>[230 V]                                                                                              | 1.30 (With indicator light: 1.34) 1.27 (With indicator light: 1.46)<br>[1.42 (With indicator light: 1.46)] [1.39 (With indicator light: 1.60)] |
| <b>Surge voltage suppressor</b>      |                                          | Diode (Varistor is for DIN terminal<br>and non-polar)                                                         |                                                                                                                                                |
| <b>Indicator light</b>               |                                          | LED (AC of DIN connector is neon light.)                                                                      |                                                                                                                                                |

 \* In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.

\* For 115 VAC and 230 VAC, the allowable voltage is -15% to +5% of rated voltage.

\* S, Z and T type (with power saving circuit) should be used within the following allowable voltage fluctuation range due to a voltage drop caused by the internal circuit.

S and Z type: 24 VDC: -7% to +10%  
12 VDC: -4% to +10%

T type: 24 VDC: -8% to +10%  
12 VDC: -6% to +10%

## Response Time

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

### SY3000

| Type of actuation | Response time (ms) (at the pressure of 0.5 MPa) |                               |            |
|-------------------|-------------------------------------------------|-------------------------------|------------|
|                   | Without surge voltage suppressor                | With surge voltage suppressor |            |
|                   |                                                 | S, Z type                     | R, U type  |
| 2 position single | 12 or less                                      | 15 or less                    | 12 or less |
| 2 position double | 10 or less                                      | 13 or less                    | 10 or less |
| 3 position        | 15 or less                                      | 20 or less                    | 16 or less |

### SY5000

| Type of actuation | Response time (ms) (at the pressure of 0.5 MPa) |                               |            |
|-------------------|-------------------------------------------------|-------------------------------|------------|
|                   | Without surge voltage suppressor                | With surge voltage suppressor |            |
|                   |                                                 | S, Z type                     | R, U type  |
| 2 position single | 19 or less                                      | 26 or less                    | 19 or less |
| 2 position double | 18 or less                                      | 22 or less                    | 18 or less |
| 3 position        | 32 or less                                      | 38 or less                    | 32 or less |

### SY7000

| Type of actuation | Response time (ms) (at the pressure of 0.5 MPa) |                                     |            |
|-------------------|-------------------------------------------------|-------------------------------------|------------|
|                   | Without light/surge voltage suppressor          | With light/surge voltage suppressor |            |
|                   |                                                 | S, Z type                           | R, U type  |
| 2 position single | 31 or less                                      | 38 or less                          | 33 or less |
| 2 position double | 27 or less                                      | 30 or less                          | 28 or less |
| 3 position        | 50 or less                                      | 56 or less                          | 50 or less |

SJ

SY

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

VQZ

SQ

VFS

VFR

VQ7

**Mass**

**Series SY3000**

| Valve model | Type of actuation |                 | Port size                        | Mass (g) |                    |              |
|-------------|-------------------|-----------------|----------------------------------|----------|--------------------|--------------|
|             |                   |                 | A, B                             | Gro-mmet | L/M plug connector | M8 Connector |
| SY3□60-□-M5 | 2 position        | Single          | M5 x 0.8                         | 49       | 51                 | 55           |
|             |                   | Double          |                                  | 70       | 73                 | 81           |
|             | 3 position        | Closed center   |                                  | 73       | 76                 | 84           |
|             |                   | Exhaust center  |                                  |          |                    |              |
|             |                   | Pressure center |                                  |          |                    |              |
| SY3□60-□-C4 | 2 position        | Single          | C4<br>(One-touch fitting for ø4) | 62       | 61                 | 65           |
|             |                   | Double          |                                  | 80       | 83                 | 91           |
|             | 3 position        | Closed center   |                                  | 82       | 86                 | 94           |
|             |                   | Exhaust center  |                                  |          |                    |              |
|             |                   | Pressure center |                                  |          |                    |              |
| SY3□60-□-C6 | 2 position        | Single          | C6<br>(One-touch fitting for ø6) | 55       | 57                 | 61           |
|             |                   | Double          |                                  | 76       | 79                 | 87           |
|             | 3 position        | Closed center   |                                  | 78       | 82                 | 90           |
|             |                   | Exhaust center  |                                  |          |                    |              |
|             |                   | Pressure center |                                  |          |                    |              |

 Note) [ ]: denotes normal position.

**Series SY7000**

| Valve model  | Type of actuation |                 | Port size                          | Mass (g) |                    |              |              |
|--------------|-------------------|-----------------|------------------------------------|----------|--------------------|--------------|--------------|
|              |                   |                 | A, B                               | Gro-mmet | L/M plug connector | DIN terminal | M8 Connector |
| SY7□60-□-02  | 2 position        | Single          | 1/4                                | 103      | 105                | 126          | 109          |
|              |                   | Double          |                                    | 125      | 128                | 170          | 136          |
|              | 3 position        | Closed center   |                                    | 133      | 136                | 178          | 144          |
|              |                   | Exhaust center  |                                    |          |                    |              |              |
|              |                   | Pressure center |                                    |          |                    |              |              |
| SY7□60-□-C8  | 2 position        | Single          | C8<br>(One-touch fitting for ø8)   | 138      | 139                | 160          | 143          |
|              |                   | Double          |                                    | 160      | 163                | 205          | 171          |
|              | 3 position        | Closed center   |                                    | 168      | 171                | 213          | 179          |
|              |                   | Exhaust center  |                                    |          |                    |              |              |
|              |                   | Pressure center |                                    |          |                    |              |              |
| SY7□60-□-C10 | 2 position        | Single          | C10<br>(One-touch fitting for ø10) | 123      | 125                | 146          | 129          |
|              |                   | Double          |                                    | 145      | 149                | 191          | 157          |
|              | 3 position        | Closed center   |                                    | 153      | 157                | 199          | 165          |
|              |                   | Exhaust center  |                                    |          |                    |              |              |
|              |                   | Pressure center |                                    |          |                    |              |              |

**Series SY5000**

| Valve model | Type of actuation |                 | Port size                        | Mass (g) |                    |              |              |
|-------------|-------------------|-----------------|----------------------------------|----------|--------------------|--------------|--------------|
|             |                   |                 | A, B                             | Gro-mmet | L/M plug connector | DIN terminal | M8 Connector |
| SY5□60-□-01 | 2 position        | Single          | 1/8                              | 67       | 69                 | 90           | 71           |
|             |                   | Double          |                                  | 91       | 94                 | 136          | 102          |
|             | 3 position        | Closed center   |                                  | 97       | 100                | 142          | 108          |
|             |                   | Exhaust center  |                                  |          |                    |              |              |
|             |                   | Pressure center |                                  |          |                    |              |              |
| SY5□60-□-C4 | 2 position        | Single          | C4<br>(One-touch fitting for ø4) | 91       | 93                 | 114          | 97           |
|             |                   | Double          |                                  | 113      | 116                | 158          | 124          |
|             | 3 position        | Closed center   |                                  | 119      | 122                | 164          | 130          |
|             |                   | Exhaust center  |                                  |          |                    |              |              |
|             |                   | Pressure center |                                  |          |                    |              |              |
| SY5□60-□-C6 | 2 position        | Single          | C6<br>(One-touch fitting for ø6) | 86       | 88                 | 109          | 92           |
|             |                   | Double          |                                  | 108      | 111                | 153          | 119          |
|             | 3 position        | Closed center   |                                  | 114      | 117                | 159          | 125          |
|             |                   | Exhaust center  |                                  |          |                    |              |              |
|             |                   | Pressure center |                                  |          |                    |              |              |
| SY5□60-□-C8 | 2 position        | Single          | C8<br>(One-touch fitting for ø8) | 78       | 80                 | 101          | 84           |
|             |                   | Double          |                                  | 100      | 103                | 145          | 111          |
|             | 3 position        | Closed center   |                                  | 106      | 109                | 151          | 117          |
|             |                   | Exhaust center  |                                  |          |                    |              |              |
|             |                   | Pressure center |                                  |          |                    |              |              |

## How to Order Pilot Valve Assembly

V111  - 5 G

### Coil specifications

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

\* Power saving circuit is not available in the case of D, DO or W  type.

### Rated voltage

|   |                                            |
|---|--------------------------------------------|
| 5 | 24 VDC                                     |
| 6 | 12 VDC                                     |
| V | 6 VDC                                      |
| S | 5 VDC                                      |
| R | 3 VDC                                      |
| 1 | 100 VAC $50/60$ Hz                         |
| 2 | 200 VAC $50/60$ Hz                         |
| 3 | 110 VAC $50/60$ Hz<br>[115 VAC $50/60$ Hz] |
| 4 | 220 VAC $50/60$ Hz<br>[230 VAC $50/60$ Hz] |

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

### Light/surge voltage suppressor

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

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

### Electrical entry

|                            |                           |                                         |
|----------------------------|---------------------------|-----------------------------------------|
| G                          | Grommet, 300 mm lead wire |                                         |
| H                          | Grommet, 600 mm lead wire |                                         |
| L                          |                           | With lead wire                          |
| LN                         | L plug connector          | Without lead wire                       |
| LO                         |                           | Without connector                       |
| M                          |                           | With lead wire                          |
| MN                         | M plug connector          | Without lead wire                       |
| MO                         |                           | Without connector                       |
| WO                         | M8                        | Without connector cable                 |
| W <input type="checkbox"/> | connector                 | With connector cable <sup>Note 1)</sup> |

\* For connector cable of M8 connector, refer to page 339.  
Note 1) Enter the cable length symbols in . Please be sure to fill in the blank referring to page 340.

## ■ DIN terminal type

V115 - 5 D

### Rated voltage

|   |                                            |
|---|--------------------------------------------|
| 5 | 24 VDC                                     |
| 6 | 12 VDC                                     |
| 1 | 100 VAC $50/60$ Hz                         |
| 2 | 200 VAC $50/60$ Hz                         |
| 3 | 110 VAC $50/60$ Hz<br>[115 VAC $50/60$ Hz] |
| 4 | 220 VAC $50/60$ Hz<br>[230 VAC $50/60$ Hz] |

\* DC specifications of Type D, Y, DO and YO is only available with 12 and 24 VDC.

### Light/surge voltage suppressor

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

\* DOZ and YOZ are not available.  
\* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

### Electrical entry

|    |              |                   |
|----|--------------|-------------------|
| D  | DIN terminal | With connector    |
| DO | (Type D)     | Without connector |
| Y  | DIN terminal | With connector    |
| YO | (Type Y)     | Without connector |

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

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

SJ

SY

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

VQZ

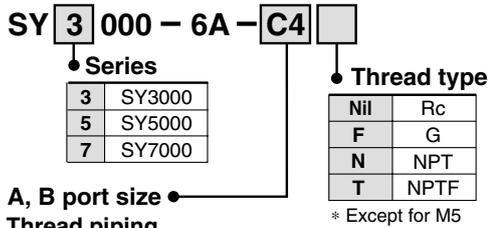
SQ

VFS

VFR

VQ7

## How to Order Port Block Assembly



### A, B port size

### Thread piping

| Symbol | Port size | Applicable series |
|--------|-----------|-------------------|
| M5     | M5 x 0.8  | SY3000            |
| 01     | 1/8       | SY5000            |
| 02     | 1/4       | SY7000            |

### One-touch fitting (Metric size)

| Symbol | Port size                 | Applicable series |
|--------|---------------------------|-------------------|
| C4     | One-touch fitting for ø4  | SY3000            |
| C6     | One-touch fitting for ø6  |                   |
| C4     | One-touch fitting for ø4  | SY5000            |
| C6     | One-touch fitting for ø6  |                   |
| C8     | One-touch fitting for ø8  | SY7000            |
| C8     | One-touch fitting for ø8  |                   |
| C10    | One-touch fitting for ø10 |                   |

### One-touch fitting (Inch size)

| Symbol | Port size                    | Applicable series |
|--------|------------------------------|-------------------|
| N3     | One-touch fitting for ø5/32" | SY3000            |
| N7     | One-touch fitting for ø1/4"  |                   |
| N3     | One-touch fitting for ø5/32" | SY5000            |
| N7     | One-touch fitting for ø1/4"  |                   |
| N9     | One-touch fitting for ø5/16" | SY7000            |
| N9     | One-touch fitting for ø5/16" |                   |
| N11    | One-touch fitting for ø3/8"  |                   |

## How to Change Port Block Assembly

Connecting port size of A and B can be changed by replacing port block assembly mounted on body. When changing block assembly, correct screw torque must be achieved to avoid trouble; e.g. air leakage.

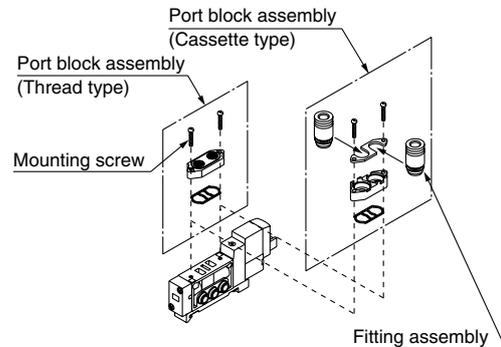
With the one-touch fitting port block assembly, it is only necessary to change the fitting and not the whole block. Refer to following part numbers.

### One-touch fitting (Metric size)

| Port size                 | Fitting assembly part no. | Applicable series |
|---------------------------|---------------------------|-------------------|
| One-touch fitting for ø4  | VVQ1000-50A-C4            | SY3000            |
| One-touch fitting for ø6  | VVQ1000-50A-C6            |                   |
| One-touch fitting for ø4  | VVQ1000-51A-C4            | SY5000            |
| One-touch fitting for ø6  | VVQ1000-51A-C6            |                   |
| One-touch fitting for ø8  | VVQ1000-51A-C8            | SY7000            |
| One-touch fitting for ø8  | VVQ2000-51A-C8            |                   |
| One-touch fitting for ø10 | VVQ2000-51A-C10           |                   |

### One-touch fitting (Inch size)

| Port size                    | Fitting assembly part no. | Applicable series |
|------------------------------|---------------------------|-------------------|
| One-touch fitting for ø5/32" | VVQ1000-50A-N3            | SY3000            |
| One-touch fitting for ø1/4"  | VVQ1000-50A-N7            |                   |
| One-touch fitting for ø5/32" | VVQ1000-51A-N3            | SY5000            |
| One-touch fitting for ø1/4"  | VVQ1000-51A-N7            |                   |
| One-touch fitting for ø5/16" | VVQ1000-51A-N9            | SY7000            |
| One-touch fitting for ø1/4"  | VVQ2000-51A-N9            |                   |
| One-touch fitting for ø3/8"  | VVQ2000-51A-N11           |                   |



### ⚠ Caution

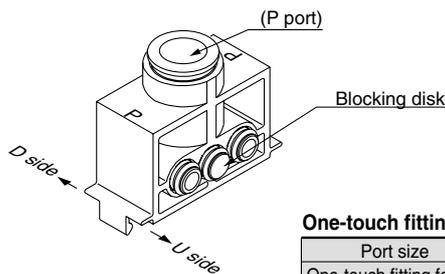
Torque for mounting screws

SY3000(M2): 0.12 N·m  
 SY5000, 7000 (M3): 0.6 N·m

\* Refer to "How to Change Port Block Assembly" for part numbers.

## Manifold Option

### Individual SUP block assembly



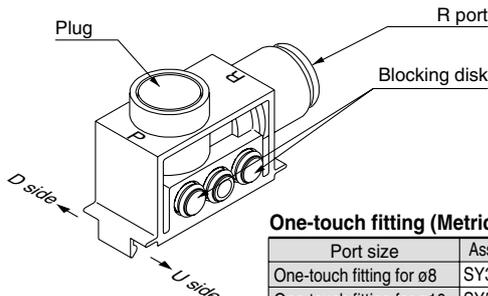
#### One-touch fitting (Metric size)

| Port size                 | Assembly part no. | Applicable series |
|---------------------------|-------------------|-------------------|
| One-touch fitting for ø6  | SY3000-54-2C(-Q)  | SY3000            |
| One-touch fitting for ø8  | SY3000-54-1C(-Q)  |                   |
| One-touch fitting for ø10 | SY5000-54-1C(-Q)  | SY5000            |
| One-touch fitting for ø12 | SY7000-54-1C(-Q)  | SY7000            |

#### One-touch fitting (Inch size)

| Port size                    | Assembly part no. | Applicable series |
|------------------------------|-------------------|-------------------|
| One-touch fitting for ø5/16" | SY3000-54-3C(-Q)  | SY3000            |
| One-touch fitting for ø3/8"  | SY5000-54-2C(-Q)  | SY5000            |
| One-touch fitting for ø3/8"  | SY7000-54-3C(-Q)  | SY7000            |

### Individual EXH block assembly



#### One-touch fitting (Metric size)

| Port size                 | Assembly part no. | Applicable series |
|---------------------------|-------------------|-------------------|
| One-touch fitting for ø8  | SY3000-55-1B(-Q)  | SY3000            |
| One-touch fitting for ø10 | SY5000-55-1B(-Q)  | SY5000            |
| One-touch fitting for ø12 | SY7000-55-1B(-Q)  | SY7000            |

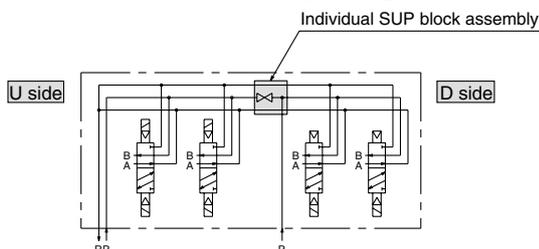
#### One-touch fitting (Inch size)

| Port size                    | Assembly part no. | Applicable series |
|------------------------------|-------------------|-------------------|
| One-touch fitting for ø5/16" | SY3000-55-2B(-Q)  | SY3000            |
| One-touch fitting for ø3/8"  | SY5000-55-2B(-Q)  | SY5000            |
| One-touch fitting for ø3/8"  | SY7000-55-3B(-Q)  | SY7000            |

### [When supplying the manifold with 2 different supply pressures.]

Specify arrangement of individual SUP block assembly on the manifold specification sheet. (When using SS5Y□-60-□□D, blocking disk is assembled on

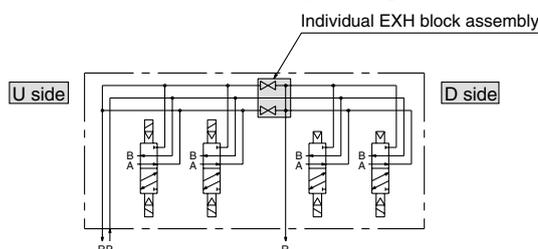
<Manifold model no.: SS5Y<sup>3</sup>-60-□□D>



### [When 2 different EXH passages are required.]

Specify arrangement of individual EXH block assembly on the manifold specification sheet. (When using SS5Y□-60-□□D, blocking disk is assembled on D side.)

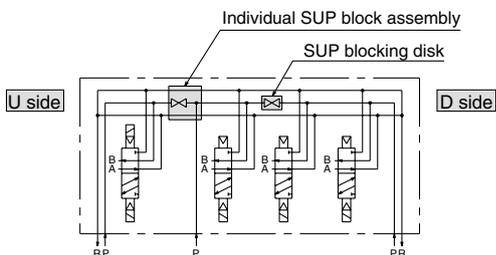
<Manifold model no.: SS5Y<sup>3</sup>-60-□□D>



### [When a different supply pressure is required for only a middle valve.]

Specify arrangement of individual SUP block assembly and SUP blocking disk on the manifold specification sheet.

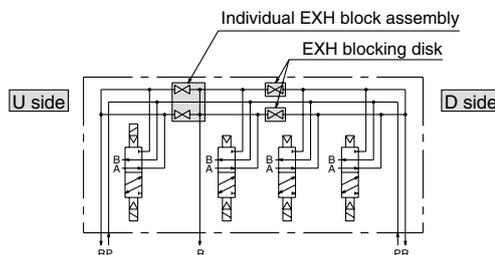
(Applicable manifold model no.: SS5Y□-60-□□B)



### [When a separate exhaust passage is needed on only a middle valve.]

Specify arrangement of individual EXH block assembly and EXH blocking disk on the manifold specification sheet.

(Applicable manifold model no.: SS5Y□-60-□□B)



- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

## Manifold Option

### ■ SUP blocking disk

By installing a SUP blocking disk in the pressure supply passage of a manifold valve, it is possible to supply two or more different high and low pressures to one manifold. (This is the same block disk used with the individual SUP block assembly.)



| Series        | Part no.     |
|---------------|--------------|
| <b>SY3000</b> | SY3000-52-6A |
| <b>SY5000</b> | SY5000-52-4A |
| <b>SY7000</b> | SY7000-70-2A |

### ■ EXH blocking disk

By installing an EXH blocking disk in the exhaust passage of a manifold valve, it is possible to divide the valve's exhaust so that it does not affect another valve. (Two blocking disks are needed to separate both EXH passages. It is the same block disk that is used in the individual EXH block assembly.)



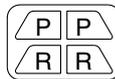
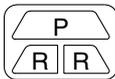
| Series        | Part no.     |
|---------------|--------------|
| <b>SY3000</b> | SY3000-52-6A |
| <b>SY5000</b> | SY5000-52-4A |
| <b>SY7000</b> | SY7000-70-2A |

### ■ Label for block disk

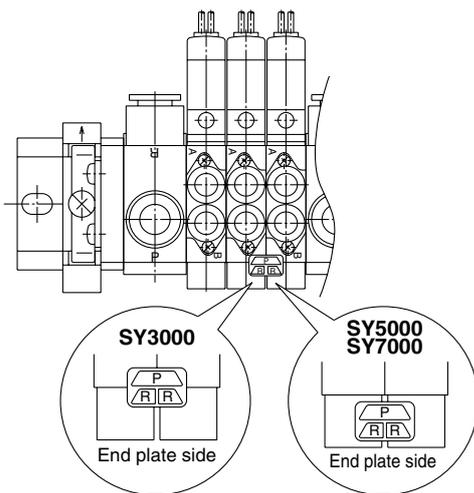
The labels shown below are used on manifold stations containing SUP/EXH blocking disk(s) to show their location. (3 pcs. each)

#### VZ3000-123-1A

Label for SUP block disk    Label for EXH block disk    Label for SUP/EXH block disk

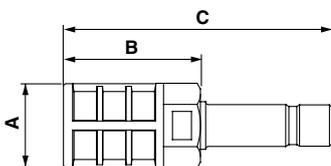


\* When a block disk is concurrently ordered by specifying on the manifold specification sheet, etc., a label will be stuck on the position where block disk is mounted.



### ■ Silencer with One-touch fitting

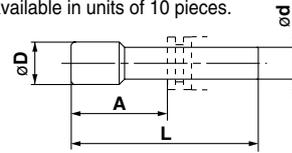
The silencer plugs directly into the One-touch fittings of the manifold.



| Series                         | Model      | Effective area     | A         | B  | C    |
|--------------------------------|------------|--------------------|-----------|----|------|
| <b>SY3000</b> (for $\phi 8$ )  | AN203-KM8  | 14 mm <sup>2</sup> | $\phi 16$ | 26 | 51   |
| <b>SY5000</b> (for $\phi 10$ ) | AN200-KM10 | 26 mm <sup>2</sup> | $\phi 22$ | 54 | 80.8 |
|                                | AN300-KM10 | 30 mm <sup>2</sup> | $\phi 25$ | 70 | 97   |
| <b>SY7000</b> (for $\phi 12$ ) | AN300-KM12 | 41 mm <sup>2</sup> | $\phi 25$ | 70 | 98   |

### ■ Plug (white)

These are inserted in unused cylinder ports and SUP, EXH ports. Purchasing order is available in units of 10 pieces.



#### Dimensions

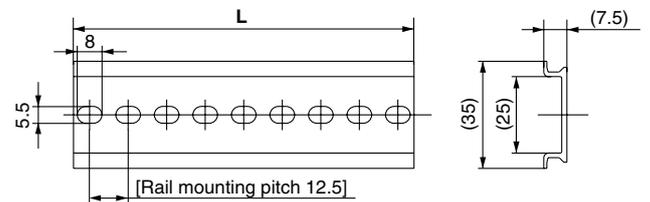
| Applicable fittings size $\phi d$ | Model          | A    | L    | D    |
|-----------------------------------|----------------|------|------|------|
| 4                                 | <b>KQ2P-04</b> | 16   | 32   | 6    |
| 6                                 | <b>KQ2P-06</b> | 18   | 35   | 8    |
| 8                                 | <b>KQ2P-08</b> | 20.5 | 39   | 10   |
| 10                                | <b>KQ2P-10</b> | 22   | 43   | 12   |
| 12                                | <b>KQ2P-12</b> | 24   | 45.5 | 14   |
| 5/32"                             | <b>KQ2P-03</b> | 16   | 32   | 6    |
| 1/4"                              | <b>KQ2P-07</b> | 18   | 35   | 8.5  |
| 5/16"                             | <b>KQ2P-09</b> | 20.5 | 39   | 10   |
| 3/8"                              | <b>KQ2P-11</b> | 22   | 43   | 11.5 |

#### ■ DIN Rail Dimensions/Mass for SY3000/5000

##### VZ1000-11-1-□

◆ Refer to the L dimension tables

\* Enter a number from the DIN rail dimension table below in them.



| No.         | 0    | 1     | 2    | 3     | 4    | 5     | 6    | 7     | 8    | 9     |
|-------------|------|-------|------|-------|------|-------|------|-------|------|-------|
| L dimension | 98   | 110.5 | 123  | 135.5 | 148  | 160.5 | 173  | 185.5 | 198  | 210.5 |
| Mass (g)    | 17.6 | 19.9  | 22.1 | 24.4  | 26.6 | 28.9  | 31.1 | 33.4  | 35.6 | 37.9  |

| No.         | 10   | 11    | 12   | 13    | 14   | 15    | 16   | 17    | 18   | 19    |
|-------------|------|-------|------|-------|------|-------|------|-------|------|-------|
| L dimension | 223  | 235.5 | 248  | 260.5 | 273  | 285.5 | 298  | 310.5 | 323  | 335.5 |
| Mass (g)    | 40.1 | 42.4  | 44.6 | 46.9  | 49.1 | 51.4  | 53.6 | 55.9  | 58.1 | 60.4  |

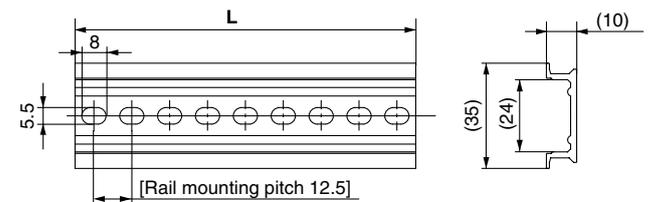
| No.         | 20   | 21    | 22   | 23    | 24   | 25    | 26   | 27    | 28   | 29    |
|-------------|------|-------|------|-------|------|-------|------|-------|------|-------|
| L dimension | 348  | 360.5 | 373  | 385.5 | 398  | 410.5 | 423  | 435.5 | 448  | 460.5 |
| Mass (g)    | 62.6 | 64.9  | 67.1 | 69.4  | 71.6 | 73.9  | 76.1 | 78.4  | 80.6 | 82.9  |

#### ■ DIN Rail Dimensions/Mass for SY7000

##### VZ1000-11-4-□

◆ Refer to the L dimension tables

\* Enter a number from the DIN rail dimension table below in them.



| No.         | 0    | 1     | 2    | 3     | 4    | 5     | 6    | 7     | 8    | 9     |
|-------------|------|-------|------|-------|------|-------|------|-------|------|-------|
| L dimension | 98   | 110.5 | 123  | 135.5 | 148  | 160.5 | 173  | 185.5 | 198  | 210.5 |
| Mass (g)    | 24.8 | 28    | 31.1 | 34.3  | 37.4 | 40.6  | 43.8 | 46.9  | 50.1 | 53.3  |

| No.         | 10   | 11    | 12   | 13    | 14   | 15    | 16   | 17    | 18   | 19    |
|-------------|------|-------|------|-------|------|-------|------|-------|------|-------|
| L dimension | 223  | 235.5 | 248  | 260.5 | 273  | 285.5 | 298  | 310.5 | 323  | 335.5 |
| Mass (g)    | 56.4 | 59.6  | 62.7 | 65.9  | 69.1 | 72.2  | 75.4 | 78.6  | 81.7 | 84.9  |

| No.         | 20  | 21    | 22   | 23    | 24    | 25    | 26  | 27    | 28    | 29    |
|-------------|-----|-------|------|-------|-------|-------|-----|-------|-------|-------|
| L dimension | 348 | 360.5 | 373  | 385.5 | 398   | 410.5 | 423 | 435.5 | 448   | 460.5 |
| Mass (g)    | 88  | 91.2  | 94.4 | 97.5  | 100.7 | 103.9 | 107 | 110.2 | 113.3 | 116.5 |

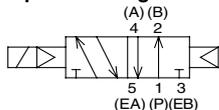
Note) For DIN rail mounting, refer to page 338.

## Construction

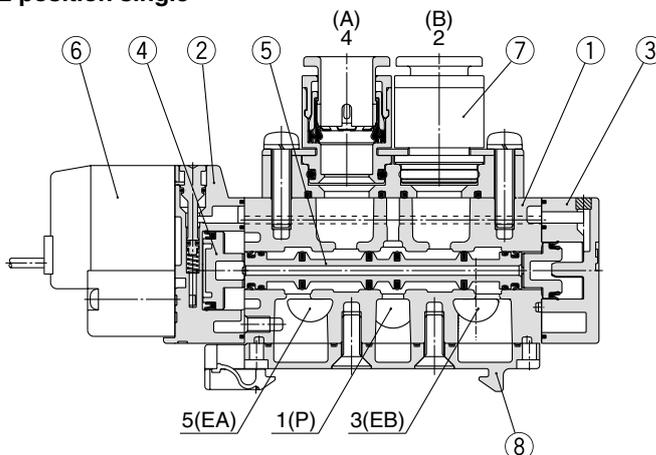
### Series SY

#### JIS Symbol

##### 2 position single

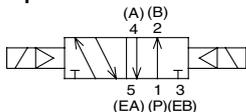


#### 2 position single

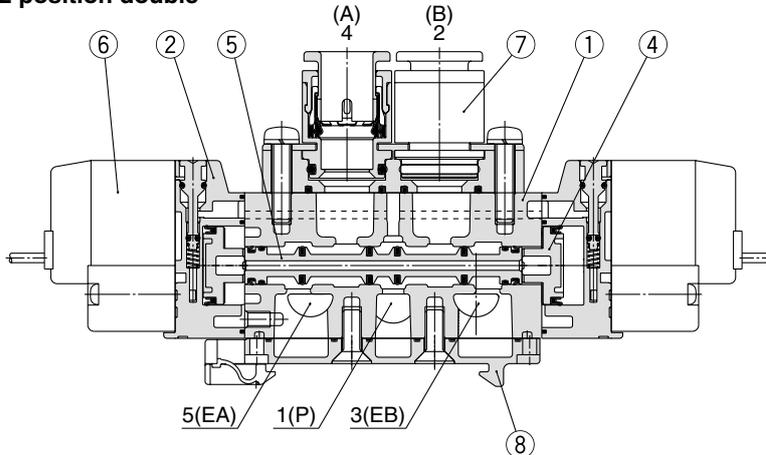


#### JIS Symbol

##### 2 position double

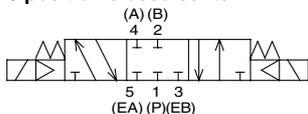


#### 2 position double

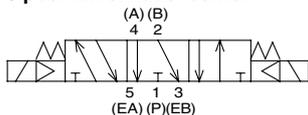


#### JIS Symbol

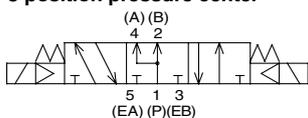
##### 3 position closed center



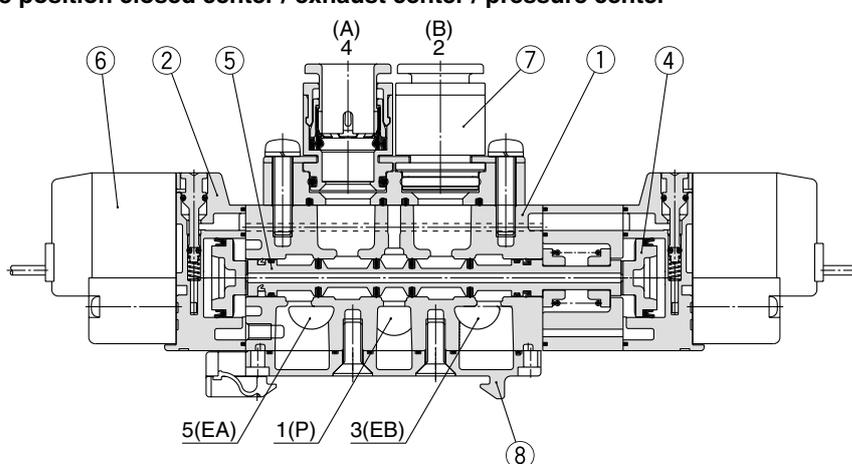
##### 3 position exhaust center



##### 3 position pressure center



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



(This figure shows a closed center type.)

### Component Parts

| No. | Description          | Material                                            | Note  |
|-----|----------------------|-----------------------------------------------------|-------|
| 1   | Body                 | Aluminum die-casted<br>(SY3000:<br>Zinc die-casted) | White |
| 2   | Adapter plate        | Resin                                               | White |
| 3   | End plate            | Resin                                               | White |
| 4   | Piston               | Resin                                               | —     |
| 5   | Spool valve assembly | Aluminum/H-NBR                                      | —     |

### Replacement Parts

| No. | Description                            | No.                                                                    |
|-----|----------------------------------------|------------------------------------------------------------------------|
| 6   | Pilot valve assembly                   | Refer to "How to Order Pilot Valve Assembly" on page 183.              |
| 7   | Port block assembly                    | Refer to "How to Order Port Block Assembly" on page 184.               |
| 8   | Bottom cover assembly <sup>Note)</sup> | SY3000-41-2A (with screw, gasket)<br>SY5000-41-2A (with screw, gasket) |

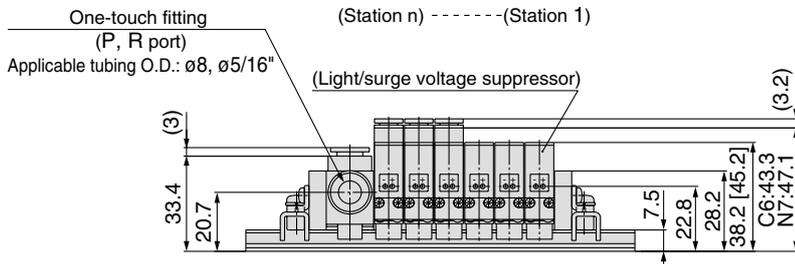
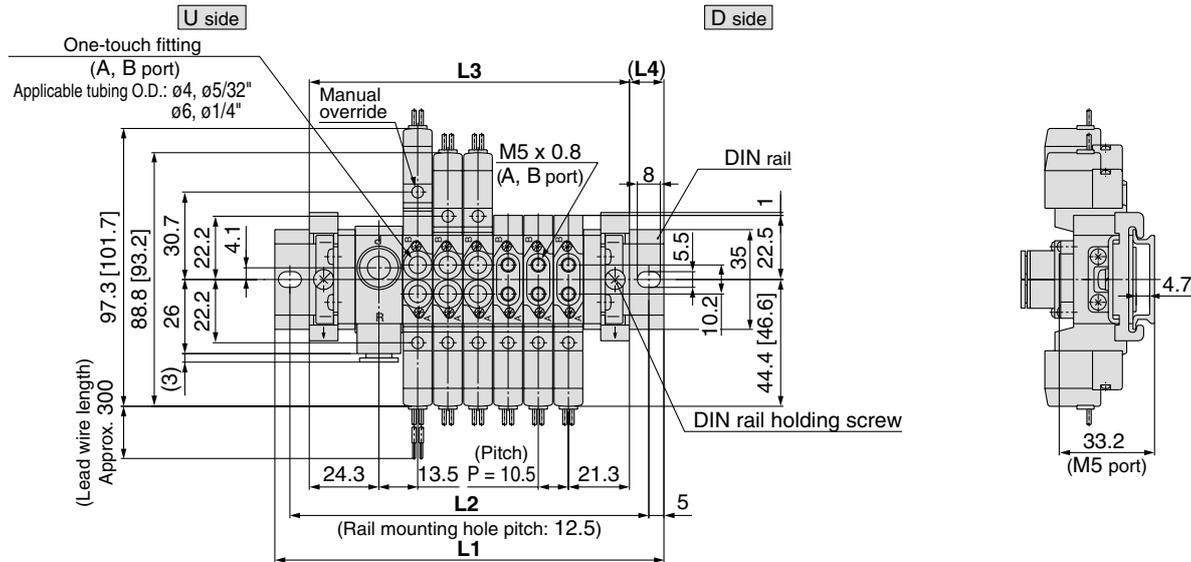
Note) There is no bottom cover assembly available for SY7000.

|       |
|-------|
| SJ    |
| SY    |
| SV    |
| SYJ   |
| SZ    |
| VP4   |
| S0700 |
| VQ    |
| VQ4   |
| VQ5   |
| VQC   |
| VQZ   |
| SQ    |
| VFS   |
| VFR   |
| VQ7   |



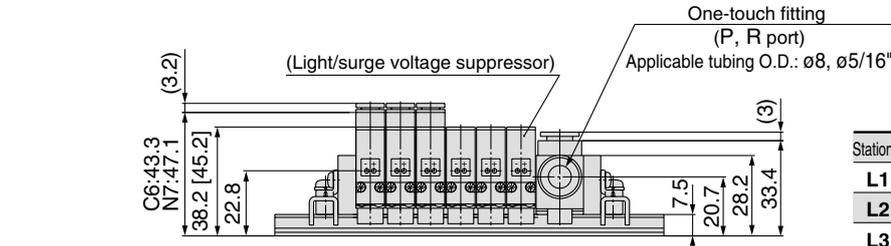
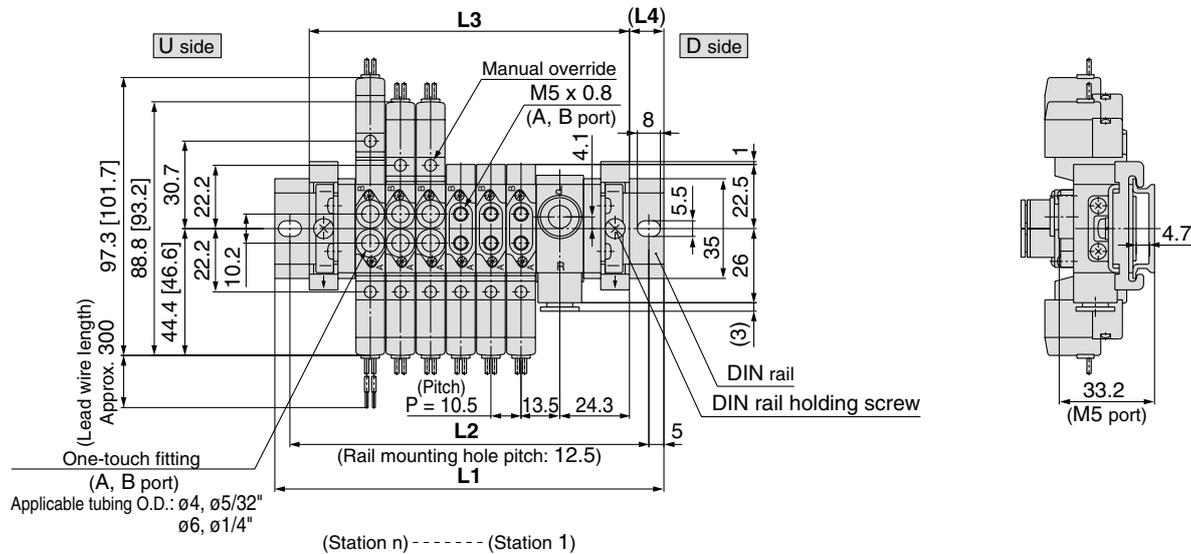
**Dimensions**

**SS5Y3-60- Stations U**



| Stations  | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|-----------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b> | 98         | 110.5 | 123   | 135.5 | 135.5 | 148   | 160.5 | 173   | 185.5       |
| <b>L2</b> | 87.5       | 100   | 112.5 | 125   | 125   | 137.5 | 150   | 162.5 | 175         |
| <b>L3</b> | 69.5       | 80    | 90.5  | 101   | 111.5 | 122   | 132.5 | 143   | 153.5       |
| <b>L4</b> | 14         | 15    | 16    | 17    | 12    | 13    | 14    | 15    | 16          |

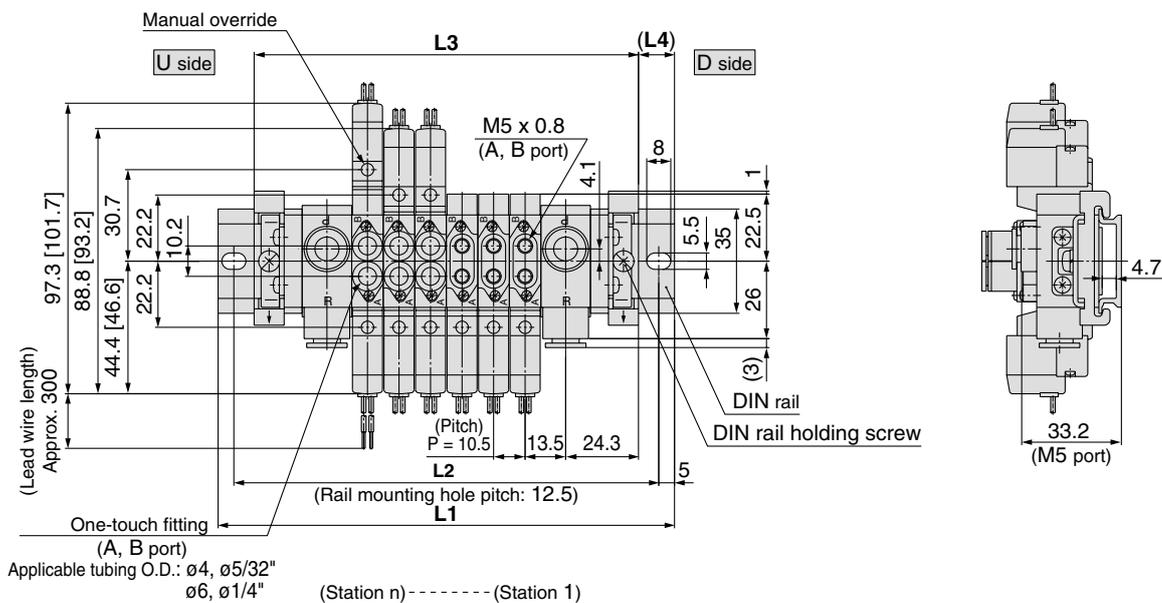
**SS5Y3-60- Stations D**



| Stations  | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|-----------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b> | 98         | 110.5 | 123   | 135.5 | 135.5 | 148   | 160.5 | 173   | 185.5       |
| <b>L2</b> | 87.5       | 100   | 112.5 | 125   | 125   | 137.5 | 150   | 162.5 | 175         |
| <b>L3</b> | 69.5       | 80    | 90.5  | 101   | 111.5 | 122   | 132.5 | 143   | 153.5       |
| <b>L4</b> | 14         | 15    | 16    | 17    | 12    | 13    | 14    | 15    | 16          |

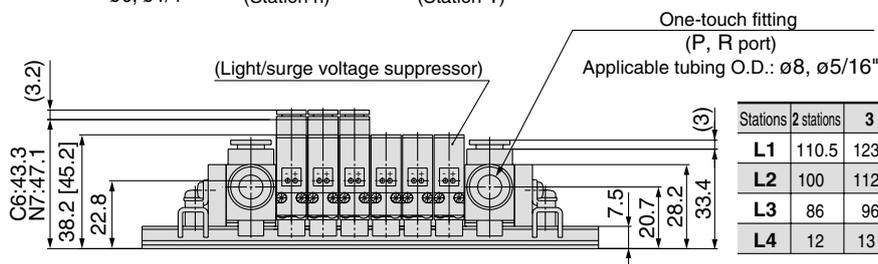


**SS5Y3-60- Stations B**



Applicable tubing O.D.:  $\varnothing 4$ ,  $\varnothing 5/32$ "  
 $\varnothing 6$ ,  $\varnothing 1/4$ "

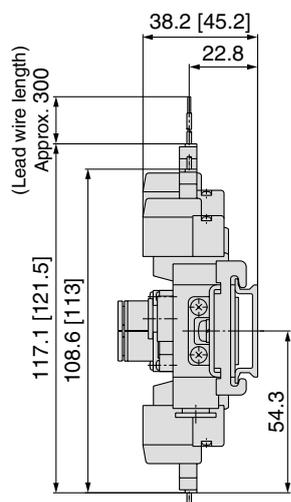
(Station n)----- (Station 1)



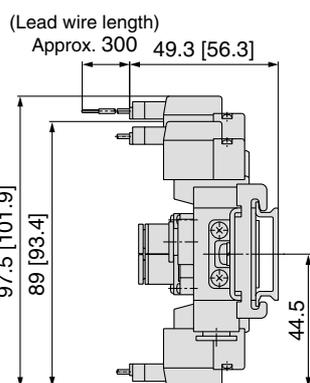
| Stations | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|----------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1       | 110.5      | 123   | 135.5 | 148   | 160.5 | 173   | 173   | 185.5 | 198         |
| L2       | 100        | 112.5 | 125   | 137.5 | 150   | 162.5 | 162.5 | 175   | 187.5       |
| L3       | 86         | 96.5  | 107   | 117.5 | 128   | 138.5 | 149   | 159.5 | 170         |
| L4       | 12         | 13    | 14    | 15    | 16    | 17    | 12    | 13    | 14          |

| Stations | 11 stations | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20 stations |
|----------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1       | 210.5       | 223   | 235.5 | 235.5 | 248   | 260.5 | 273   | 285.5 | 298   | 310.5       |
| L2       | 200         | 212.5 | 225   | 225   | 237.5 | 250   | 262.5 | 275   | 287.5 | 300         |
| L3       | 180.5       | 191   | 201.5 | 212   | 222.5 | 233   | 243.5 | 254   | 264.5 | 275         |
| L4       | 15          | 16    | 17    | 11.5  | 12.5  | 13.5  | 14.5  | 15.5  | 16.5  | 17.5        |

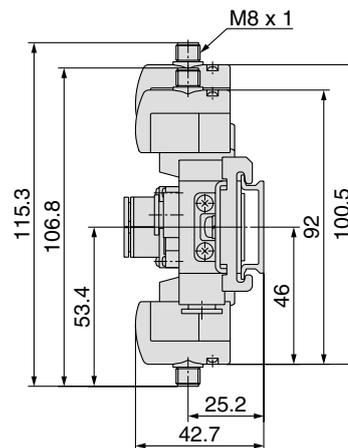
**L plug connector (L)**



**M plug connector (M)**



**M8 connector (WO)**

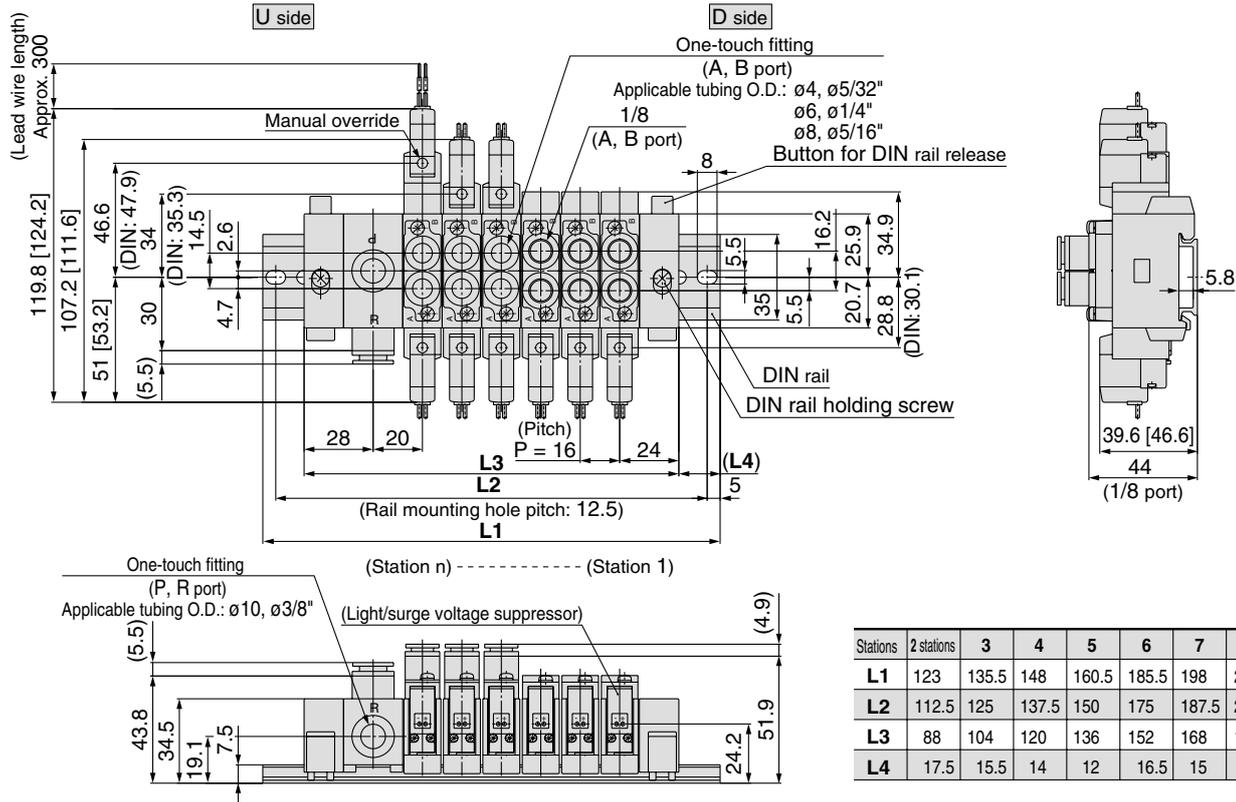


Note) Refer to page 340 for dimensions of connector types.

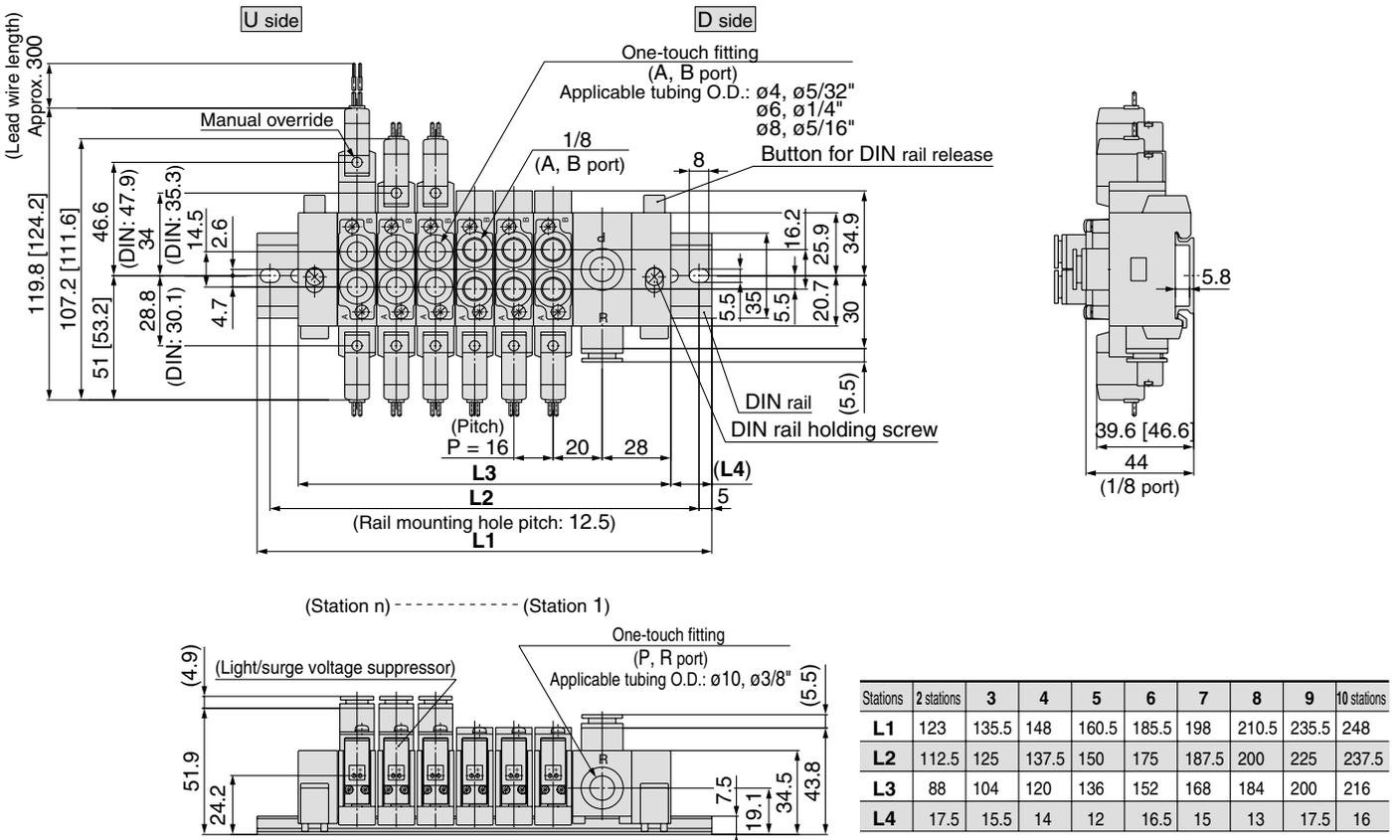
- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

## Dimensions

### SS5Y5-60-Stations U

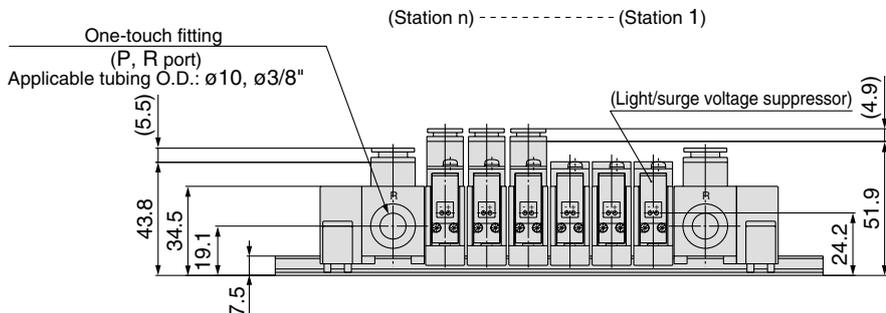
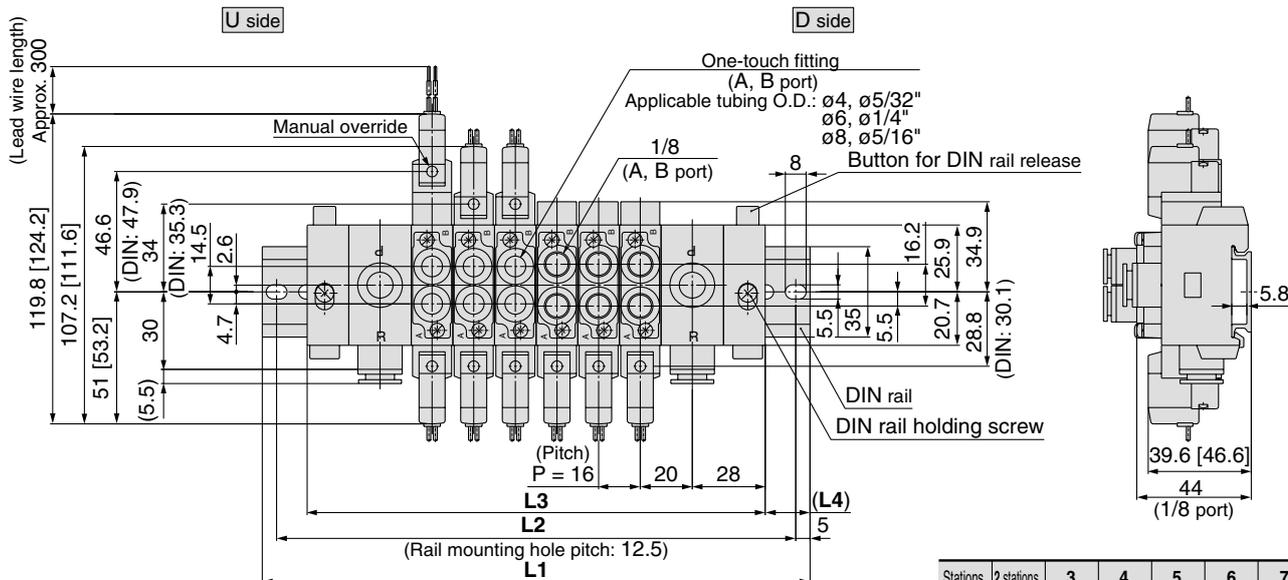


### SS5Y5-60-Stations D





**SS5Y5-60-Stations B**



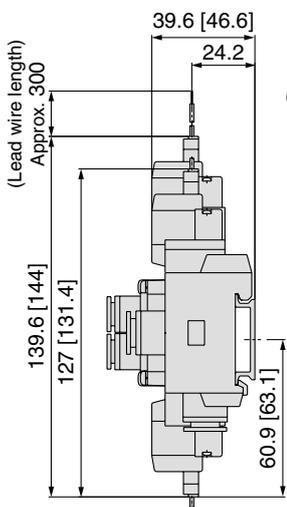
| Stations | 2 stations | 3     | 4     | 5     | 6     | 7     | 8 stations |
|----------|------------|-------|-------|-------|-------|-------|------------|
| L1       | 135.5      | 160.5 | 173   | 185.5 | 210.5 | 223   | 235.5      |
| L2       | 125        | 150   | 162.5 | 175   | 200   | 212.5 | 225        |
| L3       | 112        | 128   | 144   | 160   | 176   | 192   | 208        |
| L4       | 11.5       | 16    | 14.5  | 12.5  | 17.5  | 15.5  | 13.5       |

| Stations | 9 stations | 10    | 11    | 12    | 13    | 14    | 15 stations |
|----------|------------|-------|-------|-------|-------|-------|-------------|
| L1       | 248        | 273   | 285.5 | 298   | 323   | 335.5 | 348         |
| L2       | 237.5      | 262.5 | 275   | 287.5 | 312.5 | 325   | 337.5       |
| L3       | 224        | 240   | 256   | 272   | 288   | 304   | 320         |
| L4       | 12         | 16.5  | 14.5  | 13    | 17.5  | 15.5  | 14          |

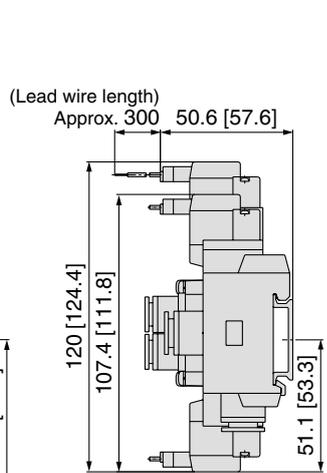
| Stations | 16 stations | 17    | 18    | 19    | 20 stations |
|----------|-------------|-------|-------|-------|-------------|
| L1       | 360.5       | 385.5 | 398   | 410.5 | 435.5       |
| L2       | 350         | 375   | 387.5 | 400   | 425         |
| L3       | 336         | 352   | 368   | 384   | 400         |
| L4       | 12          | 16.5  | 15    | 13    | 17.5        |

- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

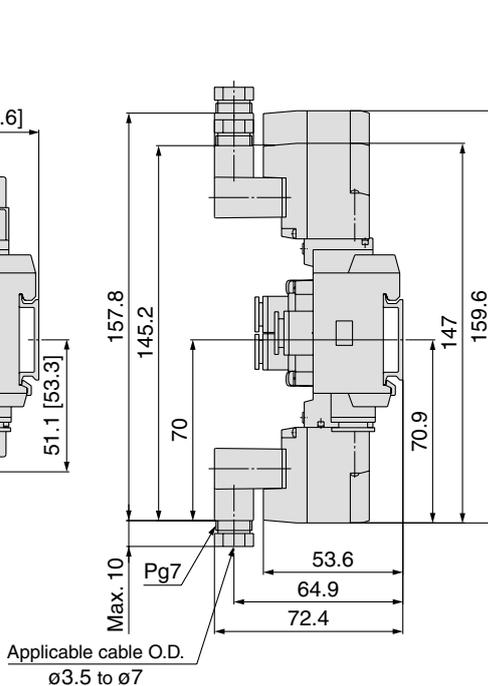
**L plug connector (L)**



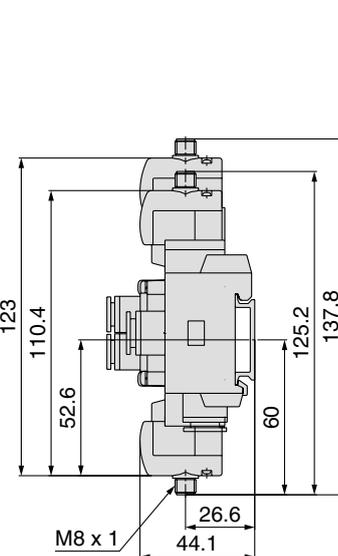
**M plug connector (M)**



**DIN terminal (D, Y)**



**M8 connector (WO)**

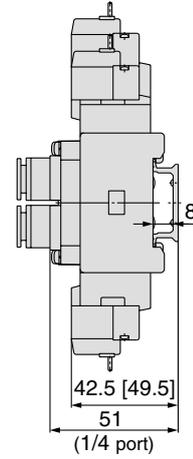
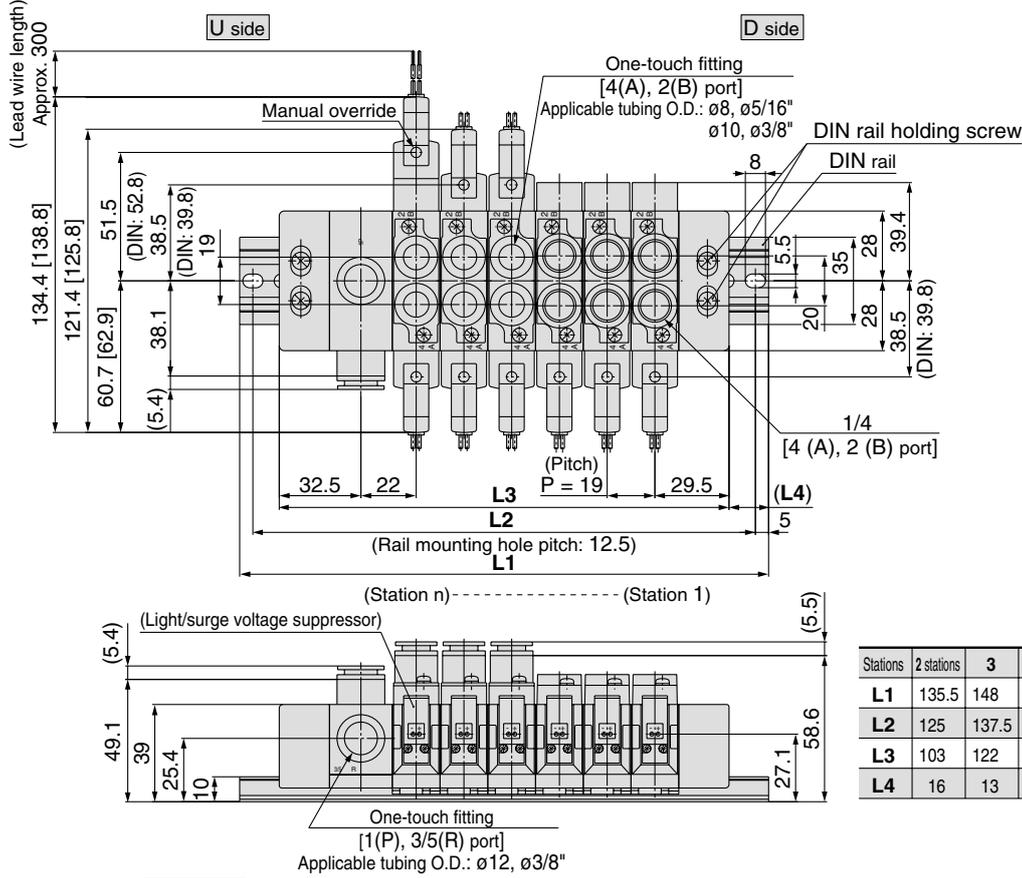


Note) Refer to page 340 for dimensions of connector types.



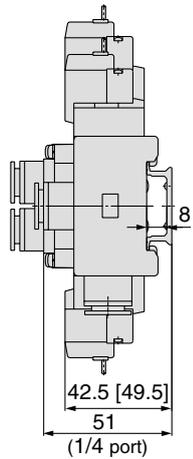
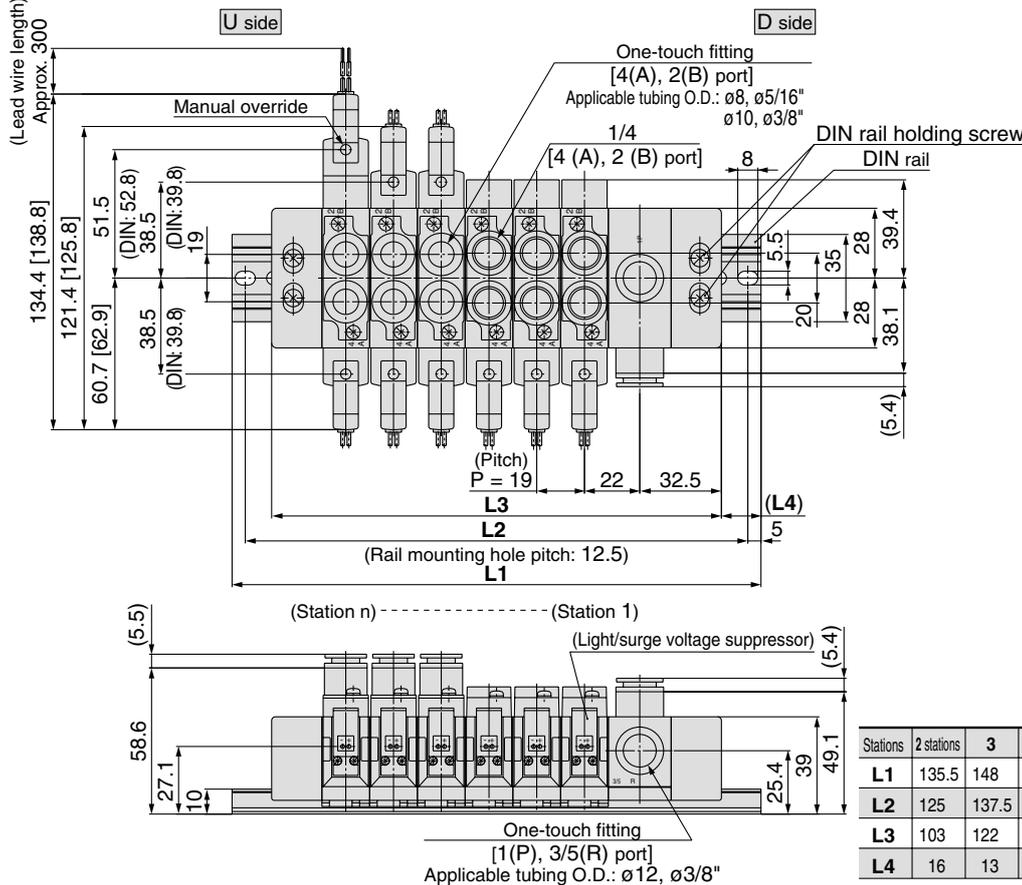
**Dimensions**

**SS5Y7-60-Stations U**



| Stations  | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|-----------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b> | 135.5      | 148   | 173   | 185.5 | 210.5 | 223   | 248   | 260.5 | 285.5       |
| <b>L2</b> | 125        | 137.5 | 162.5 | 175   | 200   | 212.5 | 237.5 | 250   | 275         |
| <b>L3</b> | 103        | 122   | 141   | 160   | 179   | 198   | 217   | 236   | 255         |
| <b>L4</b> | 16         | 13    | 16    | 12.5  | 15.5  | 12.5  | 15.5  | 12    | 15          |

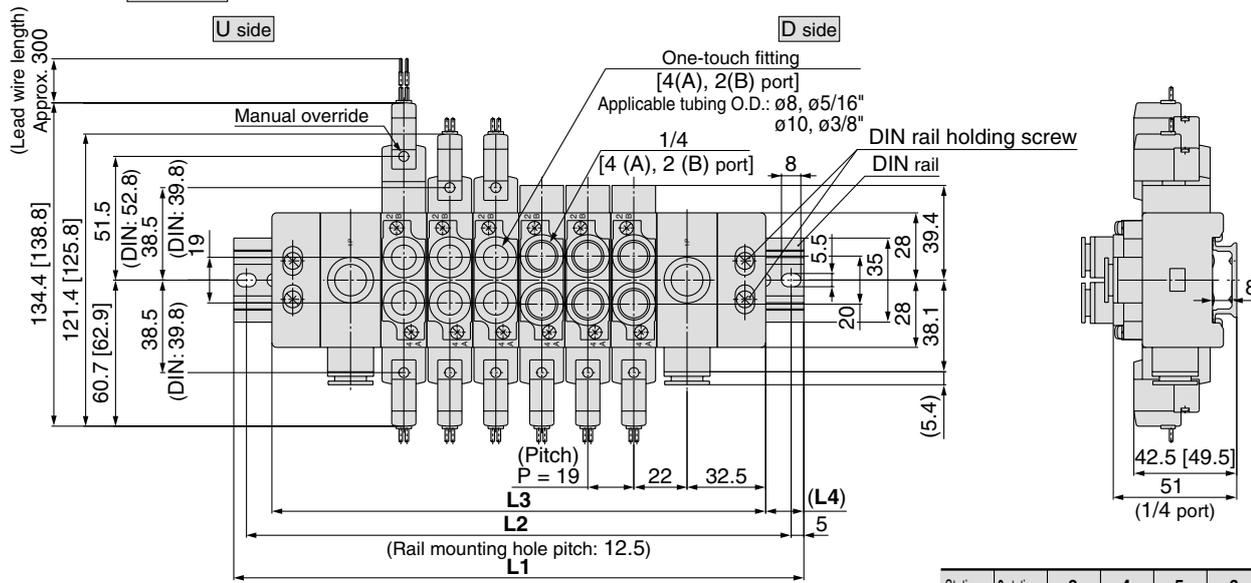
**SS5Y7-60-Stations D**



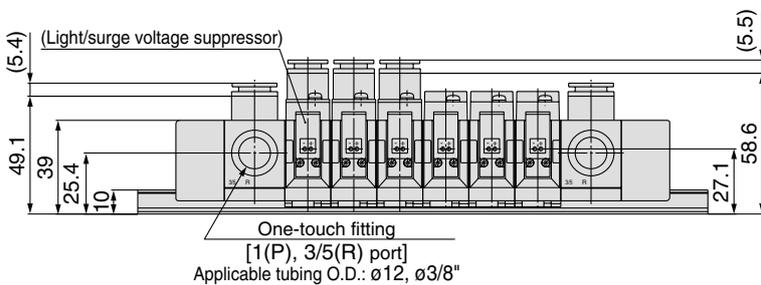
| Stations  | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|-----------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b> | 135.5      | 148   | 173   | 185.5 | 210.5 | 223   | 248   | 260.5 | 285.5       |
| <b>L2</b> | 125        | 137.5 | 162.5 | 175   | 200   | 212.5 | 237.5 | 250   | 275         |
| <b>L3</b> | 103        | 122   | 141   | 160   | 179   | 198   | 217   | 236   | 255         |
| <b>L4</b> | 16         | 13    | 16    | 12.5  | 15.5  | 12.5  | 15.5  | 12    | 15          |



**SS5Y7-60- Stations B**



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



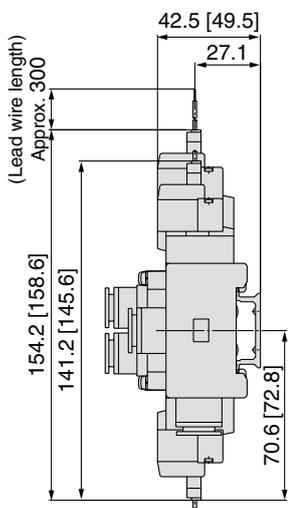
| Stations | 2 stations | 3     | 4     | 5     | 6     | 7     | 8 stations |
|----------|------------|-------|-------|-------|-------|-------|------------|
| L1       | 160.5      | 173   | 198   | 210.5 | 235.5 | 248   | 273        |
| L2       | 150        | 162.5 | 187.5 | 200   | 225   | 237.5 | 262.5      |
| L3       | 128        | 147   | 166   | 185   | 204   | 223   | 242        |
| L4       | 16         | 13    | 16    | 12.5  | 15.5  | 12.5  | 15.5       |

| Stations | 9 stations | 10    | 11    | 12    | 13    | 14    | 15 stations |
|----------|------------|-------|-------|-------|-------|-------|-------------|
| L1       | 285.5      | 310.5 | 323   | 348   | 360.5 | 385.5 | 410.5       |
| L2       | 275        | 300   | 312.5 | 337.5 | 350   | 375   | 400         |
| L3       | 261        | 280   | 299   | 318   | 337   | 356   | 375         |
| L4       | 12         | 15    | 12    | 15    | 11.5  | 14.5  | 17.5        |

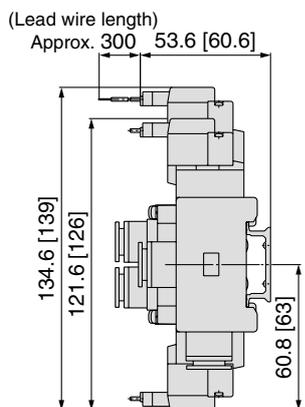
| Stations | 16 stations | 17    | 18    | 19    | 20 stations |
|----------|-------------|-------|-------|-------|-------------|
| L1       | 423         | 448   | 460.5 | 485.5 | 498         |
| L2       | 412.5       | 437.5 | 450   | 475   | 487.5       |
| L3       | 394         | 413   | 432   | 451   | 470         |
| L4       | 14.5        | 17.5  | 14    | 17    | 14          |

- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

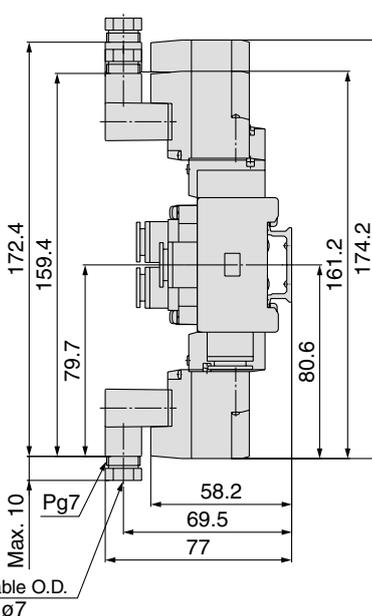
**L plug connector (L)**



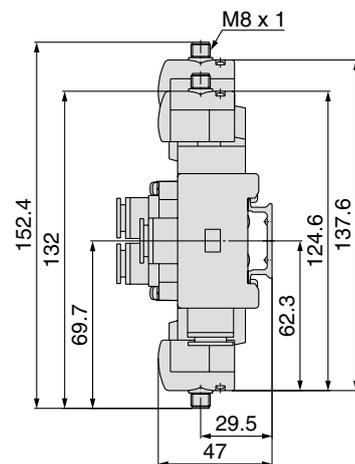
**M plug connector (M)**



**DIN terminal (D, Y)**



**M8 connector (WO)**

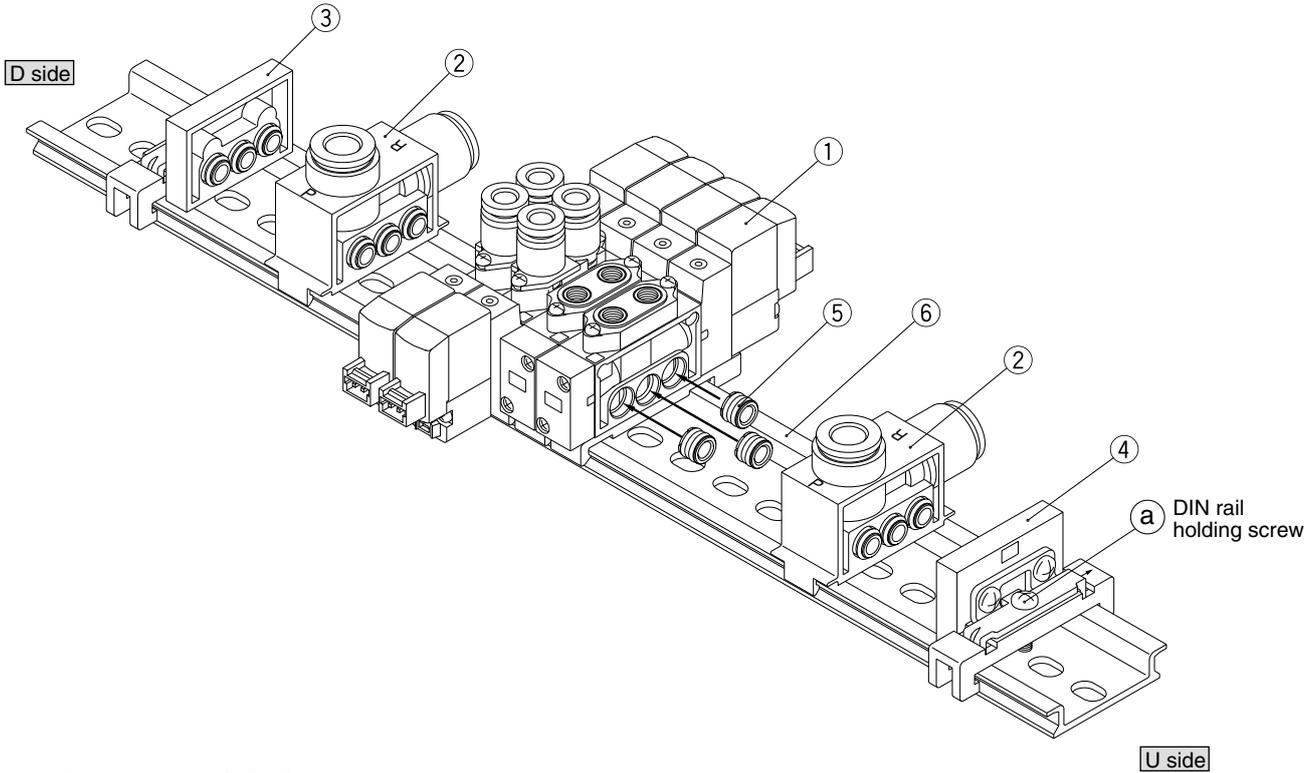


Note) Refer to page 340 for dimensions of connector types.

**DIN Rail Manifold Exploded View**

**SY3000**

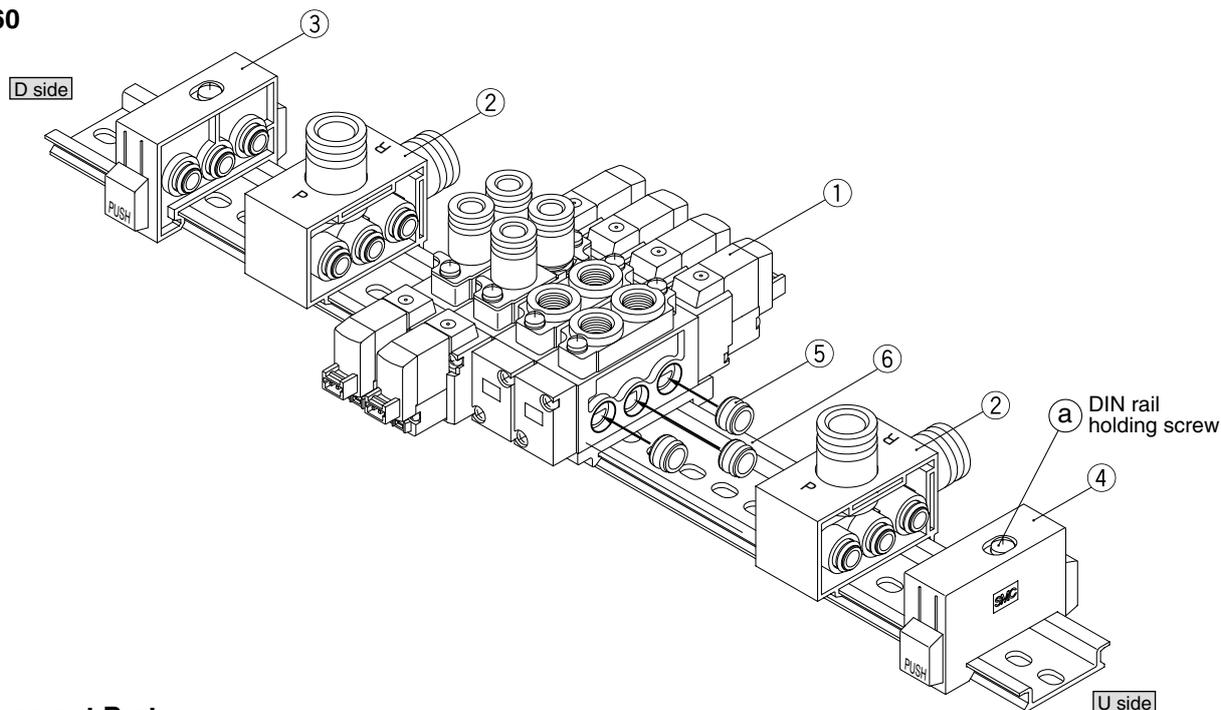
**Type 60**



**Replacement Parts**

| No. | Description            | Part no.                                     | Note                                                                                                                     |
|-----|------------------------|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| 1   | Valve                  | SY3□60-□□-□(-Q)                              | □ at the end of part number denotes A. B port size: M5, C4, C6, N3, N7. Includes bushing assembly (SY3000-52-5A) 3 pcs.  |
| 2   | SUP/EXH block assembly | SY3000-55- <sup>1</sup> / <sub>2</sub> A(-Q) | P, R port (1: One-touch fitting for ø8, 2: One-touch fitting for ø5/16") Includes bushing assembly (SY3000-52-5A) 3 pcs. |
| 3   | End block assembly     | SY3000-56-1A(-Q)                             | For D side (Bushing assembly: Not available for SY3000-52-5A)                                                            |
| 4   | End block assembly     | SY3000-56-1B(-Q)                             | For U side (Bushing assembly: Not available for SY3000-52-5A)                                                            |
| 5   | Bushing assembly       | SY3000-52-5A                                 | CE-compliant: SY3000-52-1A                                                                                               |
| 6   | DIN rail               | VZ1000-11-1-□                                | Refer to page 186.                                                                                                       |

**SY5000**  
Type 60



**Replacement Parts**

| No. | Description            | Part no.                                   | Note                                                                                                                            |
|-----|------------------------|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| 1   | Valve                  | SY5□60-□□-□(-Q)                            | □ at the end of part number denotes A. B port size: 01, C4, C6, C8, N3, N7, N9. Includes bushing assembly (SY5000-52-3A) 3 pcs. |
| 2   | SUP/EXH block assembly | SY5000-55- <sup>1</sup> <sub>2</sub> A(-Q) | P, R port (1: One-touch fitting for ø10, 2: One-touch fitting for ø3/8") Includes bushing assembly (SY5000-52-3A) 3 pcs.        |
| 3   | End block assembly     | SY5000-56-1A(-Q)                           | For D side (Bushing assembly: Not available for SY5000-52-3A)                                                                   |
| 4   | End block assembly     | SY5000-56-1B(-Q)                           | For U side (Bushing assembly: Not available for SY5000-52-3A)                                                                   |
| 5   | Bushing assembly       | SY5000-52-3A                               |                                                                                                                                 |
| 6   | DIN rail               | VZ1000-11-1-□                              | Refer to page 186.                                                                                                              |

**How to Add Additional Valves to the DIN Rail**

Valves can be added at any station on the rail.

- 1 Loosen the manifold base clamping screw (a).
- 2 Separate the valves at the point where more valves are to be added.
- 3 Mount the additional valves on the DIN rail as shown in Fig. 1
- 4 Connect them together while pressing the block assemblies toward each other, and tighten the holding screw (a) to fix them to the DIN rail.

**Caution**

**Tightening torque**

SY3000: 1 N·m

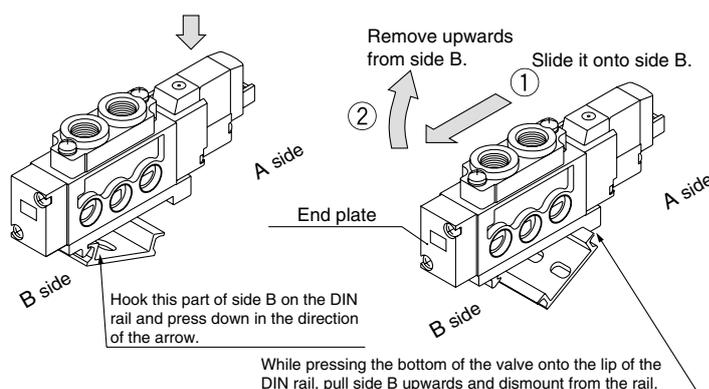
SY5000: 1.4 N·m

(While lightly holding the blocks after fixing an end block on one side, tighten the other end block for better sealing after no gap between valves is confirmed.)

- Bushing assembly must be seated properly to each valve block in order to prevent air leaks from occurring.
- Refer to the fig. 2 when dismantling the valve from the DIN rail.

Fig. 1 Manifold mounting procedure

Fig. 2 Manifold dismantling procedure



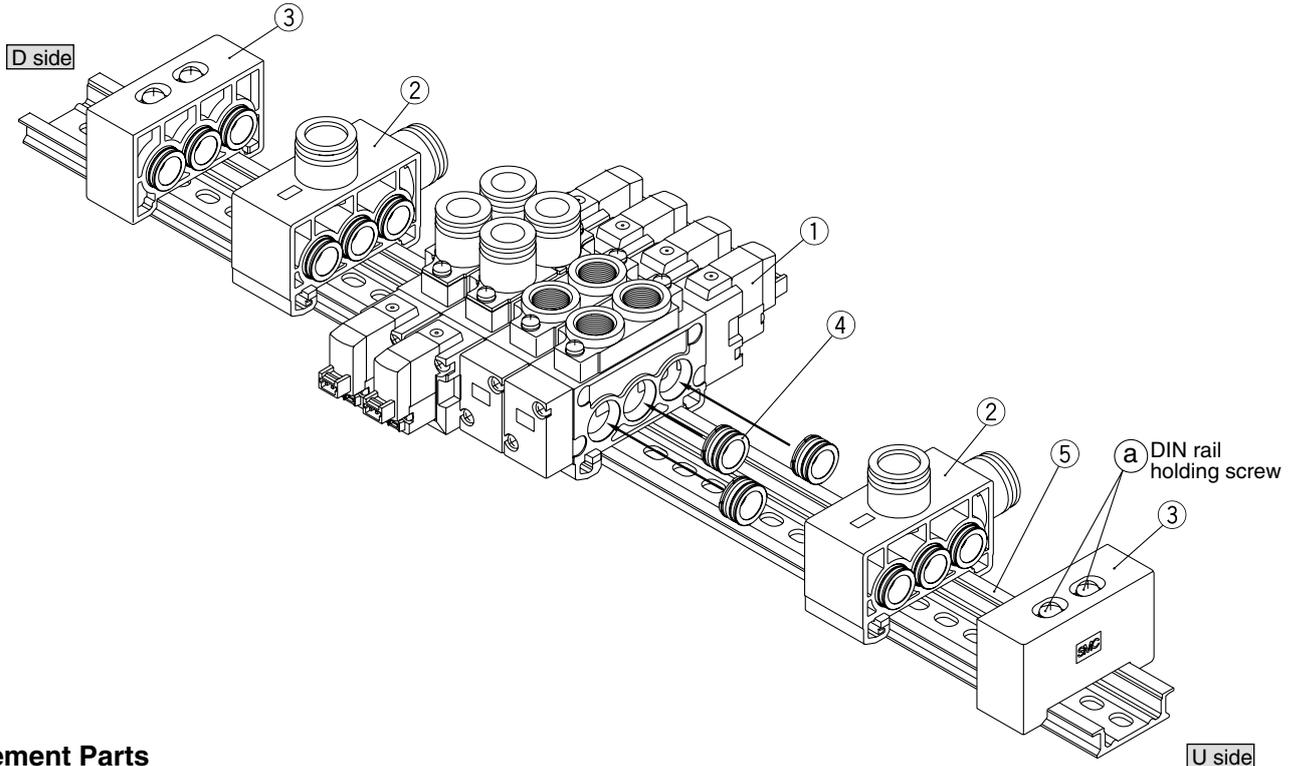
**Caution**

When clamping screw (a) of the end block is not sufficiently tightened during reassembly, air leakage may result. Before supplying air, check that there are no gaps between valves and that the end block is firmly secured to the DIN rail in order to ensure air supply without leakage.

- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

**DIN Rail Manifold Exploded View**

**SY7000**  
Type 60



**Replacement Parts**

| No. | Description            | Part no.                       | Note                                                                                                                      |
|-----|------------------------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| 1   | Valve                  | SY7□60-□□-□(-Q)                | □ at the end of part number denotes A. B port size: 02, C8, C10, N9, N11. Includes bushing assembly (SY7000-70-1A) 3 pcs. |
| 2   | SUP/EXH block assembly | SY7000-75- $\frac{1}{3}$ A(-Q) |                                                                                                                           |
| 3   | End block assembly     | SY7000-56-1A(-Q)               | In common for D side and U side (Bushing assembly: Not available for SY7000-70-1A.)                                       |
| 4   | Bushing assembly       | SY7000-70-1A                   |                                                                                                                           |
| 5   | DIN rail               | VZ1000-11-4-□                  | Refer to page 186.                                                                                                        |

**How to Add Additional Valves to the DIN Rail** Valves can be added at any station on the rail.

- 1 Loosen the rail holding screw (a) at both of 2 locations which holds the manifold base either in the U side or D side.  
When removing the end block assembly from the DIN rail, loosen the holding screws for DIN rail at first, then slide it to the edge of the rail.
- 2 Separate the valves at the point where more valves are to be added.
- 3 Mount the additional valves on the DIN rail as shown in Fig. 1.
- 4 Connect them together while pressing the block assemblies toward each other, and tighten the 2 holding screws (a) for DIN rail alternately (2 to 3 times) with the prescribed torque (1.4 N·m) to fix them to the DIN rail.

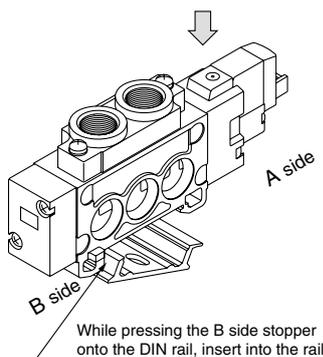
**⚠ Caution**

**Tightening torque**  
SY7000: 1.4 N·m

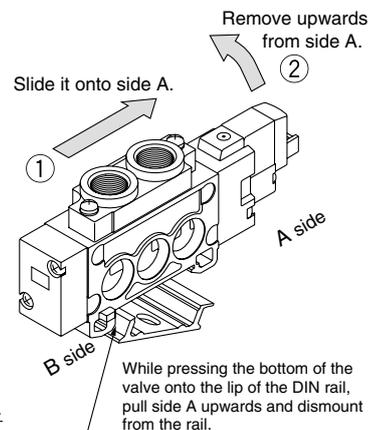
(While lightly holding the blocks after fixing an end block on one side, tighten the other end block for better sealing after no gap between valves is confirmed.)

- **Bushing assembly must be seated properly to each valve block in order to prevent air leaks from occurring.**
- **Refer to the fig. 2 when dismantling the valve from the DIN rail.**

**Fig. 1 Manifold mounting procedure**



**Fig. 2 Manifold dismantling procedure**



**⚠ Caution**

When clamping screw (a) of the end block is not sufficiently tightened during reassembly, air leakage may result. Before supplying air, check that there are no gaps between valves and that the end block is firmly secured to the DIN rail in order to ensure air supply without leakage.

Type **41**  
Type **42**

# 5 Port Solenoid Valve Base Mounted Manifold Bar Stock Type/Individual Wiring

## Series SY3000/5000/7000



### How to Order Manifold

#### Type 41/Compact style

**SS5Y 5 - 41 - 05 - C8** [ ] - [ ]

**Manifold series**

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |

**Stations**

|    |             |
|----|-------------|
| 02 | 2 stations  |
| :  | :           |
| 20 | 20 stations |

**Thread type**

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

\* This also includes the number of blanking plate assemblies.

\* Except for M5

**A, B port size**

**Thread piping**

| Symbol | Port size | Applicable series |
|--------|-----------|-------------------|
| M5     | M5 x 0.8  | SY3000            |
| 01     | 1/8       | SY5000            |

**CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

**One-touch fitting (Metric size)**

| Symbol | Port size                | Applicable series |
|--------|--------------------------|-------------------|
| C4     | One-touch fitting for ø4 | SY3000            |
| C6     | One-touch fitting for ø6 | SY3000            |
| C6     | One-touch fitting for ø6 | SY5000            |
| C8     | One-touch fitting for ø8 | SY5000            |

**One-touch fitting (Inch size)**

| Symbol | Port size                    | Applicable series |
|--------|------------------------------|-------------------|
| N3     | One-touch fitting for ø5/32" | SY3000            |
| N7     | One-touch fitting for ø1/4"  | SY3000            |
| N7     | One-touch fitting for ø1/4"  | SY5000            |
| N9     | One-touch fitting for ø5/16" | SY5000            |

#### Type 42/External pilot capable

**SS5Y 5 - 42 - 05 - C8** [ ] - [ ]

**Manifold series**

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |
| 7 | SY7000 |

**Stations**

|    |             |
|----|-------------|
| 02 | 2 stations  |
| :  | :           |
| 20 | 20 stations |

**Thread type**

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

**A, B port size**

**Thread piping**

| Symbol | Port size | Applicable series |
|--------|-----------|-------------------|
| 01     | 1/8       | SY3000            |
| 02     | 1/4       | SY5000            |
| 02     | 1/4       | SY7000            |

**CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

**One-touch fitting (Metric size)**

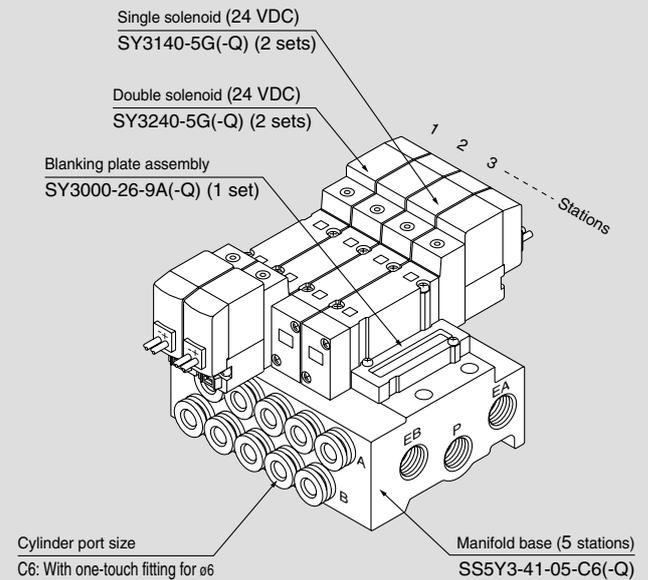
| Symbol | Port size                 | Applicable series |
|--------|---------------------------|-------------------|
| C4     | One-touch fitting for ø4  | SY3000            |
| C6     | One-touch fitting for ø6  | SY3000            |
| C6     | One-touch fitting for ø6  | SY5000            |
| C8     | One-touch fitting for ø8  | SY5000            |
| C10    | One-touch fitting for ø10 | SY7000            |

**One-touch fitting (Inch size)**

| Symbol | Port size                    | Applicable series |
|--------|------------------------------|-------------------|
| N3     | One-touch fitting for ø5/32" | SY3000            |
| N7     | One-touch fitting for ø1/4"  | SY3000            |
| N7     | One-touch fitting for ø1/4"  | SY5000            |
| N9     | One-touch fitting for ø5/16" | SY5000            |
| N11    | One-touch fitting for ø3/8"  | SY7000            |

### How to Order Manifold Assembly (Example)

#### Example



**SS5Y3-41-05-C6** ..... 1 set (Type 41, 5-station manifold base part no.)  
 \* **SY3240-5G** ..... 2 sets (Double solenoid part no.)  
 \* **SY3140-5G** ..... 2 sets (Single solenoid part no.)  
 \* **SY3000-26-9A** ..... 1 set (Blanking plate assembly part no.)

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

Add the valve and option part number under the manifold base part number. In the case of complex arrangement, specify them on the manifold specification sheet.

**How to Order Valve**

**SY 5 2 40** □ □ - **5 L** □ □ - □ - □

**Series**

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |
| 7 | SY7000 |

**Type of actuation**

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

**Pilot type**

|     |                |
|-----|----------------|
| Nil | Internal pilot |
| R   | External pilot |

**Coil specifications**

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

\* Power saving circuit is not available in the case of D, Y, DO, YO or W□ type.

**Rated voltage**

**For DC**

|   |        |
|---|--------|
| 5 | 24 VDC |
| 6 | 12 VDC |
| V | 6 VDC  |
| S | 5 VDC  |
| R | 3 VDC  |

**For AC (50/60 Hz)**

|   |                   |
|---|-------------------|
| 1 | 100 VAC           |
| 2 | 200 VAC           |
| 3 | 110 VAC [115 VAC] |
| 4 | 220 VAC [230 VAC] |

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

**CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

\* For DC only except DIN terminal.

**Made to Order**

|     |                                               |
|-----|-----------------------------------------------|
| Nil | —                                             |
| X90 | Main valve fluoro rubber (Refer to page 332.) |

**Manual override**

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

**Light/surge voltage suppressor**

**Electrical entry for G, H, L, M, W**

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

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

**Electrical entry for D, Y**

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

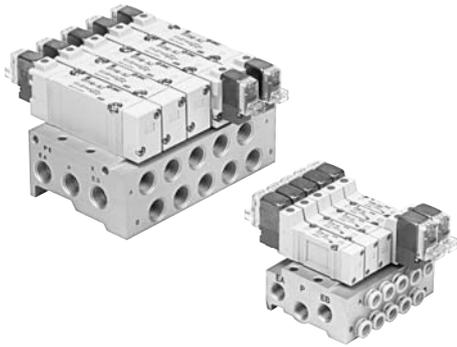
\* DOZ and YOZ are not available.  
\* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

**Electrical entry**

|                                                                             |                                                                                                          |                                                                                                          |                                                                                                                      |                                                                              |
|-----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC                                  |                                                                                                          |                                                                                                          | 24, 12 VDC/<br>100, 110, 200,<br>220 VAC                                                                             | 24, 12, 6, 5, 3 VDC                                                          |
| Grommet                                                                     | L plug connector                                                                                         | M plug connector                                                                                         | DIN terminal                                                                                                         | M8 connector                                                                 |
| <b>G:</b> Lead wire length 300 mm lead<br><b>H:</b> Lead wire length 600 mm | <b>L:</b> With lead wire (Length 300 mm)<br><b>LN:</b> Without lead wire<br><b>LO:</b> Without connector | <b>M:</b> With lead wire (Length 300 mm)<br><b>MN:</b> Without lead wire<br><b>MO:</b> Without connector | <b>D:</b> With connector<br><b>DO:</b> Without connector<br><b>Y:</b> With connector<br><b>YO:</b> Without connector | <b>WO:</b> Without connector cable<br><b>W□:</b> With connector cable (Note) |

\* LN, MN type: with 2 sockets.  
\* "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). For details, refer to page 336.  
\* For connector cable of M8 connector, refer to page 339.  
\* M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 331 for details.  
\* Refer to page 336 for the lead wire length of L and M plug connectors.  
\* Refer to page 337 for the connector assembly with cover for L and M plug connectors.  
Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.

- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7



## Manifold Specifications

|                                         |                                     |                                                                             |                                                                       |                                                                       |                                                                       |
|-----------------------------------------|-------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------|
| Model                                   | SS5Y3-41(-Q)                        | SS5Y3-42(-Q)                                                                | SS5Y5-41(-Q)                                                          | SS5Y5-42(-Q)                                                          | SS5Y7-42(-Q)                                                          |
| Applicable valve                        | SY3□40                              |                                                                             | SY5□40                                                                |                                                                       | SY7□40                                                                |
| Manifold type                           | Single base/B mount                 |                                                                             |                                                                       |                                                                       |                                                                       |
| P(SUP)/R(EXH)                           | Common SUP, Common EXH              |                                                                             |                                                                       |                                                                       |                                                                       |
| Valve stations                          | 2 to 20 stations <sup>Note 1)</sup> |                                                                             |                                                                       |                                                                       |                                                                       |
| A, B port                               | Location                            | Base                                                                        |                                                                       |                                                                       |                                                                       |
|                                         | Porting specifications              | Side                                                                        |                                                                       |                                                                       |                                                                       |
| Port size                               | P, EA, EB port                      | 1/8                                                                         |                                                                       | 1/4                                                                   |                                                                       |
|                                         | A, B port                           | M5 x 0.8,<br>C4 (One-touch fitting for ø4)<br>C6 (One-touch fitting for ø6) | 1/8<br>C4 (One-touch fitting for ø4)<br>C6 (One-touch fitting for ø6) | 1/8<br>C6 (One-touch fitting for ø6)<br>C8 (One-touch fitting for ø8) | 1/4<br>C6 (One-touch fitting for ø6)<br>C8 (One-touch fitting for ø8) |
| Manifold base mass<br>W (g) n: Stations | W = 30n + 50                        | W = 37n + 63                                                                | W = 61n + 101                                                         | W = 79n + 127                                                         | W = 100n + 151                                                        |



Note 1) For more than 10 stations (more than 5 stations in case of SS5Y7), supply pressure to P port on both sides and exhaust from EA/EB port on both sides.

Note 2) Refer to "Manifold Option" on page 238.

## Flow Characteristics

| Model        | Port size              |                | Flow characteristics       |      |      |                            |      |      |
|--------------|------------------------|----------------|----------------------------|------|------|----------------------------|------|------|
|              | 1, 5, 3<br>(P, EA, EB) | 4, 2<br>(A, B) | 1 → 4/2 (P → A/B)          |      |      | 4/2 → 5/3 (A/B → EA/EB)    |      |      |
|              |                        |                | C (dm <sup>3</sup> /s·bar) | b    | Cv   | C (dm <sup>3</sup> /s·bar) | b    | Cv   |
| SS5Y3-41(-Q) | 1/8                    | C6             | 0.75                       | 0.19 | 0.18 | 0.81                       | 0.23 | 0.20 |
| SS5Y3-42(-Q) | 1/8                    | C6             | 0.75                       | 0.20 | 0.18 | 0.82                       | 0.20 | 0.20 |
| SS5Y5-41(-Q) | 1/4                    | C8             | 1.8                        | 0.23 | 0.44 | 1.9                        | 0.16 | 0.45 |
| SS5Y5-42(-Q) | 1/4                    | C8             | 1.9                        | 0.20 | 0.46 | 1.9                        | 0.12 | 0.43 |
| SS5Y7-42(-Q) | 1/4                    | C10            | 3.0                        | 0.25 | 0.75 | 3.0                        | 0.12 | 0.66 |

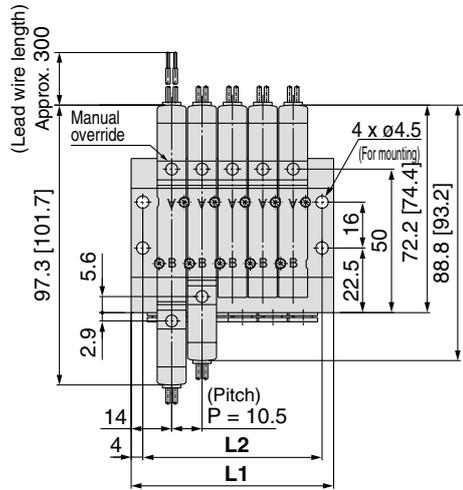


Note) The value is for manifold base with 5 stations and individually operated 2 position type.

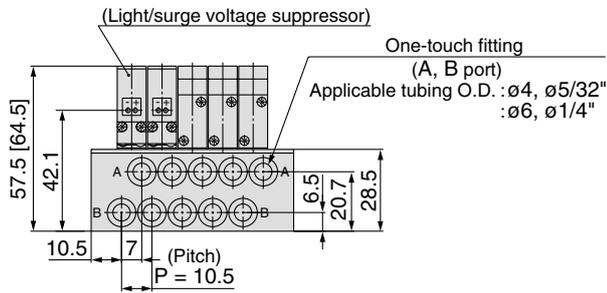
**SY3000: SS5Y3-41- Stations -M5**, C4,N3  
C6,N7



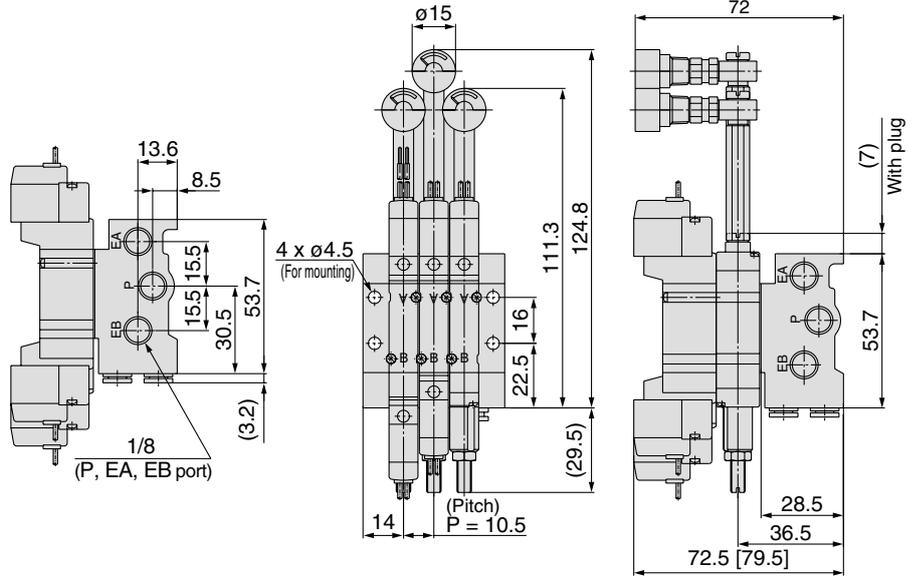
**Grommet (G)**



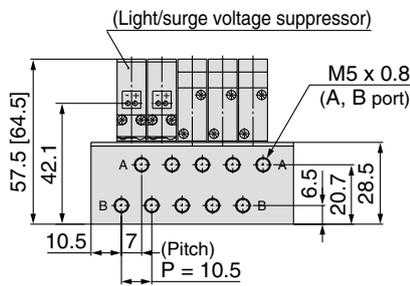
(Station 1) ----- (Station n)



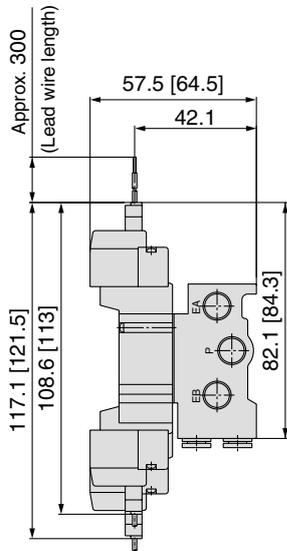
**With interface regulator (with gauge)**



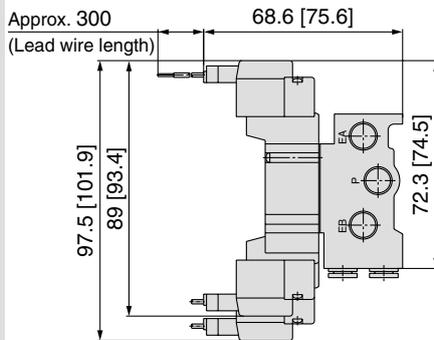
**For M5**



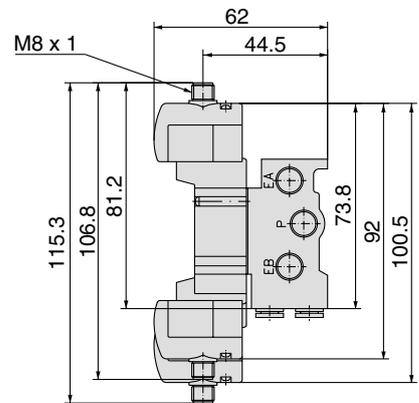
**L plug connector (L)**



**M plug connector (M)**



**M8 connector (WO)**



Note) Refer to page 340 for dimensions of connector types.

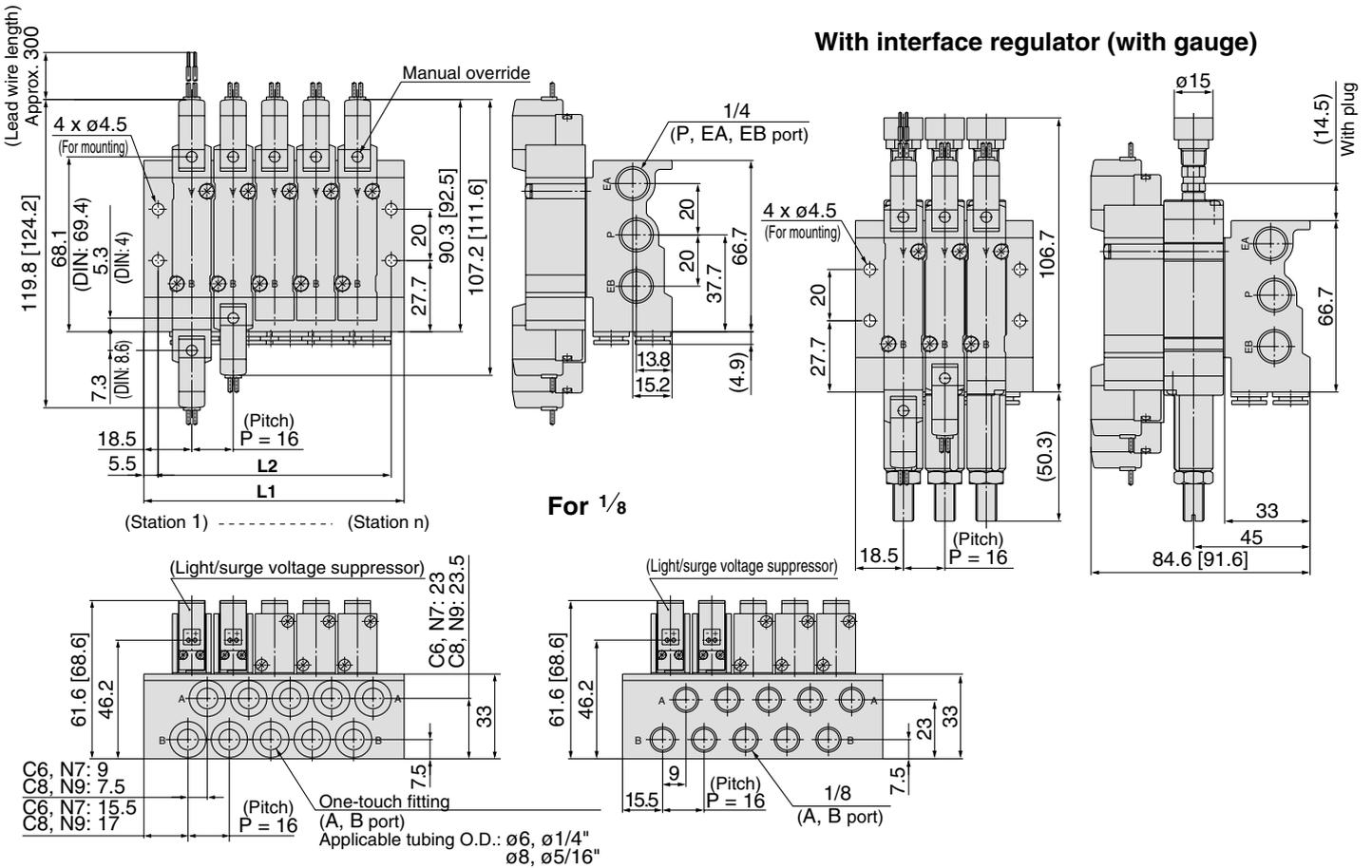
- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

| Stations n | 2 stations | 3  | 4    | 5  | 6    | 7  | 8     | 9   | 10    | 11  | 12    | 13  | 14    | 15  | 16    | 17  | 18    | 19  | 20 stations |
|------------|------------|----|------|----|------|----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------------|
| <b>L1</b>  | 38.5       | 49 | 59.5 | 70 | 80.5 | 91 | 101.5 | 112 | 122.5 | 133 | 143.5 | 154 | 164.5 | 175 | 185.5 | 196 | 206.5 | 217 | 227.5       |
| <b>L2</b>  | 30.5       | 41 | 51.5 | 62 | 72.5 | 83 | 93.5  | 104 | 114.5 | 125 | 135.5 | 146 | 156.5 | 167 | 177.5 | 188 | 198.5 | 209 | 219.5       |

SY5000: SS5Y5-41- Stations -01,  C6, N7  
 C8, N9



## Grommet (G)

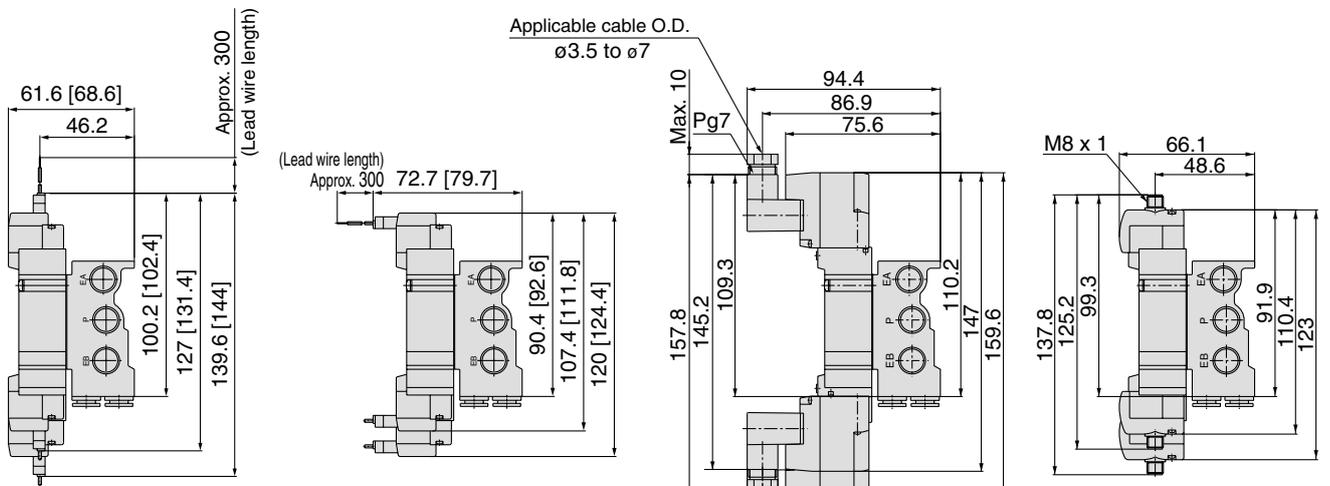


## L plug connector (L)

## M plug connector (M)

## DIN terminal (D, Y)

## M8 connector (WO)



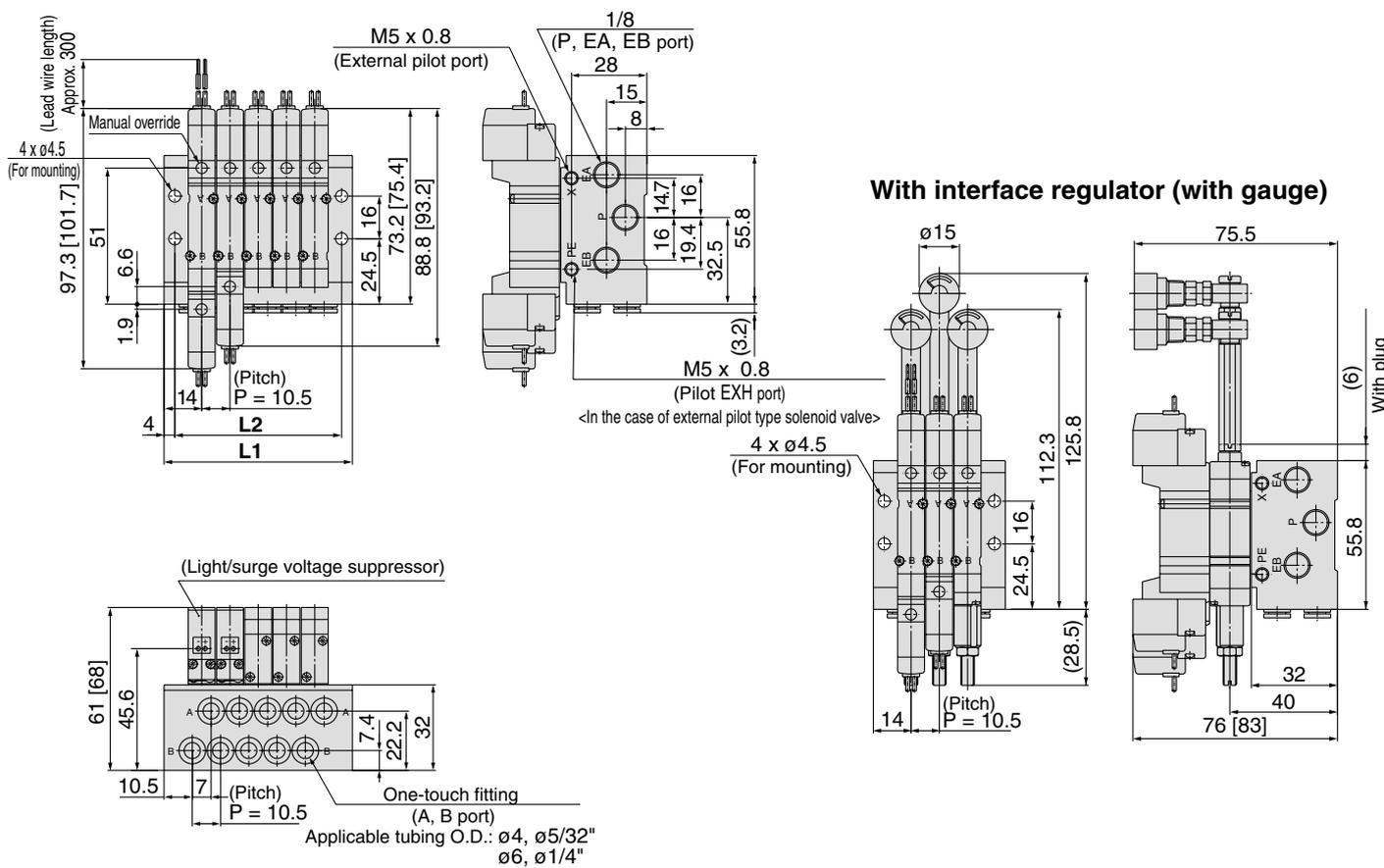
Note) Refer to page 340 for dimensions of connector types.

| Stations n | 2 stations | 3    | 4    | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20 stations |
|------------|------------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 52.5       | 68.5 | 84.5 | 100.5 | 116.5 | 132.5 | 148.5 | 164.5 | 180.5 | 196.5 | 212.5 | 228.5 | 244.5 | 260.5 | 276.5 | 292.5 | 308.5 | 324.5 | 340.5       |
| L2         | 42         | 58   | 74   | 90    | 106   | 122   | 138   | 154   | 170   | 186   | 202   | 218   | 234   | 250   | 266   | 282   | 298   | 314   | 330         |

**SY3000: SS5Y3-42- Stations** - C4, N3  
C6, N7

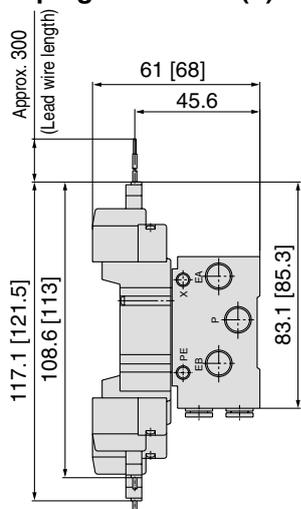


**Grommet (G)**

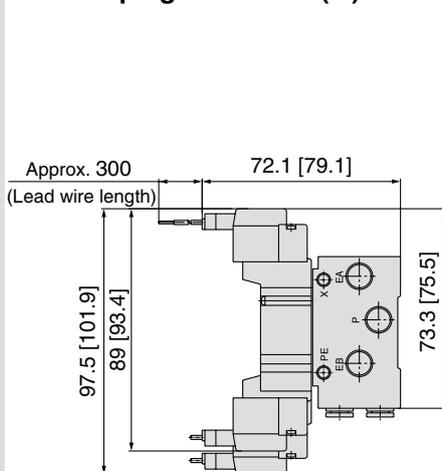


- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

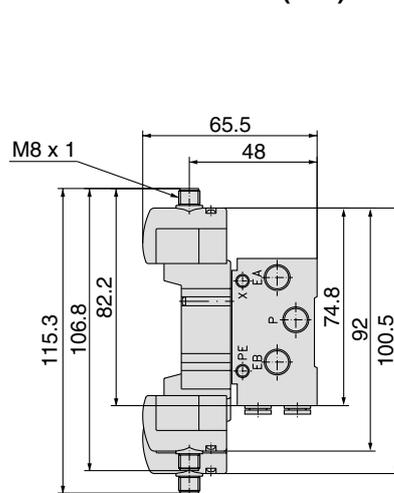
**L plug connector (L)**



**M plug connector (M)**



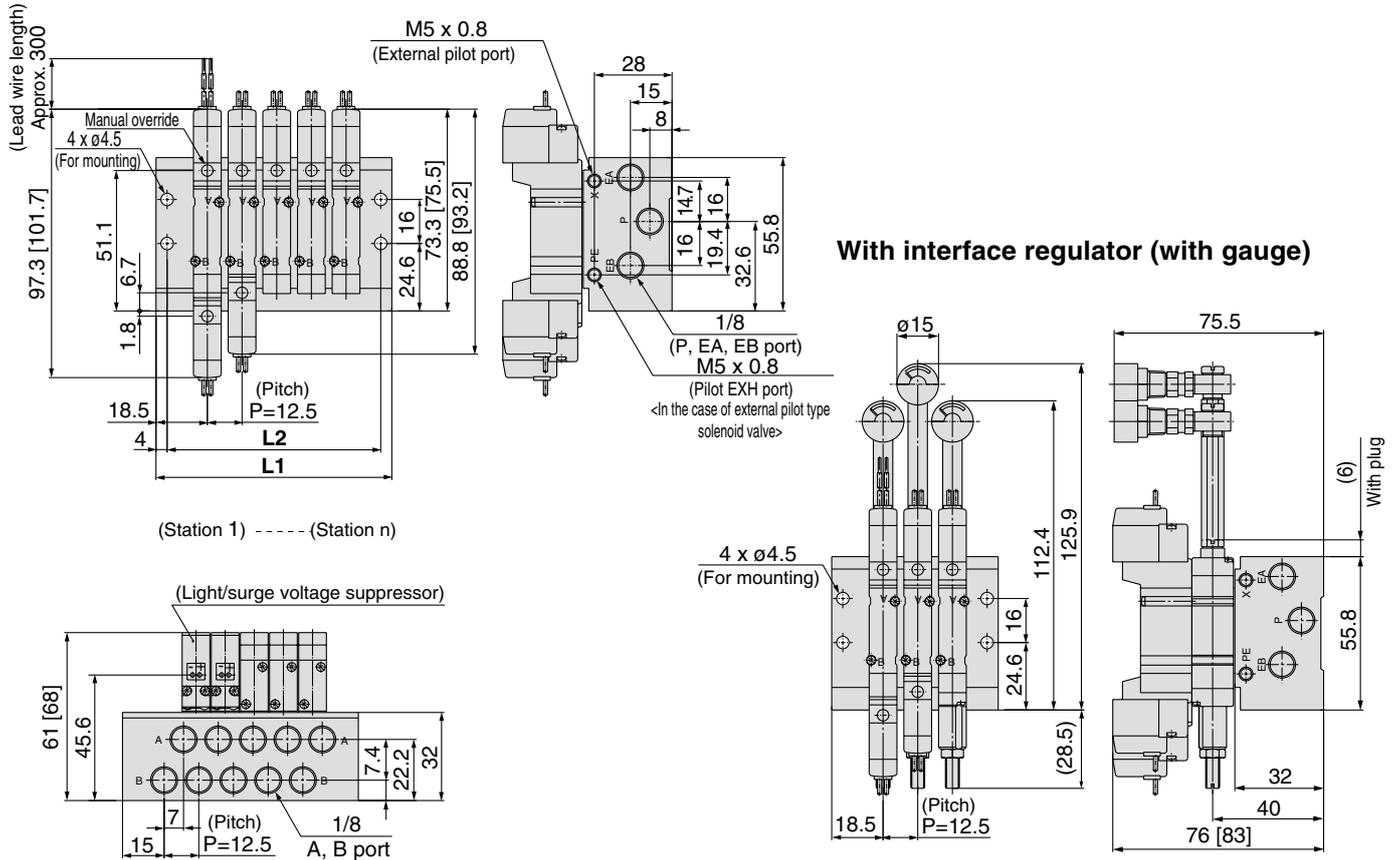
**M8 connector (WO)**



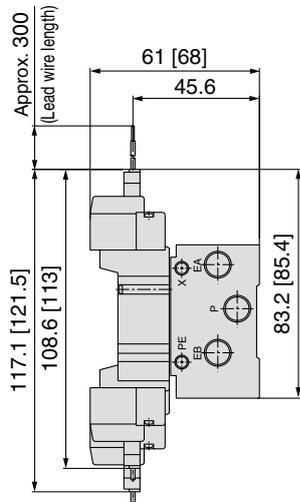
Note) Refer to page 340 for dimensions of connector types.

| Stations n | 2 stations | 3  | 4    | 5  | 6    | 7  | 8     | 9   | 10    | 11  | 12    | 13  | 14    | 15  | 16    | 17  | 18    | 19  | 20 stations |
|------------|------------|----|------|----|------|----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------------|
| <b>L1</b>  | 38.5       | 49 | 59.5 | 70 | 80.5 | 91 | 101.5 | 112 | 122.5 | 133 | 143.5 | 154 | 164.5 | 175 | 185.5 | 196 | 206.5 | 217 | 227.5       |
| <b>L2</b>  | 30.5       | 41 | 51.5 | 62 | 72.5 | 83 | 93.5  | 104 | 114.5 | 125 | 135.5 | 146 | 156.5 | 167 | 177.5 | 188 | 198.5 | 209 | 219.5       |

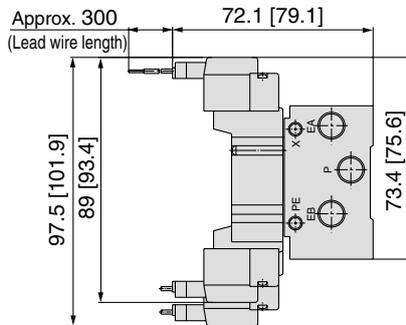
**Grommet (G)**



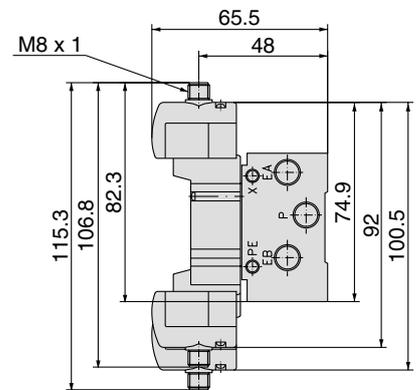
**L plug connector (L)**



**M plug connector (M)**



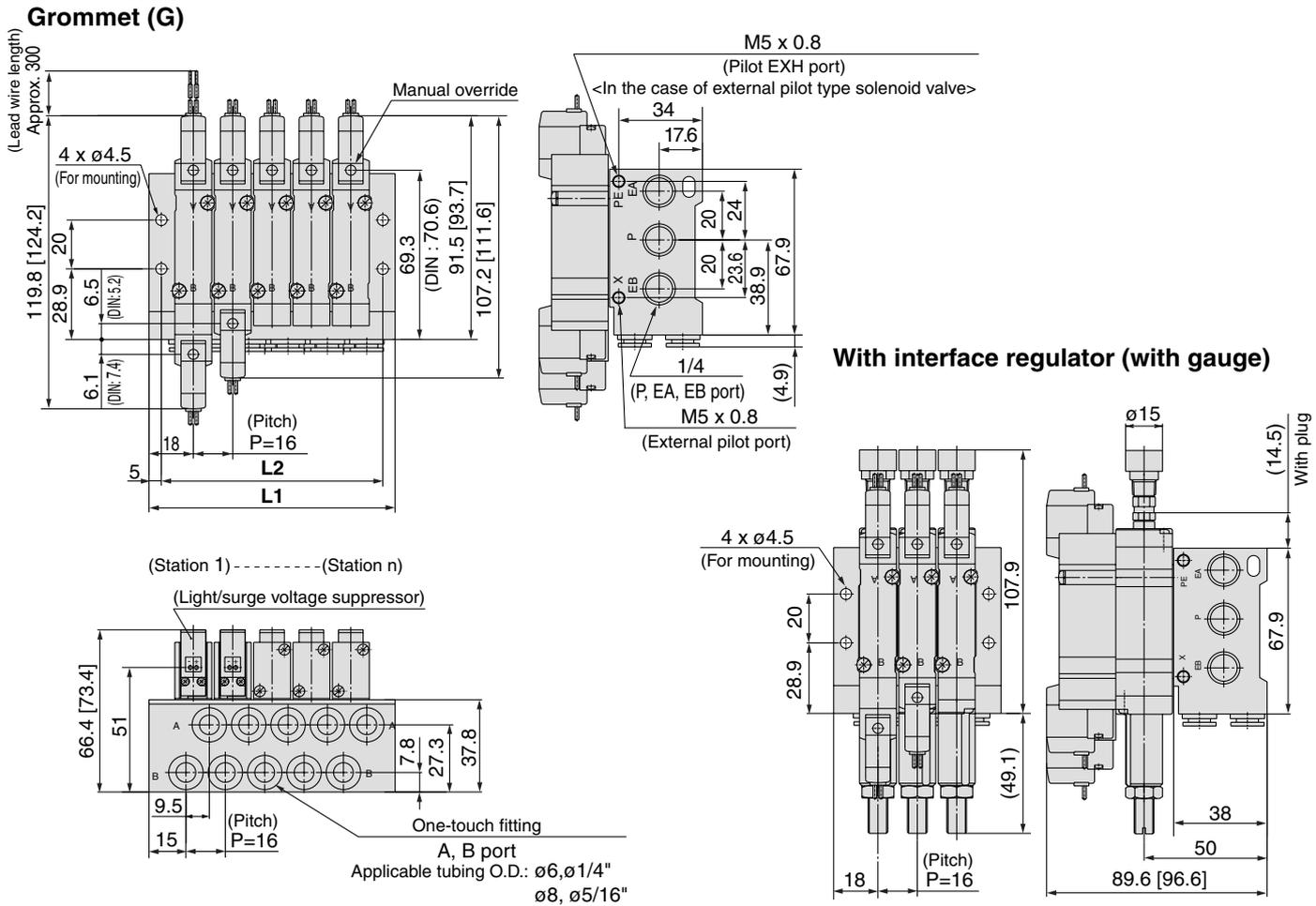
**M8 connector (WO)**



Note) Refer to page 340 for dimensions of connector types.

| Stations n | 2 stations | 3  | 4    | 5  | 6    | 7   | 8     | 9   | 10    | 11  | 12    | 13  | 14    | 15  | 16    | 17  | 18    | 19  | 20 stations |
|------------|------------|----|------|----|------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------------|
| <b>L1</b>  | 47.5       | 60 | 72.5 | 85 | 97.5 | 110 | 122.5 | 135 | 147.5 | 160 | 172.5 | 185 | 197.5 | 210 | 222.5 | 235 | 247.5 | 260 | 272.5       |
| <b>L2</b>  | 39.5       | 52 | 64.5 | 77 | 89.5 | 102 | 114.5 | 127 | 139.5 | 152 | 164.5 | 177 | 189.5 | 202 | 214.5 | 227 | 239.5 | 252 | 264.5       |

**SY5000: SS5Y5-42- Stations**  C4, N3  C6, N7



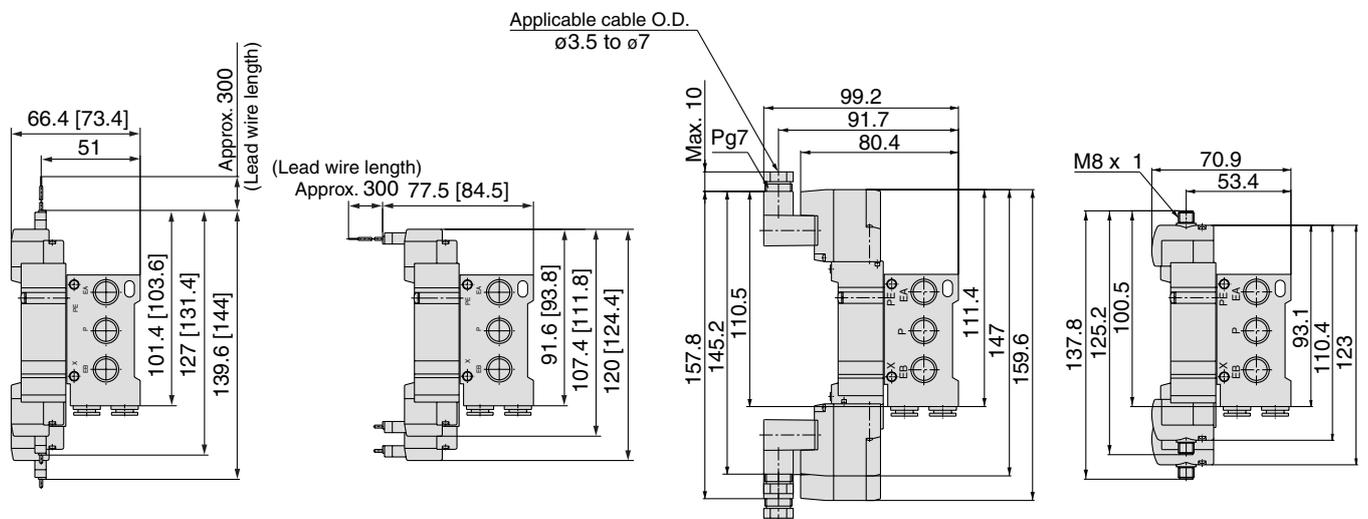
- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

**L plug connector (L)**

**M plug connector (M)**

**DIN terminal (D, Y)**

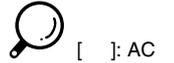
**M8 connector (WO)**



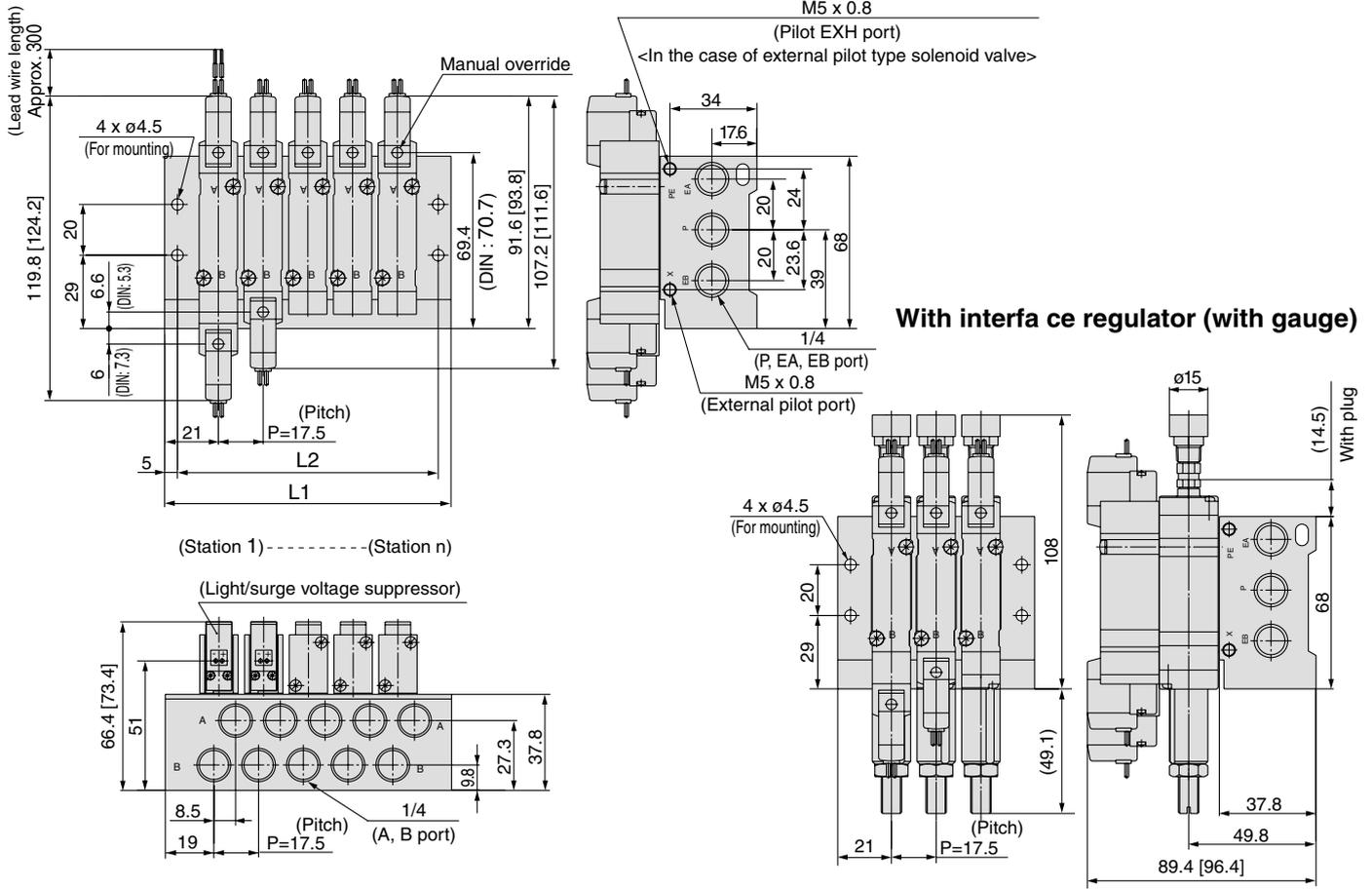
Note) Refer to page 340 for dimensions of connector types.

| Stations n | 2 stations | 3  | 4  | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20 stations |
|------------|------------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------|
| <b>L1</b>  | 52         | 68 | 84 | 100 | 116 | 132 | 148 | 164 | 180 | 196 | 212 | 228 | 244 | 260 | 276 | 292 | 308 | 324 | 340         |
| <b>L2</b>  | 42         | 58 | 74 | 90  | 106 | 122 | 138 | 154 | 170 | 186 | 202 | 218 | 234 | 250 | 266 | 282 | 298 | 314 | 330         |

**SY5000: SS5Y5-42- Stations -02**



**Grommet (G)**

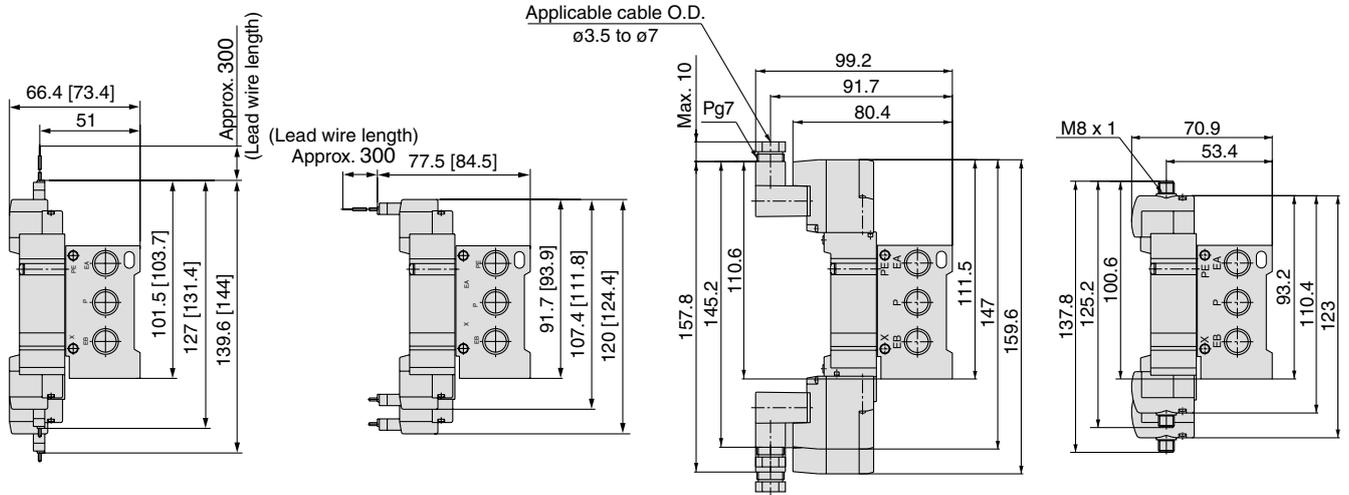


**L plug connector (L)**

**M plug connector (M)**

**DIN terminal (D, Y)**

**M8 connector (WO)**



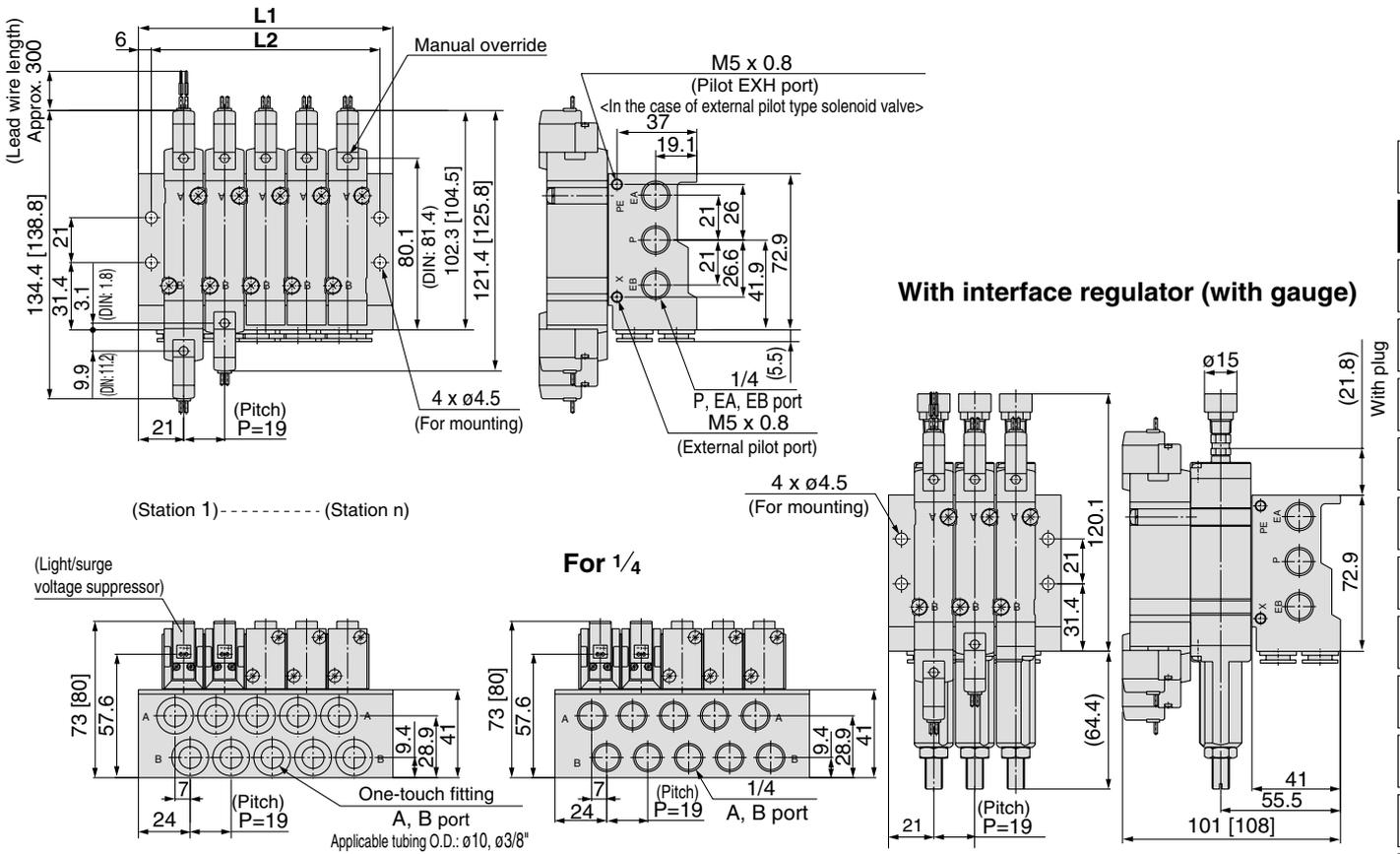
Note) Refer to page 340 for dimensions of connector types.

| Stations n | 2 stations | 3  | 4    | 5   | 6     | 7   | 8     | 9   | 10    | 11  | 12    | 13  | 14    | 15  | 16    | 17  | 18    | 19  | 20 stations |
|------------|------------|----|------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------------|
| <b>L1</b>  | 59.5       | 77 | 94.5 | 112 | 129.5 | 147 | 164.5 | 182 | 199.5 | 217 | 234.5 | 252 | 269.5 | 287 | 304.5 | 322 | 339.5 | 357 | 374.5       |
| <b>L2</b>  | 49.5       | 67 | 84.5 | 102 | 119.5 | 137 | 154.5 | 172 | 189.5 | 207 | 224.5 | 242 | 259.5 | 277 | 294.5 | 312 | 329.5 | 347 | 364.5       |

**SY7000: SS5Y7-42- Stations -02, C10, N11**



**Grommet (G)**



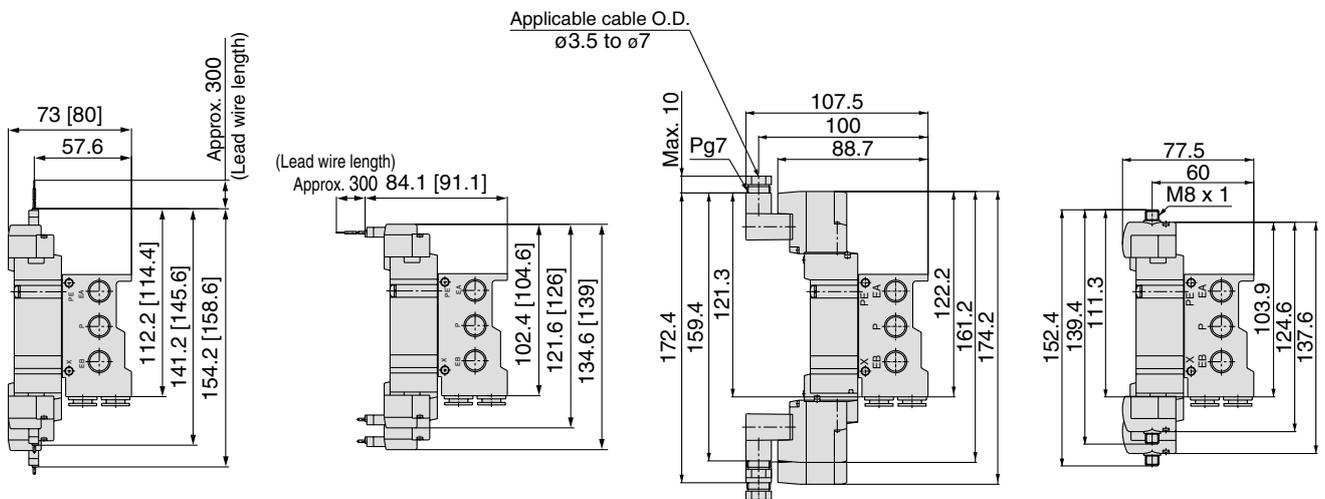
- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

**L plug connector (L)**

**M plug connector (M)**

**DIN terminal (D, Y)**

**M8 connector (WO)**



Note) Refer to page 340 for dimensions of connector types.

| Stations n | 2 stations | 3  | 4  | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20 stations |
|------------|------------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------------|
| <b>L1</b>  | 61         | 80 | 99 | 118 | 137 | 156 | 175 | 194 | 213 | 232 | 251 | 270 | 289 | 308 | 327 | 346 | 365 | 384 | 403         |
| <b>L2</b>  | 49         | 68 | 87 | 106 | 125 | 144 | 163 | 182 | 201 | 220 | 239 | 258 | 277 | 296 | 315 | 334 | 353 | 372 | 391         |

# 5 Port Solenoid Valve Base Mounted Manifold Stacking Type/Individual Wiring

## Series SY9000



Type **43**

### How to Order Manifold

**SS5Y 9 - 43 - 05 U - C8 -**

- Manifold series**

|   |        |
|---|--------|
| 9 | SY9000 |
|---|--------|
- Valve stations**

| Symbol | Stations    |
|--------|-------------|
| 02     | 2 stations  |
| ⋮      | ⋮           |
| 20     | 20 stations |

\* This also includes the number of blanking plate assemblies.
- P, R port outlets**

| Symbol | Port outlet | Applicable stations |
|--------|-------------|---------------------|
| U      | U side      | 2 to 10 stations    |
| D      | D side      | 2 to 20 stations    |
| B      | Both sides  | 2 to 20 stations    |
- SUP/EXH block assembly specifications**

| Symbol | Specifications                        |
|--------|---------------------------------------|
| Nil    | Standard/Internal pilot specification |
| R      | External pilot specification          |
| S      | Internal pilot/Built-in silencer      |
| RS     | External pilot/Built-in silencer      |
- Thread type**

|     |      |
|-----|------|
| Nil | Rc   |
| F   | G    |
| N   | NPT  |
| T   | NPTF |
- Option**

| Symbol | Mounting                                                                                                              |
|--------|-----------------------------------------------------------------------------------------------------------------------|
| Nil    | Direct mounting                                                                                                       |
| D      | DIN rail mounting (with DIN rail)                                                                                     |
| DO     | DIN rail mounting (without DIN rail)                                                                                  |
| D*     | When a longer DIN rail is desired than the specified stations, specify the station number to be required into * mark. |
- A, B port size**

**Thread piping**

| Symbol | Port size |
|--------|-----------|
| 02     | 1/4       |
| 03     | 3/8       |

**One-touch fitting (Metric size)**

| Symbol | Port size                 |
|--------|---------------------------|
| C8     | One-touch fitting for ø8  |
| C10    | One-touch fitting for ø10 |
| C12    | One-touch fitting for ø12 |
| M      | Mixed                     |

**One-touch fitting (Inch size)**

| Symbol | Port size                    |
|--------|------------------------------|
| N9     | One-touch fitting for ø5/16" |
| N11    | One-touch fitting for ø3/8"  |
| M      | Mixed                        |

\* In the case of mixed specifications (M), indicate separately on the manifold specification sheet.
- CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

### How to Order Manifold Assembly (Example)

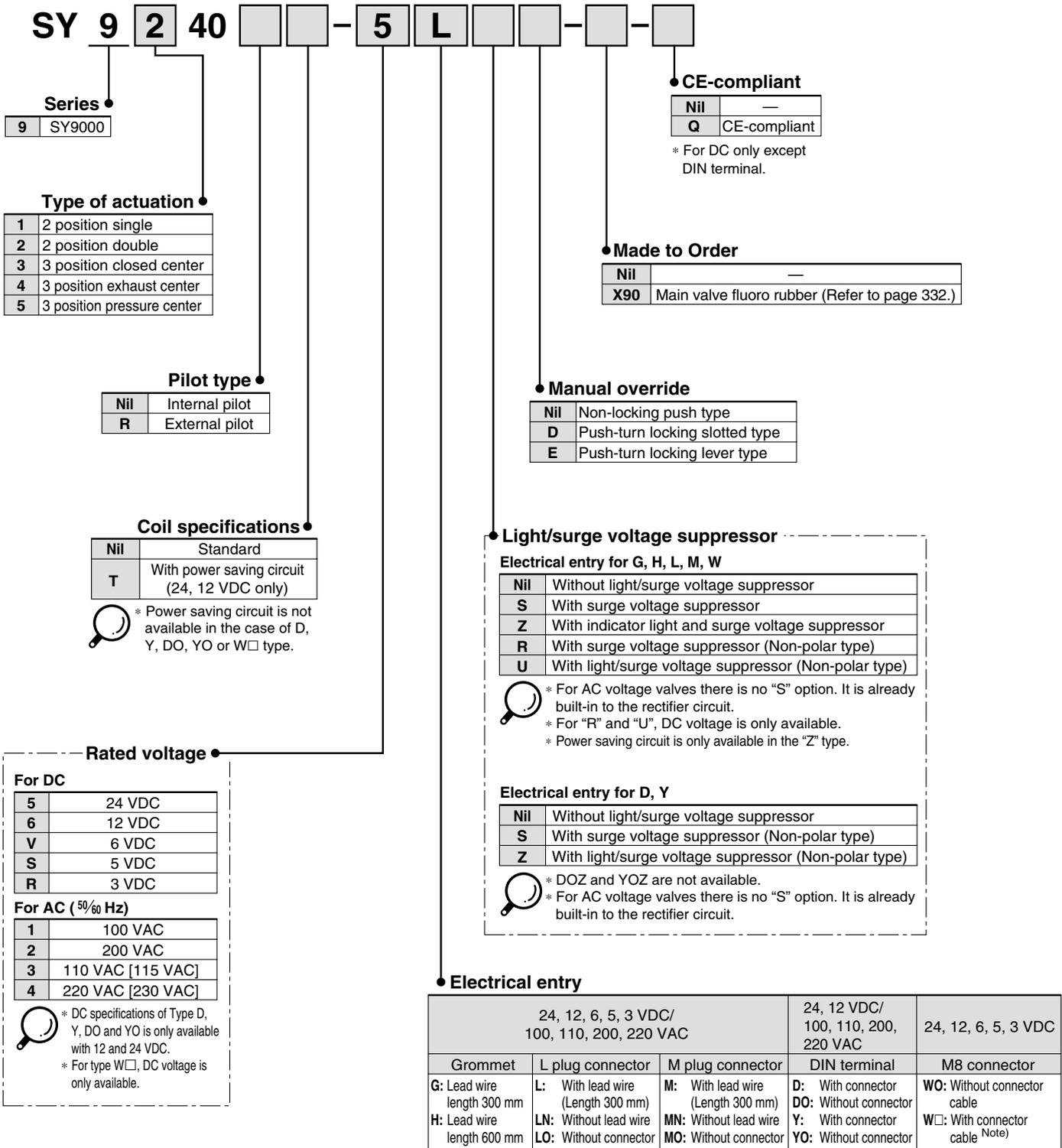
**Example**

**SS5Y9-43-05B-C12 ... 1 set (Type 43, 5-station manifold base part no.)**  
 \* SY9000-26-2A ..... 1 set (Blanking plate assembly part no.)  
 \* SY9140-5LOZ ..... 2 sets (Single solenoid part no.)  
 \* SY9220-5LOZ ..... 2 sets (Double solenoid part no.)

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

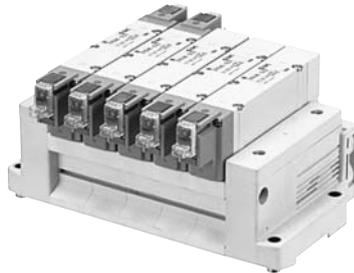
Add the valve and option part number under the manifold base part number. In the case of complex arrangement, specify them on the manifold specification sheet.

**How to Order Valve**



- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

\* LN, MN type: with 2 sockets.  
\* DIN terminal type "Y" which conforms to EN-175301-803C (former DIN43650C) is also available. For details, refer to page 336.  
\* For connector cable of M8 connector, refer to page 339.  
\* M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 331 for details.  
\* Refer to page 336 for the lead wire length of L and M plug connectors.  
\* Refer to page 337 for the connector assembly with cover for L and M plug connectors.  
Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.



## Manifold Specifications

|                                          |                |                                                                                                                                       |
|------------------------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Model                                    |                | <b>SS5Y9-43(-Q)</b>                                                                                                                   |
| Applicable valve                         |                | <b>SY9□40</b>                                                                                                                         |
| Manifold type                            |                | Stacking type                                                                                                                         |
| P(SUP)/R(EXH)                            |                | Common SUP, Common EXH                                                                                                                |
| Valve stations                           |                | 2 to 20 stations <sup>(1)</sup>                                                                                                       |
| A, B port                                | Location       | Base                                                                                                                                  |
| Porting specifications                   | Direction      | Side                                                                                                                                  |
| Port size                                | P, EA, EB port | C12 (One-touch fitting for ø12)                                                                                                       |
|                                          | A, B port      | $\frac{1}{4}$<br>$\frac{3}{8}$<br>C8 (One-touch fitting for ø8)<br>C10 (One-touch fitting for ø10)<br>C12 (One-touch fitting for ø12) |
| Manifold base mass<br>W (g), n: Stations |                | W = 107n + 330                                                                                                                        |



Note 1) For more than 10 stations, supply pressure to P port on both sides and exhaust from EA/EB port on both sides.

Note 2) Refer to "Manifold Option" on page 238.

## Flow Characteristics

| Model               | Port size              |                | Flow characteristics      |      |     |                           |      |     |
|---------------------|------------------------|----------------|---------------------------|------|-----|---------------------------|------|-----|
|                     | 1, 5, 3<br>(P, EA, EB) | 4, 2<br>(A, B) | 1→4/2 (P→A/B)             |      |     | 4/2→5/3 (A/B→EA/EB)       |      |     |
|                     |                        |                | C (dm <sup>3</sup> /sbar) | b    | Cv  | C (dm <sup>3</sup> /sbar) | b    | Cv  |
| <b>SS5Y9-43(-Q)</b> | C12                    | C12            | 6.4                       | 0.29 | 1.6 | 7.3                       | 0.29 | 1.8 |



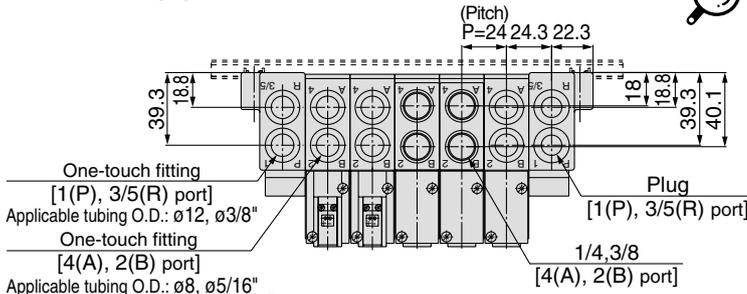
Note) The value is for manifold base with 5 stations and individually operated 2 position type.



SY9000: SS5Y9-43- Stations U  <sup>02</sup>C9, N9  <sup>03</sup>C10, N11  <sup>04</sup>C12  (-D)

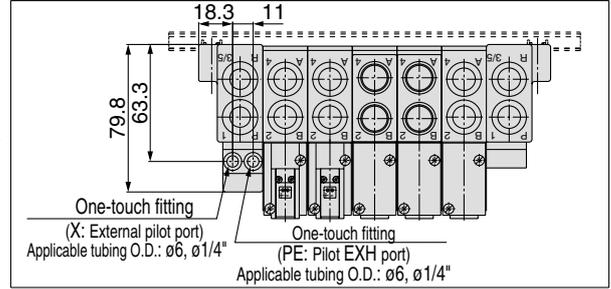
[ ] : AC

## Grommet (G)

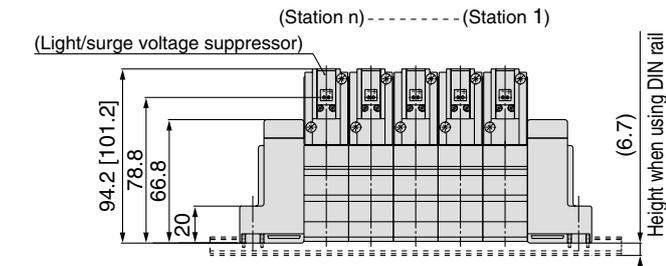
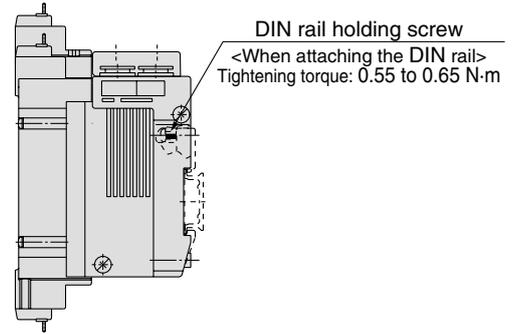
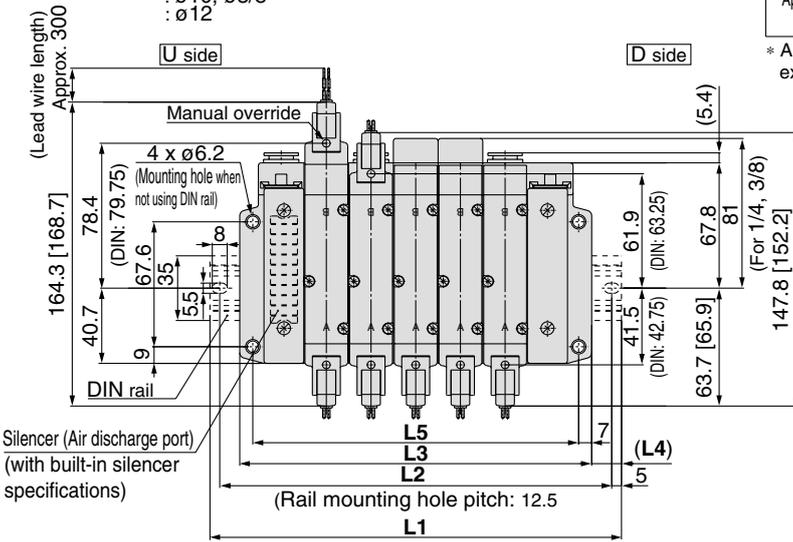


\* When P, R port outlets are indicated on the U side, the P, R ports on the opposite side are plugged.

## With External Pilot Specifications

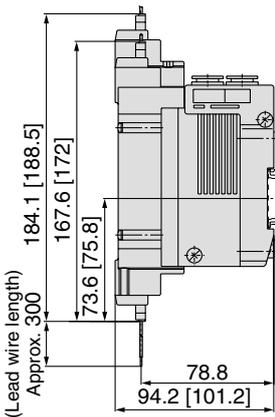


\* Air discharge port on the built-in silencer type and the external pilot's extracting position are in the D side.

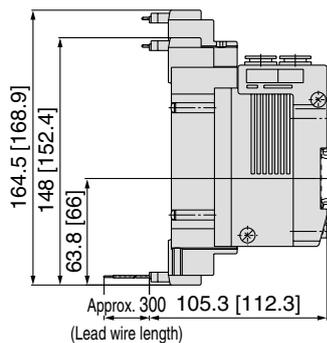


| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 148        | 173   | 198   | 223   | 248   | 260.5 | 285.5 | 310.5 | 335.5       |
| L2         | 137.5      | 162.5 | 187.5 | 212.5 | 237.5 | 250   | 275   | 300   | 325         |
| L3         | 117        | 141   | 165   | 189   | 213   | 237   | 261   | 285   | 309         |
| L4         | 15.5       | 16    | 16.5  | 17    | 17.5  | 12    | 12.5  | 13    | 13.5        |
| L5         | 103        | 127   | 151   | 175   | 199   | 223   | 247   | 271   | 295         |

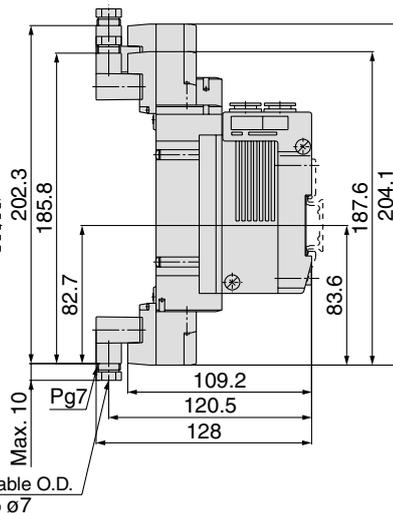
## L plug connector (L)



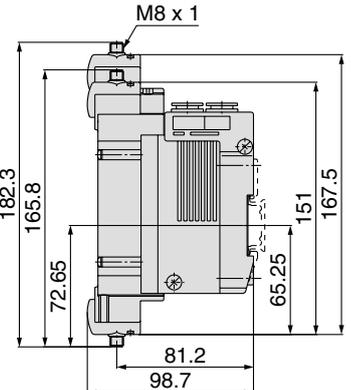
## M plug connector (M)



## DIN terminal (D, Y)



## M8 connector (WO)



Note) Refer to page 340 for dimensions of connector types.

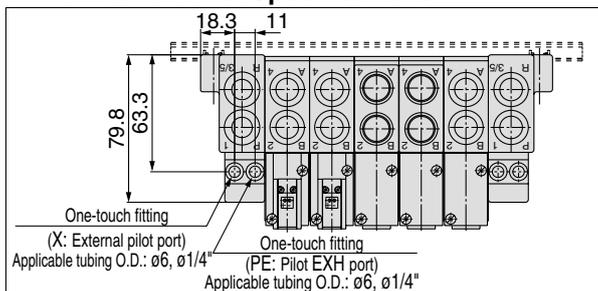
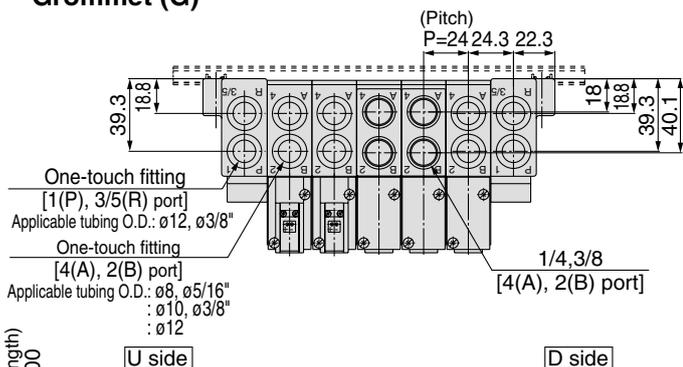
SY9000: SS5Y9-43- Stations B  02: C8, N9  03: C10, N11  (-D)



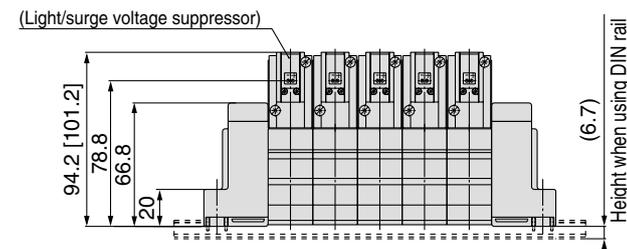
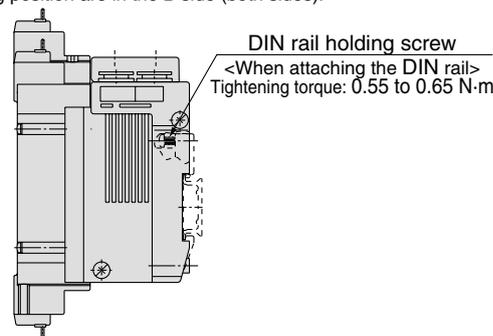
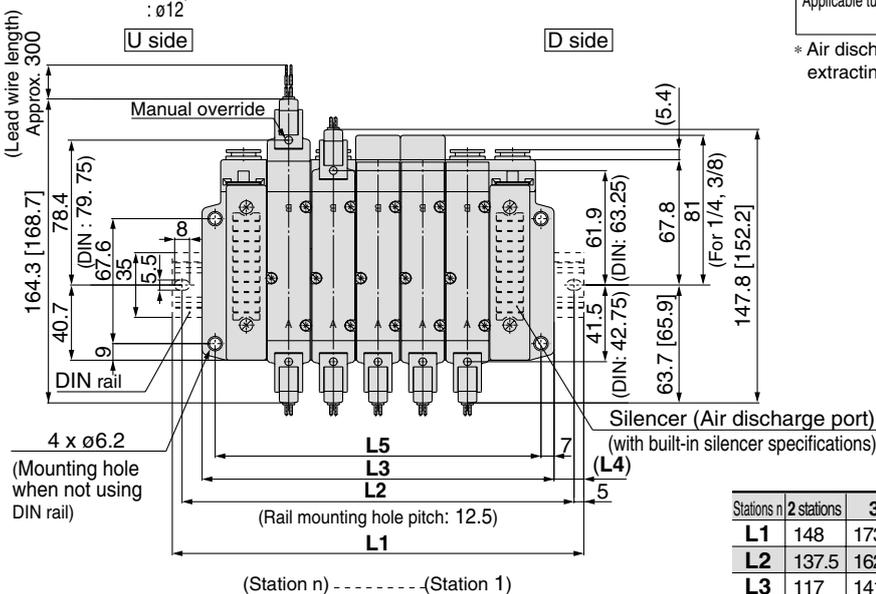
**Grommet (G)**

\* When P, R port outlets are indicated on the B side, the P, R ports on the both sides are in the open state.

**With External Pilot Specifications**



\* Air discharge port on the built-in silencer type and the external pilot's extracting position are in the B side (both sides).



| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 148        | 173   | 198   | 223   | 248   | 260.5 | 285.5 | 310.5 | 335.5       |
| L2         | 137.5      | 162.5 | 187.5 | 212.5 | 237.5 | 250   | 275   | 300   | 325         |
| L3         | 117        | 141   | 165   | 189   | 213   | 237   | 261   | 285   | 309         |
| L4         | 15.5       | 16    | 16.5  | 17    | 17.5  | 12    | 12.5  | 13    | 13.5        |
| L5         | 103        | 127   | 151   | 175   | 199   | 223   | 247   | 271   | 295         |

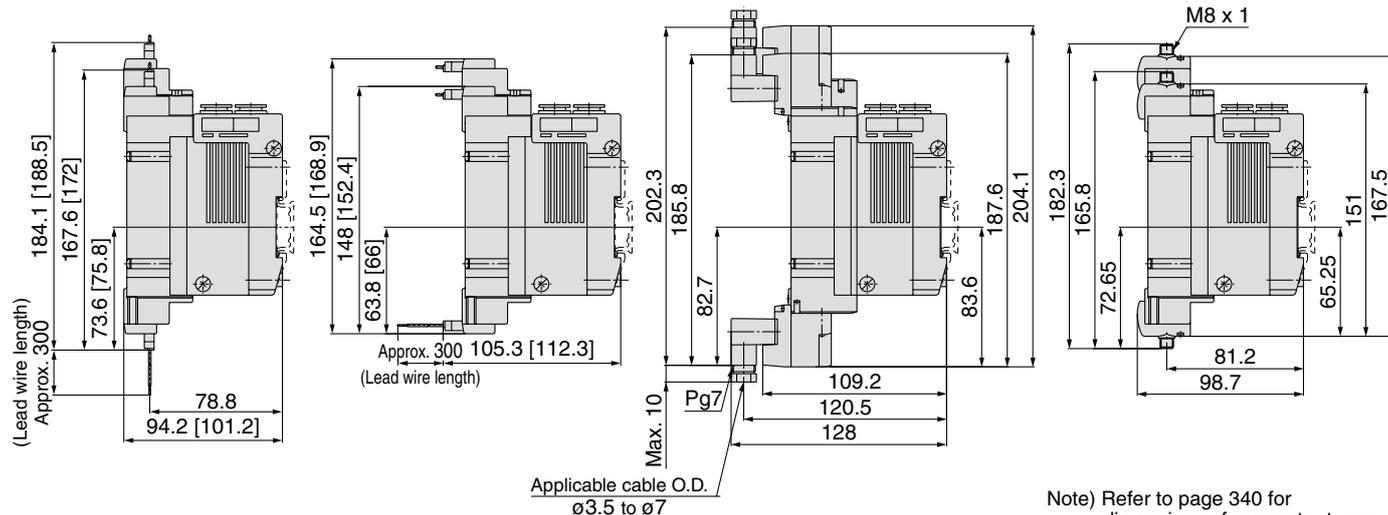
| Stations n | 11 stations | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20 stations |
|------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 360.5       | 385.5 | 410.5 | 435.5 | 460.5 | 485.5 | 510.5 | 535.5 | 560.5 | 573         |
| L2         | 350         | 375   | 400   | 425   | 450   | 475   | 500   | 525   | 550   | 562.5       |
| L3         | 333         | 357   | 381   | 405   | 429   | 453   | 477   | 501   | 525   | 549         |
| L4         | 14          | 14.5  | 15    | 15.5  | 16    | 16.5  | 17    | 17.5  | 18    | 12          |
| L5         | 319         | 343   | 367   | 391   | 415   | 439   | 463   | 487   | 511   | 535         |

**L plug connector (L)**

**M plug connector (M)**

**DIN terminal (D, Y)**

**M8 connector (WO)**



Note) Refer to page 340 for dimensions of connector types.

- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

Type **41P**

Type **42P**

# 5 Port Solenoid Valve Base Mounted Manifold Bar Stock Type/Flat Ribbon Cable

## Series SY3000/5000/7000



### How to Order Manifold

#### Type 41P/Compact style

**SS5Y 5 - 41P - 05 - C8** [ ] - [ ]

**Manifold series**

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |

**Stations**

|    |             |
|----|-------------|
| 03 | 3 stations  |
| ⋮  | ⋮           |
| 12 | 12 stations |

\* SS5Y3 has 4 to 12 stations.

**A, B port size  
Thread piping**

| Symbol | Port size | Applicable series |
|--------|-----------|-------------------|
| M5     | M5 x 0.8  | SY3000            |
| 01     | 1/8       | SY5000            |

**Thread type**

|  | Nil | Rc   | CE-compliant |
|--|-----|------|--------------|
|  | F   | G    | Nil          |
|  | N   | NPT  | Q            |
|  | T   | NPTF | CE-compliant |

\* Except for M5 \* For DC only.

**One-touch fitting (Metric size)**

| Symbol | Port size                | Applicable series |
|--------|--------------------------|-------------------|
| C4     | One-touch fitting for ø4 | SY3000            |
| C6     | One-touch fitting for ø6 | SY3000            |
| C6     | One-touch fitting for ø6 | SY5000            |
| C8     | One-touch fitting for ø8 | SY5000            |

**One-touch fitting (Inch size)**

| Symbol | Port size                    | Applicable series |
|--------|------------------------------|-------------------|
| N3     | One-touch fitting for ø5/32" | SY3000            |
| N7     | One-touch fitting for ø1/4"  | SY3000            |
| N7     | One-touch fitting for ø1/4"  | SY5000            |
| N9     | One-touch fitting for ø5/16" | SY5000            |

#### Type 42P/Common external pilot capable

**SS5Y 5 - 42P - 05 - C8** [ ] - [ ]

**Manifold series**

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |
| 7 | SY7000 |

**Stations**

|    |             |
|----|-------------|
| 03 | 3 stations  |
| ⋮  | ⋮           |
| 12 | 12 stations |

\* SS5Y3 has 4 to 12 stations.

**A, B port size  
Thread piping**

| Symbol | Port size | Applicable series |
|--------|-----------|-------------------|
| 01     | 1/8       | SY3000            |
| 02     | 1/4       | SY5000            |
| 02     | 1/4       | SY7000            |

**Thread type**

|  | Nil | Rc   | CE-compliant |
|--|-----|------|--------------|
|  | F   | G    | Nil          |
|  | N   | NPT  | Q            |
|  | T   | NPTF | CE-compliant |

\* For DC only.

**One-touch fitting (Metric size)**

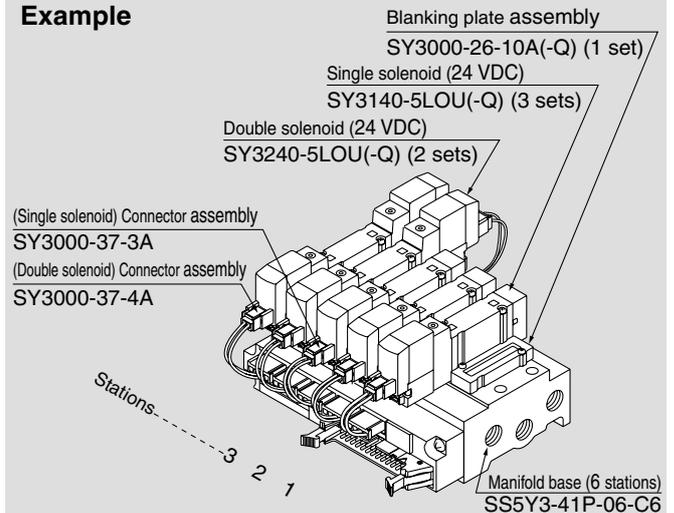
| Symbol | Port size                 | Applicable series |
|--------|---------------------------|-------------------|
| C4     | One-touch fitting for ø4  | SY3000            |
| C6     | One-touch fitting for ø6  | SY3000            |
| C6     | One-touch fitting for ø6  | SY5000            |
| C8     | One-touch fitting for ø8  | SY5000            |
| C10    | One-touch fitting for ø10 | SY7000            |

**One-touch fitting (Inch size)**

| Symbol | Port size                    | Applicable series |
|--------|------------------------------|-------------------|
| N3     | One-touch fitting for ø5/32" | SY3000            |
| N7     | One-touch fitting for ø1/4"  | SY3000            |
| N7     | One-touch fitting for ø1/4"  | SY5000            |
| N9     | One-touch fitting for ø5/16" | SY5000            |
| N11    | One-touch fitting for ø3/8"  | SY7000            |

### How to Order Manifold Assembly (Example)

#### Example

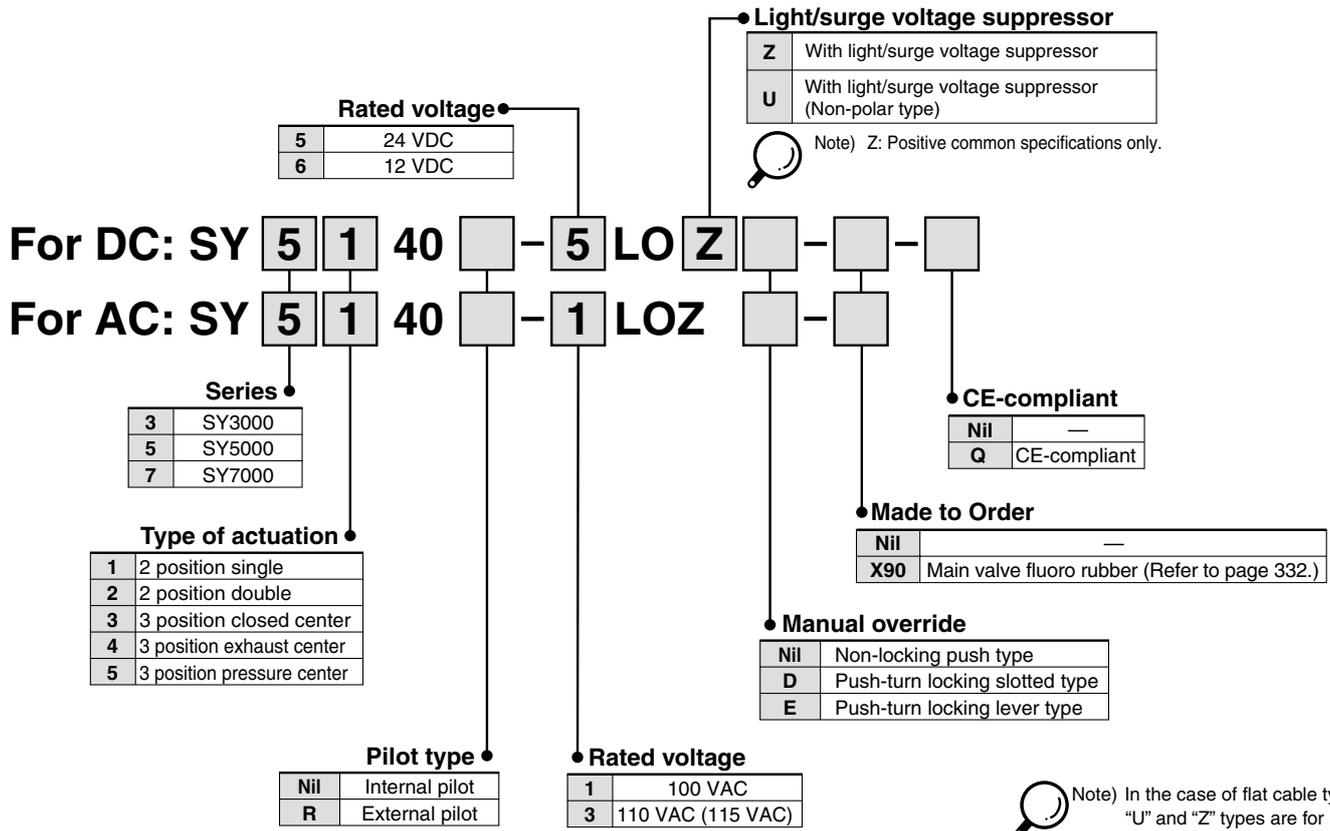


- SS5Y3-41P-06-C6 ... 1 set (Type 41P, 6-station manifold base part no.)
- \* SX3000-26-10A ..... 1 set (Blanking plate assembly part no.)
- \* SY3140-5LOU ..... 3 sets (Single solenoid part no.)
- \* SY3240-5LOU ..... 2 sets (Double solenoid part no.)
- \* SY3000-37-3A ..... 3 sets (Connector assembly part no.)
- \* SY3000-37-4A ..... 2 sets (Connector assembly part no.)

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

Add the valve and option part number under the manifold base part number. In the case of complex arrangement, specify them on the manifold specification sheet.

## How to Order Valve



- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

## How to Order Connector Assembly

### For 12, 24 VDC

| Specifications                          | For SY3000   | For SY5000/7000 |
|-----------------------------------------|--------------|-----------------|
| For single solenoid                     | SY3000-37-3A | SY5000-37-3A    |
| Double solenoid, 3 position type        | SY3000-37-4A | SY5000-37-4A    |
| Single with spacer assembly             | SY5000-37-3A | SY5000-37-5A    |
| Double, 3 position with spacer assembly | SY3000-37-6A | SY5000-37-6A    |

### For 100 VAC

| Specifications                          | For SY3000    | For SY5000/7000 |
|-----------------------------------------|---------------|-----------------|
| For single solenoid                     | SY3000-37-32A | SY5000-37-15A   |
| Double solenoid, 3 position type        | SY3000-37-33A | SY5000-37-16A   |
| Single with spacer assembly             | SY5000-37-15A | SY5000-37-17A   |
| Double, 3 position with spacer assembly | SY3000-37-34A | SY5000-37-18A   |

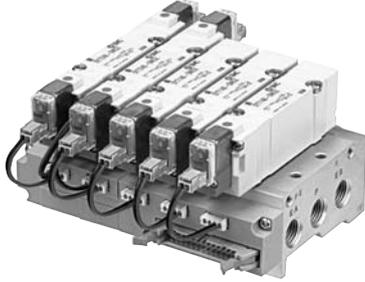
### For 100 VAC (115 VAC)

| Specifications                          | For SY3000    | For SY5000/7000 |
|-----------------------------------------|---------------|-----------------|
| For single solenoid                     | SY3000-37-35A | SY5000-37-19A   |
| Double solenoid, 3 position type        | SY3000-37-36A | SY5000-37-20A   |
| Single with spacer assembly             | SY5000-37-19A | SY5000-37-21A   |
| Double, 3 position with spacer assembly | SY3000-37-37A | SY5000-37-22A   |

## Flat Ribbon Cable Manifold Specifications

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

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



| Model                                    | SS5Y3-41P(-Q)                                                                                       | SS5Y3-42P(-Q)                                                  | SS5Y5-41P(-Q)                                                  | SS5Y5-42P(-Q)                                                  | SS5Y7-42P(-Q)                   |
|------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|---------------------------------|
| Applicable valve                         | SY3□40                                                                                              |                                                                | SY5□40                                                         |                                                                |                                 |
| Manifold type                            | Single base/B mount                                                                                 |                                                                |                                                                |                                                                |                                 |
| P(SUP)/R(EXH)                            | Common SUP, Common EXH                                                                              |                                                                |                                                                |                                                                |                                 |
| Valve stations                           | 4 to 12 stations <sup>(1)</sup>                                                                     |                                                                | 3 to 12 stations <sup>(Note 1)</sup>                           |                                                                |                                 |
| A, B port<br>Porting specifications      | Location<br>Base                                                                                    |                                                                |                                                                |                                                                |                                 |
|                                          | Direction<br>Side                                                                                   |                                                                |                                                                |                                                                |                                 |
| Port size                                | P, EA, EB port                                                                                      |                                                                | 1/8                                                            |                                                                | 1/4                             |
|                                          | A, B port                                                                                           |                                                                | 1/8                                                            | 1/8                                                            | 1/4                             |
| Manifold base mass<br>W (g), n: Stations | M5 x 0.8                                                                                            | 1/8                                                            | 1/8                                                            | 1/4                                                            | 1/4                             |
|                                          | C4 (One-touch fitting for ø4)<br>C6 (One-touch fitting for ø6)                                      | C4 (One-touch fitting for ø4)<br>C6 (One-touch fitting for ø6) | C6 (One-touch fitting for ø6)<br>C8 (One-touch fitting for ø8) | C6 (One-touch fitting for ø6)<br>C8 (One-touch fitting for ø8) | C10 (One-touch fitting for ø10) |
| Manifold base mass<br>W (g), n: Stations | W = 39n + 83                                                                                        | W = 48n + 99                                                   | W = 67n + 118                                                  | W = 88n + 151                                                  | W = 109n + 174                  |
| Applicable flat ribbon cable connector   | Flat ribbon cable connector, Socket: 26 pins MIL type with strain relief, Conforming to MIL-C-83503 |                                                                |                                                                |                                                                |                                 |
| Internal wiring                          | In common between +COM and -COM (Z type: +COM only).                                                |                                                                |                                                                |                                                                |                                 |
| Rated voltage <sup>(Note 4)</sup>        | 12, 24 VDC, 100, 110 VAC                                                                            |                                                                |                                                                |                                                                |                                 |

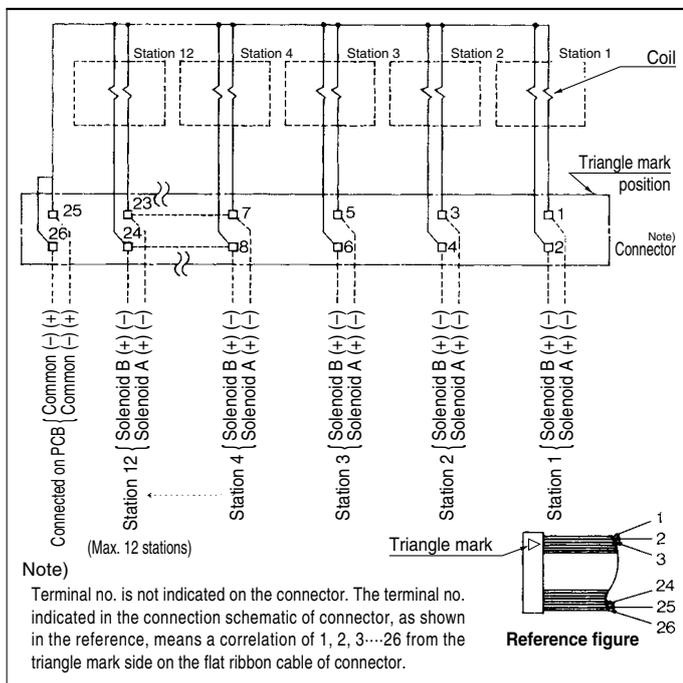
- Note 1) For more than 10 stations (more than 5 stations in case of SS5Y7), supply pressure to P port on both sides and exhaust from EA/EB port on both sides.
- Note 2) The withstand voltage specification for the wiring unit section is JIS C 0704, Grade 1 or its equivalent.
- Note 3) Refer to "Manifold Option" on page 238.
- Note 4) CE-compliant: For DC only.

## Flow Characteristics

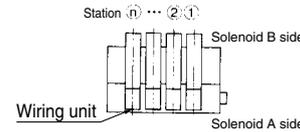
| Model     | Port size              |                | Flow characteristics         |      |      |                              |      |      |
|-----------|------------------------|----------------|------------------------------|------|------|------------------------------|------|------|
|           | 1, 5, 3<br>(P, EA, EB) | 4, 2<br>(A, B) | 1 → 4/2 (P → A/B)            |      |      | 4/2 → 5/3 (A/B → EA/EB)      |      |      |
|           |                        |                | C (dm <sup>3</sup> /(s·bar)) | b    | Cv   | C (dm <sup>3</sup> /(s·bar)) | b    | Cv   |
| SS5Y3-41P | 1/8                    | C6             | 0.75                         | 0.19 | 0.18 | 0.81                         | 0.23 | 0.20 |
| SS5Y3-42P | 1/8                    | C6             | 0.75                         | 0.20 | 0.18 | 0.82                         | 0.20 | 0.20 |
| SS5Y5-41P | 1/4                    | C8             | 1.8                          | 0.23 | 0.44 | 1.9                          | 0.16 | 0.45 |
| SS5Y5-42P | 1/4                    | C8             | 1.9                          | 0.20 | 0.46 | 1.9                          | 0.12 | 0.43 |
| SS5Y7-42P | 1/4                    | C10            | 3.0                          | 0.25 | 0.75 | 3.0                          | 0.12 | 0.66 |

Note) The value is for manifold base with 5 stations and individually operated 2 position type.

## Internal Wiring of Manifold (Non-polar type)



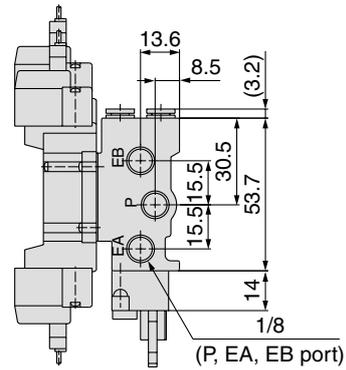
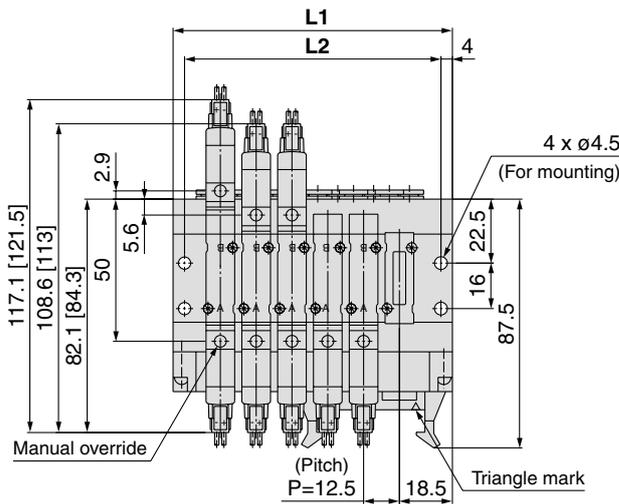
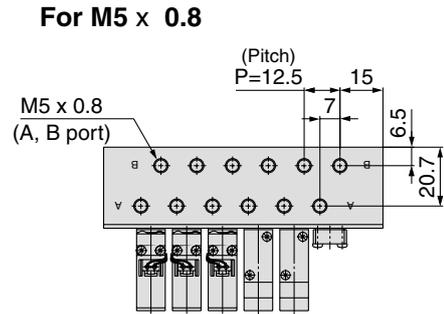
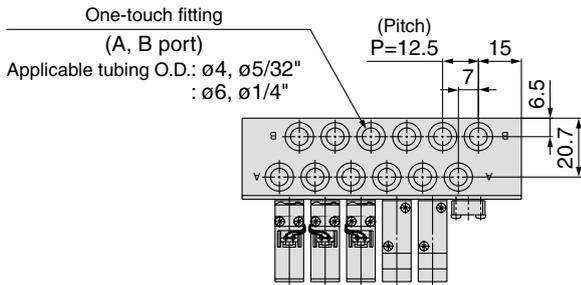
- For more than 10 stations, both poles of the common should be wired.
- For single solenoid, connect to the solenoid A side.
- The maximum number of stations that can be accommodated is 12. For more stations, please contact SMC.



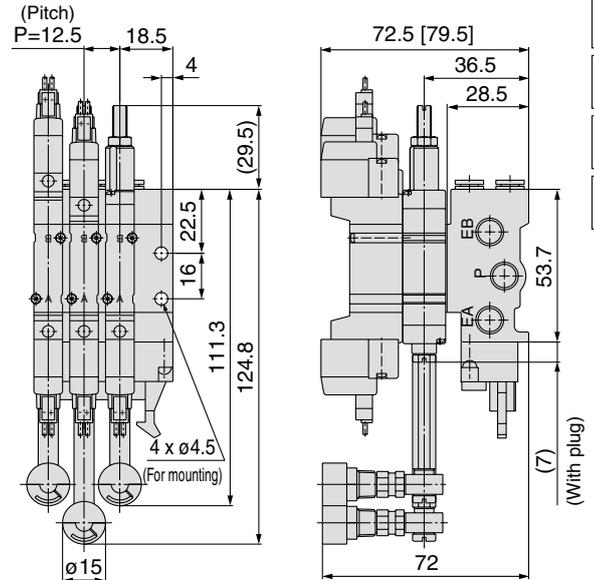
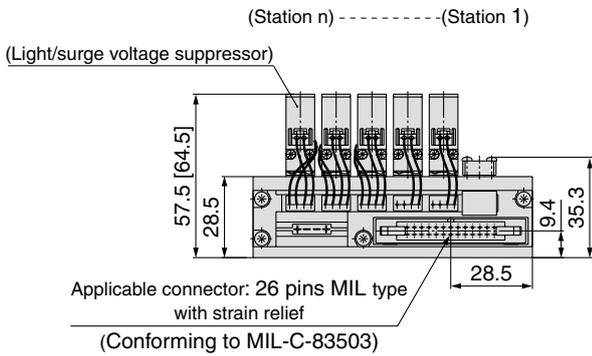
### ⚠ Caution

- For non-polar (U) valves, the electrical DC connections can be used with either positive and negative COM. For type (Z), only use with positive COM as the valve does not operate correctly when used with negative COM.

**SY3000: SS5Y3-41P- Stations -M5, C4, N3**  **C6, N7**

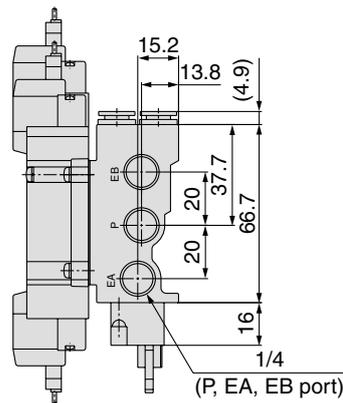
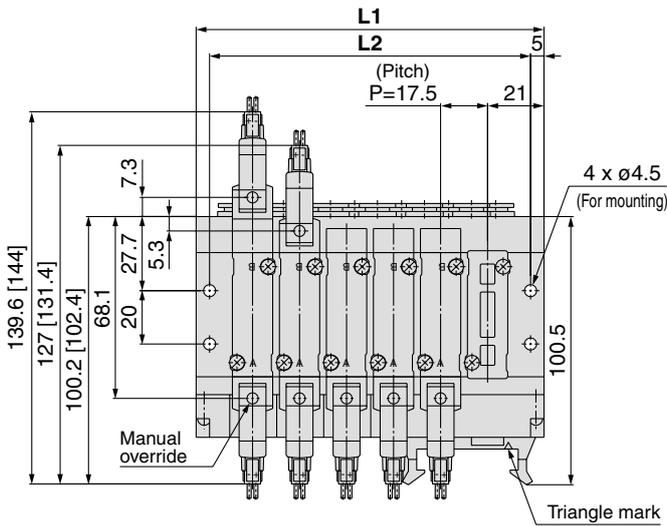
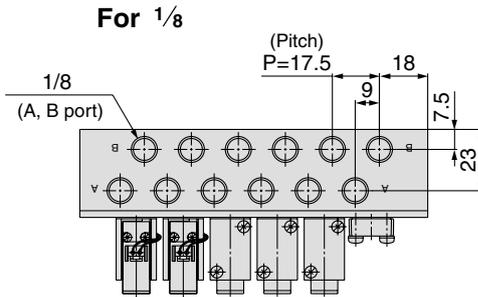
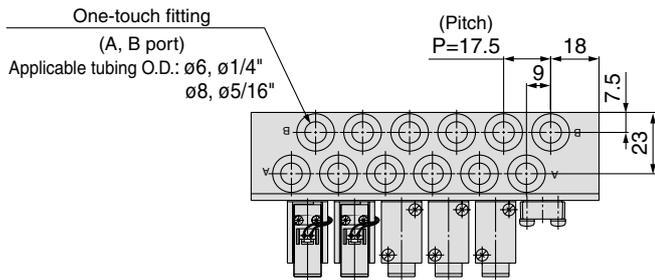


**With interface regulator (with gauge)**

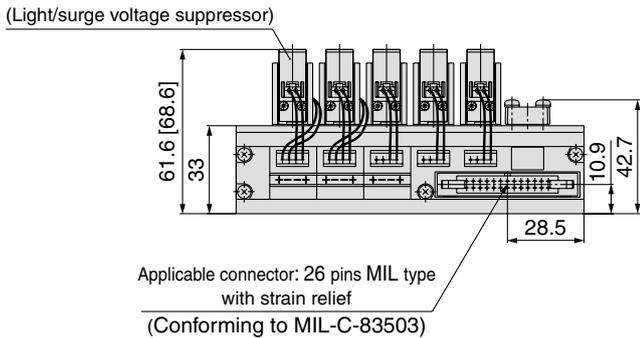


| Stations n | 4    | 5  | 6    | 7   | 8     | 9   | 10    | 11  | 12    |
|------------|------|----|------|-----|-------|-----|-------|-----|-------|
| <b>L1</b>  | 72.5 | 85 | 97.5 | 110 | 122.5 | 135 | 147.5 | 160 | 172.5 |
| <b>L2</b>  | 64.5 | 77 | 89.5 | 102 | 114.5 | 127 | 139.5 | 152 | 164.5 |

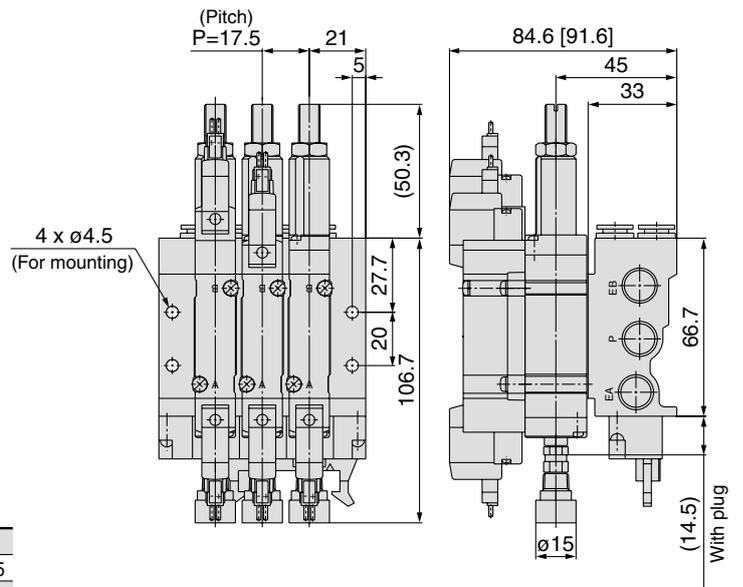
- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7



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

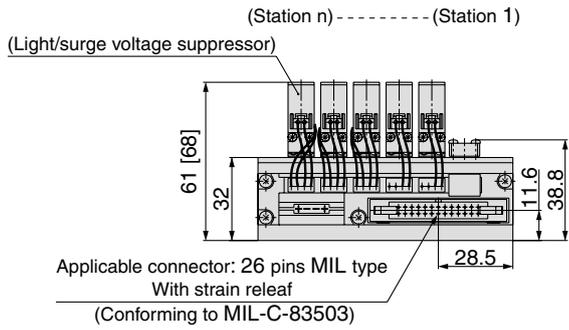
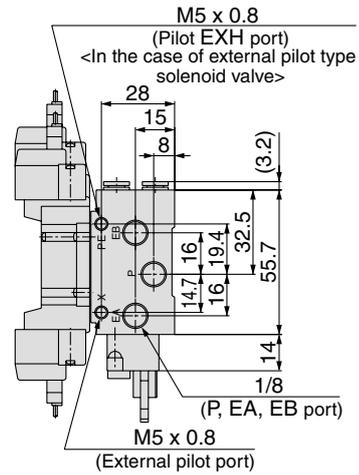
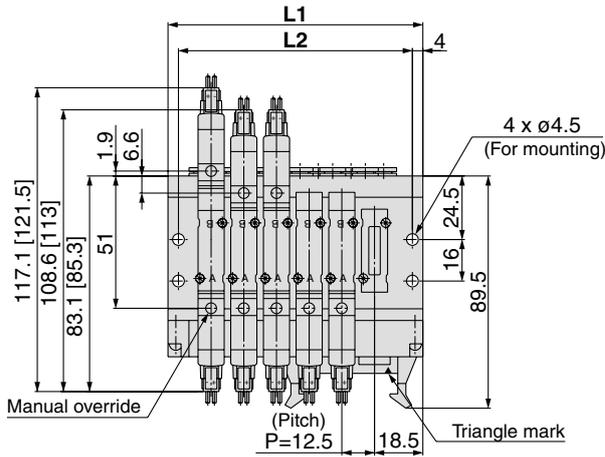
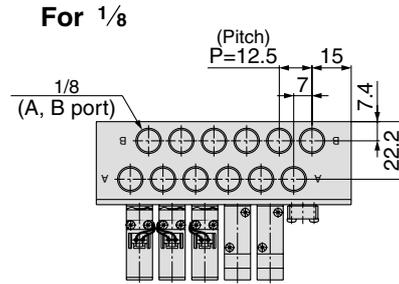
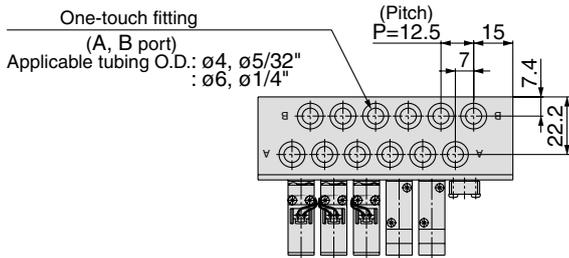


**With interface regulator (with gauge)**

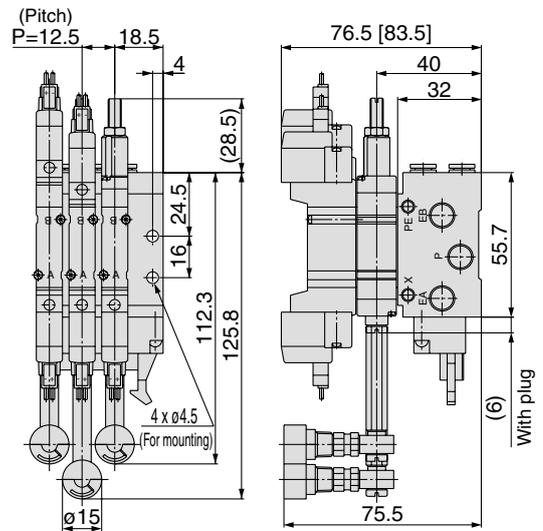


| Stations n | 3  | 4    | 5   | 6     | 7   | 8     | 9   | 10    | 11  | 12    |
|------------|----|------|-----|-------|-----|-------|-----|-------|-----|-------|
| <b>L1</b>  | 77 | 94.5 | 112 | 129.5 | 147 | 164.5 | 182 | 199.5 | 217 | 234.5 |
| <b>L2</b>  | 67 | 84.5 | 102 | 119.5 | 137 | 154.5 | 172 | 189.5 | 207 | 224.5 |

**SY3000: SS5Y3-42P- Stations -01**, C4, N3  
C6, N7



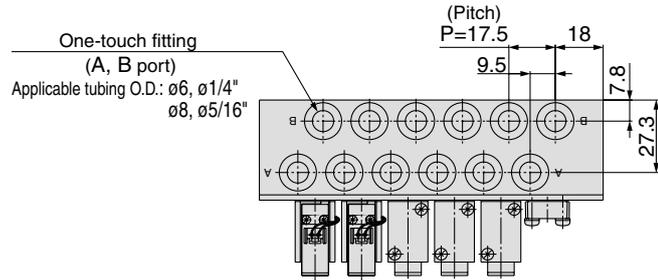
**With interface regulator (with gauge)**



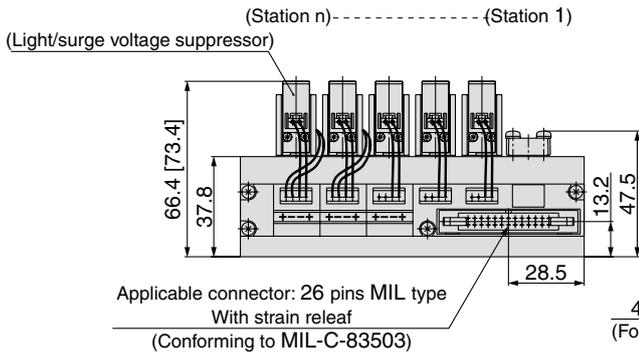
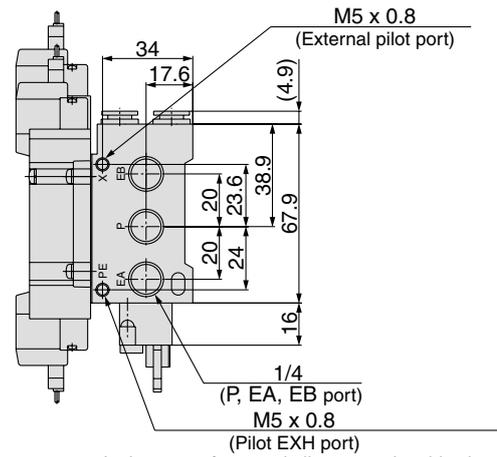
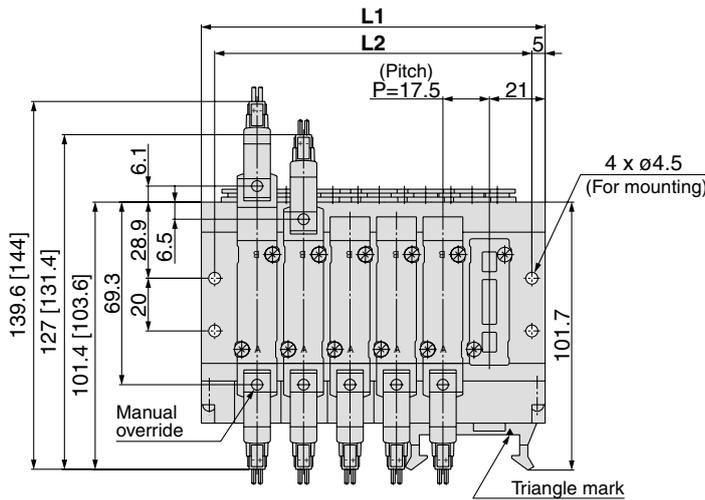
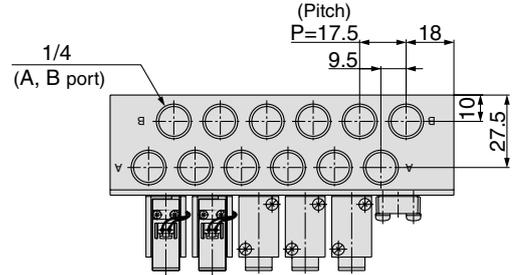
| Stations n | 4    | 5  | 6    | 7   | 8     | 9   | 10    | 11  | 12    |
|------------|------|----|------|-----|-------|-----|-------|-----|-------|
| L1         | 72.5 | 85 | 97.5 | 110 | 122.5 | 135 | 147.5 | 160 | 172.5 |
| L2         | 64.5 | 77 | 89.5 | 102 | 114.5 | 127 | 139.5 | 152 | 164.5 |

- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

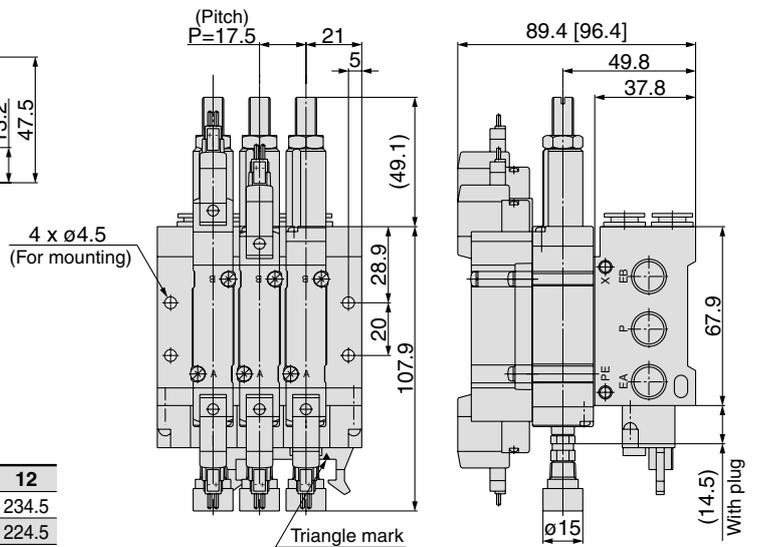
**Grommet (G)**



For  $1/4$



**With interface regulator (with gauge)**



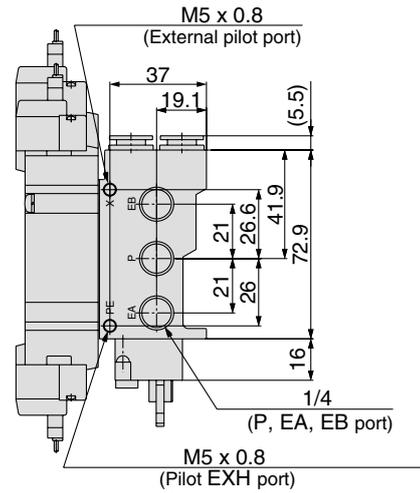
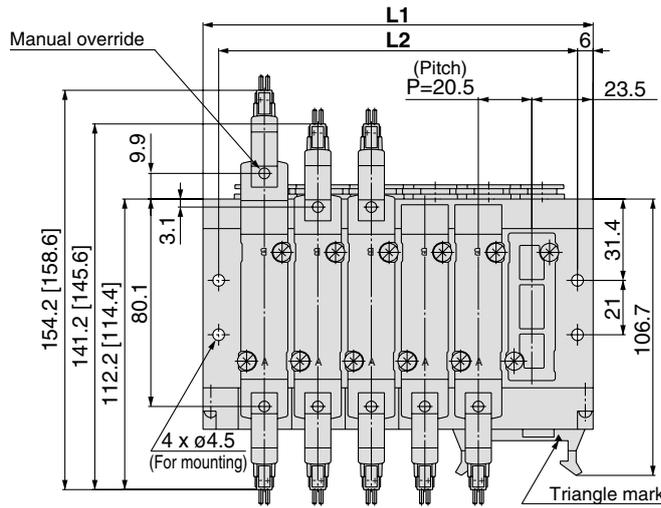
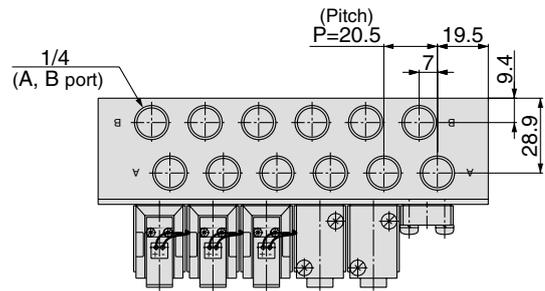
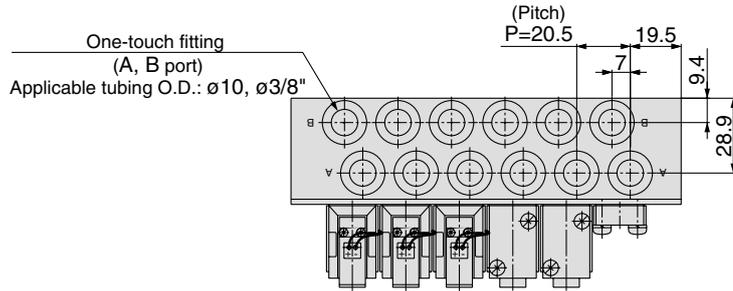
| Stations n | 3  | 4    | 5   | 6     | 7   | 8     | 9   | 10    | 11  | 12    |
|------------|----|------|-----|-------|-----|-------|-----|-------|-----|-------|
| L1         | 77 | 94.5 | 112 | 129.5 | 147 | 164.5 | 182 | 199.5 | 217 | 234.5 |
| L2         | 67 | 84.5 | 102 | 119.5 | 137 | 154.5 | 172 | 189.5 | 207 | 224.5 |

**SY7000: SS5Y7-42P- Stations -02, C10, N11**  



**Grommet (G)**

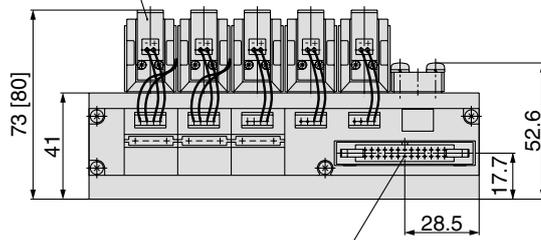
For 1/4



<In the case of external pilot type solenoid valve>

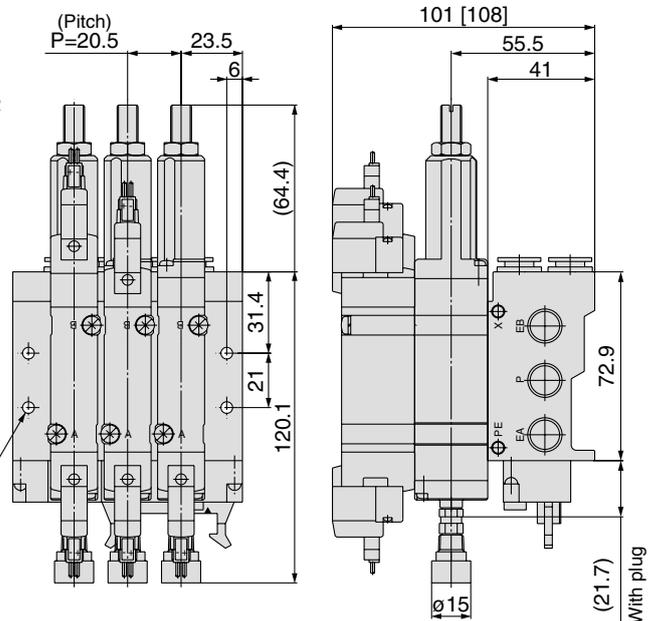
(Station n) ----- (Station 1)

(Light/surge voltage suppressor)



Applicable connector: 26 pins MIL type  
With strain relief  
(Conforming to MIL-C-83503)

**With interface regulator (with gauge)**



| Stations n | 3  | 4     | 5   | 6     | 7   | 8     | 9   | 10    | 11  | 12    |
|------------|----|-------|-----|-------|-----|-------|-----|-------|-----|-------|
| <b>L1</b>  | 88 | 108.5 | 129 | 149.5 | 170 | 190.5 | 211 | 231.5 | 252 | 272.5 |
| <b>L2</b>  | 76 | 96.5  | 117 | 137.5 | 158 | 178.5 | 199 | 219.5 | 240 | 260.5 |

4 x ø4.5  
(For mounting)

- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

# 5 Port Solenoid Valve Base Mounted Manifold Stacking Type/Flat Ribbon Cable



Type **43P**

# Series SY9000

## How to Order Manifold

**SS5Y9-43P-05 U - C8 - - -**

**Manifold series**

|   |        |
|---|--------|
| 9 | SY9000 |
|---|--------|

**Valve stations**

| Symbol | Stations    |
|--------|-------------|
| 04     | 4 stations  |
| ⋮      | ⋮           |
| 12     | 12 stations |

\* This also includes the number of blanking plate assemblies.

**Thread type**

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

**Option**

| Symbol | Mounting                                                                                                              |
|--------|-----------------------------------------------------------------------------------------------------------------------|
| Nil    | Direct mounting                                                                                                       |
| D      | DIN rail mounting (with DIN rail)                                                                                     |
| DO     | DIN rail mounting (without DIN rail)                                                                                  |
| D*     | When a longer DIN rail is desired than the specified stations, specify the station number to be required into * mark. |

**P, R port outlets**

| Symbol | Port outlet | Applicable stations |
|--------|-------------|---------------------|
| U      | U side      | 4 to 10 stations    |
| D      | D side      |                     |
| B      | Both sides  |                     |

**SUP/EXH block assembly specifications**

| Symbol | Specifications                        |
|--------|---------------------------------------|
| Nil    | Standard/Internal pilot specification |
| R      | External pilot specification          |
| S      | Internal pilot/Built-in silencer      |
| RS     | External pilot/Built-in silencer      |

**A, B port size**

| Symbol | Port size |
|--------|-----------|
| 02     | 1/4       |
| 03     | 3/8       |

**One-touch fitting (Metric size)**

| Symbol | Port size                 |
|--------|---------------------------|
| C8     | One-touch fitting for ø8  |
| C10    | One-touch fitting for ø10 |
| C12    | One-touch fitting for ø12 |
| M      | Mixed                     |

**One-touch fitting (Inch size)**

| Symbol | Port size                    |
|--------|------------------------------|
| N9     | One-touch fitting for ø5/16" |
| N11    | One-touch fitting for ø3/8"  |
| M      | Mixed                        |

\* In the case of mixed specifications (M), indicate separately on the manifold specification sheet.

**CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

\* For DC only.

## How to Order Manifold Assembly (Example)

**Example**

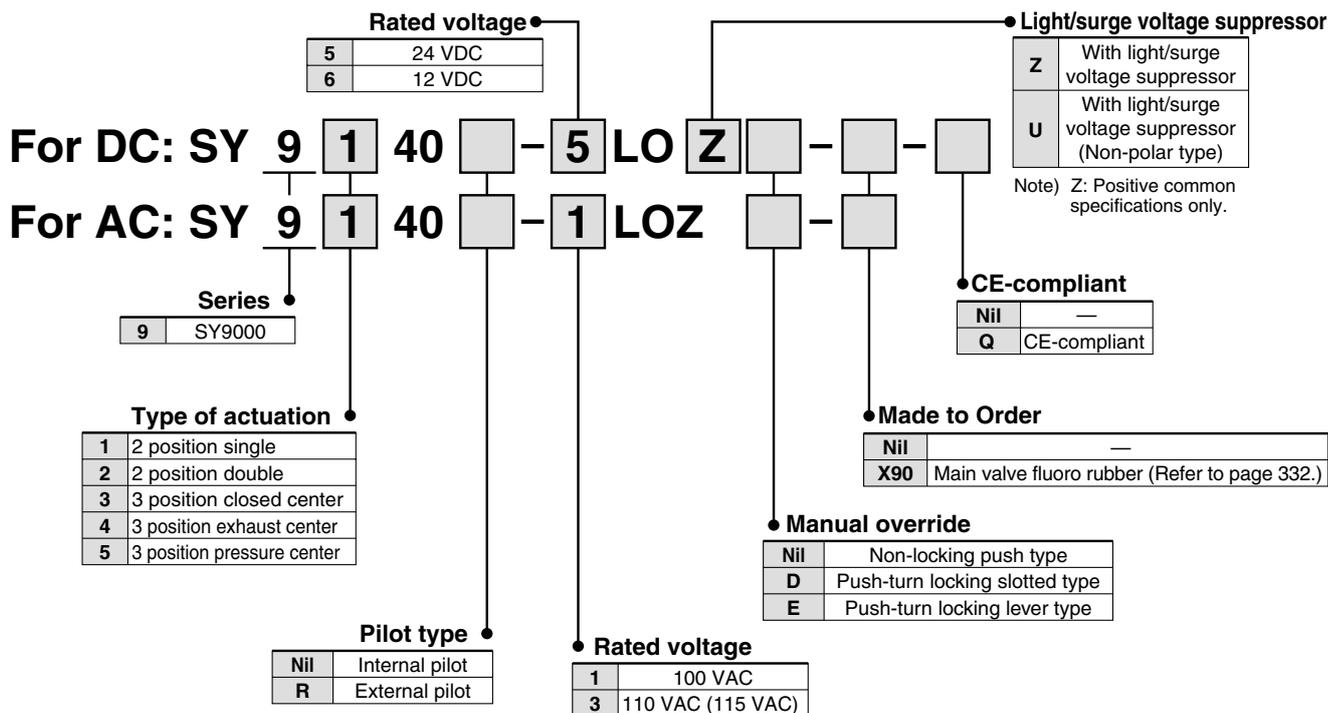
**SS5Y9-43P-05B-C12-1 set (Type 43P, 5-station manifold base part no.)**

- \* SY9000-26-4A ..... 1 set (Blanking plate assembly part no.)
- \* SY9140-5LOU ..... 2 sets (Single solenoid part no.)
- \* SY9240-5LOU ..... 2 sets (Double solenoid part no.)
- \* SY9000-37-1A ..... 2 sets (Connector assembly part no.)
- \* SY9000-37-2A ..... 2 sets (Connector assembly part no.)
- \* SY9000-41-1 ..... 1 set (Lead wire cover)

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

Add the valve and option part number under the manifold base part number. In the case of complex arrangement, specify them on the manifold specification sheet.

## How to Order Valve



Note) In the case of flat cable type, "U" and "Z" types are for DC specifications and "Z" type is for AC specifications. "Z" type for DC is positive common specification only. For the other combination, please contact SMC.

## How to Order Connector Assembly

### For 12, 24 VDC

| Specifications                          | For SY9000   |
|-----------------------------------------|--------------|
| For single solenoid                     | SY9000-37-1A |
| Double solenoid, 3 position type        | SY9000-37-2A |
| Single with spacer assembly             | SY9000-37-3A |
| Double, 3 position with spacer assembly | SY9000-37-4A |

### For 100 VAC

| Specifications                          | For SY9000   |
|-----------------------------------------|--------------|
| For single solenoid                     | SY9000-37-1B |
| Double solenoid, 3 position type        | SY9000-37-2B |
| Single with spacer assembly             | SY9000-37-3B |
| Double, 3 position with spacer assembly | SY9000-37-4B |

### For 110 VAC (115 VAC)

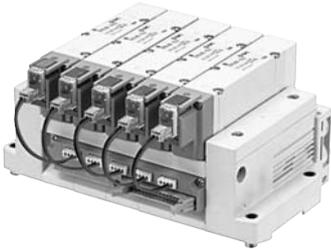
| Specifications                          | For SY9000   |
|-----------------------------------------|--------------|
| For single solenoid                     | SY9000-37-1C |
| Double solenoid, 3 position type        | SY9000-37-2C |
| Single with spacer assembly             | SY9000-37-3C |
| Double, 3 position with spacer assembly | SY9000-37-4C |

SJ  
SY  
SV  
SYJ  
SZ  
VP4  
S0700  
VQ  
VQ4  
VQ5  
VQC  
VQZ  
SQ  
VFS  
VFR  
VQ7

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

• Clean appearance

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



### Flat Ribbon Cable Manifold Specifications

|                                         |                |                                                                                                                   |
|-----------------------------------------|----------------|-------------------------------------------------------------------------------------------------------------------|
| Model                                   |                | SS5Y9-43P                                                                                                         |
| Applicable valve                        |                | SY9□40                                                                                                            |
| Manifold type                           |                | Stacking type                                                                                                     |
| P (SUP)/R (EXH)                         |                | Common SUP, Common EXH                                                                                            |
| Valve stations                          |                | 4 to 12 stations <sup>Note 1)</sup>                                                                               |
| A, B port<br>Porting specifications     | Location       | Base                                                                                                              |
|                                         | Direction      | Side                                                                                                              |
| Port size                               | P, EA, EB port | C12 (One-touch fitting for ø12)                                                                                   |
|                                         | A, B port      | 1/4<br>3/8<br>C8 (One-touch fitting for ø8)<br>C10 (One-touch fitting for ø10)<br>C12 (One-touch fitting for ø12) |
| Manifold base mass<br>W (g) n: Stations |                | W = 114n + 343                                                                                                    |
| Applicable flat ribbon cable connector  |                | Flat ribbon cable connection, Socket: 26 pins MIL with strain relief, Conforming to MIL-C-83503                   |
| Internal wiring                         |                | In common between +COM and -COM (Z type: +COM only)                                                               |
| Rated voltage <sup>Note 4)</sup>        |                | 12, 24 VDC, 100, 110 VAC                                                                                          |

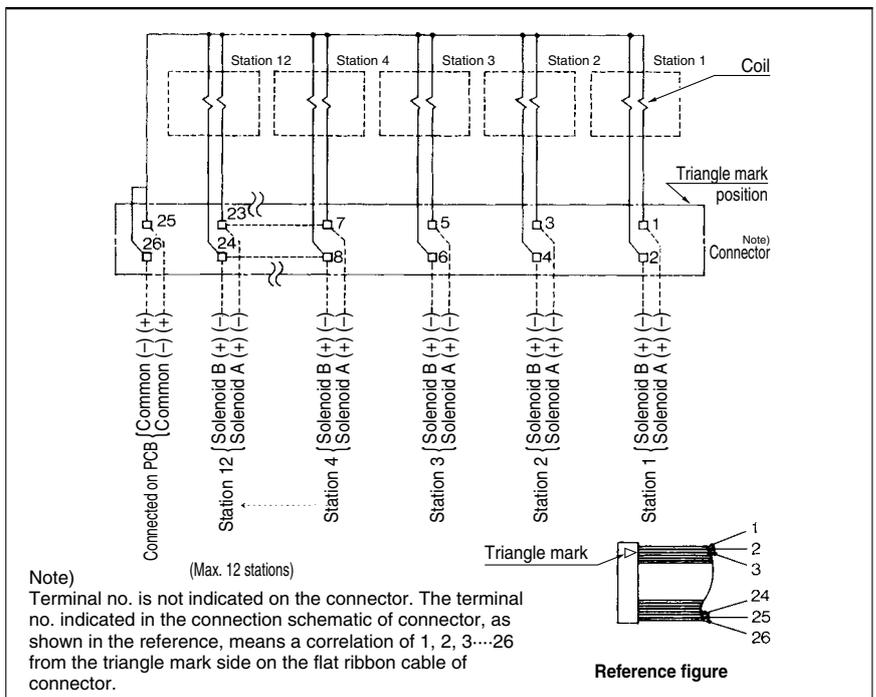
- Note 1) For more than 10 stations, supply pressure to P port on both sides and exhaust from EA/EB port on both sides.
- Note 2) The withstand voltage specification for the wiring unit section is JIS C 0704, Grade 1 or its equivalent.
- Note 3) Refer to "Manifold Option" on page 238.
- Note 4) CE-compliant: For DC only.

### Flow Characteristics

| Model     | Port size              |                | Flow characteristics |      |     |                         |      |     |
|-----------|------------------------|----------------|----------------------|------|-----|-------------------------|------|-----|
|           | 1, 5, 3<br>(P, EA, EB) | 4, 2<br>(A, B) | 1 → 4/2 (P → A/B)    |      |     | 4/2 → 5/3 (A/B → EA/EB) |      |     |
|           |                        |                | C (dm³/(s·bar))      | b    | Cv  | C (dm³/(s·bar))         | b    | Cv  |
| SS5Y9-43P | C12                    | C12            | 6.4                  | 0.29 | 1.6 | 7.3                     | 0.29 | 1.8 |

Note) The value is for manifold base with 5 stations and individually operated 2 position type.

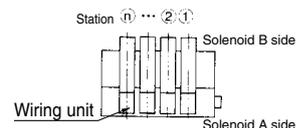
### Internal Wiring of Manifold (Non-polar type)



**Caution**

- For non-polar (U) valves, the electrical DC connections can be used with either positive and negative COM. For type (Z), only use with positive COM as the valve does not operate correctly when used with negative COM.

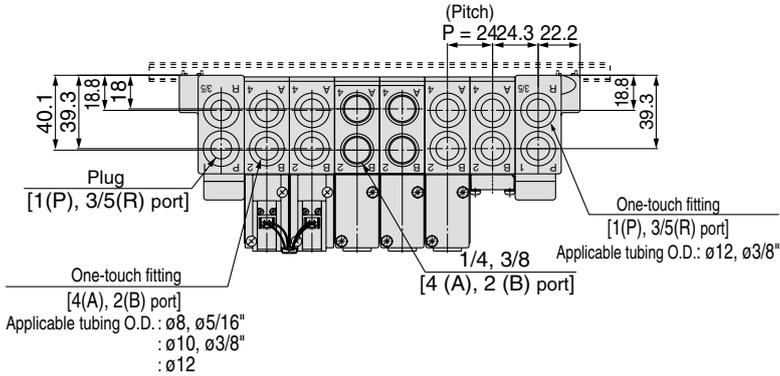
- For more than 10 stations, both poles of the common should be wired.
- For single solenoid, connect to the solenoid A side.
- The maximum number of stations that can be accommodated is 12. For more stations, please contact SMC.



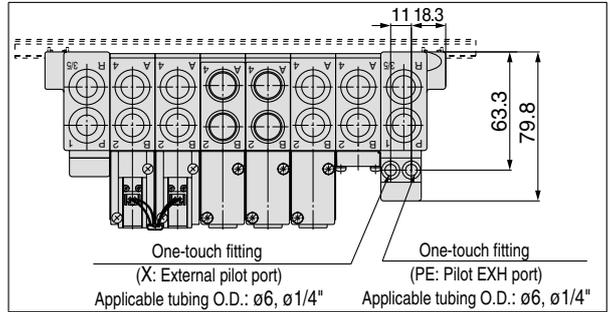
SY9000: SS5Y9-43P- Stations D  <sup>02</sup> C8, N9  <sup>03</sup> C10, N11  (-D)

[ ] : AC

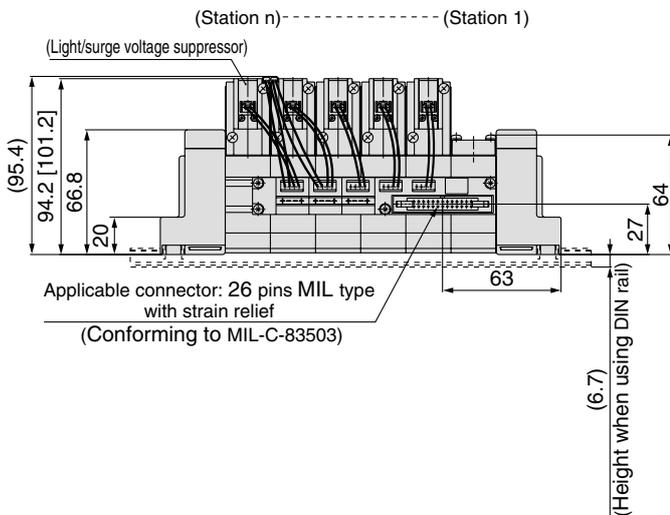
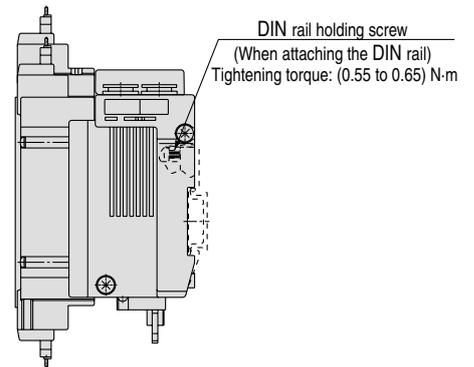
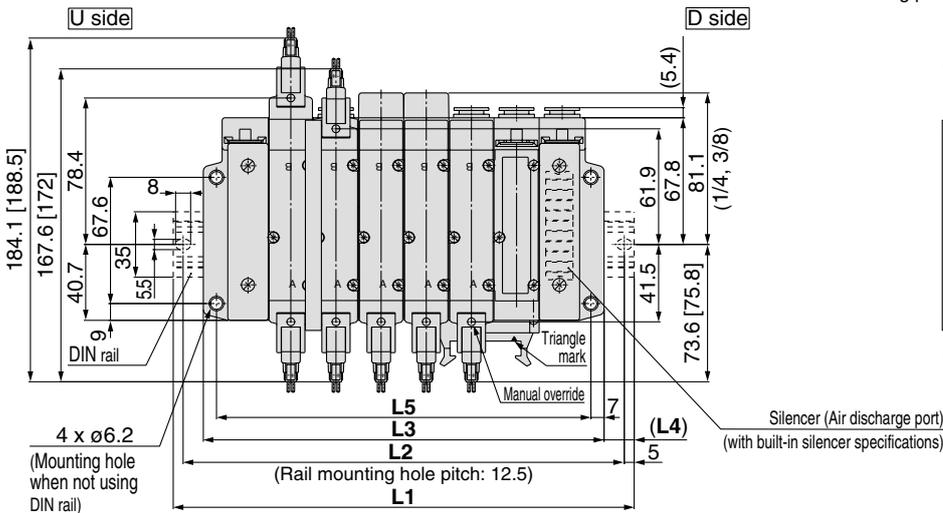
\* When P, R port outlets are indicated on the D side, the P, R ports on the opposite side are plugged.



**With External Pilot Specifications**



\* Air discharge port on the built-in silencer type and the external pilot's extracting position are in the D side.



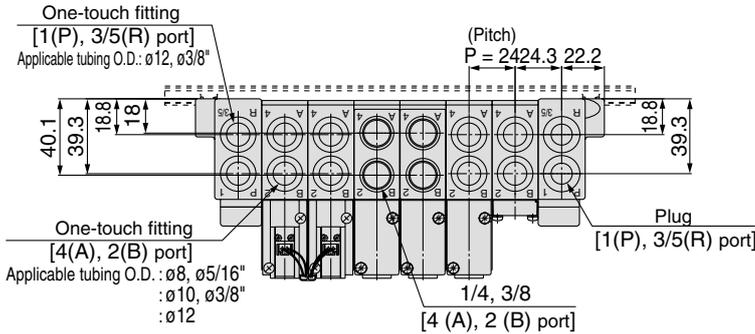
| Stations n | 4 stations | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------------|
| L1         | 198        | 223   | 248   | 260.5 | 285.5 | 310.5 | 335.5       |
| L2         | 187.5      | 212.5 | 237.5 | 250   | 275   | 300   | 325         |
| L3         | 165        | 189   | 213   | 237   | 261   | 285   | 309         |
| L4         | 16.5       | 17    | 17.5  | 12    | 12.5  | 13    | 13.5        |
| L5         | 151        | 175   | 199   | 223   | 247   | 271   | 295         |

- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

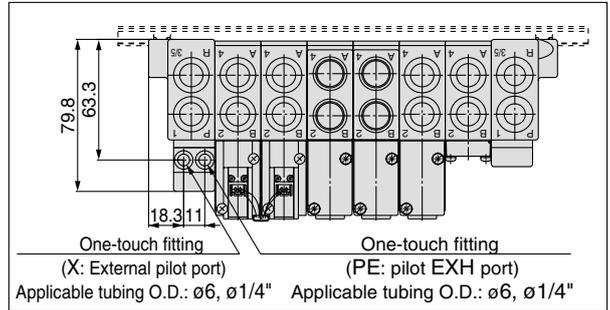
SY9000: SS5Y9-43P- Stations U  <sup>02</sup> C8, N9  <sup>03</sup> C10, N11  C12  (-D)

[ ] : AC

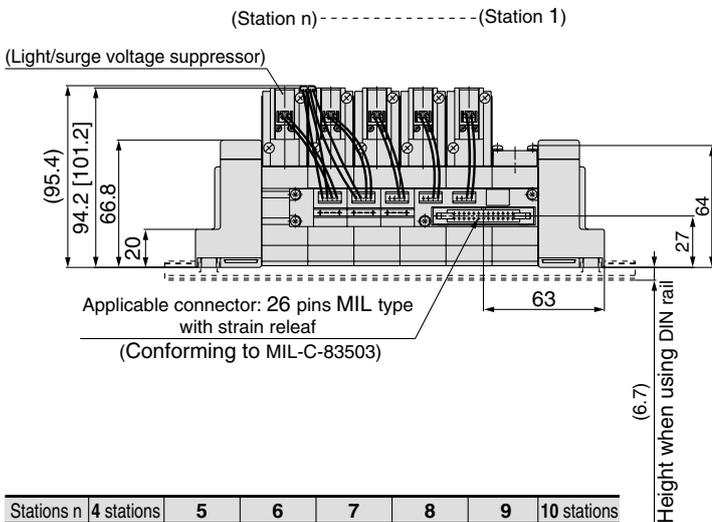
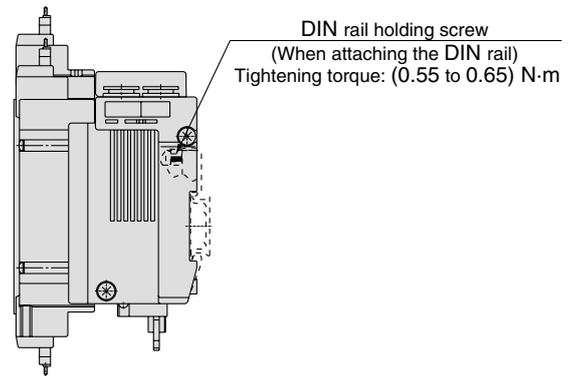
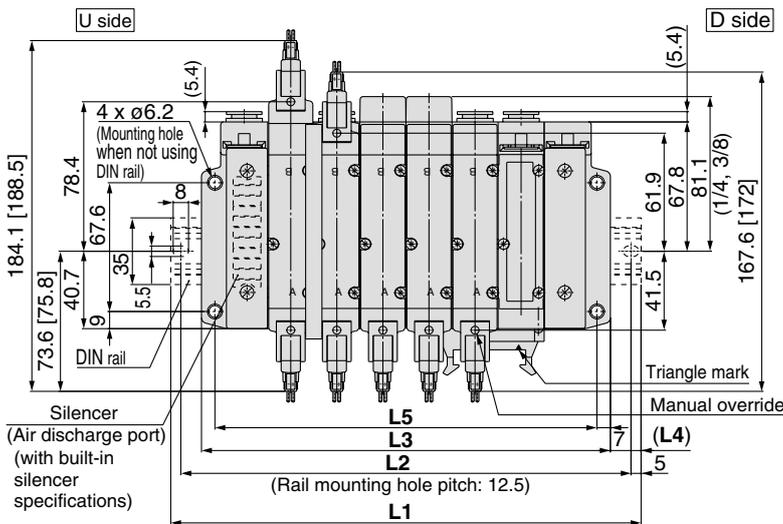
\* When P, R port outlets are indicated on the U side, the P, R ports on the opposite side are plugged.



### With External Pilot Specifications



\* Air discharge port on the built-in silencer type and the external pilot's extracting position are in the U side.



| Stations n | 4 stations | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------------|
| L1         | 198        | 223   | 248   | 260.5 | 285.5 | 310.5 | 335.5       |
| L2         | 187.5      | 212.5 | 237.5 | 250   | 275   | 300   | 325         |
| L3         | 165        | 189   | 213   | 237   | 261   | 285   | 309         |
| L4         | 16.5       | 17    | 17.5  | 12    | 12.5  | 13    | 13.5        |
| L5         | 151        | 175   | 199   | 223   | 247   | 271   | 295         |



Type **42SA**

# EX510 Gateway System Serial Transmission System Base Mounted Manifold/Integrated Type Series **SY3000/5000/7000**



## How to Order Manifold

SS5Y **3** - 42SA    - **03** - **01**    -   

Manifold series

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |
| 7 | SY7000 |

SI unit

|     |                    |
|-----|--------------------|
| Nil | NPN output (+COM.) |
| N   | PNP output (-COM.) |

CE-compliant

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

Thread type

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

Valve stations

| Symbol    | Stations    | Note                                                                        |
|-----------|-------------|-----------------------------------------------------------------------------|
| <b>03</b> | 3 stations  | Double wiring <sup>Note 1)</sup>                                            |
| ⋮         | ⋮           |                                                                             |
| <b>08</b> | 8 stations  | Specified layout <sup>Note 2)</sup><br>(Compatible with 16 solenoid valves) |
| <b>03</b> | 3 stations  |                                                                             |
| ⋮         | ⋮           |                                                                             |
| <b>16</b> | 16 stations |                                                                             |

- SS5Y3 can be set from 4 stations.
- The number of the blanking plate assembly is also included.
- Note 1) Double wiring: Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
- Note 2) Specified layout: Indicate wiring specifications on the manifold specification sheet. (Note that double and 3 position valves cannot be used where single solenoid wiring has been specified.)

A, B port size

Thread piping

|           |     |             |
|-----------|-----|-------------|
| <b>01</b> | 1/8 | SY3000      |
| <b>02</b> | 1/4 | SY5000/7000 |

One-touch fitting (Metric size)

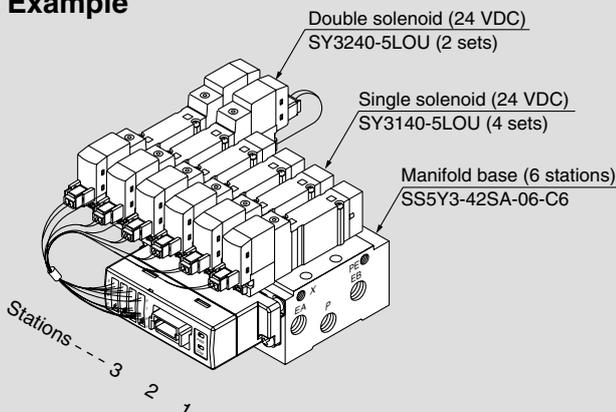
|            |                           |        |
|------------|---------------------------|--------|
| <b>C4</b>  | One-touch fitting for ø4  | SY3000 |
| <b>C6</b>  | One-touch fitting for ø6  |        |
| <b>C6</b>  | One-touch fitting for ø6  | SY5000 |
| <b>C8</b>  | One-touch fitting for ø8  |        |
| <b>C10</b> | One-touch fitting for ø10 | SY7000 |

One-touch fitting (Inch size)

|            |                              |        |
|------------|------------------------------|--------|
| <b>N3</b>  | One-touch fitting for ø5/32" | SY3000 |
| <b>N7</b>  | One-touch fitting for ø1/4"  |        |
| <b>N7</b>  | One-touch fitting for ø1/4"  | SY5000 |
| <b>N9</b>  | One-touch fitting for ø5/16" |        |
| <b>N11</b> | One-touch fitting for ø3/8"  | SY7000 |

## How to Order Manifold Assembly (Example)

Example



**SS5Y3-42SA-06-C6** · 1 set (42SA type 6-station manifold part no.)  
 \* **SY3140-5LOU** ······ 4 sets (Single solenoid part no.)  
 \* **SY3240-5LOU** ······ 2 sets (Double solenoid part no.)

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

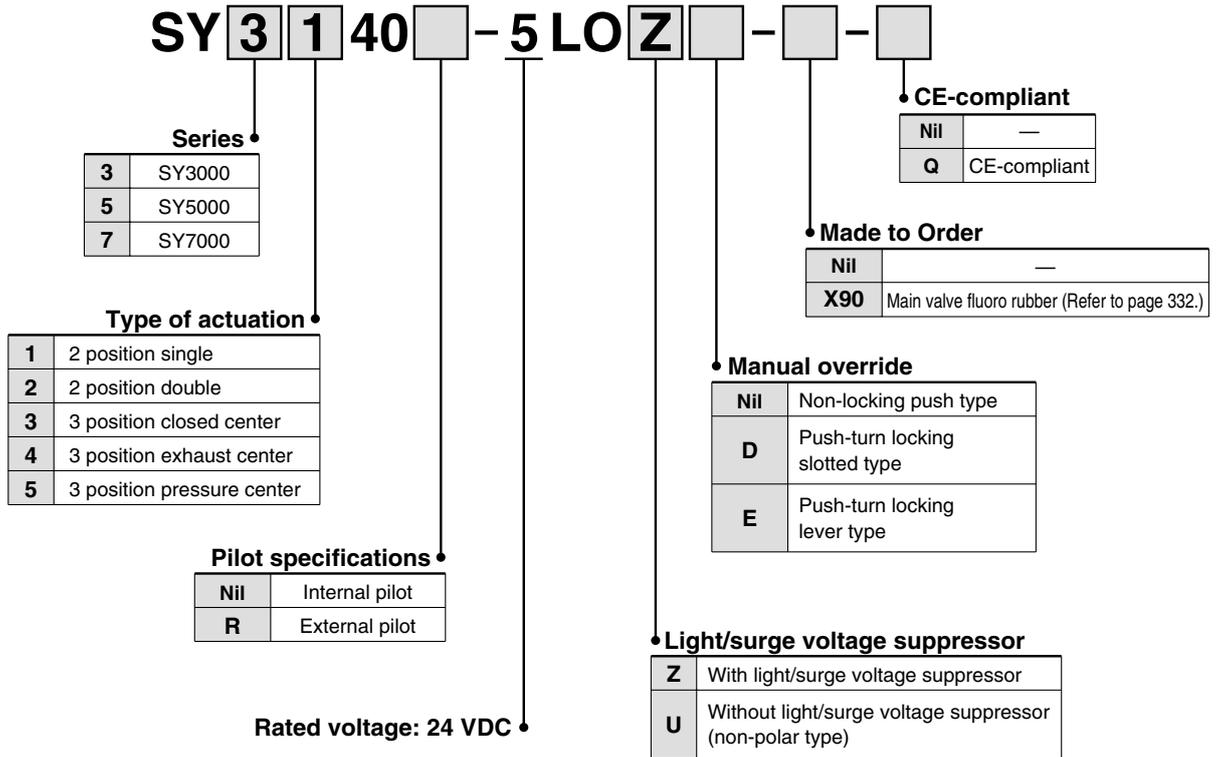
Add the valve and option part number under the manifold base part number. When entry of part numbers becomes complicated, indicate by the manifold specification sheet. For a manifold for an EX510, the length of the lead wire for a connector assembly depends on the number of stations. Therefore, the manifold assembly is shipped with the valves (including blanking plates) and connector assembly mounted on it, as the standard specification. Be sure to specify the part nos. of the solenoid valves to be mounted.

SI unit part no.

| Symbol | SI unit specifications | SI unit part no. | Page           |
|--------|------------------------|------------------|----------------|
| Nil    | NPN output (+COM.)     | EX510-S001       | P.1715 to 1717 |
| N      | PNP output (-COM.)     | EX510-S101       |                |

For details of "Gateway System Serial Transmission System, Series EX510", refer to pages 1696 through to 1724.

**How to Order Valves**



- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7







Type **43SA**

# EX510 Gateway System Serial Transmission System Base Mounted Manifold/Stacking Type Series **SY9000** **CE**

## How to Order Manifold

**SS5Y9 - 43SA** [ ] - **03** **U** [ ] - **02** [ ] - [ ] - [ ]

### SI unit

|            |                    |
|------------|--------------------|
| <b>Nil</b> | NPN output (+COM.) |
| <b>N</b>   | PNP output (-COM.) |

### Valve stations

| Symbol    | Stations    | Note                                                                        |
|-----------|-------------|-----------------------------------------------------------------------------|
| <b>03</b> | 3 stations  | Double wiring <sup>Note 1)</sup>                                            |
| ⋮         | ⋮           |                                                                             |
| <b>08</b> | 8 stations  |                                                                             |
| <b>03</b> | 3 stations  | Specified layout <sup>Note 2)</sup><br>(Compatible with 16 solenoid valves) |
| ⋮         | ⋮           |                                                                             |
| <b>16</b> | 16 stations |                                                                             |

- The number of the blanking plate assembly is also included.
- Note 1) Double wiring: Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
- Note 2) Specified layout: Indicate wiring specifications on the manifold specification sheet. (Note that double and 3 position valves cannot be used where single solenoid wiring has been specified.)

### CE-compliant

|            |              |
|------------|--------------|
| <b>Nil</b> | —            |
| <b>Q</b>   | CE-compliant |

### Option

|            |                                                                                                                       |
|------------|-----------------------------------------------------------------------------------------------------------------------|
| <b>Nil</b> | Direct mounting                                                                                                       |
| <b>D</b>   | DIN rail mounting (With DIN rail)                                                                                     |
| <b>DO</b>  | DIN rail mounting (Without DIN rail)                                                                                  |
| <b>D*</b>  | When a longer DIN rail is desired than the specified stations, specify the station number to be required into * mark. |

### Thread type

|            |      |
|------------|------|
| <b>Nil</b> | Rc   |
| <b>F</b>   | G    |
| <b>N</b>   | NPT  |
| <b>T</b>   | NPTF |

### A, B port size Thread piping

|           |     |
|-----------|-----|
| <b>02</b> | 1/4 |
| <b>03</b> | 3/8 |

### One-touch fitting (Metric size)

|            |                           |
|------------|---------------------------|
| <b>C8</b>  | One-touch fitting for ø8  |
| <b>C10</b> | One-touch fitting for ø10 |
| <b>C12</b> | One-touch fitting for ø12 |
| <b>M</b>   | Mixed                     |

### One-touch fitting (Inch size)

|            |                              |
|------------|------------------------------|
| <b>N9</b>  | One-touch fitting for ø5/16" |
| <b>N11</b> | One-touch fitting for ø3/8"  |
| <b>M</b>   | Mixed                        |

- For the mixed specification, indicate separately on a manifold specification sheet.

### SUP/EXH block assembly specifications

|            |                                   |
|------------|-----------------------------------|
| <b>Nil</b> | Standard/Internal pilot           |
| <b>R</b>   | External pilot                    |
| <b>S</b>   | Internal pilot, Built-in silencer |
| <b>RS</b>  | External pilot, Built-in silencer |

### P, R port outlets

|          |            |                  |
|----------|------------|------------------|
| <b>U</b> | U side     | 3 to 10 stations |
| <b>D</b> | D side     |                  |
| <b>B</b> | Both sides |                  |

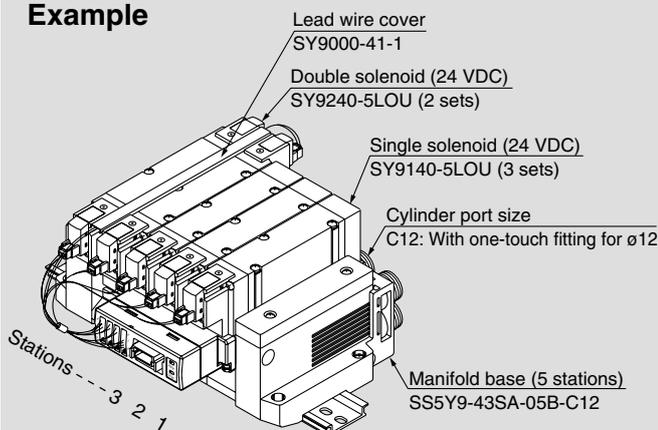
### SI unit part no.

| Symbol     | SI unit specifications | SI unit part no. | Page           |
|------------|------------------------|------------------|----------------|
| <b>Nil</b> | NPN output (+COM.)     | EX510-S001       | P.1715 to 1717 |
| <b>N</b>   | PNP output (-COM.)     | EX510-S101       |                |

For details of "Gateway System Serial Transmission System, Series EX510", refer to pages 1696 through to 1724.

## How to Order Manifold Assembly (Order Example)

### Example



**SS5Y9-43SA-05B-C12** · 1 set (43SA type 5-station manifold part no.)  
 \* **SY9140-5LOU** ..... 3 sets (Single solenoid part no.)  
 \* **SY9240-5LOU** ..... 2 sets (Double solenoid part no.)  
 \* **SY9000-41-1** ..... 1 set (Lead wire cover)

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

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. For a manifold for an EX510, the length of the lead wire for a connector assembly depends on the number of stations. Therefore, the manifold assembly is shipped with the valves (including blanking plates) and connector assembly mounted on it, as the standard specification. Be sure to specify the part nos. of the solenoid valves to be mounted.

SJ  
SY  
SV  
SYJ  
SZ  
VP4  
S0700  
VQ  
VQ4  
VQ5  
VQC  
VQZ  
SQ  
VFS  
VFR  
VQ7

**How to Order Valves**

SY9 **1** **40** **□** - **5** **LO** **Z** **□** - **□** - **□**

**Type of actuation**

|          |                            |
|----------|----------------------------|
| <b>1</b> | 2 position single          |
| <b>2</b> | 2 position double          |
| <b>3</b> | 3 position closed center   |
| <b>4</b> | 3 position exhaust center  |
| <b>5</b> | 3 position pressure center |

**Pilot specifications**

|            |                |
|------------|----------------|
| <b>Nil</b> | Internal pilot |
| <b>R</b>   | External pilot |

**Rated voltage: 24 VDC**

**CE-compliant**

|            |              |
|------------|--------------|
| <b>Nil</b> | —            |
| <b>Q</b>   | CE-compliant |

**Made to Order**

|            |                                               |
|------------|-----------------------------------------------|
| <b>Nil</b> | —                                             |
| <b>X90</b> | Main valve fluoro rubber (Refer to page 332.) |

**Manual override**

|            |                                |
|------------|--------------------------------|
| <b>Nil</b> | Non-locking push type          |
| <b>D</b>   | Push-turn locking slotted type |
| <b>E</b>   | Push-turn locking lever type   |

**Light/surge voltage suppressor**

|          |                                                         |
|----------|---------------------------------------------------------|
| <b>Z</b> | With light/surge voltage suppressor                     |
| <b>U</b> | Without light/surge voltage suppressor (non-polar type) |

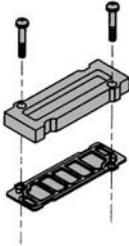






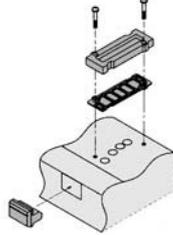
## Manifold Option

### ■ Type 41, 42, 43, 42SA, 43SA Blanking plate assembly



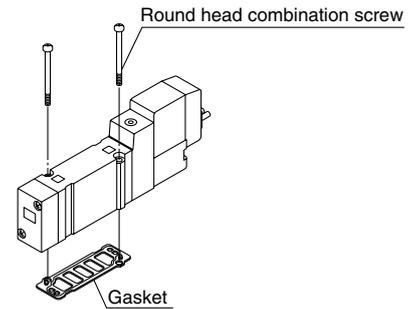
| Series        | Assembly part no. |
|---------------|-------------------|
| <b>SY3000</b> | SY3000-26-9A(-Q)  |
| <b>SY5000</b> | SY5000-26-20A(-Q) |
| <b>SY7000</b> | SY7000-26-22A(-Q) |
| <b>SY9000</b> | SY9000-26-2A(-Q)  |

### ■ Type 41P, 42P, 43P Blanking plate assembly



| Series        | Assembly part no. |
|---------------|-------------------|
| <b>SY3000</b> | SY3000-26-10A(-Q) |
| <b>SY5000</b> | SY5000-26-21A(-Q) |
| <b>SY7000</b> | SY7000-26-23A(-Q) |
| <b>SY9000</b> | SY9000-26-4A(-Q)  |

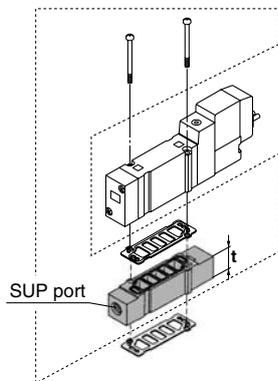
### ■ Gasket assembly part no.



| Series        | Gasket assembly part no. |
|---------------|--------------------------|
| <b>SY3000</b> | SY3000-GS-2              |
| <b>SY5000</b> | SY5000-GS-2(-Q)          |
| <b>SY7000</b> | SY7000-GS-2(-Q)          |
| <b>SY9000</b> | SY9000-GS-2              |

Note) The gasket assembly includes 10 sets of mounting screws and a gasket.

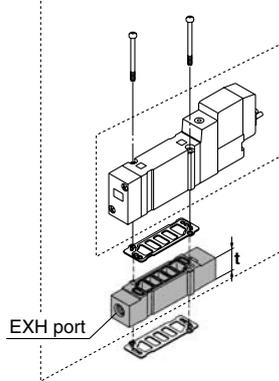
### ■ Individual SUP spacer assembly



| Series        | Assembly part no.  | Port size | t  |
|---------------|--------------------|-----------|----|
| <b>SY3000</b> | SY3000-38-2A(-Q)   | M5 x 0.8  | 11 |
| <b>SY5000</b> | SY5000-38-16*A(-Q) | 1/8       | 15 |
| <b>SY7000</b> | SY7000-38-16*A(-Q) | 1/4       | 18 |
| <b>SY9000</b> | SY9000-38-2*A(-Q)  | 1/4       | 20 |

Note) • The SUP port of SY3000, 5000 and 7000 may be either on the lead wire side or on the end plate side. (An assembly is shipped under the condition shown in the figure.)  
 • The end plate side is only available to SY9000.

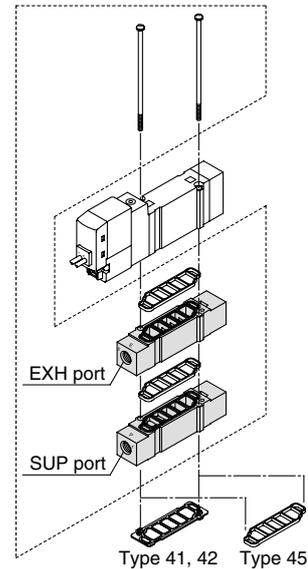
### ■ Individual EXH spacer assembly



| Series        | Assembly part no.  | Port size | t  |
|---------------|--------------------|-----------|----|
| <b>SY3000</b> | SY3000-39-2A(-Q)   | M5 x 0.8  | 11 |
| <b>SY5000</b> | SY5000-39-16*A(-Q) | 1/8       | 15 |
| <b>SY7000</b> | SY7000-39-16*A(-Q) | 1/4       | 18 |
| <b>SY9000</b> | SY9000-39-2*A(-Q)  | 1/4       | 20 |

Note) In case of 41P, 42P and 43P, for protection of the wiring unit section from drainage, piping at the EA port should be arranged so that it will not be directly exposed to exhaust from the valve.

### ■ Individual SUP spacer assembly + Individual EXH spacer assembly (Double spacer)



[●: Available X: Not available —: Nonapplicable manifold]

| Series        | Individual SUP + Individual EXP Assemble part no. | Port size | Applicable manifold types |     |    |     |    |            |     |
|---------------|---------------------------------------------------|-----------|---------------------------|-----|----|-----|----|------------|-----|
|               |                                                   |           | 41                        | 41P | 42 | 42P | 45 | 45-A 45-NA | 45* |
| <b>SY3000</b> | SY3000-120-2A(-Q)                                 | M5 x 0.8  | ●                         | ×   | ●  | ×   | ●  | ×          | ×   |
| <b>SY5000</b> | SY5000-75-1*A(-Q)                                 | 1/8       | ●                         | ×   | ●  | ×   | ●  | ×          | ×   |
| <b>SY7000</b> | SY7000-73-1*A(-Q)                                 | 1/4       | ●                         | ×   | ●  | ×   | —  | —          | —   |

Note) The port on a spacer can be directed to the pilot valve side or end plate side. For mounting the port to the pilot valve side, please make sure to connect the ports to protect the pilot valve wiring section from drainage.  
 The individual SUP spacer and EXH spacer can be mounted either on the upper side or lower side. (The above illustration shows the condition when the product is shipped out from a factory.)

### ⚠ Caution

#### Mounting screw tightening torques

**M2: 0.16 N·m**  
**M3: 0.8 N·m**  
**M4: 1.4 N·m**

#### \* Thread type

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

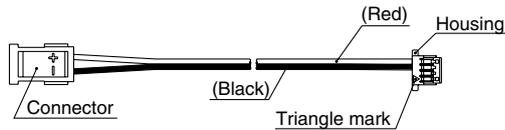
### ⚠ Warning

When mounting a valve or spacer on the manifold base or sub-plate, etc., those mounting directions are determined. If mounted in the wrong direction, the equipment to be connected may cause malfunction. Refer to external dimensions, and then mount it.

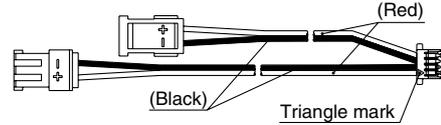
## Manifold Option

### ■ Connector assembly

For single solenoid (SY3000-37-81A-□-N)



For double solenoid (SY3000-37-81A-□-□)



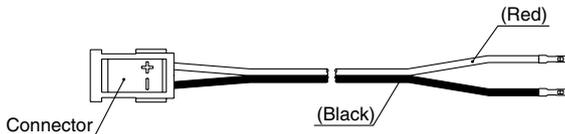
**Connector assembly order no. (Can be used for the manifold without a specified layout (8 stations or less))**  
**Integrated type**

| Model      | Part no.          | Connector mounting position            |
|------------|-------------------|----------------------------------------|
| SS5Y3-42SA | SY3000-37-81A-3-N | Single: For 1 to 4 stations            |
|            | SY3000-37-81A-3-6 | Double/3 position: For 1 to 4 stations |
|            | SY3000-37-81A-2-N | Single: For 5 to 8 stations            |
|            | SY3000-37-81A-2-4 | Double/3 position: For 5 to 8 stations |
| SS5Y5-42SA | SY3000-37-81A-3-N | Single: For 1 to 8 stations            |
|            | SY3000-37-81A-3-6 | Double/3 position: For 1 to 8 stations |
| SS5Y7-42SA | SY3000-37-81A-3-N | Single: For 1 to 4 stations            |
|            | SY3000-37-81A-3-6 | Double/3 position: For 1 to 4 stations |
|            | SY3000-37-81A-4-N | Single: For 5 to 8 stations            |
|            | SY3000-37-81A-4-7 | Double/3 position: For 5 to 8 stations |

Note) The above is for the station addition or maintenance. When ordering a connector assembly separately, a number would not be printed on the connector.

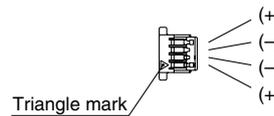
### ■ Connector assembly

SY3000-37-80A-□



### ■ Housing (8 pcs./set)

SY3000-44-3A



**Connector assembly order no. (Can be used for the manifold with a specified layout)**

| Model      | Part no.         | Connector mounting position |
|------------|------------------|-----------------------------|
| SS5Y3-42SA | SY3000-37-80A-3  | For A side                  |
|            | SY3000-37-80A-6  | For B side                  |
|            | SY3000-37-80A-4  | For A side                  |
|            | SY3000-37-80A-7  | For B side                  |
| SS5Y5-42SA | SY3000-37-80A-3  | For A side                  |
|            | SY3000-37-80A-6  | For B side                  |
|            | SY3000-37-80A-7  | For A side                  |
|            | SY3000-37-80A-9  | For B side                  |
| SS5Y7-42SA | SY3000-37-80A-4  | For A side                  |
|            | SY3000-37-80A-7  | For B side                  |
|            | SY3000-37-80A-8  | For A side                  |
|            | SY3000-37-80A-11 | For B side                  |
| SS5Y9-43SA | SY3000-37-80A-6  | For A side                  |
|            | SY3000-37-80A-11 | For B side                  |
|            | SY3000-37-80A-9  | For A side                  |
|            | SY3000-37-80A-14 | For B side                  |
|            | SY3000-37-80A-13 | For A side                  |
|            | SY3000-37-80A-18 | For B side                  |

Note 1) The above is for station addition or maintenance. When ordering a connector assembly separately, a number will not be printed on the connector.

Note 2) After inserting the connector assembly into the housing, be sure to confirm that the lead wire will not come off by lightly pulling the wire. Furthermore, do not reuse the lead wire after it has been inserted and removed.

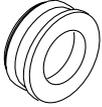
Note 3) Wiring is set longer than the actual wiring distance.

SJ  
**SY**  
 SV  
 SYJ  
 SZ  
 VP4  
 S0700  
 VQ  
 VQ4  
 VQ5  
 VQC  
 VQZ  
 SQ  
 VFS  
 VFR  
 VQ7

## Manifold Option

### ■ SUP blocking disk (For SY9000)

By installing a SUP blocking disk in the pressure supply passage of a manifold base, it is possible to supply two or more different high and low pressures to one manifold.



| Series        | No.          |
|---------------|--------------|
| <b>SY9000</b> | SY9000-57-1A |

### ■ EXH blocking disk (For SY9000)

By installing an EXH blocking disk in the exhaust passage of a manifold base, it is possible to divide the valve's exhaust so that it does not affect another valve. (Two blocking disks are needed to divide both exhausts.)



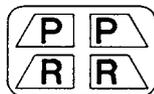
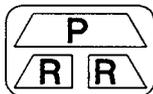
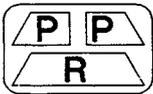
| Series        | No.          |
|---------------|--------------|
| <b>SY9000</b> | SY9000-57-1A |

### ■ Label for block disk (For SY9000)

The labels shown below are used on manifold stations containing SUP/EXH block disk(s) to show their location. (3 pcs. each)

#### VZ3000-123-1A

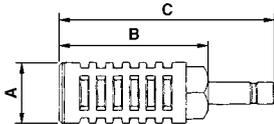
Label for SUP block disk    Label for EXH block disk    Label for SUP/EXH block disk



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

### ■ Silencer with One-touch fitting (For SY9000)

The silencer plugs directly into the One-touch fittings of the manifold R (exhaust) port.



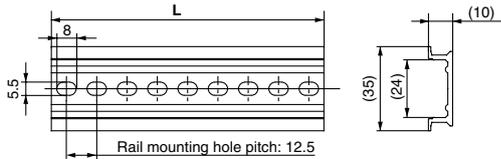
| For Series   | Model      | Effective area     | A   | B  | C  |
|--------------|------------|--------------------|-----|----|----|
| SY9000 (ø12) | AN300-KM12 | 41 mm <sup>2</sup> | ø25 | 70 | 98 |

### ■ DIN Rail Dimensions/Mass for SY9000

VZ1000-11-4-□

#### Refer to L dimensions

\* Fill in □ with an appropriate no. listed on the table of DIN rail dimensions shown below.

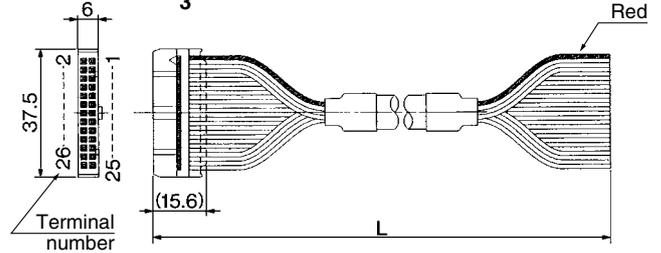


| No.         | 0    | 1     | 2    | 3     | 4     | 5     | 6    | 7     | 8     | 9     |
|-------------|------|-------|------|-------|-------|-------|------|-------|-------|-------|
| L Dimension | 98   | 110.5 | 123  | 135.5 | 148   | 160.5 | 173  | 185.5 | 198   | 210.5 |
| Mass (g)    | 24.8 | 28    | 31.1 | 34.3  | 37.4  | 40.6  | 43.8 | 46.9  | 50.1  | 53.3  |
| No.         | 10   | 11    | 12   | 13    | 14    | 15    | 16   | 17    | 18    | 19    |
| L Dimension | 223  | 235.5 | 248  | 260.5 | 273   | 285.5 | 298  | 310.5 | 323   | 335.5 |
| Mass (g)    | 56.4 | 59.6  | 62.7 | 65.9  | 69.1  | 72.2  | 75.4 | 78.6  | 81.7  | 84.9  |
| No.         | 20   | 21    | 22   | 23    | 24    | 25    | 26   | 27    | 28    | 29    |
| L Dimension | 348  | 360.5 | 373  | 385.5 | 398   | 410.5 | 423  | 435.5 | 448   | 460.5 |
| Mass (g)    | 88   | 91.2  | 94.4 | 97.5  | 100.7 | 103.9 | 107  | 110.2 | 113.3 | 116.5 |

Note) • Refer to page 338 for DIN rail.  
• Refer to L1 dimension on pages 211 to 213, 225 to 227 and 235 to 237 for lengths that correspond to the number of manifold stations.

### ■ Cable assembly

AXT100-FC26- $\frac{1}{3}$



### Connector Assembly for Flat Ribbon Cables

| Cable length (L) | Ass'y part no. | Note                      |
|------------------|----------------|---------------------------|
| 1.5m             | AXT100-FC26-1  | Cable 26 core<br>x 28 AWG |
| 3m               | AXT100-FC26-2  |                           |
| 5m               | AXT100-FC26-3  |                           |

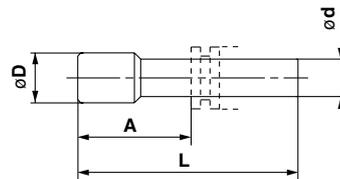
\* For other commercial connectors, use a 26 pins with strain relief conforming to MIL-C-83503.

### Connector manufacturers' example

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

### ■ Plug (white)

These are inserted in unused cylinder ports and SUP, EXH ports. Purchasing order is available in units of 10 pieces.



### Dimensions

| Applicable fittings size ød | Model          | A    | L    | D    |
|-----------------------------|----------------|------|------|------|
| 4                           | <b>KQ2P-04</b> | 16   | 32   | 6    |
| 6                           | <b>KQ2P-06</b> | 18   | 35   | 8    |
| 8                           | <b>KQ2P-08</b> | 20.5 | 39   | 10   |
| 10                          | <b>KQ2P-10</b> | 22   | 43   | 12   |
| 12                          | <b>KQ2P-12</b> | 24   | 44.5 | 14   |
| 1/8"                        | <b>KQ2P-01</b> | 16   | 31.5 | 5    |
| 5/32"                       | <b>KQ2P-03</b> | 16   | 32   | 6    |
| 1/4"                        | <b>KQ2P-07</b> | 18   | 35   | 8.5  |
| 5/16"                       | <b>KQ2P-09</b> | 20.5 | 39   | 10   |
| 3/8"                        | <b>KQ2P-11</b> | 22   | 43   | 11.5 |

**Manifold Option**

▪How to Order Interface Regulator

**Series SY3000**

**ARBY3000-05-P-2**

● **Pressure gauge connection port**

|           |                            |
|-----------|----------------------------|
| <b>05</b> | Pressure gauge (G15-10-01) |
| <b>M1</b> | Plug (M-5P)                |

● **Regulating port**

|           |                                               |
|-----------|-----------------------------------------------|
| <b>P</b>  | P port                                        |
| <b>A1</b> | A port (P controlled type, A port regulation) |
| <b>B1</b> | B port (P controlled type, B port regulation) |



Note) In the case of Series ARBY3000 with a pressure gauge when mounting on the manifold, use caution that the part numbers are different between the odd no. stations and the even no. stations to avoid gauges from interfering from each others.

**ARBY3000-05-□-2**  
(For odd number stations)

**ARBY3000-06-□-2**  
(For even number stations)

**ARBY3000-M1-□-2**

**Series SY5000**

**ARBY5000-00-P-2**

● **Pressure gauge connection port**

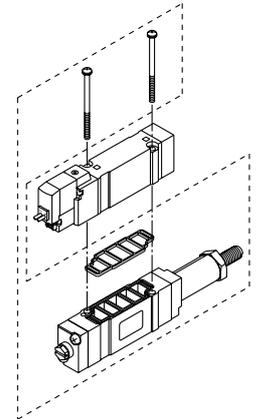
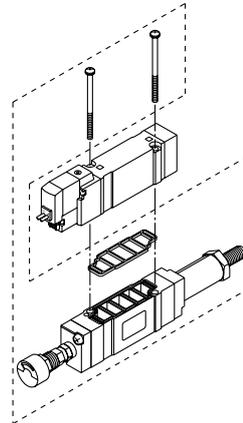
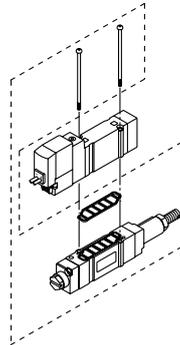
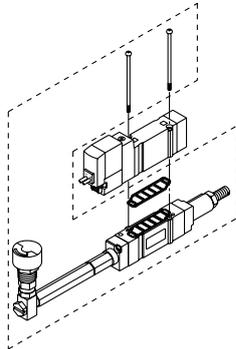
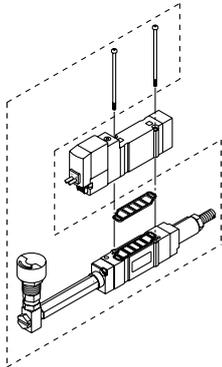
|           |                            |
|-----------|----------------------------|
| <b>00</b> | Pressure gauge (G15-10-01) |
| <b>M1</b> | Plug (M-5P)                |

● **Regulating port**

|           |                                               |
|-----------|-----------------------------------------------|
| <b>P</b>  | P port                                        |
| <b>A1</b> | A port (P controlled type, A port regulation) |
| <b>B1</b> | B port (P controlled type, B port regulation) |

**ARBY5000-00-□-2**

**ARBY5000-M1-□-2**



**Series SY7000**

**ARBY7000-00-P-2**

● **Pressure gauge connection port**

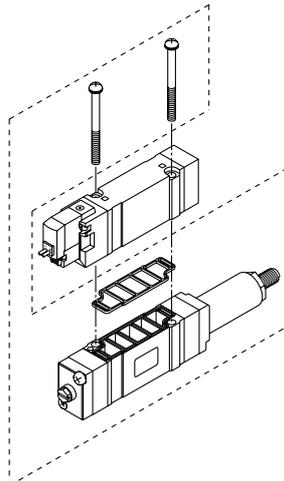
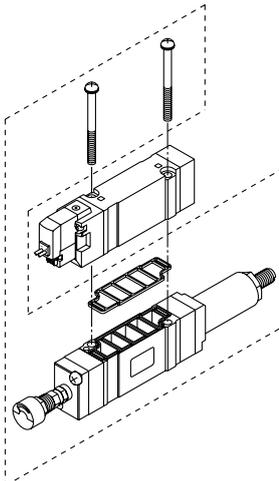
|           |                            |
|-----------|----------------------------|
| <b>00</b> | Pressure gauge (G15-10-01) |
| <b>M1</b> | Plug (M-5P)                |

● **Regulating port**

|           |                                               |
|-----------|-----------------------------------------------|
| <b>P</b>  | P port                                        |
| <b>A1</b> | A port (P controlled type, A port regulation) |
| <b>B1</b> | B port (P controlled type, B port regulation) |

**ARBY7000-00-□-2**

**ARBY7000-M1-□-2**



Note) ARBY is not CE-compliant.

**Accessory**

| Series          | Round head combination screw  | Gasket      |
|-----------------|-------------------------------|-------------|
| <b>ARBY3000</b> | SY3000-23-10 (M2 x 36)        | SX3000-57-4 |
| <b>ARBY5000</b> | M3 x 48.5, Matt nickel plated | SX5000-57-6 |
| <b>ARBY7000</b> | M4 x 57, Matt nickel plated   | SX7000-57-4 |

**⚠ Caution**

**Mounting screw tightening torques**

- M2: 0.16 N·m**
- M3: 0.8 N·m**
- M4: 1.4 N·m**

**SJ**

**SY**

**SV**

**SYJ**

**SZ**

**VP4**

**S0700**

**VQ**

**VQ4**

**VQ5**

**VQC**

**VQZ**

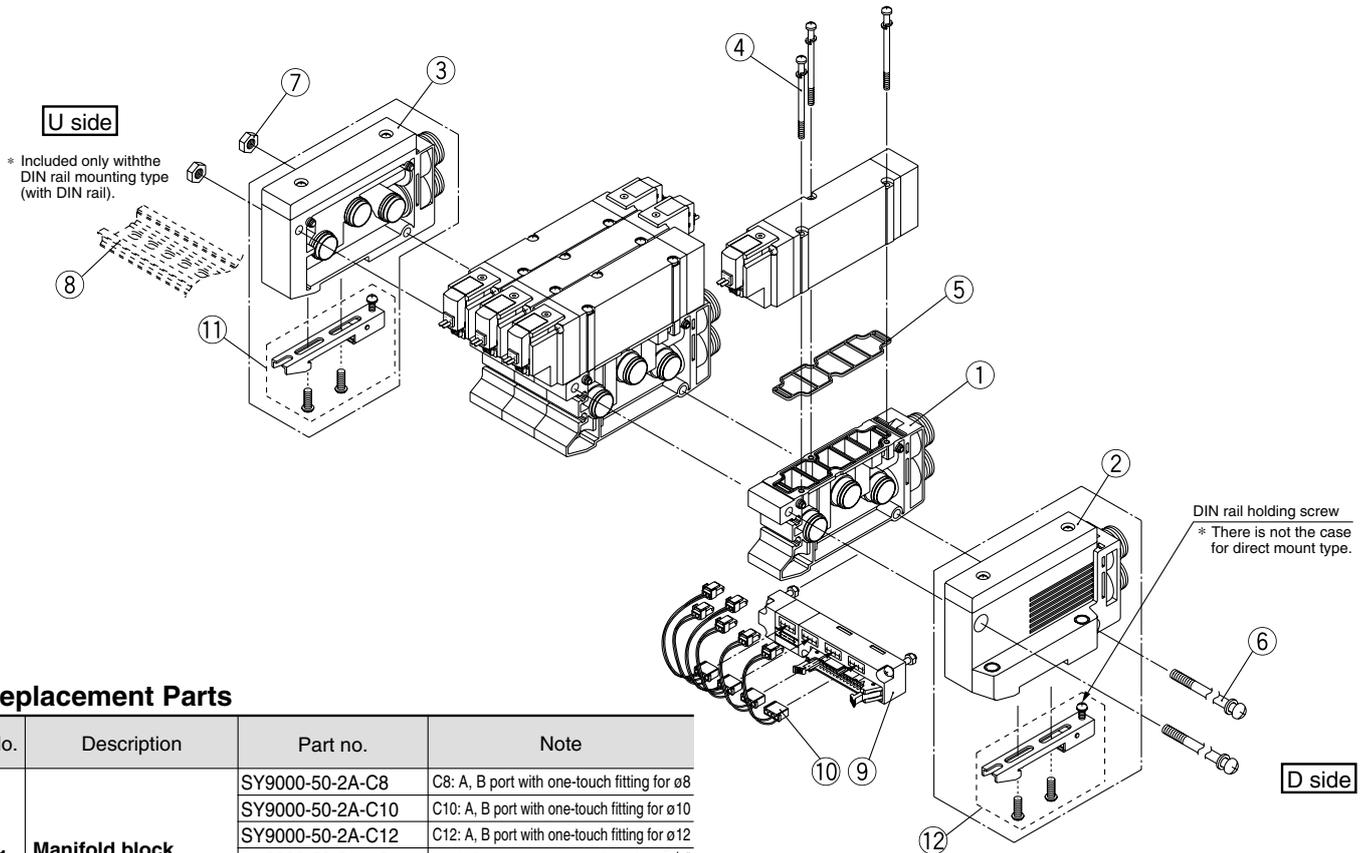
**SQ**

**VFS**

**VFR**

**VQ7**

**Base Mounted Manifold Exploded View**

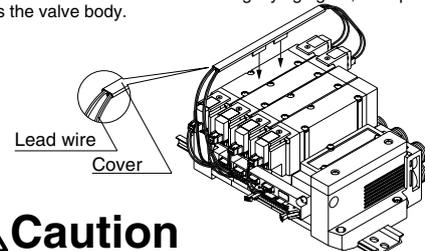


**Replacement Parts**

| No. | Description                  | Part no.         | Note                                                                                                                                               |
|-----|------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Manifold block assembly      | SY9000-50-2A-C8  | C8: A, B port with one-touch fitting for ø8                                                                                                        |
|     |                              | SY9000-50-2A-C10 | C10: A, B port with one-touch fitting for ø10                                                                                                      |
|     |                              | SY9000-50-2A-C12 | C12: A, B port with one-touch fitting for ø12                                                                                                      |
|     |                              | SY9000-50-2A-N9  | N9: A, B port with one-touch fitting for ø $\frac{5}{16}$ "                                                                                        |
|     |                              | SY9000-50-2A-N11 | N11: A, B port with one-touch fitting for ø $\frac{3}{8}$ "                                                                                        |
|     |                              | SY9000-50-2A-O2* | O2: A, B port $\frac{1}{4}$ " (* thread type)                                                                                                      |
|     |                              | SY9000-50-2A-O3* | O3: A, B port $\frac{3}{8}$ " (* thread type)                                                                                                      |
| 4   | Round head combination screw | SY9000-18-2      | M3 x 42, Matt nickel plated                                                                                                                        |
| 5   | Gasket                       | SY9000-11-2      |                                                                                                                                                    |
| 6   | Tension bolt                 | SY9000-23-□      | □ at the end of part number corresponds with the number of manifold station. Specify the same number as the number of stations.                    |
| 7   | Hexagon nut                  | SY9000-25-1      |                                                                                                                                                    |
| 8   | DIN rail                     | VZ1000-11-4-□    | Refer to page 240.                                                                                                                                 |
| 9   | Wiring unit assembly         | SY9000-36-□A     | □ at the end of part number corresponds with the number of manifold station. Specify the same number as the number of stations (4 to 12 stations). |
| 10  | Connector assembly           | SY9000-37-□□     | Refer to page 223.                                                                                                                                 |
| 11  | Lead wire cover              | SY9000-41-1      |                                                                                                                                                    |
| 12  | Clamp sub assembly           | SY9000-30-1A     | Included only with the DIN rail mounting type.                                                                                                     |

**⑪ How to assemble lead wire cover**

Lead wire cover is only usable for double solenoid valves. Lead wire is inserted into the lead wire cover as magnifying figure, then push it until it touches the valve body.



**⚠ Caution**

For type 43P (Flat cable manifold) of Series SY9000, the lead wire cover is attached for bundling the lead wires for each solenoid. In case such as adding double solenoid valve, etc., order separately lead wire cover as well.

**② SUP/EXH block assembly no. (D side mounting)**

- Direct mount type: **SY9000-70-** [ ] **A-** [ ]
- DIN rail mount type: **SY9000-72-** [ ] **A-** [ ]

• P, R port

|     |                                         |
|-----|-----------------------------------------|
| C12 | One-touch fitting for ø12               |
| N11 | One-touch fitting for ø $\frac{3}{8}$ " |
| 00  | Plug                                    |

• Specifications

|   |                                         |
|---|-----------------------------------------|
| 1 | Internal pilot type                     |
| 3 | External pilot type                     |
| 4 | Internal pilot / Built-in silencer type |
| 5 | External pilot / Built-in silencer type |

**③ SUP/EXH block assembly no. (U side mounting)**

- Direct mount type: **SY9000-71-** [ ] **A-** [ ]
- DIN rail mount type: **SY9000-73-** [ ] **A-** [ ]

• P, R port

|     |                                         |
|-----|-----------------------------------------|
| C12 | One-touch fitting for ø12               |
| N11 | One-touch fitting for ø $\frac{3}{8}$ " |
| 00  | Plug                                    |

• Specifications

|   |                                         |
|---|-----------------------------------------|
| 1 | Internal pilot type                     |
| 3 | External pilot type                     |
| 4 | Internal pilot / Built-in silencer type |
| 5 | External pilot / Built-in silencer type |

**How to Increase Manifold Bases (Series SY9000 only) Manifold case can be added at any location.**

When a type 43 manifold base is added, tension bolts as well as manifold block assembly will be required. Order the tension bolt suitable for the stations after a station was increased (decreased), since the length of a tension bolt differs by the number of stations. (For changing the number of stations for a type 43P manifold, wiring unit for the stations and lead assembly will be required.)

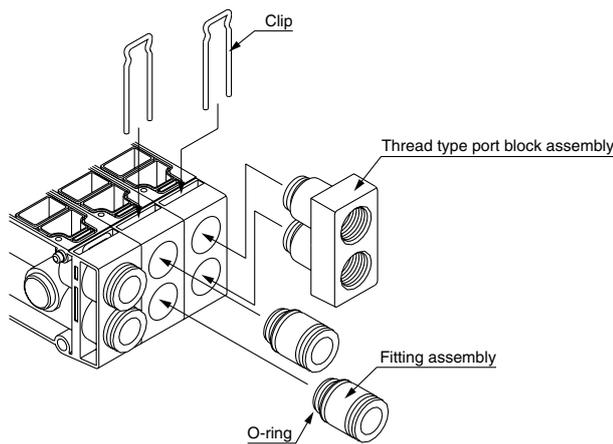
- 1 Loosen the tension bolts connecting the manifold base, and pull out both of 2 tension bolts.  
(When equipped with a DIN rail, loosen one DIN rail holding screw on either U side or D side.)
- 2 Separate the blocks at the location where station expansion is desired.
- 3 Mount additional manifold block assembly.
- 4 Press block-to-block so that there's no gap. After connection, insert a tension bolt for desired stations and then tighten it.  
**⚠ Caution** (Tightening torque: 2.9 N·m)  
 (When equipped with a DIN rail, be sure to tighten the DIN rail holding screws after tightening the tension bolts. Tightening torque: 1.4 N·m)

**⚠ Caution**

1. Be sure to shut off the power and air supplies before disassembly. Furthermore, since air may remain inside the actuator, piping and manifold, confirm that the air is completely exhausted before performing any work.
2. When disassembly and assembly are performed, air leakage may result if connections between blocks and tightening of the end block's holding screw, is inadequate.
3. By adding wiring unit assembly to type 43 manifold, it can be changed to type 43P manifold, too.

**How to Replace A, B Port Fitting Assembly**

By replacing manifold block fitting assemblies or the threaded port block assembly of a type 43(P) manifold, the port size of the A and B ports can be changed. To replace these parts, remove the clip with a flat head screwdriver after the valve has been removed. Insert the fitting assemblies or threaded port block assembly, and then reinsert the clip so that it does not protrude from the manifold block.



**Fitting Assembly Part No.**

| Port size                             | No.             | Note                                                  |
|---------------------------------------|-----------------|-------------------------------------------------------|
| One-touch fitting assembly for ø8     | VVQ4000-50B-C8  |                                                       |
| One-touch fitting assembly for ø10    | VVQ4000-50B-C10 |                                                       |
| One-touch fitting assembly for ø12    | VVQ4000-50B-C12 |                                                       |
| One-touch fitting for ø 5/16"         | VVQ4000-50B-N9  |                                                       |
| One-touch fitting for ø 3/8"          | VVQ4000-50B-N11 |                                                       |
| 1/4 threaded type port block assembly | SY9000-58A-02*  | —* at the end of part number denotes the thread type. |
| 3/8 threaded type port block assembly | SY9000-58A-03*  | —* at the end of part number denotes the thread type. |
| Plug assembly                         | SY9000-62-1A    |                                                       |

Note 1) Be careful to avoid damage or contamination of O-rings, as this can cause air leakage.  
 Note 2) Although replacing One-touch fittings of P, R port is also possible, use caution to the cases, etc. in which solenoid valves are often used at the same time by using the smaller sized fittings than the standard size (ø12). Because there may not be able to supply or exhaust air sufficiently in comparison with the valve performances. Besides, although fittings used for A, B port are the same, it is not possible to use the threaded type port block assembly.

SJ  
 SY  
 SV  
 SYJ  
 SZ  
 VP4  
 S0700  
 VQ  
 VQ4  
 VQ5  
 VQC  
 VQZ  
 SQ  
 VFS  
 VFR  
 VQ7

# 5 Port Solenoid Valve Base Mounted Manifold Stacking Type/DIN Rail Mounted/Individual Wiring

## Series SY3000/5000

Type **45**

### How to Order Manifold

SS5Y **3** - 45 - **05** **U** - **C6** - [ ] - [ ]

• **Series**

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |

• **Valve stations**

|    |             |
|----|-------------|
| 02 | 2 stations  |
| ⋮  | ⋮           |
| 20 | 20 stations |

• **SUP/EXH block assembly mounting position**

| Symbol    | Mounting position      | Applicable no. of stations |
|-----------|------------------------|----------------------------|
| <b>U</b>  | U side                 | 2 to 10 stations           |
| <b>D</b>  | D side                 |                            |
| <b>B</b>  | (Both sides)           |                            |
| <b>M*</b> | Special specifications |                            |

\* For special specifications, indicate separately by the manifold specification sheet.

• **Option**

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (20 stations at maximum)

• **CE-compliant**

|            |              |
|------------|--------------|
| <b>Nil</b> | —            |
| <b>Q</b>   | CE-compliant |

• **A, B port size**

**One-touch fitting (Metric size)**

| Symbol    | Port size                      | Applicable series |
|-----------|--------------------------------|-------------------|
| <b>C4</b> | One-touch fitting for $\phi 4$ | SY3000            |
| <b>C6</b> | One-touch fitting for $\phi 6$ |                   |
| <b>M</b>  | Mixed                          | SY5000            |
| <b>C4</b> | One-touch fitting for $\phi 4$ |                   |
| <b>C6</b> | One-touch fitting for $\phi 6$ |                   |
| <b>C8</b> | One-touch fitting for $\phi 8$ |                   |
| <b>M</b>  | Mixed                          |                   |

**One-touch fitting (Inch size)**

| Symbol    | Port size                           | Applicable series |
|-----------|-------------------------------------|-------------------|
| <b>N3</b> | One-touch fitting for $\phi 5/32$ " | SY3000            |
| <b>N7</b> | One-touch fitting for $\phi 1/4$ "  |                   |
| <b>M</b>  | Mixed                               | SY5000            |
| <b>N3</b> | One-touch fitting for $\phi 5/32$ " |                   |
| <b>N7</b> | One-touch fitting for $\phi 1/4$ "  |                   |
| <b>N9</b> | One-touch fitting for $\phi 5/16$ " |                   |
| <b>M</b>  | Mixed                               |                   |

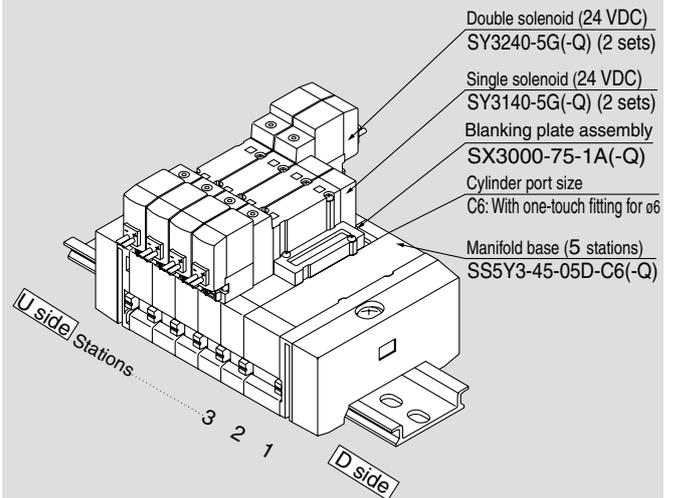
\* In the case of mixed specifications (M), indicate separately on the manifold specification sheet.



Refer to pages 324 to 328 for external pilot specifications and built-in silencer.

### How to Order Manifold Assembly (Example)

#### Example



**SS5Y3-45-05D-C6** ..... 1 set (Type 45, 5-station manifold base part no.)  
 \* **SX3000-75-1A** ..... 1 set (Blanking plate assembly part no.)  
 \* **SY3140-5G** ..... 2 sets (Single solenoid part no.)  
 \* **SY3240-5G** ..... 2 sets (Double solenoid part no.)

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

The valve arrangement is numbered as the 1st. station on D side regardless of the mounting position of SUP/EXH block assembly. In ordering, specify the part nos. in the order from the 1st. station on D side. Besides, when the arrangement will be complicated, fill out the manifold specification sheet to instruct us.

## How to Order Valve

SY 5 2 40 □ - 5 L □ □ - □ - □

### Series

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |

### Type of actuation

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

### Coil specifications

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

\* Power saving circuit is not available in the case of D, Y, DO, YO or W□ type.

### Rated voltage

#### For DC

|   |        |
|---|--------|
| 5 | 24 VDC |
| 6 | 12 VDC |
| V | 6 VDC  |
| S | 5 VDC  |
| R | 3 VDC  |

#### AC ( Hz )<sup>50/60</sup>

|   |                   |
|---|-------------------|
| 1 | 100 VAC           |
| 2 | 200 VAC           |
| 3 | 110 VAC [115 VAC] |
| 4 | 220 VAC [230 VAC] |

\* DC specifications of type D, Y, DO and YO is only available with 12 and 24 VDC.  
 \* For type W□, DC voltage is only available.  
 \* D and DO only available for SY5000.

### CE-compliant

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

\* For DC only except DIN terminal.

### Made to Order

|     |                                               |
|-----|-----------------------------------------------|
| Nil | —                                             |
| X90 | Main valve fluoro rubber (Refer to page 332.) |

### Manual override

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

### Light/surge voltage suppressor

#### Electrical entry for G, H, L, M, W

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

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

#### Electrical entry for D, Y

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

\* DOZ and YOZ are not available.  
 \* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

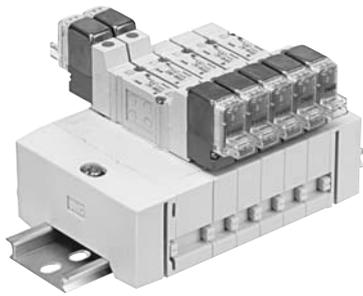
### Electrical entry

| 24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC |                                          |                                          | 24, 12 VDC/<br>100, 110, 200,<br>220 VAC | 24, 12, 6, 5, 3 VDC                                |
|--------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|----------------------------------------------------|
| Grommet                                    | L plug connector                         | M plug connector                         | DIN terminal                             | M8 connector                                       |
| <b>G:</b> Lead wire length 300 mm          | <b>L:</b> With lead wire (Length 300 mm) | <b>M:</b> With lead wire (Length 300 mm) | <b>(SY5000)</b>                          | <b>WO:</b> Without connector cable                 |
| <b>H:</b> Lead wire length 600 mm          | <b>LN:</b> Without lead wire             | <b>MN:</b> Without lead wire             | <b>DO:</b> Without connector             | <b>W□:</b> With connector cable <sup>Note 1)</sup> |
|                                            | <b>LO:</b> Without connector             | <b>MO:</b> Without connector             | <b>Y:</b> With connector                 |                                                    |
|                                            |                                          |                                          | <b>YO:</b> Without connector             |                                                    |

\* LN, MN type: with 2 sockets.  
 \* D and DO only available for SY5000.  
 \* "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). Refer to page 336 for details.  
 \* Refer to page 339 for connector cable of M8 connector.  
 \* M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 331 for details.  
 \* Refer to page 336 for the lead wire length of L and M plug connectors.  
 \* Refer to page 337 for the connector assembly with cover for L and M plug connectors.  
 Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.

\* When ordering valve as a single unit, gaskets for the stacking base type are not included. Order them separately, if necessary. (Refer to page 254 for details.)

SJ  
 SY  
 SV  
 SYJ  
 SZ  
 VP4  
 S0700  
 VQ  
 VQ4  
 VQ5  
 VQC  
 VQZ  
 SQ  
 VFS  
 VFR  
 VQ7



## Manifold Specifications

|                                          |                                                                     |                               |                                                                     |  |
|------------------------------------------|---------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------|--|
| Model                                    | <b>SS5Y3-45(-Q)</b>                                                 |                               | <b>SS5Y5-45(-Q)</b>                                                 |  |
| Applicable valve                         | <b>SY3□40</b>                                                       |                               | <b>SY5□40</b>                                                       |  |
| Manifold type                            | Stacking type/DIN rail mounted                                      |                               |                                                                     |  |
| P (SUP)/R (EXH)                          | Common SUP, Common EXH                                              |                               |                                                                     |  |
| Valve stations                           | 2 to 20 stations <sup>Note 1)</sup>                                 |                               |                                                                     |  |
| A, B port<br>Porting specifications      | Location                                                            | Base                          |                                                                     |  |
|                                          | Direction                                                           | Side                          |                                                                     |  |
| Port size                                | P, R port                                                           | C8 (One-touch fitting for ø8) | C10 (One-touch fitting for ø10)                                     |  |
|                                          | A, B port                                                           | C4 (One-touch fitting for ø4) | C4 (One-touch fitting for ø4)                                       |  |
|                                          |                                                                     | C6 (One-touch fitting for ø6) | C6 (One-touch fitting for ø6)<br>C8 (One-touch fitting for ø8)      |  |
| Manifold base mass<br>W (g), n: Stations | 2 to 10 stations: W = 22n + 118<br>11 to 20 stations: W = 22n + 140 |                               | 2 to 10 stations: W = 47n + 156<br>11 to 20 stations: W = 47n + 190 |  |



Note 1) For more than 11 stations, supply pressure to P port on both sides and exhaust from R port on both sides.

## Flow Characteristics

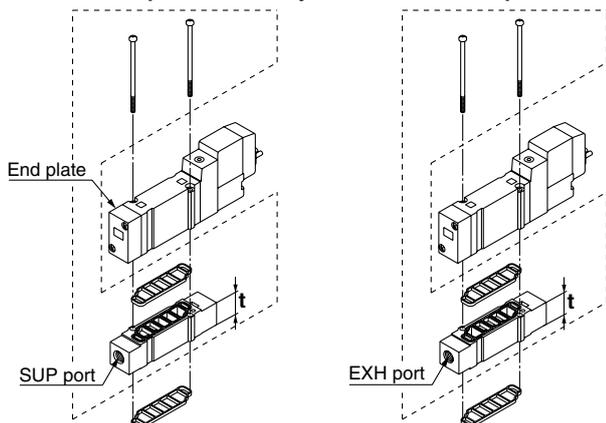
| Model           | Port size          |              | Flow characteristics       |      |      |                            |      |      |
|-----------------|--------------------|--------------|----------------------------|------|------|----------------------------|------|------|
|                 | 1,5,3<br>(P,EA,EB) | 4,2<br>(A,B) | 1 → 4/2 (P → A/B)          |      |      | 4/2 → 5/3 (A/B → EA/EB)    |      |      |
|                 |                    |              | C (dm <sup>3</sup> /s·bar) | b    | Cv   | C (dm <sup>3</sup> /s·bar) | b    | Cv   |
| <b>SS5Y3-45</b> | C8                 | C6           | 0.88                       | 0.21 | 0.22 | 0.95                       | 0.18 | 0.22 |
| <b>SS5Y5-45</b> | C10                | C8           | 2.2                        | 0.24 | 0.53 | 2.5                        | 0.18 | 0.58 |



Note) The value is for manifold base with 5 stations and individually operated 2 position type.

## Manifold Option

### Individual SUP spacer assembly ■ Individual EXH spacer assembly ■ SUP blocking disk



| Series | Assembly part no.  | Port size | t  |
|--------|--------------------|-----------|----|
| SY3000 | SY3000-38-2A(-Q)   | M5 x 0.8  | 11 |
| SY5000 | SY5000-38-16+A(-Q) | 1/8       | 15 |

Note) The SUP port may be either on the lead wire side or on the end plate side. (An assembly is shipped under the condition shown in the figure.)

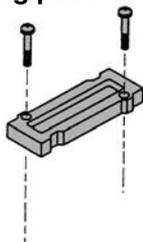
| Series | Assembly part no.  | Port size | t  |
|--------|--------------------|-----------|----|
| SY3000 | SY3000-39-2A(-Q)   | M5 x 0.8  | 11 |
| SY5000 | SY5000-39-16+A(-Q) | 1/8       | 15 |

Note) The EXH port may be either on the lead wire side or on the end plate side.

#### \* Thread type

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

### ■ Blanking plate assembly



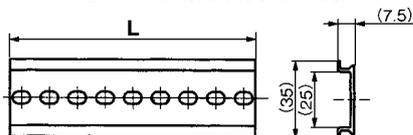
| Series | Assembly part no. |
|--------|-------------------|
| SY3000 | SX3000-75-1A(-Q)  |
| SY5000 | SX5000-76-5A(-Q)  |

### ■ Dimensions/DIN rail

VZ1000-11-1-□

#### ● Refer to L dimensions

\* Fill in □ with an appropriate no. listed on the table of DIN rail dimensions shown below.



|             |       |       |       |       |       |       |       |       |       |       |       |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| No.         | 0     | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    |
| L Dimension | 98    | 110.5 | 123   | 135.5 | 148   | 160.5 | 173   | 185.5 | 198   | 210.5 | 223   |
| No.         | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    |
| L Dimension | 235.5 | 248   | 260.5 | 273   | 285.5 | 298   | 310.5 | 323   | 335.5 | 348   | 360.5 |
| No.         | 22    | 23    | 24    | 25    | 26    | 27    | 28    | 29    | 30    | 31    | 32    |
| L Dimension | 373   | 385.5 | 398   | 410.5 | 423   | 435.5 | 448   | 460.5 | 473   | 485.5 | 498   |
| No.         | 33    | 34    | 35    | 36    | 37    | 38    | 39    | 40    | 41    | 42    | 43    |
| L Dimension | 510.5 | 523   | 535.5 | 548   | 560.5 | 573   | 585.5 | 598   | 610.5 | 623   | 635.5 |
| No.         | 44    | 45    | 46    | 47    | 48    | 49    | 50    | 51    | 52    | 53    | 54    |
| L Dimension | 648   | 660.5 | 673   | 685.5 | 698   | 710.5 | 723   | 735.5 | 748   | 760.5 | 773   |
| No.         | 55    | 56    | 57    | 58    | 59    | 60    | 61    | 62    | 63    | 64    | 65    |
| L Dimension | 785.5 | 798   | 810.5 | 823   | 835.5 | 848   | 860.5 | 873   | 885.5 | 898   | 910.5 |
| No.         | 66    | 67    | 68    | 69    | 70    | 71    |       |       |       |       |       |
| L Dimension | 923   | 935.5 | 948   | 960.5 | 973   | 985.5 |       |       |       |       |       |

\* Refer to L1 dimension on pages starting with pages 250 to 253 for lengths that correspond to the number of manifold stations.

### ■ SUP blocking disk

By installing a SUP blocking disk in the pressure supply passage of a manifold valve, it is possible to supply two or more different high and low pressures to one manifold.



| Series | Part no.     |
|--------|--------------|
| SY3000 | SX3000-77-1A |
| SY5000 | SX5000-77-1A |

### ■ EXH blocking disk

By installing an EXH blocking disk in the exhaust passage of a manifold valve, it is possible to divide the valve's exhaust so that it does not affect another valve. (Two blocking disks are needed to divide both exhausts.)



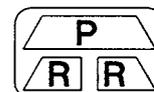
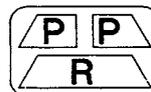
| Series | Part no.     |
|--------|--------------|
| SY3000 | SX3000-77-1A |
| SY5000 | SX5000-77-1A |

### ■ Label for block disk

The labels shown below are used on manifold stations containing SUP/EXH blocking disk(s) to show their location. (3 pcs. each)

#### VZ3000-123-1A

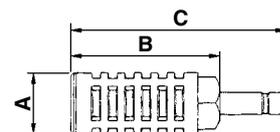
Label for SUP block disk    Label for EXH block disk    Label for SUP/EXH block disk



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

### ■ Silencer with One-touch fitting

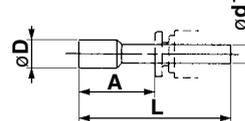
The silencer plugs directly into the One-touch fittings of the manifold.



| Series           | Model      | Effective area     | A   | B    | C    |
|------------------|------------|--------------------|-----|------|------|
| For SY3000 (ø8)  | AN203-KM8  | 14 mm <sup>2</sup> | ø16 | 26   | 51   |
| For SY5000 (ø10) | AN200-KM10 | 26 mm <sup>2</sup> | ø22 | 53.8 | 80.8 |
|                  | AN300-KM10 | 30 mm <sup>2</sup> | ø25 | 70   | 97   |

### ■ Plug (white)

These are inserted in unused cylinder ports and SUP, EXH ports. Purchasing order is available in units of 10 pieces.



### Dimensions

| Applicable fittings size ød | Model   | A    | L    | D   |
|-----------------------------|---------|------|------|-----|
| 4                           | KQ2P-04 | 16   | 32   | 6   |
| 6                           | KQ2P-06 | 18   | 35   | 8   |
| 8                           | KQ2P-08 | 20.5 | 39   | 10  |
| 10                          | KQ2P-10 | 22   | 43   | 12  |
| 1/8"                        | KQ2P-01 | 16   | 31.5 | 5   |
| 5/32"                       | KQ2P-03 | 16   | 32   | 6   |
| 1/4"                        | KQ2P-07 | 18   | 35   | 8.5 |
| 5/16"                       | KQ2P-09 | 20.5 | 39   | 10  |

**Manifold Option**

▪ How to Order Interface Regulator (SY3000, 5000 only)

**Series SY3000**

**ARBY3000 - 05 - P - 2**

• **Regulating port**

|           |                                               |
|-----------|-----------------------------------------------|
| <b>P</b>  | P port                                        |
| <b>A1</b> | A port (P controlled type, A port regulation) |
| <b>B1</b> | B port (P controlled type, B port regulation) |

• **Pressure gauge connection port**

|           |                                                      |
|-----------|------------------------------------------------------|
| <b>05</b> | Pressure gauge (G15-10-01) [for odd number station]  |
| <b>06</b> | Pressure gauge (G15-10-01) [for even number station] |
| <b>M1</b> | Plug (M-5P)                                          |

\* In the case of Series ARBY3000 with a pressure gauge when mounting on the manifold, use caution that the part numbers are different between the odd no. stations and the even no.

**Series SY5000**

**ARBY5000 - 00 - P - 2**

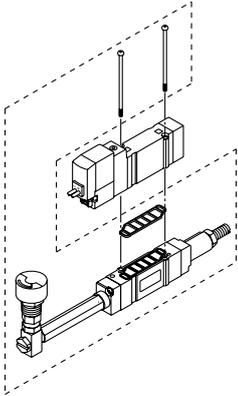
• **Regulating port**

|           |                                               |
|-----------|-----------------------------------------------|
| <b>P</b>  | P port                                        |
| <b>A1</b> | A port (P controlled type, A port regulation) |
| <b>B1</b> | B port (P controlled type, B port regulation) |

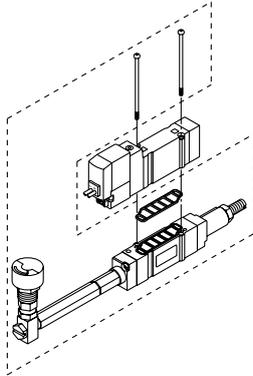
• **Pressure gauge connection port**

|           |                            |
|-----------|----------------------------|
| <b>00</b> | Pressure gauge (G15-10-01) |
| <b>M1</b> | Plug (M-5P)                |

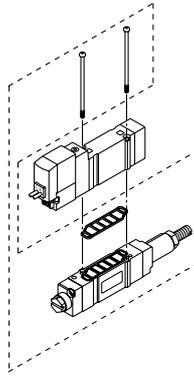
**ARBY3000-05-□-2**  
(For mounting odd number stations)



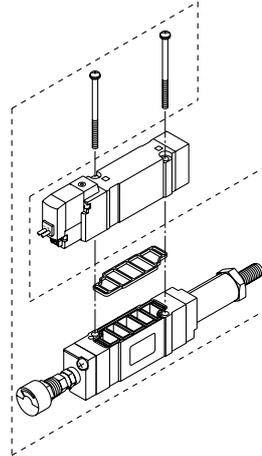
**ARBY3000-06-□-2**  
(For mounting even number stations)



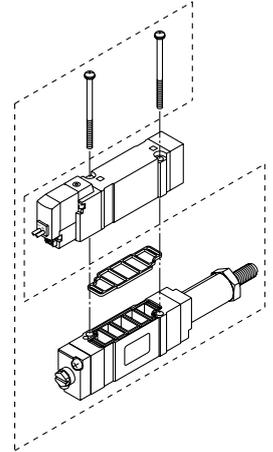
**ARBY3000-M1-□-2**



**ARBY5000-00-□-2**



**ARBY5000-M1-□-2**



Note) ARBY is not CE-compliant.

**Accessory**

| Series          | Round head combination screw     | Gasket      |
|-----------------|----------------------------------|-------------|
| <b>ARBY3000</b> | SY3000-23-10<br>(M2 x 36)        | SX3000-57-4 |
| <b>ARBY5000</b> | M3 x 48.5,<br>Matt nickel plated | SX5000-57-6 |

**Caution**

**Mounting screw tightening torques**

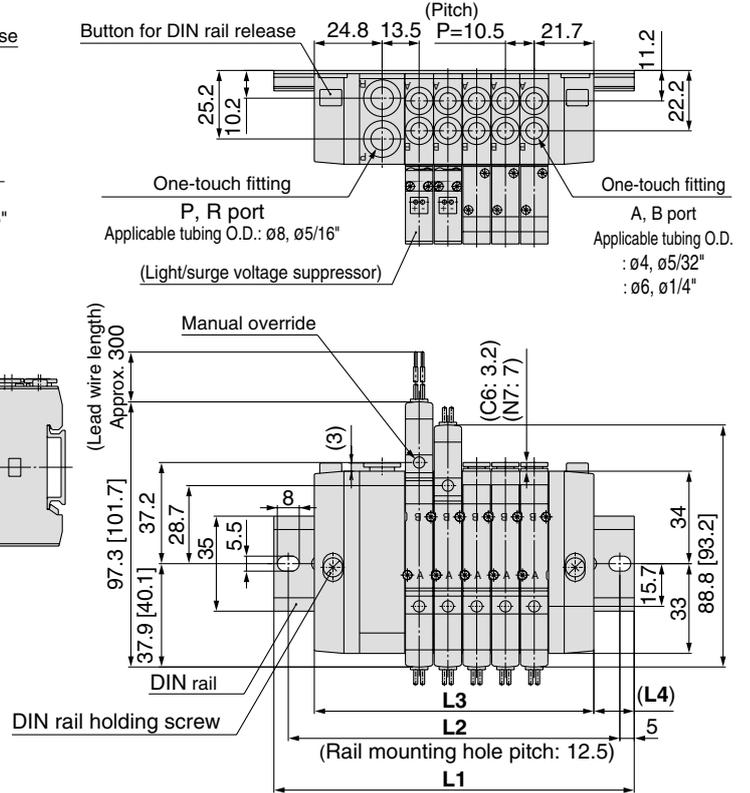
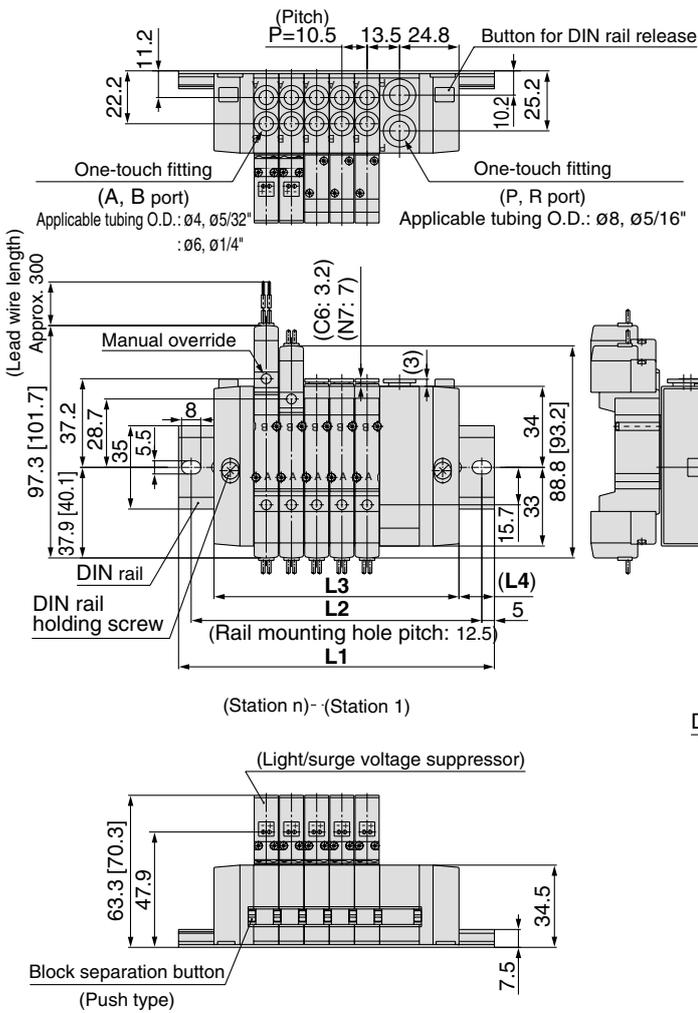
**M2: 0.17 N·m**  
**M3: 0.8 N·m**



**Dimensions: Series SY3000**

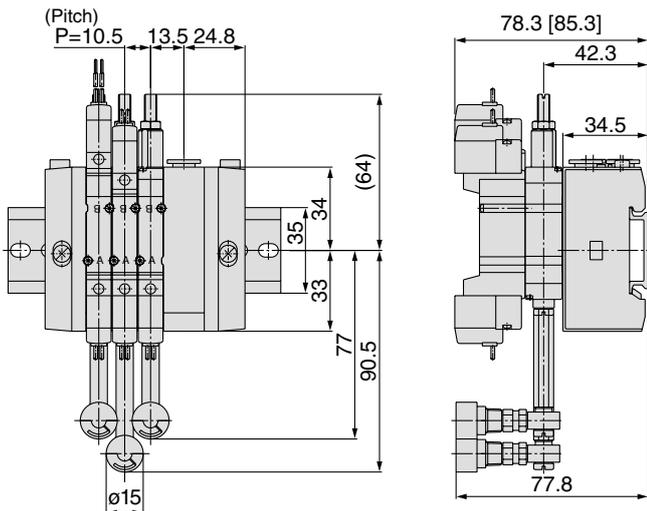
**SS5Y3-45- Stations D-C4, N3  
C6, N7**

**SS5Y3-45- Stations U-C4, N3  
C6, N7**



| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 98         | 110.5 | 123   | 135.5 | 148   | 148   | 160.5 | 173   | 185.5       |
| L2         | 87.5       | 100   | 112.5 | 125   | 137.5 | 137.5 | 150   | 162.5 | 175         |
| L3         | 70.5       | 81    | 91.5  | 102   | 112.5 | 123   | 133.5 | 144   | 154.5       |
| L4         | 13.5       | 14.5  | 15.5  | 16.5  | 17.5  | 12.5  | 13.5  | 14.5  | 15.5        |

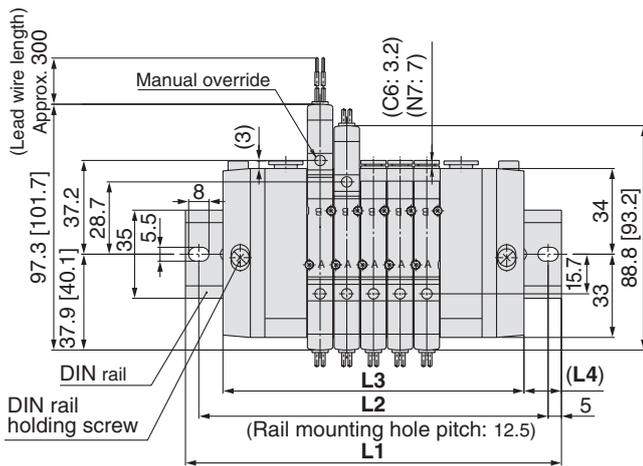
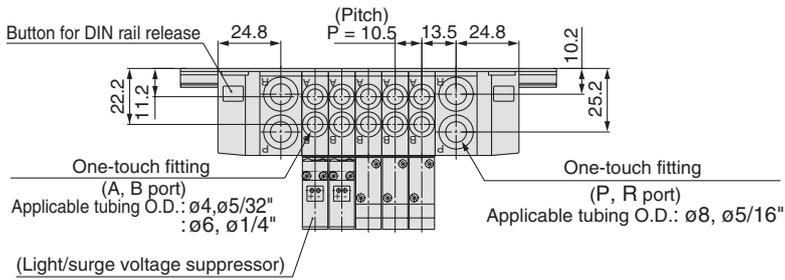
**With interface regulator (with gauge)**





**Dimensions: Series SY3000**

**SS5Y3-45- Stations B- C4, N3  
C6, N7**

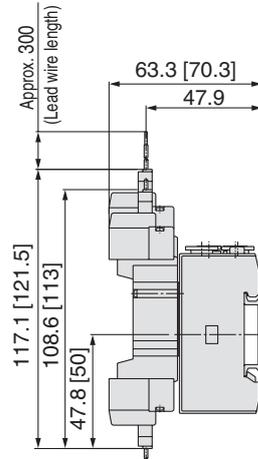


| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 110.5      | 123   | 135.5 | 148   | 160.5 | 173   | 185.5 | 185.5 | 198         |
| <b>L2</b>  | 100        | 112.5 | 125   | 137.5 | 150   | 162.5 | 175   | 175   | 187.5       |
| <b>L3</b>  | 87         | 97.5  | 108   | 118.5 | 129   | 139.5 | 150   | 160.5 | 171         |
| <b>L4</b>  | 11.5       | 12.5  | 13.5  | 14.5  | 15.5  | 16.5  | 17.5  | 12.5  | 13.5        |

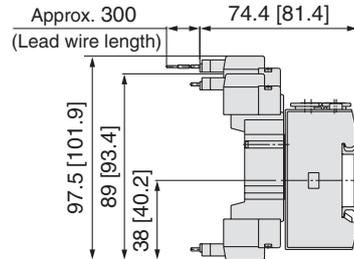
| Stations n | 11 stations | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20 stations |
|------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 210.5       | 223   | 235.5 | 248   | 248   | 260.5 | 273   | 285.5 | 298   | 310.5       |
| <b>L2</b>  | 200         | 212.5 | 225   | 237.5 | 237.5 | 250   | 262.5 | 275   | 287.5 | 300         |
| <b>L3</b>  | 181.5       | 192   | 202.5 | 213   | 223.5 | 234   | 244.5 | 255   | 265.5 | 276         |
| <b>L4</b>  | 14.5        | 15.5  | 16.5  | 17.5  | 12    | 13    | 14    | 15    | 16    | 17          |

| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 98         | 110.5 | 123   | 135.5 | 148   | 148   | 160.5 | 173   | 185.5       |
| <b>L2</b>  | 87.5       | 100   | 112.5 | 125   | 137.5 | 137.5 | 150   | 162.5 | 175         |
| <b>L3</b>  | 70.5       | 81    | 91.5  | 102   | 112.5 | 123   | 133.5 | 144   | 154.5       |
| <b>L4</b>  | 13.5       | 14.5  | 15.5  | 16.5  | 17.5  | 12.5  | 13.5  | 14.5  | 15.5        |

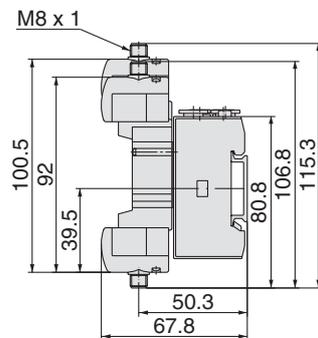
**L plug connector**



**M plug connector**



**M8 connector (WO)**



Note) Refer to page 340 for dimensions of connector types.

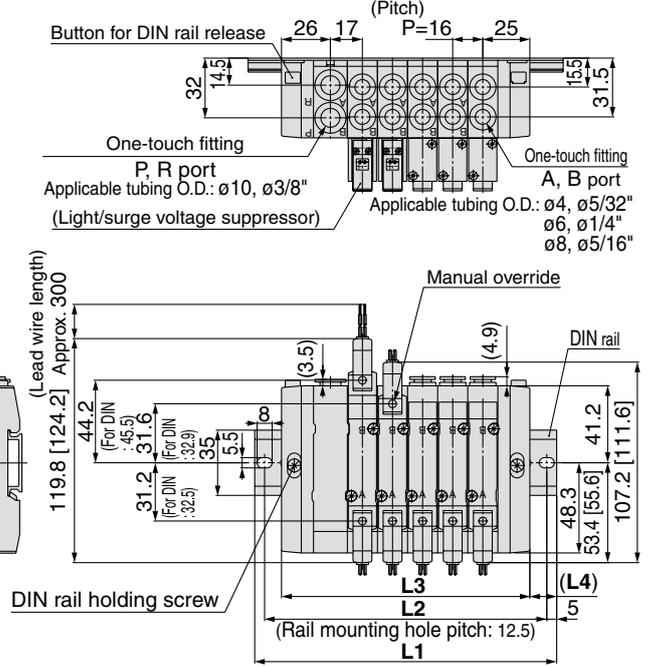
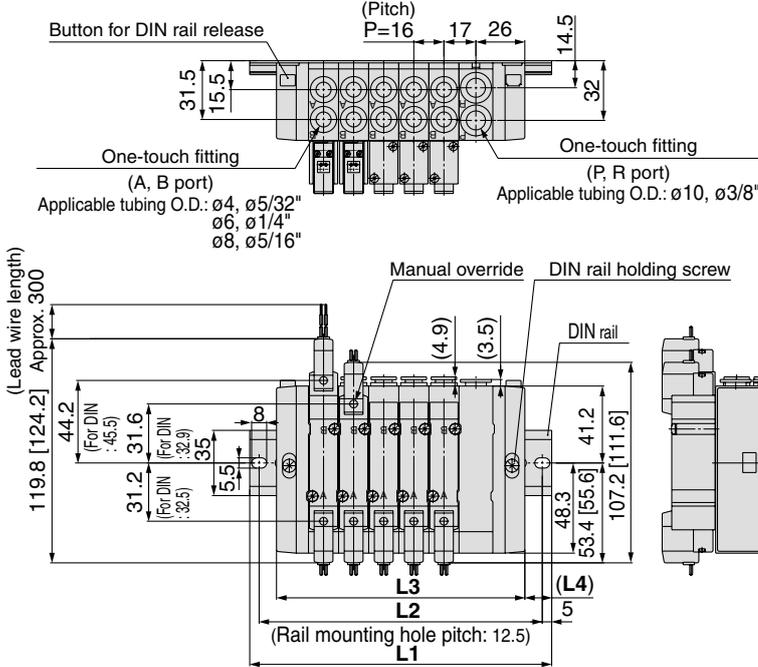
- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7



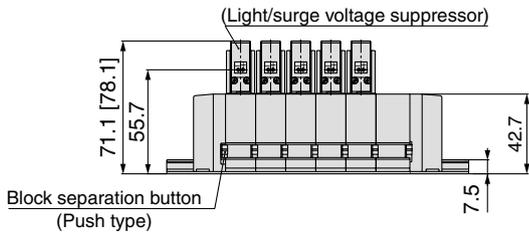
## Dimensions: Series SY5000

**SS5Y5-45- Stations D-** C4, N3  
C6, N7  
C8, N9

**SS5Y5-45- Stations U-** C4, N3  
C6, N7  
C8, N9

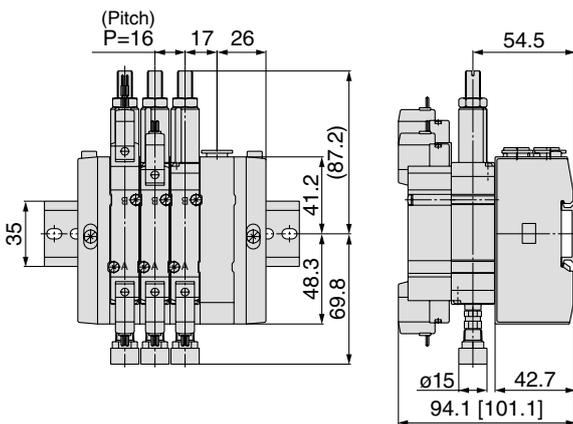


(Station n) --- (Station 1)



| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 110.5      | 135.5 | 148   | 160.5 | 173   | 198   | 210.5 | 223   | 235.5       |
| L2         | 100        | 125   | 137.5 | 150   | 162.5 | 187.5 | 200   | 212.5 | 225         |
| L3         | 84         | 100   | 116   | 132   | 148   | 164   | 180   | 196   | 212         |
| L4         | 13         | 17.5  | 16    | 14    | 12.5  | 17    | 15    | 13.5  | 11.5        |

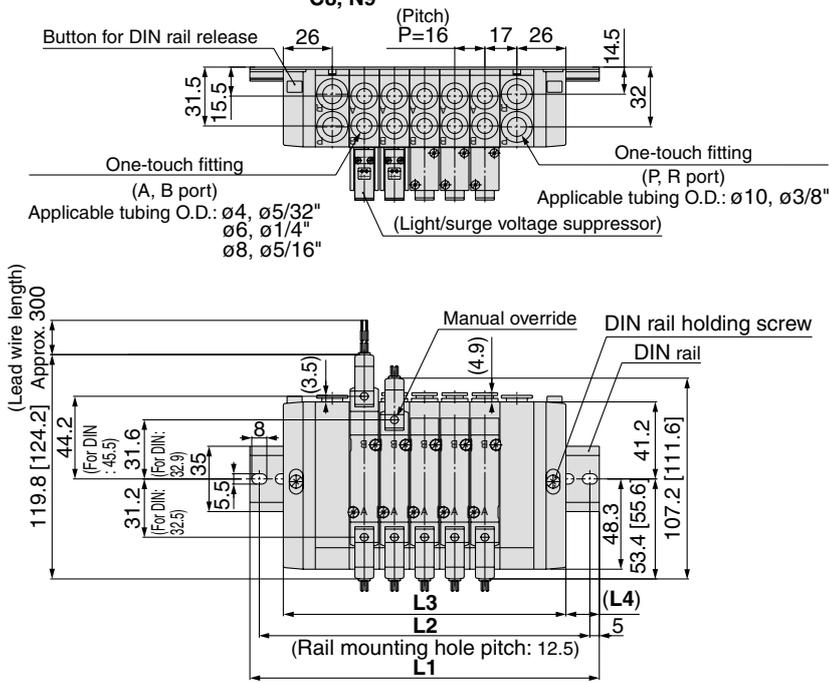
### With interface regulator (with gauge)



**Dimensions: Series SY5000**



**SS5Y3-45- Stations B-C4, N3  
C6, N7  
C8, N9**

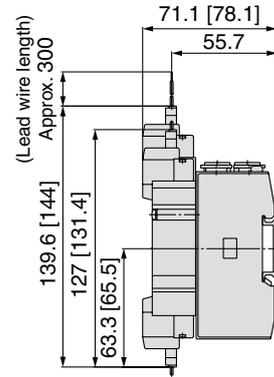


| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 135.5      | 148   | 160.5 | 185.5 | 198   | 210.5 | 223   | 248   | 260.5       |
| L2         | 125        | 137.5 | 150   | 175   | 187.5 | 200   | 212.5 | 237.5 | 250         |
| L3         | 102        | 118   | 134   | 150   | 166   | 182   | 198   | 214   | 230         |
| L4         | 16.5       | 15    | 13    | 17.5  | 16    | 14    | 12.5  | 17    | 15          |

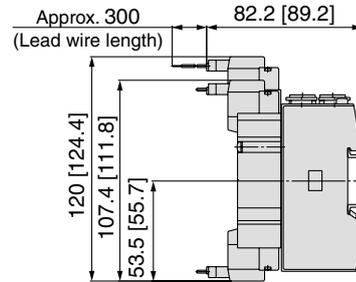
  

| Stations n | 11 stations | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20 stations |
|------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 273         | 285.5 | 310.5 | 323   | 335.5 | 360.5 | 373   | 385.5 | 398   | 423         |
| L2         | 262.5       | 275   | 300   | 312.5 | 325   | 350   | 362.5 | 375   | 387.5 | 412.5       |
| L3         | 246         | 262   | 278   | 294   | 310   | 326   | 342   | 358   | 374   | 390         |
| L4         | 13.5        | 11.5  | 16    | 14.5  | 12.5  | 17    | 15.5  | 13.5  | 12    | 16.5        |

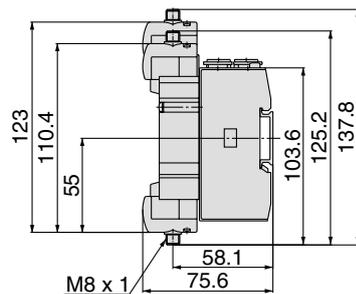
**L plug connector**



**M plug connector**

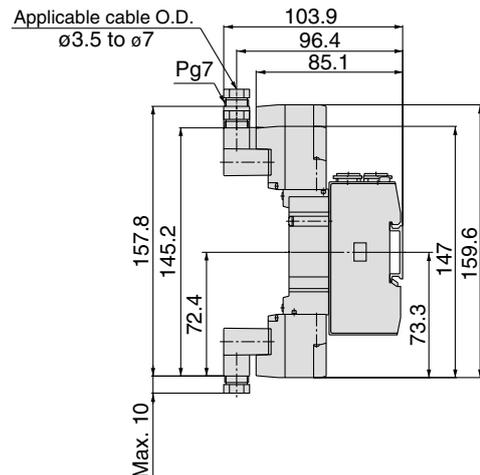


**M8 connector (WO)**



Note) Refer to page 340 for dimensions of connector types.

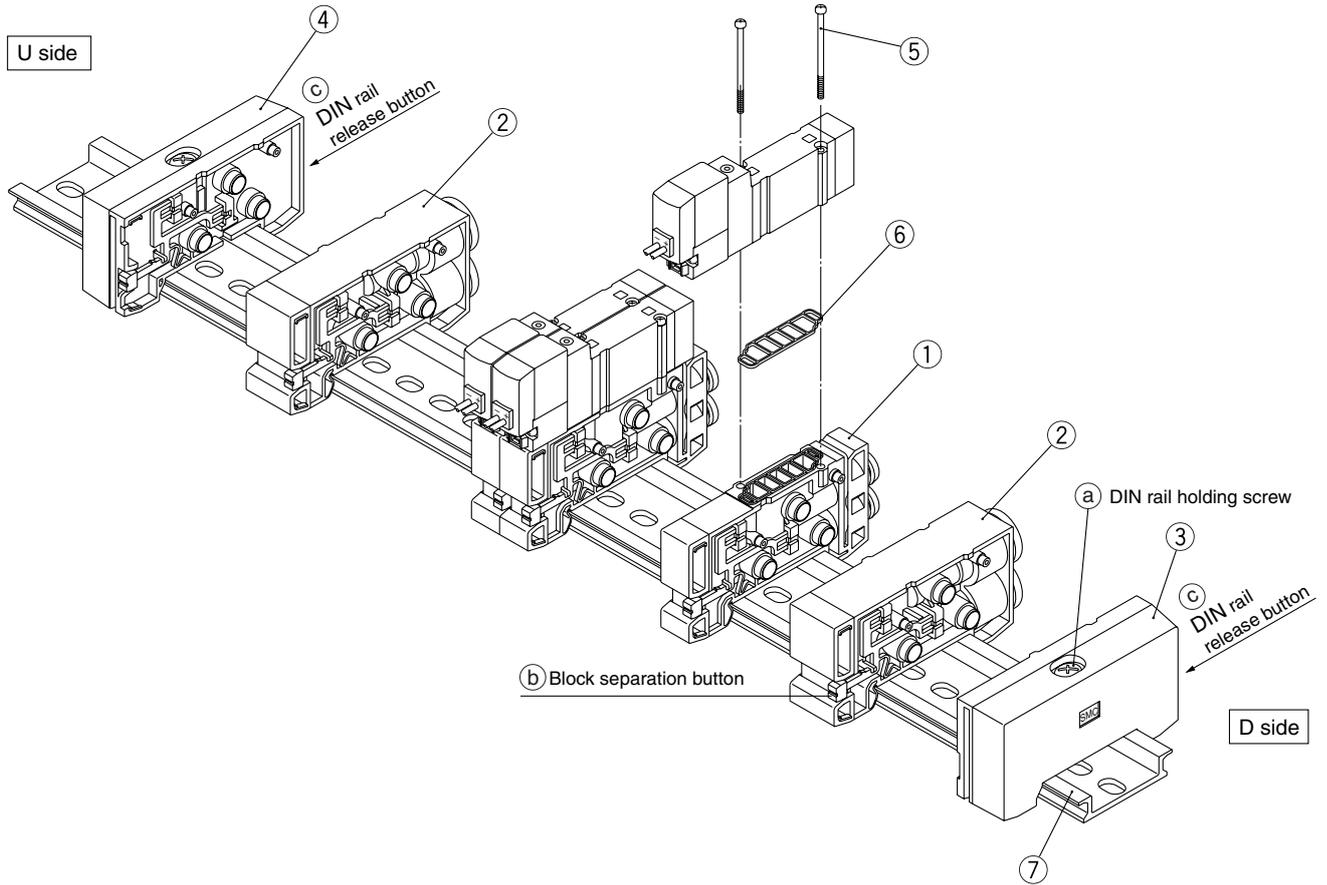
**DIN terminal (D, Y)**



- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

**DIN Rail Manifold Exploded View**

Type 45



**Replacement Parts**

| No. | Description                  | Part no.                                                      |                                                               | Note                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----|------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |                              | SY3000                                                        | SY5000                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1   | Manifold block assembly      | SX3000-50-1A-□□(-Q)                                           | SX5000-50-1A-□□(-Q)                                           | □□: SY3000 (Metric size) C4: With one-touch fitting for ø4 (Inch size) N3: With one-touch fitting for ø5/32"<br>C6: With one-touch fitting for ø6 N7: With one-touch fitting for ø1/4"<br>SY5000 (Metric size) C4: With one-touch fitting for ø4 (Inch size) N3: With one-touch fitting for ø5/32"<br>C6: With one-touch fitting for ø6 N7: With one-touch fitting for ø1/4"<br>C8: With one-touch fitting for ø8 N9: With one-touch fitting for ø5/16"<br>(Gasket 6 is supplied as an accessory.) |
| 2   | SUP/EXH block assembly       | (Metric size)<br>SX3000-51-1A<br>(Inch size)<br>SX3000-51-15A | (Metric size)<br>SX3000-51-1A<br>(Inch size)<br>SX5000-51-15A | P, R port SY3000 (Metric size) With one-touch fitting for ø8<br>(Inch size) With one-touch fitting for ø5/16"<br>P, R port SY5000 (Metric size) With one-touch fitting for ø10<br>(Inch size) With one-touch fitting for ø3/8"                                                                                                                                                                                                                                                                     |
| 3   | End block assembly R         | SX3000-52-1A(-Q)                                              | SX5000-52-1A(-Q)                                              | For D side                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 4   | End block assembly L         | SX3000-53-1A(-Q)                                              | SX5000-53-1A(-Q)                                              | For U side                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 5   | Round head combination screw | SY3000-23-4                                                   | M3 x 26<br>(Matt nickel plated)                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 6   | Gasket                       | SX3000-57-4                                                   | SX5000-57-6                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 7   | DIN rail                     | VZ1000-11-1-□                                                 |                                                               | Refer to page 247.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

## DIN Rail Manifold Exploded View

### How to Increase Manifold Bases Station expansion is possible at any position.

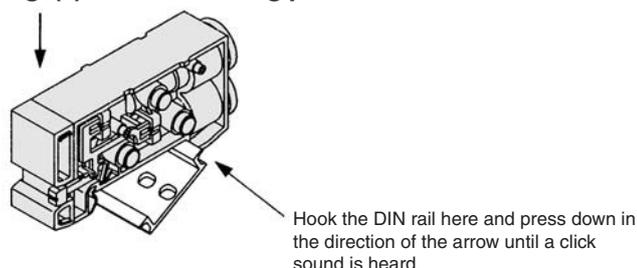
- 1 Loosen DIN rail holding screw (a) fixing the manifold base until it begins to turn idly. (While pressing DIN rail releasing buttons (c), at two locations, separate the manifold base from the DIN rail.)
- 2 Press manifold block assembly dividing button (b), that are at the location where manifold bases are to be added, until button (b) locks, and then separate the block assemblies.
- 3 Mount additional manifold block assembly on the DIN rail as shown in the figure 1.
- 4 Press the block assemblies until a click sound is produced, and tighten the DIN rail holding screw (a) to fix them to the DIN rail.  
**⚠ Caution** (Tightening torque: 1.4 N·m)  
 (While lightly holding the blocks after fixing an end block on one side, tighten the other end block for for better sealing.)

#### ⚠ Caution

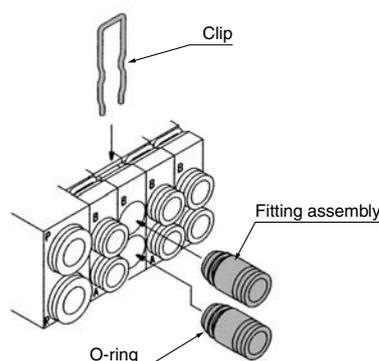
Note 1) When there are 10 or fewer manifold block assemblies, and more are added to make a total of 11 or more, a supply/exhaust block assembly must also be added.

Note 2) When disassembly and assembly are performed, air leakage may result if connections between blocks and tightening of the end block's holding screw, is inadequate. Before supplying air, confirm that there are no gaps, etc. between blocks, and that manifold blocks are securely fastened to the DIN rail. Then supply air and confirm that there is no air leakage before operating.

Fig. (1) Block mounting procedure



### How to Change Fitting Assembly



Type 45 manifold permits change in the A and B port sizes by changing the manifold block fitting assembly.

After removing the valve, remove the clip with a screwdriver, etc. For mounting a new fitting assembly, insert it and then insert a clip until it will not come out of the manifold block.

### Fitting Assembly Part No.

#### Metric size

|        |                                |                |
|--------|--------------------------------|----------------|
| SY3000 | One-touch fitting for $\phi 4$ | VVQ1000-50A-C4 |
|        | One-touch fitting for $\phi 6$ | VVQ1000-50A-C6 |
| SY5000 | One-touch fitting for $\phi 4$ | VVQ1000-51A-C4 |
|        | One-touch fitting for $\phi 6$ | VVQ1000-51A-C6 |
|        | One-touch fitting for $\phi 8$ | VVQ1000-51A-C8 |

#### Inch size

|        |                                     |                |
|--------|-------------------------------------|----------------|
| SY3000 | One-touch fitting for $\phi 5/32''$ | VVQ1000-50A-N3 |
|        | One-touch fitting for $\phi 1/4''$  | VVQ1000-50A-N7 |
| SY5000 | One-touch fitting for $\phi 5/32''$ | VVQ1000-51A-N3 |
|        | One-touch fitting for $\phi 1/4''$  | VVQ1000-51A-N7 |
|        | One-touch fitting for $\phi 5/16''$ | VVQ1000-51A-N9 |

- ⦿ Note 1) P and R ports cannot be changed.  
 ⦿ Note 2) Use caution that O-rings must be free from scratches and dust. Otherwise, air leakage may result.

- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

# 5 Port Solenoid Valve Base Mounted Manifold Stacking Type/DIN Rail Mounted/Connector Box

## Series SY3000/5000

Type **45-A**  
**NA**



### How to Order Manifold

SS5Y **3** -45- **A** **U** -05 **D** -C6- - -

#### Series

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |

#### Specifications

| Symbol    | Specifications                  |
|-----------|---------------------------------|
| <b>A</b>  | With connector box (+COM spec.) |
| <b>NA</b> | With connector box (-COM spec.) |

The style of attached lead wire assembly is different.

#### Connector box mounting position

| Symbol   | Mounting position |
|----------|-------------------|
| <b>U</b> | U side            |
| <b>D</b> | D side            |

#### Valve stations

| Symbol    | Stations    | Note                                 |
|-----------|-------------|--------------------------------------|
| <b>02</b> | 2 stations  | Applicable up to 16 solenoid valves. |
| <b>:</b>  | <b>:</b>    |                                      |
| <b>16</b> | 16 stations |                                      |

#### SUP/EXH block assembly mounting position

| Symbol    | Mounting position      | Applicable stations |
|-----------|------------------------|---------------------|
| <b>U</b>  | U side                 | 2 to 10 stations    |
| <b>D</b>  | D side                 |                     |
| <b>B</b>  | Both sides             | 2 to 16 stations    |
| <b>M*</b> | Special specifications |                     |

\* For special specifications, indicate separately by the manifold specification sheet.

#### Option

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (Max. 20 stations)

#### A/B port size

##### One-touch fitting (Metric size)

| Symbol    | Port size                | Applicable series |
|-----------|--------------------------|-------------------|
| <b>C4</b> | One-touch fitting for ø4 | SY3000            |
| <b>C6</b> | One-touch fitting for ø6 |                   |
| <b>M</b>  | Mixed                    | SY5000            |
| <b>C4</b> | One-touch fitting for ø4 |                   |
| <b>C6</b> | One-touch fitting for ø6 |                   |
| <b>C8</b> | One-touch fitting for ø8 |                   |
| <b>M</b>  | Mixed                    |                   |

##### One-touch fitting (Inch size)

| Symbol    | Port size                                              | Applicable series |
|-----------|--------------------------------------------------------|-------------------|
| <b>N3</b> | One-touch fitting for ø <sup>5</sup> / <sub>32</sub> " | SY3000            |
| <b>N7</b> | One-touch fitting for ø <sup>1</sup> / <sub>4</sub> "  |                   |
| <b>M</b>  | Mixed                                                  | SY5000            |
| <b>N3</b> | One-touch fitting for ø <sup>5</sup> / <sub>32</sub> " |                   |
| <b>N7</b> | One-touch fitting for ø <sup>1</sup> / <sub>4</sub> "  |                   |
| <b>N9</b> | One-touch fitting for ø <sup>9</sup> / <sub>16</sub> " |                   |
| <b>M</b>  | Mixed                                                  |                   |

\* In the case of mixed specifications, indicate separately on the manifold specification sheet.

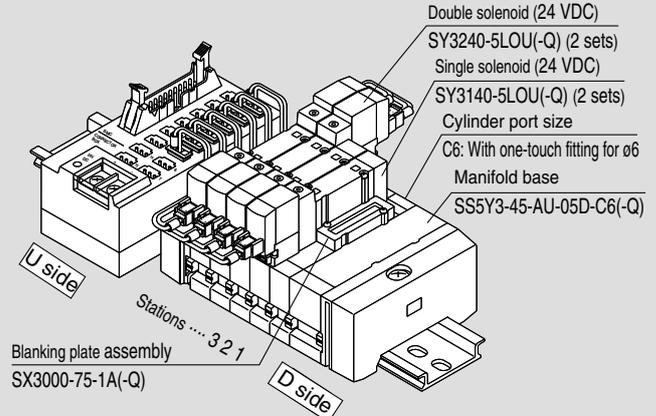
#### CE-compliant

|            |              |
|------------|--------------|
| <b>Nil</b> | —            |
| <b>Q</b>   | CE-compliant |

Refer to pages 324 to 328 for external pilot specifications and built-in silencer.

### How to Order Manifold Assembly (Example)

#### Example (SY3000, +COM, U side)



SS5Y3-45-AU-05D-C6 ..... 1 set (Type 45, 5-station manifold base part no.)  
 \* SX3000-75-1A ..... 1 set (Blanking plate assembly part no.)  
 \* SY3140-5LOU ..... 2 sets (Single solenoid part no.)  
 \* SY3240-5LOU ..... 2 sets (Double solenoid part no.)

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

The valve arrangement is numbered as the 1st. station from D side regardless of the mounting position of connector box. In ordering, specify the part nos. in the order from the 1st. station on D side. Besides, when the arrangement will be complicated, fill out the manifold specification sheet to instruct us.

SS5Y<sub>3</sub>-45-A<sub>U</sub>-□□-□□ is assembled with solenoid valve and lead wire assembly when shipping. When ordering manifold only (without valves/wires/options), refer to how to order on page 244 and list the connector box (VZ3000-106-1A) and the rail stopper (TXE1-SMC) below the manifold to allow for the connector box mounting at U side. (Be sure to order DIN rail 3 station longer than number of the manifold stations.) In this case, please note that dimensions, L1 and L2 on pages 260 and 261 may vary slightly.) For other components, refer to page 262.

### How to Order Valve

SY **5** **2** 40-5 LOU - - -

#### Series

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |

#### Rated voltage

5 24 VDC

#### Type of actuation

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

#### Manual override

|            |                                |
|------------|--------------------------------|
| <b>Nil</b> | Non-locking push type          |
| <b>D</b>   | Push-turn locking slotted type |
| <b>E</b>   | Push-turn locking lever type   |

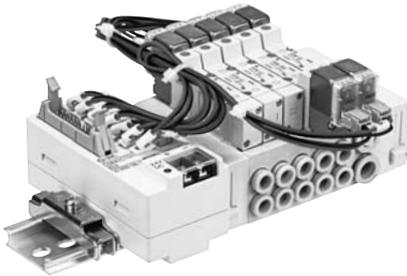
#### Made to Order

|            |                                               |
|------------|-----------------------------------------------|
| <b>Nil</b> | —                                             |
| <b>X90</b> | Main valve fluoro rubber (Refer to page 332.) |

#### CE-compliant

|            |              |
|------------|--------------|
| <b>Nil</b> | —            |
| <b>Q</b>   | CE-compliant |

When ordering valve as a single unit, gaskets for the stacking base type are not included. Order them separately, if necessary. (Refer to page 262 for details.)



### Manifold Specifications

|                                        |                                                                                                   |  |                                                                                                 |  |
|----------------------------------------|---------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------|--|
| Model                                  | <b>SS5Y3-45-A-NA-(Q)</b>                                                                          |  | <b>SS5Y5-45-A-NA-(Q)</b>                                                                        |  |
| Applicable valve                       | <b>SY3□40</b>                                                                                     |  | <b>SY5□40</b>                                                                                   |  |
| Manifold type                          | Stacking type/DIN rail mounted                                                                    |  |                                                                                                 |  |
| P (SUP)/R (EXH)                        | Common SUP, Common EXH                                                                            |  |                                                                                                 |  |
| Valve stations                         | 2 to 16 stations <small>Note 1, 2)</small>                                                        |  |                                                                                                 |  |
| A, B port                              | Base                                                                                              |  |                                                                                                 |  |
| Porting specifications                 | Location                                                                                          |  | Side                                                                                            |  |
|                                        | P, R port                                                                                         |  | C8 (One-touch fitting for ø8)                                                                   |  |
|                                        | A, B port                                                                                         |  | C4 (One-touch fitting for ø4)<br>C6 (One-touch fitting for ø6)<br>C8 (One-touch fitting for ø8) |  |
| Manifold base mass W (g)               | 2 to 10 stations: W = 26n + 207<br>11 to 20 stations: W = 26n + 229                               |  | 2 to 10 stations: W = 52n + 245<br>11 to 16 stations: W = 52n + 279                             |  |
| n: Stations                            |                                                                                                   |  |                                                                                                 |  |
| Applicable flat ribbon cable connector | Flat ribbon cable connector Socket: 20 pins MIL type with strain relief conforming to MIL-C-83503 |  |                                                                                                 |  |
| Wiring specifications                  | +COM specifications (Type 45-A), -COM specifications (Type 45-NA)                                 |  |                                                                                                 |  |

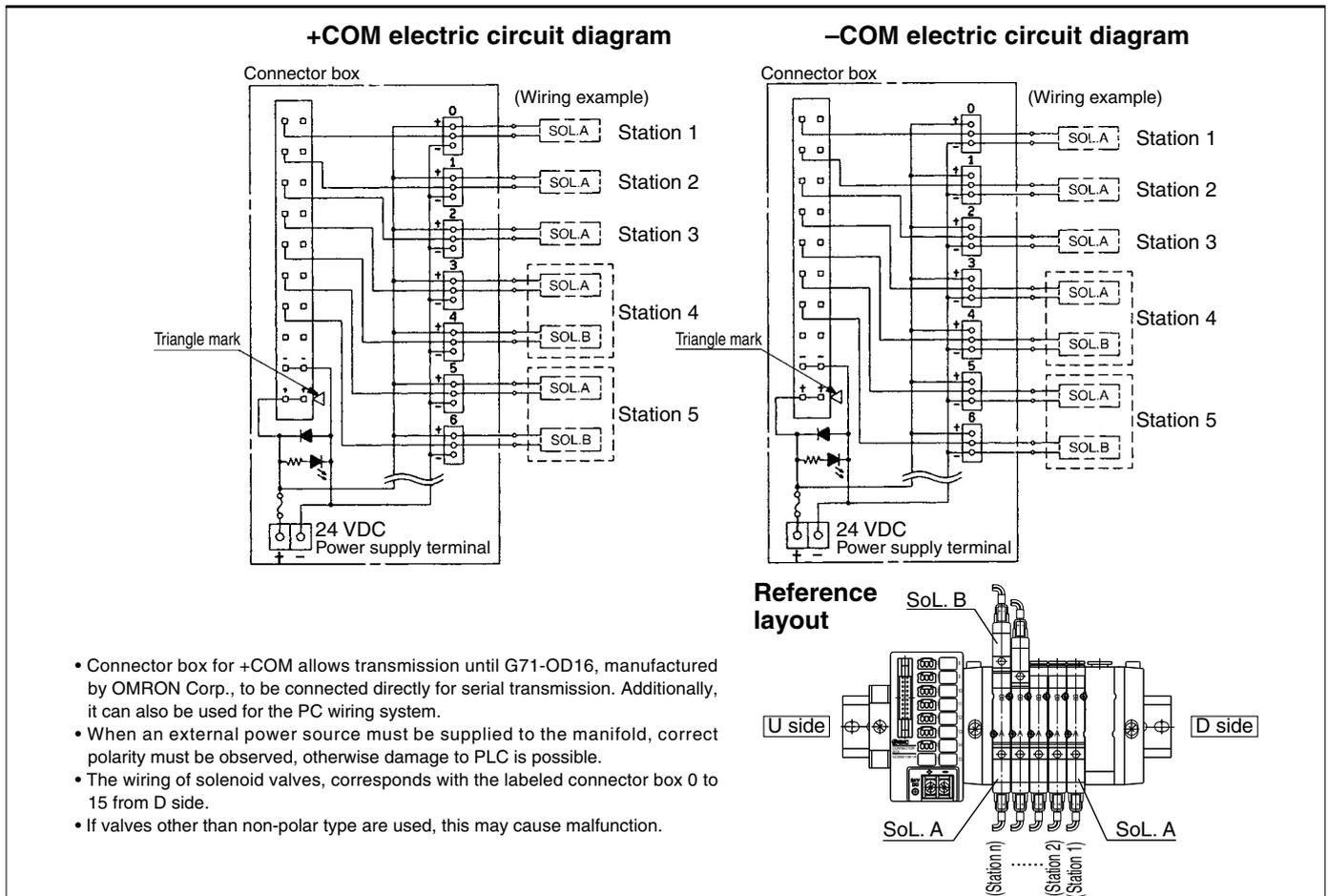
Note 1) For more than 11 stations, supply pressure to P port on both sides and exhaust from R port on both sides.  
Note 2) There is a limit depending on the number of solenoids. Refer to "How to Order".

### Flow Characteristics

| Model      | Port size              |                | Flow characteristics         |      |      |                              |      |      |
|------------|------------------------|----------------|------------------------------|------|------|------------------------------|------|------|
|            | 1, 5, 3<br>(P, EA, EB) | 4, 2<br>(A, B) | 1 → 4/2 (P → A/B)            |      |      | 4/2 → 5/3 (A/B → EA/EB)      |      |      |
|            |                        |                | C (dm <sup>3</sup> /(s·bar)) | b    | Cv   | C (dm <sup>3</sup> /(s·bar)) | b    | Cv   |
| SS5Y3-45-□ | C8                     | C6             | 0.88                         | 0.21 | 0.22 | 0.95                         | 0.18 | 0.22 |
| SS5Y5-45-□ | C10                    | C8             | 2.2                          | 0.24 | 0.53 | 2.5                          | 0.18 | 0.58 |

Note) The value is for manifold base with 5 stations and individually operated 2 position type.

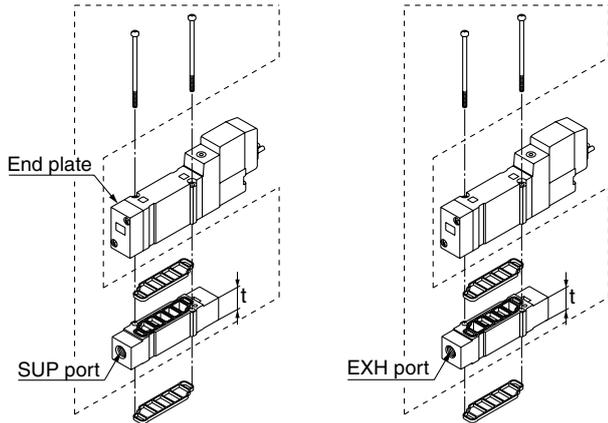
### Manifold Wiring Diagram (Circuit diagram for the reference layout)



SJ  
SY  
SV  
SYJ  
SZ  
VP4  
S0700  
VQ  
VQ4  
VQ5  
VQC  
VQZ  
SQ  
VFS  
VFR  
VQ7

## Manifold Option

### Individual SUP spacer assembly ■ Individual EXH spacer assembly



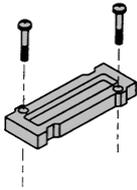
| Series | Assembly part no.  | Port size | t  |
|--------|--------------------|-----------|----|
| SY3000 | SY3000-38-2A(-Q)   | M5 x 0.8  | 11 |
| SY5000 | SY5000-38-16+A(-Q) | 1/8"      | 15 |

Note) The SUP port may be either on the lead wire side or on the end plate side. (An assembly is shipped under the condition shown in the figure.)

| Series | Assembly part no.  | Port size | t  |
|--------|--------------------|-----------|----|
| SY3000 | SY3000-39-2A(-Q)   | M5 x 0.8  | 11 |
| SY5000 | SY5000-39-16+A(-Q) | 1/8"      | 15 |

Note) The EXH port may be either on the lead wire side or on the end plate side. (An assembly is shipped under the condition shown in the figure.)

### Blanking plate assembly



#### \* Thread type

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

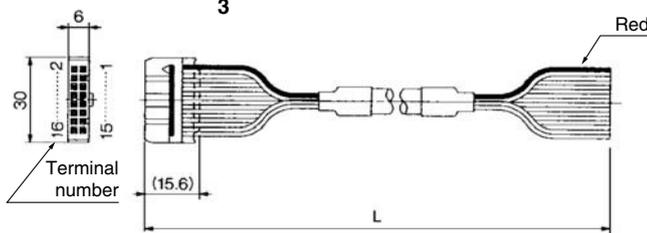
| Series | Assembly part no. |
|--------|-------------------|
| SY3000 | SX3000-75-1A(-Q)  |
| SY5000 | SX5000-76-5A(-Q)  |

### Caution

Mounting screw tightening torques

M2: 0.16 N·m  
M3: 0.8 N·m  
M4: 1.4 N·m

### Cable assembly AXT100-FC20-1



### Connector Assembly for Flat Ribbon Cables

| Cable length (L) | Assembly part no. | Note                   |
|------------------|-------------------|------------------------|
| 1.5 m            | AXT100-FC20-1     | Cable 20 core x 22 AWG |
| 3 m              | AXT100-FC20-2     |                        |
| 5 m              | AXT100-FC20-3     |                        |

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

### Connector manufacturers' example

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

### Warning

When mounting a valve or spacer on the manifold base or sub-plate, etc., those mounting directions are determined. If mounted in the wrong direction, the equipment to be connected may cause malfunction. Refer to external dimensions, and then mount it.

### SUP blocking disk

By installing a SUP blocking disk in the pressure supply passage of a manifold valve, it is possible to supply two or more different high and low pressures to one manifold.



| Series | Part no.     |
|--------|--------------|
| SY3000 | SX3000-77-1A |
| SY5000 | SX5000-77-1A |

### EXH blocking disk

By installing an EXH blocking disk in the exhaust passage of a manifold valve, it is possible to divide the valve's exhaust so that it does not affect another valve. (Two blocking disks are needed to divide both exhausts.)



| Series | Part no.     |
|--------|--------------|
| SY3000 | SX3000-77-1A |
| SY5000 | SX5000-77-1A |

### Label for block disk

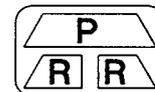
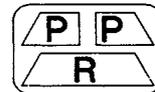
The labels shown below are used on manifold stations containing SUP/EXH blocking disk(s) to show their location. (3 pcs. each)

#### VZ3000-123-1A

Label for SUP block disk

Label for EXH block disk

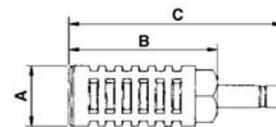
Label for SUP/EXH block disk



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

### Silencer with One-touch fitting

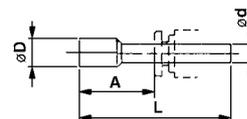
The silencer plugs directly into the One-touch fittings of the manifold.



| Series           | Model      | Effective area     | A   | B    | C    |
|------------------|------------|--------------------|-----|------|------|
| For SY3000 (ø8)  | AN203-KM8  | 14 mm <sup>2</sup> | ø16 | 26   | 51   |
| For SY5000 (ø10) | AN200-KM10 | 26 mm <sup>2</sup> | ø22 | 53.8 | 80.8 |
|                  | AN300-KM10 | 30 mm <sup>2</sup> | ø25 | 70   | 97   |

### Plug (white)

These are inserted in unused cylinder ports and SUP, EXH ports. Purchasing order is available in units of 10 pieces.



### Dimensions

| Applicable fittings size ød | Model   | A    | L    | D   |
|-----------------------------|---------|------|------|-----|
| 4                           | KQ2P-04 | 16   | 32   | 6   |
| 6                           | KQ2P-06 | 18   | 35   | 8   |
| 8                           | KQ2P-08 | 20.5 | 39   | 10  |
| 10                          | KQ2P-10 | 22   | 43   | 12  |
| 1/8"                        | KQ2P-01 | 16   | 31.5 | 5   |
| 5/32"                       | KQ2P-03 | 16   | 32   | 6   |
| 1/4"                        | KQ2P-07 | 18   | 35   | 8.5 |
| 5/16"                       | KQ2P-09 | 20.5 | 39   | 10  |

**Manifold Option**

▪How to Order Interface regulator (SY3000, 5000 only)

**Series SY3000**

**ARBY3000 - 05 - P - 2**

• **Regulating port**

|           |                                               |
|-----------|-----------------------------------------------|
| <b>P</b>  | P port                                        |
| <b>A1</b> | A port (P controlled type, A port regulation) |
| <b>B1</b> | B port (P controlled type, B port regulation) |

• **Pressure gauge connection port**

|           |                                                      |
|-----------|------------------------------------------------------|
| <b>05</b> | Pressure gauge (G15-10-01) [for odd number station]  |
| <b>06</b> | Pressure gauge (G15-10-01) [for even number station] |
| <b>M1</b> | Plug (M-5P)                                          |

\* In the case of Series ARBY3000 with a pressure gauge when mounting on the manifold, use caution that the part numbers are different between the odd no. stations and the even no. stations to avoid gauges from interfering from each others.

**Series SY5000**

**ARBY5000 - 00 - P - 2**

• **Regulating port**

|           |                                               |
|-----------|-----------------------------------------------|
| <b>P</b>  | P port                                        |
| <b>A1</b> | A port (P controlled type, A port regulation) |
| <b>B1</b> | B port (P controlled type, B port regulation) |

• **Pressure gauge connection port**

|           |                            |
|-----------|----------------------------|
| <b>00</b> | Pressure gauge (G15-10-01) |
| <b>M1</b> | Plug (M-5P)                |

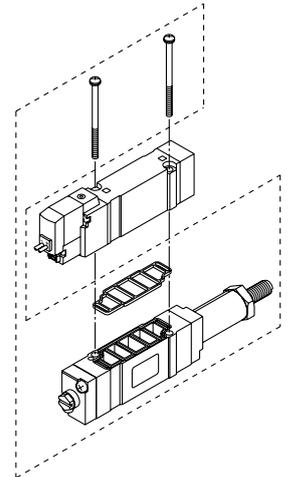
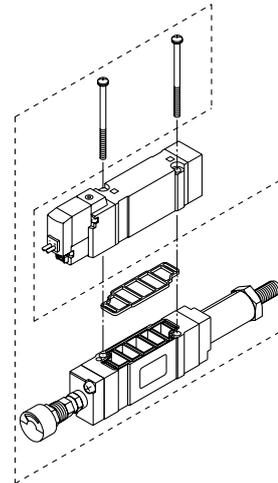
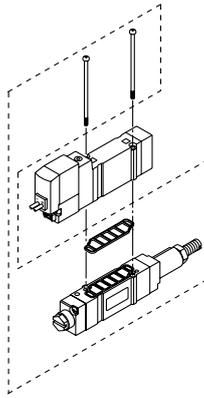
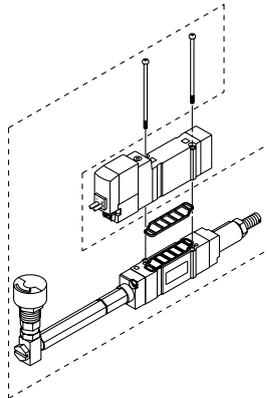
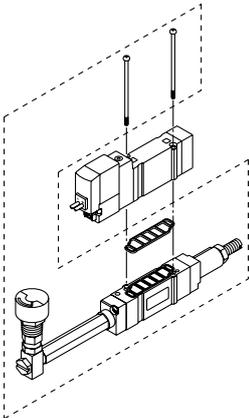
**ARBY3000-05-□-2**  
(For odd number stations)

**ARBY3000-06-□-2**  
(For even number stations)

**ARBY3000-M1-□-2**

**ARBY5000-00-□-2**

**ARBY5000-M1-□-2**



Note) ARBY is not CE-compliant.

**Accessory**

| Series          | Round head combination screw     | Gasket      |
|-----------------|----------------------------------|-------------|
| <b>ARBY3000</b> | SY3000-23-10<br>(M2 x 36)        | SX3000-57-4 |
| <b>ARBY5000</b> | M3 x 48.5,<br>Matt nickel plated | SX5000-57-6 |

**Caution**

Mounting screw tightening torques

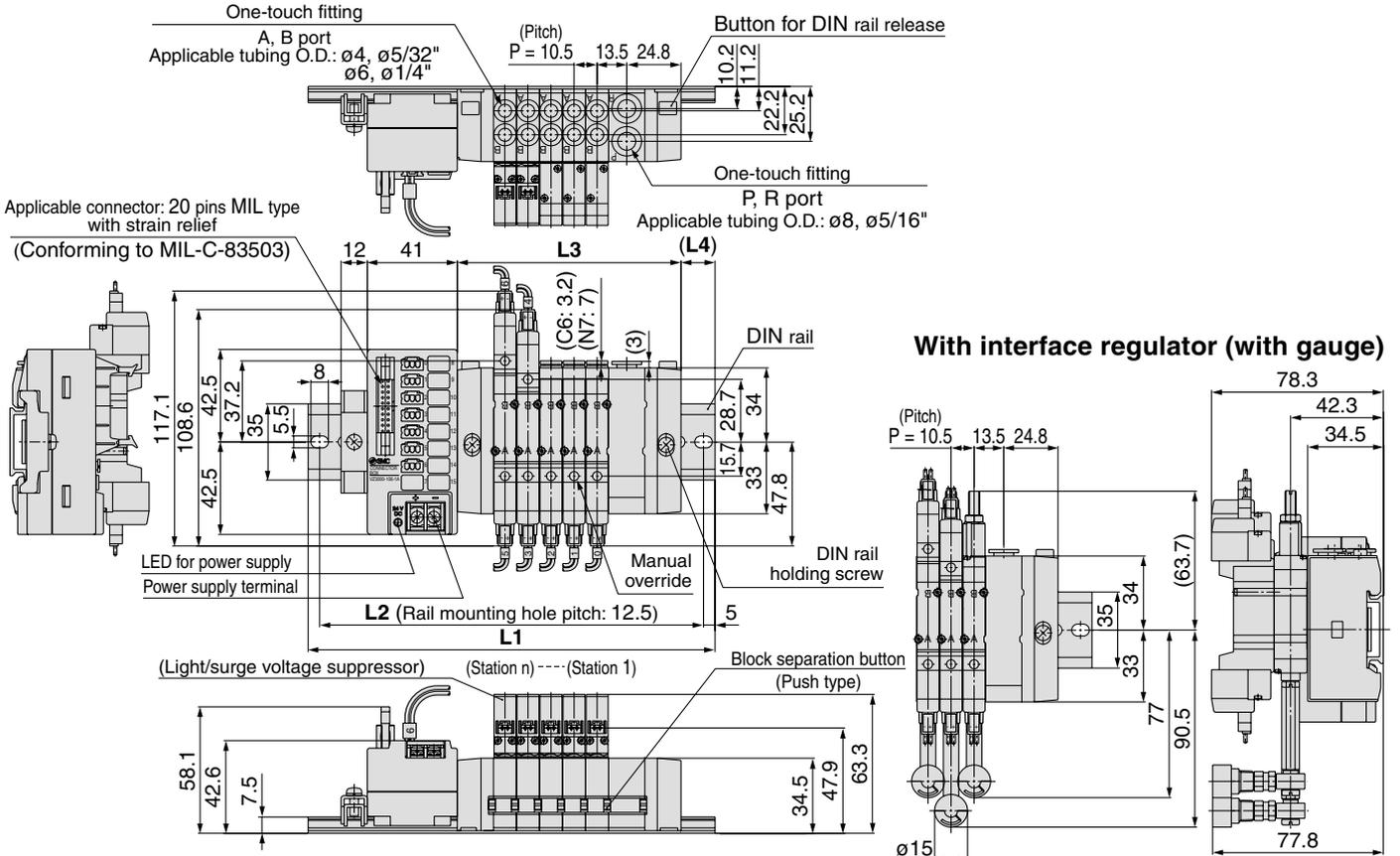
**M2: 0.16 N·m**

**M3: 0.8 N·m**

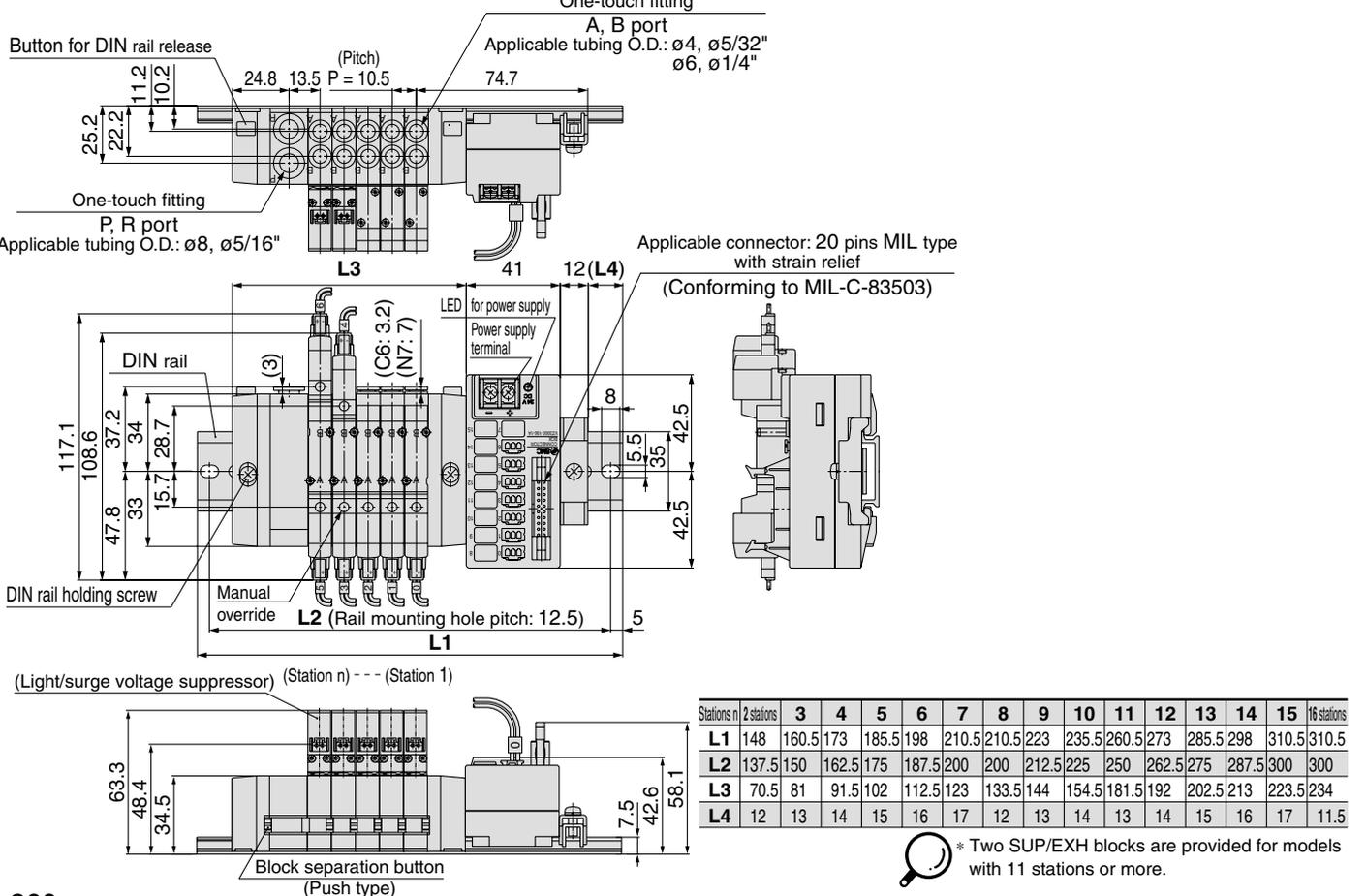
- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

## Dimensions: Series SY3000

### SS5Y3-45-AU- Stations D- C4, N3 C6, N7



### SS5Y3-45-AD- Stations U- C4, N3 C6, N7



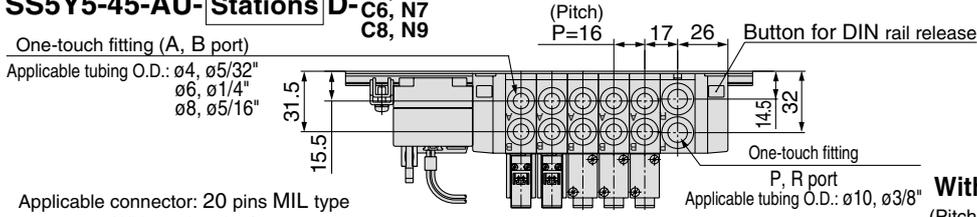
| Stations | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16 stations |
|----------|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1       | 148        | 160.5 | 173   | 185.5 | 198   | 210.5 | 210.5 | 223   | 235.5 | 260.5 | 273   | 285.5 | 298   | 310.5 | 310.5       |
| L2       | 137.5      | 150   | 162.5 | 175   | 187.5 | 200   | 200   | 212.5 | 225   | 250   | 262.5 | 275   | 287.5 | 300   | 300         |
| L3       | 70.5       | 81    | 91.5  | 102   | 112.5 | 123   | 133.5 | 144   | 154.5 | 181.5 | 192   | 202.5 | 213   | 223.5 | 234         |
| L4       | 12         | 13    | 14    | 15    | 16    | 17    | 12    | 13    | 14    | 13    | 14    | 15    | 16    | 17    | 11.5        |

\* Two SUP/EXH blocks are provided for models with 11 stations or more.

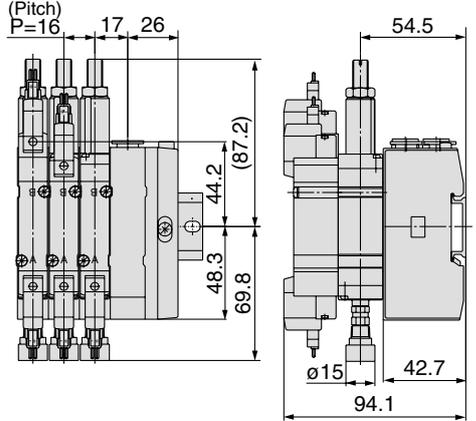
**Dimensions: Series SY5000**

**SS5Y5-45-AU- Stations D-** C4, N3  
C6, N7  
C8, N9

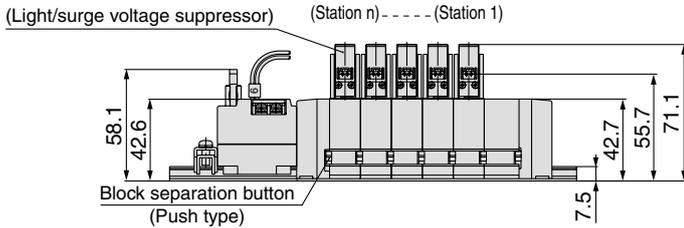
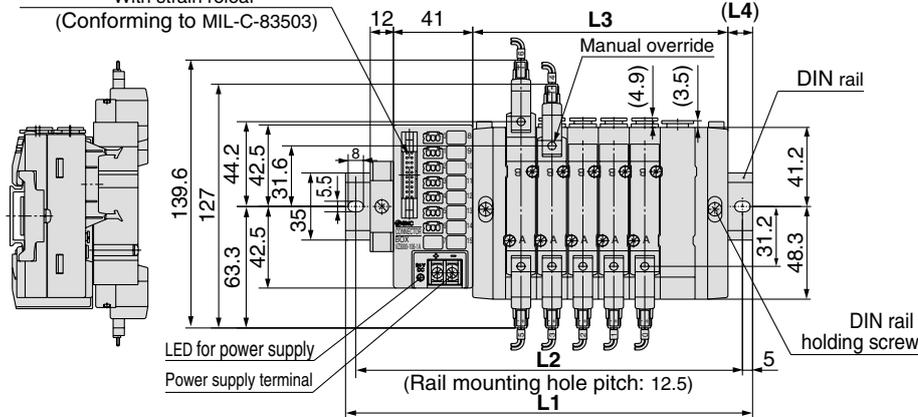
One-touch fitting (A, B port)  
Applicable tubing O.D.:  $\phi 4, \phi 5/32''$   
 $\phi 6, \phi 1/4''$   
 $\phi 8, \phi 5/16''$



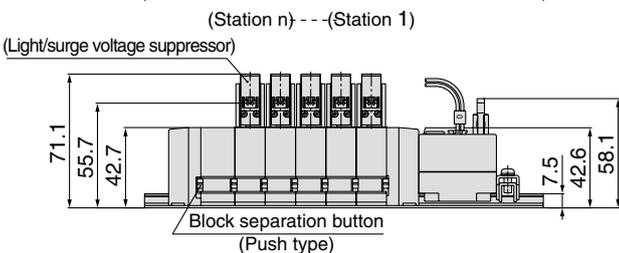
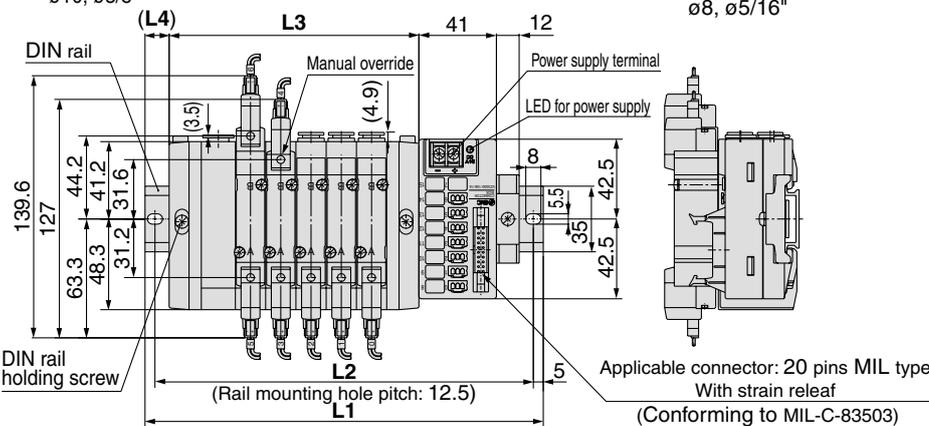
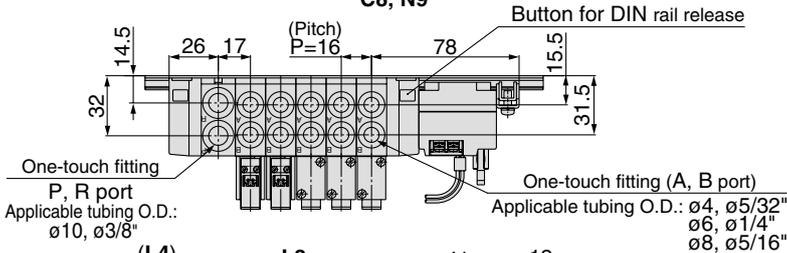
**With interface regulator (with gauge)**



Applicable connector: 20 pins MIL type  
With strain relief  
(Conforming to MIL-C-83503)



**SS5Y5-45-AD- Stations U-** C4, N3  
C6, N7  
C8, N9



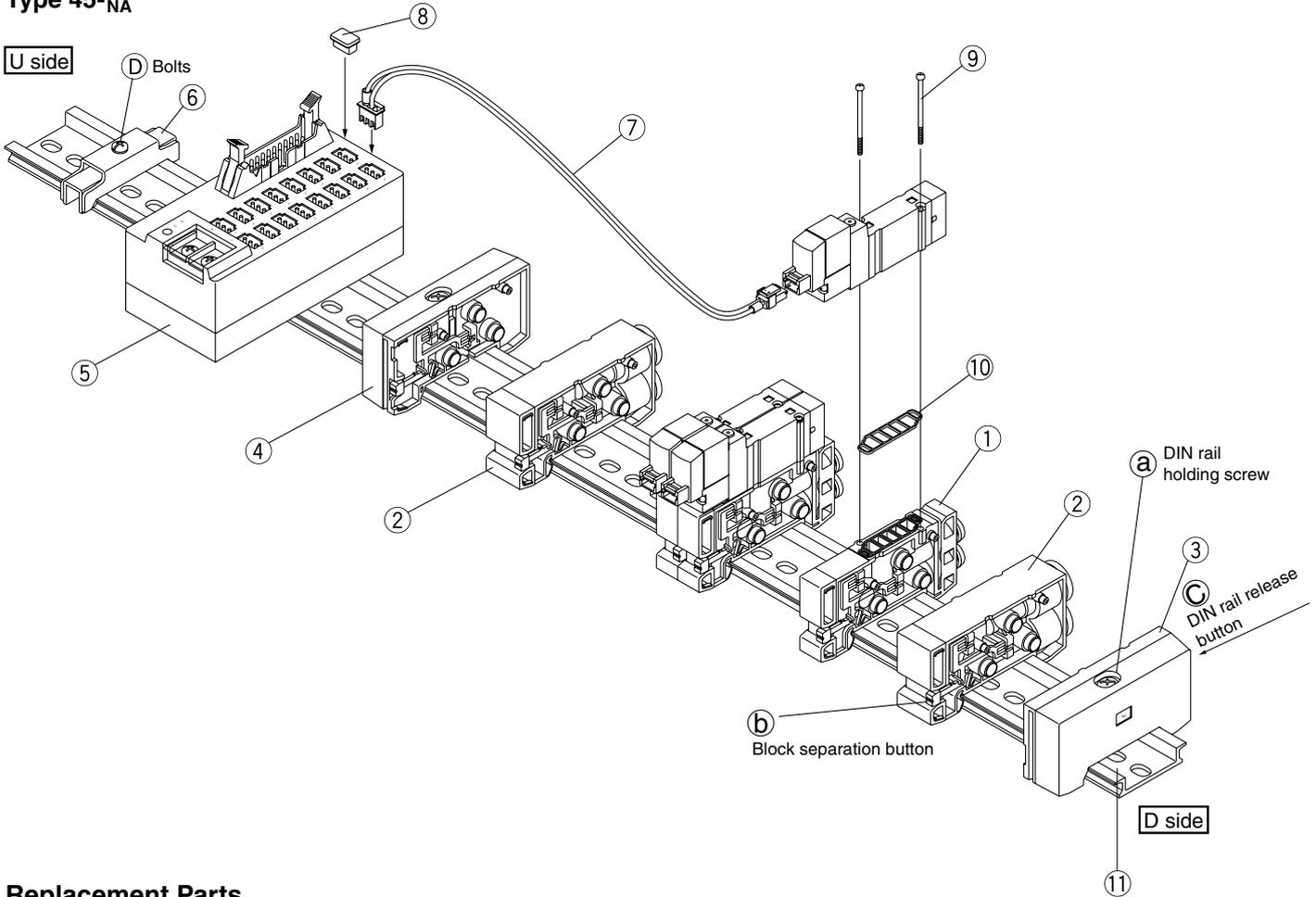
| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 160.5      | 185.5 | 198   | 210.5 | 235.5 | 248   | 260.5 | 273   | 298   | 323   | 348   | 360.5 | 373   | 398   | 410.5       |
| L2         | 150        | 175   | 187.5 | 200   | 225   | 237.5 | 250   | 262.5 | 287.5 | 312.5 | 337.5 | 350   | 362.5 | 387.5 | 400         |
| L3         | 84         | 100   | 116   | 132   | 148   | 164   | 180   | 196   | 212   | 246   | 262   | 278   | 294   | 310   | 326         |
| L4         | 11.5       | 16    | 14.5  | 12.5  | 17    | 15.5  | 13.5  | 12    | 16.5  | 12    | 16.5  | 14.5  | 13    | 17.5  | 15.5        |

\* Two SUP/EXH blocks are provided for models with 11 stations or more.

- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

**DIN Rail Manifold Exploded View**

Type 45-<sup>A</sup>NA



**Replacement Parts**

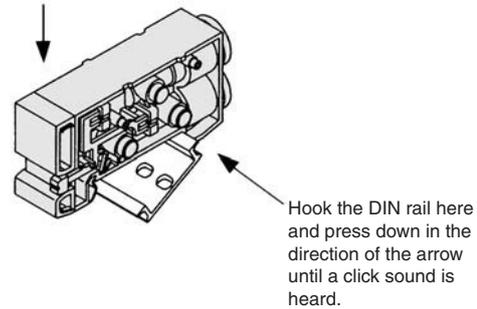
| No. | Description                  | Part no.                                                |                                                         | Note                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----|------------------------------|---------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |                              | SY3000                                                  | SY5000                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 1   | Manifold block assembly      | SX3000-50-1A-□□(-Q)                                     | SX5000-50-1A-□□(-Q)                                     | •SY3000 (Metric size) (Inch size)<br>C4: With one-touch fitting for ø4 N3: With one-touch fitting for ø5/32"<br>C6: With one-touch fitting for ø6 N7: With one-touch fitting for ø1/4"<br>•SY5000 (Metric size) (Inch size)<br>C4: With one-touch fitting for ø4 N3: With one-touch fitting for ø5/32"<br>C6: With one-touch fitting for ø6 N7: With one-touch fitting for ø1/4"<br>C8: With one-touch fitting for ø8 N9: With one-touch fitting for ø5/16"<br>(Gasket 10 is supplied as an accessory.) |
| 2   | SUP/EXH block assembly       | (Metric size) SX3000-51-1A<br>(Inch size) SX3000-51-15A | (Metric size) SX3000-51-1A<br>(Inch size) SX5000-51-15A | P, R port SY3000 (Metric size) With one-touch fitting for ø8<br>(Inch size) With one-touch fitting for ø5/16"<br>P, R port SY5000 (Metric size) With one-touch fitting for ø10<br>(Inch size) With one-touch fitting for ø3/8"                                                                                                                                                                                                                                                                          |
| 3   | End block assembly R         | SX3000-52-1A(-Q)                                        | SX5000-52-1A(-Q)                                        | For D side                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 4   | End block assembly L         | SX3000-53-1A(-Q)                                        | SX5000-53-1A(-Q)                                        | For U side                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 5   | Connector box                | VZ3000-106-1A                                           |                                                         | For 24 VDC only                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 6   | Rail stopper                 | TXE1-SMC                                                |                                                         | Made by Kasuga Electric Works                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 7   | Connecter assembly           | SY3000-43-1A-□                                          | SY3000-43-2A-□                                          | +COM Type D, 2 to 8 stations<br>Type U, 9 to 16 stations                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|     |                              | SY3000-43-2A-□                                          | SY3000-43-3A-□                                          | +COM Type D, 9 to 16 stations<br>Type U, 2 to 8 stations                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|     |                              | SY3000-43-1NA-□                                         | SY3000-43-2NA-□                                         | -COM Type D, 2 to 8 stations<br>Type U, 9 to 16 stations                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|     |                              | SY3000-43-2NA-□                                         | SY3000-43-3NA-□                                         | -COM Type D, 9 to 16 stations<br>Type U, 2 to 8 stations                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 8   | Dust cap                     | VZ3000-63-2                                             |                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 9   | Round head combination screw | SY3000-23-4                                             | M3 x 26,<br>Matt nickel plated                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 10  | Gasket                       | SX3000-57-4                                             | SX5000-57-6                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 11  | DIN rail                     | VZ1000-11-1-□                                           |                                                         | Refer to page 247.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

**How to Increase Manifold Bases**

Station expansion is possible at any position.

- 1 Loosen DIN rail holding screw (a) fixing the manifold base until it begins to turn idly. (While pressing DIN rail releasing buttons (c), at two locations, separate the manifold base from the DIN rail.)
- 2 Press manifold block assembly dividing button (b), that are at the location where manifold bases are to be added, until button (b) locks, and then separate the block assemblies.
- 3 Mount additional manifold block assembly on the DIN rail as shown in the figure 1.
- 4 Press the block assemblies until a click sound is produced, and tighten the DIN rail holding screw (a) to fix them to the DIN rail.  
**⚠Caution** (Tightening torque: 1.4 N·m)  
 (While lightly holding the blocks after fixing an end block on one side, tighten the other end block for for better sealing.)
- 5 Untighten the rail stopper bolt (d) to demount the connector box from the DIN rail, and when remounting it, tighten the bolt while pressing it against the rail.

**Fig. (1) Block mounting procedure**



**⚠Caution**

- Note 1) When there are 10 or fewer manifold block assemblies, and more are added to make a total of 11 or more, a supply/exhaust block assembly must also be added.
- Note 2) When disassembly and assembly are performed, air leakage may result if connections between blocks and tightening of the end block's holding screw, is inadequate. Before supplying air, confirm that there are no gaps, etc. between blocks, and that manifold blocks are securely fastened to the DIN rail. Then supply air and confirm that there is no air leakage before operating.
- Note 3) One connector assembly is necessary for one solenoid.  
 When a number is necessary for the connector assembly mark tube, suffix the number to the part no. (0 to 15 are provided as mark tube numbers.)  
 Ex) +COM spec.: D type for 2 to 8 stations: No. 10  
**SY3000-43-1A-10**

**How to Change Fitting Assembly**

Type 45 manifold permits change in the A and B port sizes by changing the manifold block fitting assembly.  
 After removing the valve, remove the clip with a screwdriver, etc. For mounting a new fitting assembly, insert it and then insert a clip until it will not come out of the manifold block.

**Fitting Assembly Part No.**

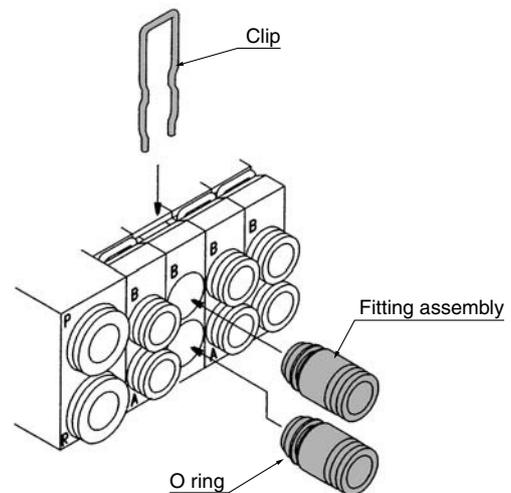
**Metric size**

|               |                          |                |
|---------------|--------------------------|----------------|
| <b>SY3000</b> | One-touch fitting for ø4 | VVQ1000-50A-C4 |
|               | One-touch fitting for ø6 | VVQ1000-50A-C6 |
| <b>SY5000</b> | One-touch fitting for ø4 | VVQ1000-51A-C4 |
|               | One-touch fitting for ø6 | VVQ1000-51A-C6 |
|               | One-touch fitting for ø8 | VVQ1000-51A-C8 |

**Inch size**

|               |                                                        |                |
|---------------|--------------------------------------------------------|----------------|
| <b>SY3000</b> | One-touch fitting for ø <sup>5</sup> / <sub>32</sub> " | VVQ1000-50A-N3 |
|               | One-touch fitting for ø <sup>1</sup> / <sub>4</sub> "  | VVQ1000-50A-N7 |
| <b>SY5000</b> | One-touch fitting for ø <sup>5</sup> / <sub>32</sub> " | VVQ1000-51A-N3 |
|               | One-touch fitting for ø <sup>1</sup> / <sub>4</sub> "  | VVQ1000-51A-N7 |
|               | One-touch fitting for ø <sup>5</sup> / <sub>16</sub> " | VVQ1000-51A-N9 |

- Note 1) P and R ports cannot be changed.  
 Note 2) Use caution that O-rings must be free from scratches and dust. Otherwise, air leakage may result.



- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

# EX510 Gateway System Serial Transmission System Base Mounted Manifold/Stacking Type $\text{C}$ $\text{E}$

## Series SY3000/5000

Type **45S6A**

### How to Order Manifold

**SS5Y 3 - 45S6A [ ] U - 02 U [ ] - C4 - [ ] - [ ]**

#### Manifold series

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |

#### SI unit

|     |                    |
|-----|--------------------|
| Nil | NPN output (+COM.) |
| N   | PNP output (-COM.) |

#### CE-compliant

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

#### SI unit mounting position

|   |        |
|---|--------|
| U | U side |
| D | D side |

#### Valve stations

| Symbol | Stations    | Note                                                                        |
|--------|-------------|-----------------------------------------------------------------------------|
| 02     | 2 stations  | Double wiring <sup>Note 1)</sup>                                            |
| :      | :           |                                                                             |
| 08     | 8 stations  | Specified layout <sup>Note 2)</sup><br>(Compatible with 16 solenoid valves) |
| 02     | 2 stations  |                                                                             |
| :      | :           |                                                                             |
| 16     | 16 stations |                                                                             |

- The number of the blanking plate assembly is also included.
- Note 1) Double wiring: Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
- Note 2) Specified layout: Indicate wiring specifications on the manifold specification sheet. (Note that double and 3 position valves cannot be used where single solenoid wiring has been specified.)

#### Option

When a DIN rail that is longer than the specified stations is desired, specify the required station number. (Max. 20 stations)

#### A, B port size

##### One-touch fitting (Metric size)

| Symbol | One-touch fitting              | Series |
|--------|--------------------------------|--------|
| C4     | One-touch fitting for $\phi 4$ | SY3000 |
| C6     | One-touch fitting for $\phi 6$ |        |
| M      | Mixed                          | SY5000 |
| C4     | One-touch fitting for $\phi 4$ |        |
| C6     | One-touch fitting for $\phi 6$ |        |
| C8     | One-touch fitting for $\phi 8$ |        |
| M      | Mixed                          |        |

##### One-touch fitting (Inch size)

| Symbol | One-touch fitting                  | Series |
|--------|------------------------------------|--------|
| N3     | One-touch fitting for $\phi 5/32"$ | SY3000 |
| N7     | One-touch fitting for $\phi 1/4"$  |        |
| M      | Mixed                              | SY5000 |
| N3     | One-touch fitting for $\phi 5/32"$ |        |
| N7     | One-touch fitting for $\phi 1/4"$  |        |
| N9     | One-touch fitting for $\phi 5/16"$ |        |
| M      | Mixed                              |        |

- For the mixed specification, indicate separately on a manifold specification sheet.

#### Pilot specifications

|     |                                  |
|-----|----------------------------------|
| Nil | Internal pilot                   |
| S   | Internal pilot/built-in silencer |
| R   | External pilot                   |
| RS  | External pilot/built-in silencer |

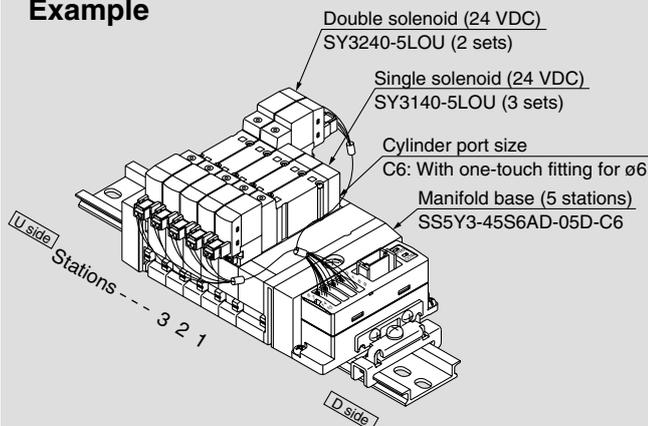
#### SUP/EXH block assembly mounting position

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

\*For the special specifications, indicate separately on a manifold specification sheet.

### How to Order Manifold Assembly (Order Example)

#### Example



**SS5Y3-45S6AD-05D-C6** · 1 set (45S6A type 5-station manifold part no.)  
 \* **SY3140-5LOU** ..... 3 sets (Single solenoid part no.)  
 \* **SY3240-5LOU** ..... 2 sets (Double solenoid part no.)

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

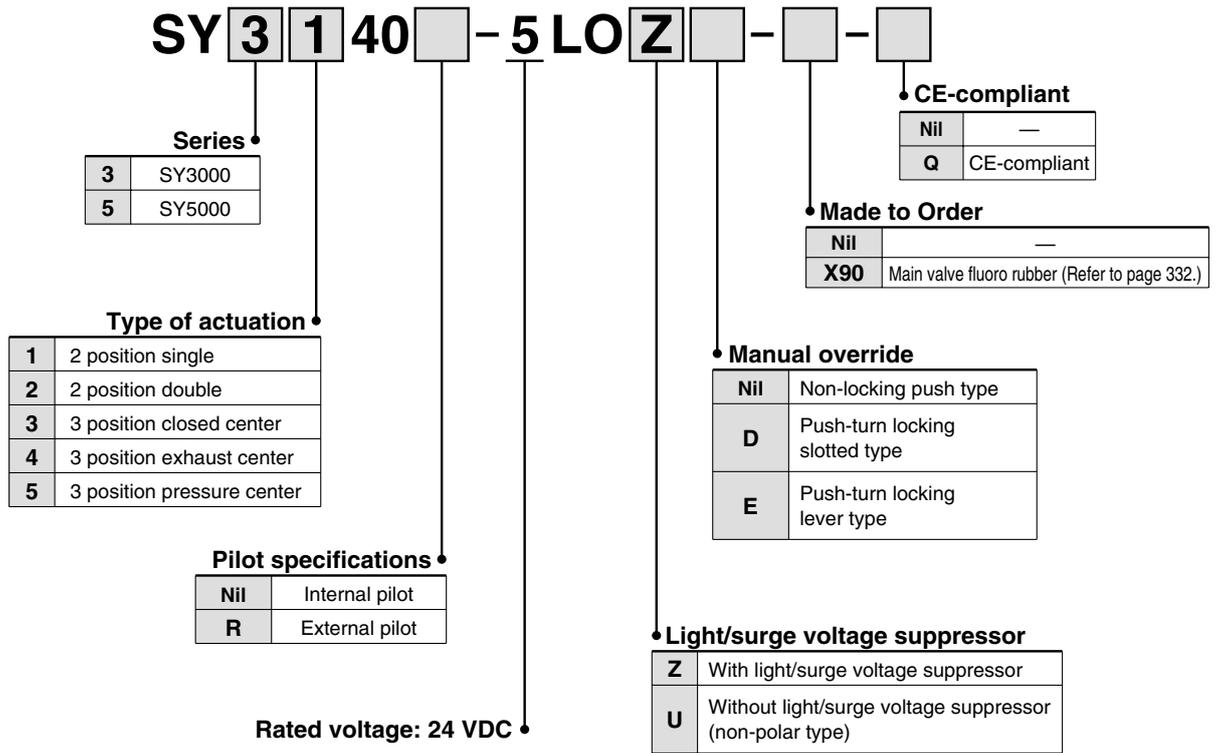
Add the valve and option part number under the manifold base part number. When entry of part numbers becomes complicated, indicate by the manifold specification sheet. For a manifold for an EX510, the length of the lead wire for a connector assembly depends on the number of stations. Therefore, the manifold assembly is shipped with the valves (including blanking plates) and connector assembly mounted on it, as the standard specification. Be sure to specify the part nos. of the solenoid valves to be mounted.

#### SI unit part no.

| Symbol | SI unit specifications | SI unit part no. | Page           |
|--------|------------------------|------------------|----------------|
| Nil    | NPN output (+COM.)     | EX510-S001       | P.1715 to 1717 |
| N      | PNP output (-COM.)     | EX510-S101       |                |

For details of "Gateway System Serial Transmission System, Series EX510", refer to pages 1696 through to 1724.

**How to Order Valves**

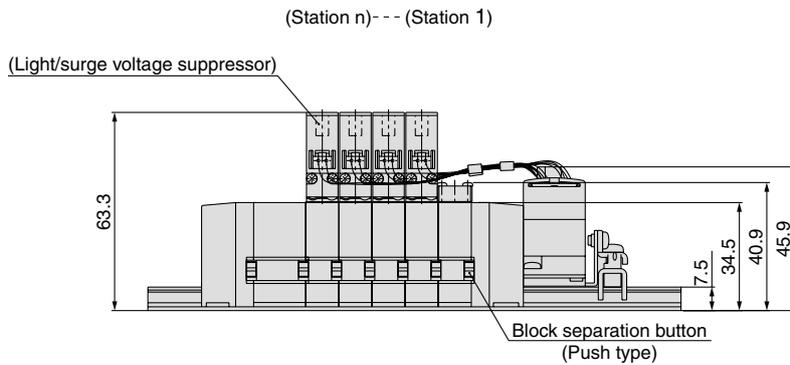
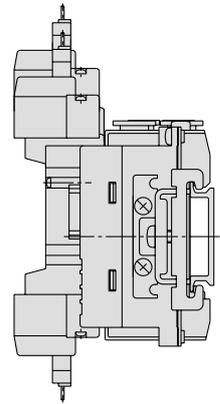
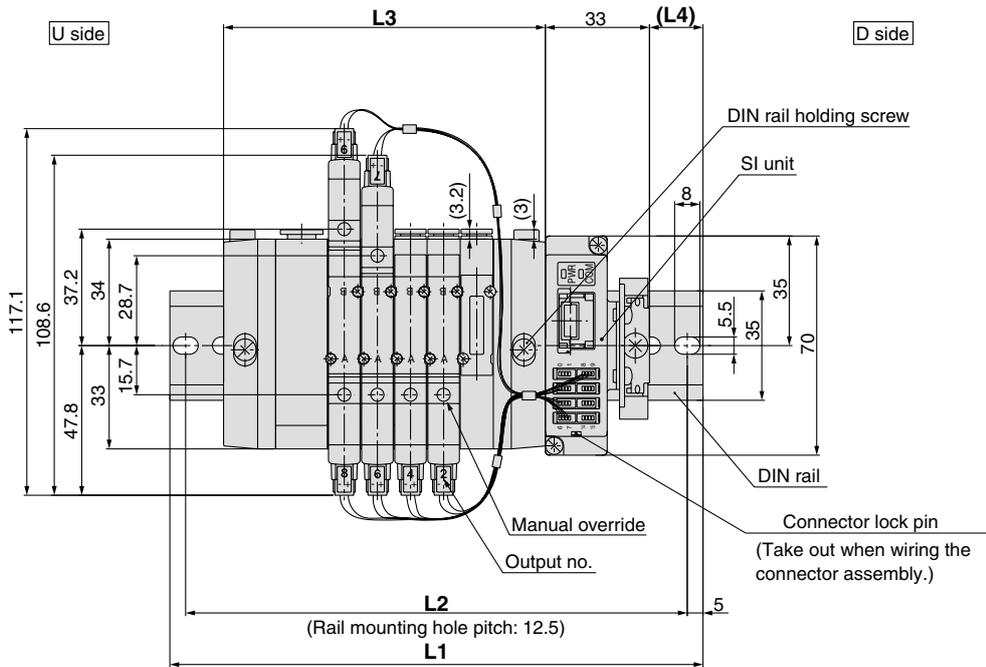
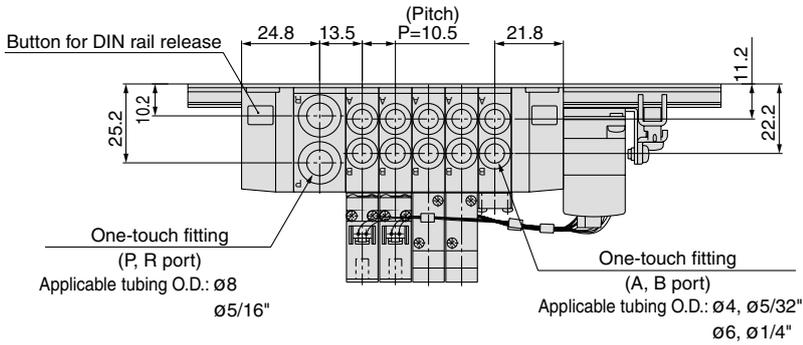


When ordering valve as a single unit, gaskets for the stacking base type are not included. Order them separately, if necessary. (Refer to page 262 for details.)

- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

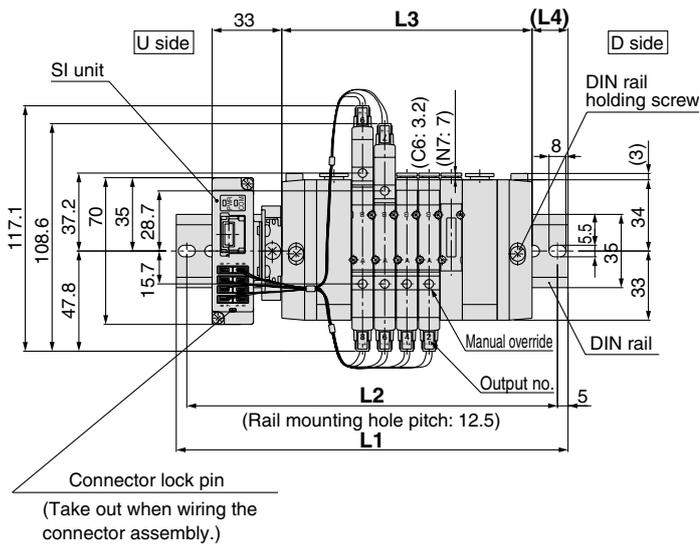
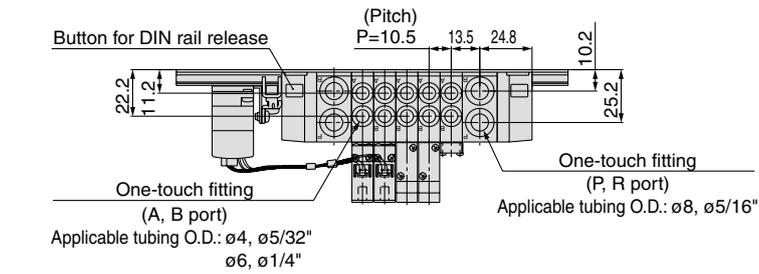
# Type **45S6A** Series **SY3000/5000**

**SY3000: SS5Y3-45S6A**  **D- Stations**  **U-** C4, N3  
C6, N7

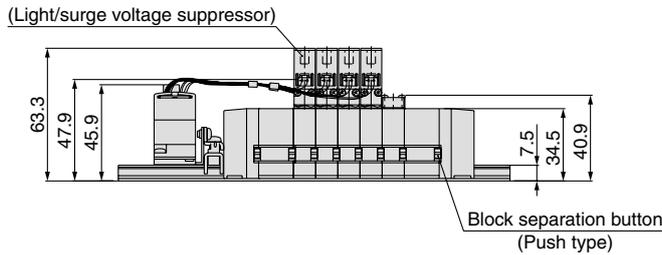


| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 135.5      | 148   | 148   | 160.5 | 173   | 185.5 | 198   | 210.5 | 223         |
| <b>L2</b>  | 125        | 137.5 | 137.5 | 150   | 162.5 | 175   | 187.5 | 200   | 212.5       |
| <b>L3</b>  | 70.5       | 81    | 91.5  | 102   | 112.5 | 123   | 133.5 | 144   | 154.5       |
| <b>L4</b>  | 16         | 17    | 12    | 13    | 14    | 15    | 16    | 17    | 18          |

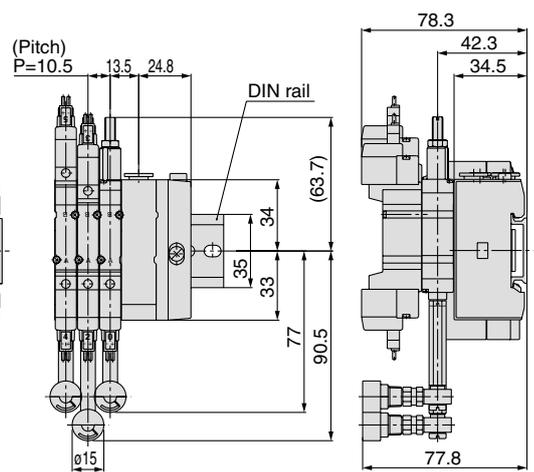
**SY3000: SS5Y3-45S6A**  **U-** Stations **B-** <sup>C4, N3</sup> <sub>C6, N7</sub>



(Station n) --- (Station 1)



**With interface regulator (with gauge)**

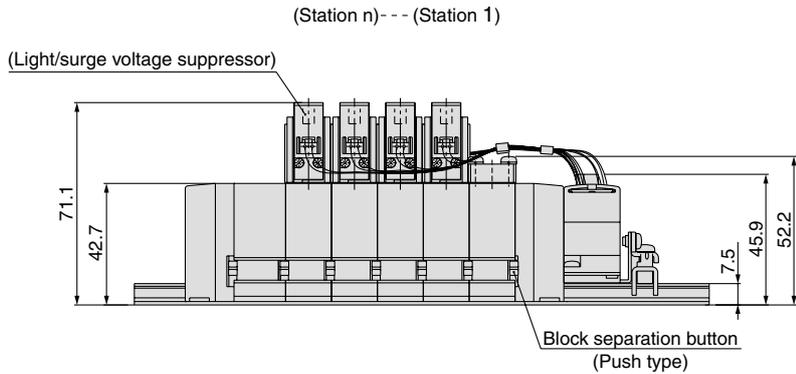
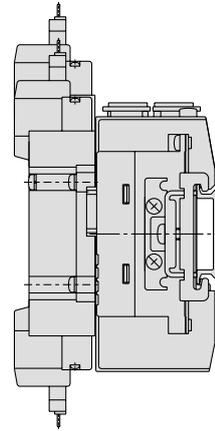
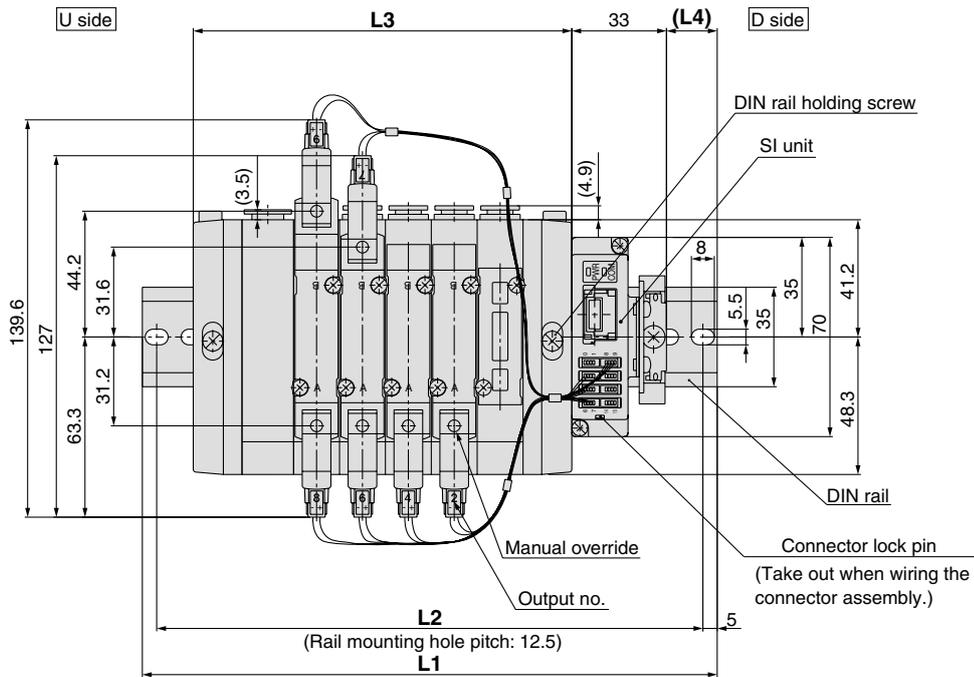
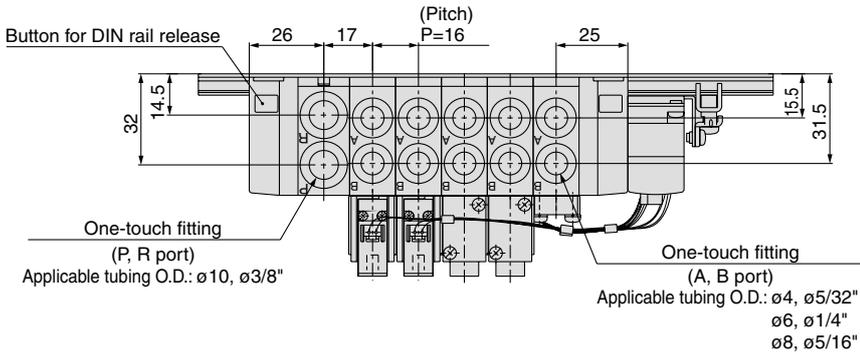


- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 148        | 160.5 | 173   | 185.5 | 185.5 | 198   | 210.5 | 223   | 235.5 | 248   | 260.5 | 260.5 | 273   | 285.5 | 298         |
| L2         | 137.5      | 150   | 162.5 | 175   | 175   | 187.5 | 200   | 212.5 | 225   | 237.5 | 250   | 250   | 262.5 | 275   | 287.5       |
| L3         | 87         | 97.5  | 108   | 118.5 | 129   | 139.5 | 150   | 160.5 | 171   | 181.5 | 192   | 202.5 | 213   | 223.5 | 234         |
| L4         | 14         | 15    | 16    | 17    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 12.5  | 13.5  | 14.5  | 15.5        |

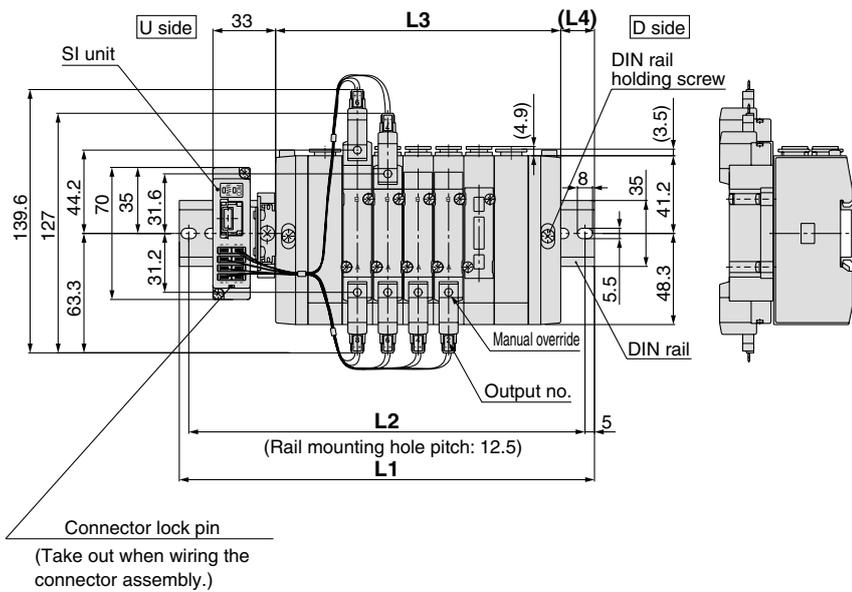
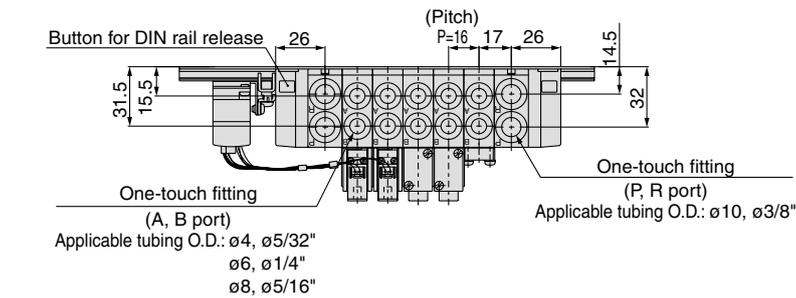
# Type **45S6A** Series **SY3000/5000**

**SY5000: SS5Y5-45S6A**  **D- Stations**  **U-** C4, N3  
C6, N7  
C8, N9

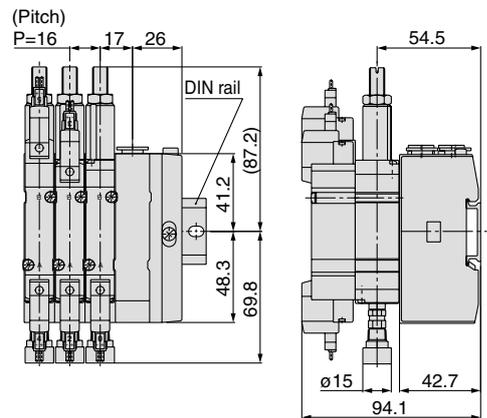


| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 148        | 160.5 | 173   | 198   | 210.5 | 223   | 248   | 260.5 | 273         |
| <b>L2</b>  | 137.5      | 150   | 162.5 | 187.5 | 200   | 212.5 | 237.5 | 250   | 262.5       |
| <b>L3</b>  | 84         | 100   | 116   | 132   | 148   | 164   | 180   | 196   | 212         |
| <b>L4</b>  | 15.5       | 14    | 12    | 16.5  | 15    | 13    | 17.5  | 16    | 14          |

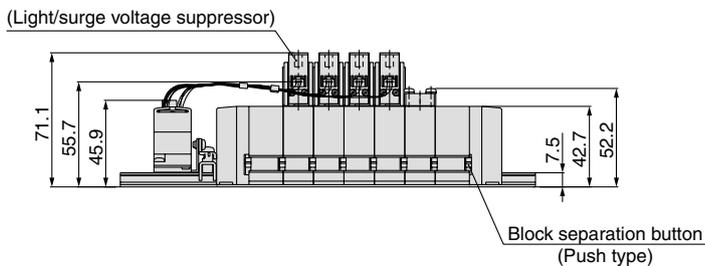
**SY5000: SS5Y5-45S6A**  **U- Stations**  **B-** C4, N3  
C6, N7  
C8, N9



**With interface regulator (with gauge)**



(Station n) --- (Station 1)

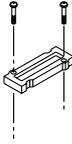


| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 160.5      | 185.5 | 198   | 210.5 | 223   | 248   | 260.5 | 273   | 298   | 310.5 | 323   | 335.5 | 360.5 | 373   | 385.5       |
| <b>L2</b>  | 150        | 175   | 187.5 | 200   | 212.5 | 237.5 | 250   | 262.5 | 287.5 | 300   | 312.5 | 325   | 350   | 362.5 | 375         |
| <b>L3</b>  | 102        | 118   | 134   | 150   | 166   | 182   | 198   | 214   | 230   | 246   | 262   | 278   | 294   | 310   | 326         |
| <b>L4</b>  | 13         | 17.5  | 15.5  | 14    | 12    | 16.5  | 15    | 13    | 17.5  | 16    | 14    | 12.5  | 17    | 15    | 13.5        |

- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

## Manifold Option

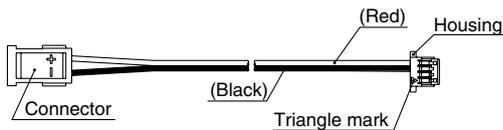
### ■ For type SS5Y<sup>3</sup>-45S6A Blanking plate assembly



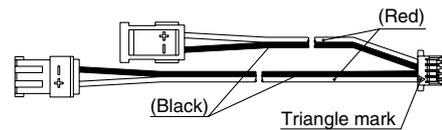
(The shape varies depending on the series.)

| Model              | Blanking plate assembly part no. |
|--------------------|----------------------------------|
| <b>SS5Y3-45S6A</b> | SX3000-75-1A(-Q)                 |
| <b>SS5Y5-45S6A</b> | SX5000-76-5A(-Q)                 |

### ■ Connector assembly For single solenoid (SY3000-37-81A-□-N)



### For double solenoid (SY3000-37-81A-□-□)

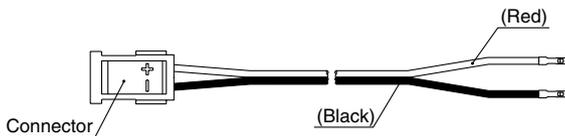


### Connector assembly order no. (Can be used for the manifold without a specified layout (8 stations or less)) Integrated type

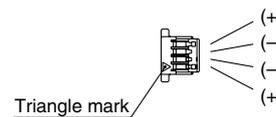
| Model                                       | Part no.           | Connector mounting position                             |
|---------------------------------------------|--------------------|---------------------------------------------------------|
| <b>SS5Y3-45S6A</b>                          | SY3000-37-81A-3-N  | Starting from the SI unit side: From unit 1 to unit 4   |
|                                             | SY3000-37-81A-3-3  | Starting from the SI unit side: From unit 5 to unit 8   |
|                                             | SY3000-37-81A-4-N  | Starting from the SI unit side: From unit 9 to unit 12  |
|                                             | SY3000-37-81A-4-4  | Starting from the SI unit side: From unit 13 to unit 16 |
| <b>SS5Y5-45S6A</b>                          | SY3000-37-81A-4-N  | Starting from the SI unit side: From unit 1 to unit 4   |
|                                             | SY3000-37-81A-4-4  | Starting from the SI unit side: From unit 5 to unit 8   |
|                                             | SY3000-37-81A-6-N  | Starting from the SI unit side: From unit 9 to unit 12  |
|                                             | SY3000-37-81A-6-6  | Starting from the SI unit side: From unit 13 to unit 16 |
| <b>SS5Y9-<sup>23</sup>/<sub>43</sub> SA</b> | SY3000-37-81A-4-N  | Single : For 1 to 4 stations                            |
|                                             | SY3000-37-81A-4-9  | Double/3 position : For 1 to 4 stations                 |
|                                             | SY3000-37-81A-6-N  | Single : For 5 to 8 stations                            |
|                                             | SY3000-37-81A-6-11 | Double/3 position : For 5 to 8 stations                 |

Note) The above is for the station addition or maintenance. When ordering a connector assembly separately, a number would not be printed on the connector.

### ■ Connector assembly SY3000-37-80A-□



### ■ Housing (8 pcs./set) SY3000-44-3A



### Connector assembly order no. (Can be used for the manifold with a specified layout)

| Model              | Part no.         | Connector mounting position                             |
|--------------------|------------------|---------------------------------------------------------|
| <b>SS5Y3-45S6A</b> | SY3000-37-80A-3  | Starting from the SI unit side: From unit 1 to unit 4   |
|                    | SY3000-37-80A-4  | Starting from the SI unit side: From unit 5 to unit 8   |
|                    | SY3000-37-80A-6  | Starting from the SI unit side: From unit 9 to unit 12  |
|                    | SY3000-37-80A-7  | Starting from the SI unit side: From unit 13 to unit 16 |
| <b>SS5Y5-45S6A</b> | SY3000-37-80A-4  | Starting from the SI unit side: From unit 1 to unit 4   |
|                    | SY3000-37-80A-6  | Starting from the SI unit side: From unit 5 to unit 8   |
|                    | SY3000-37-80A-8  | Starting from the SI unit side: From unit 9 to unit 12  |
|                    | SY3000-37-80A-10 | Starting from the SI unit side: From unit 13 to unit 16 |

Note 1) The above is for station addition or maintenance. When ordering a connector assembly separately, a number will not be printed on the connector.

Note 2) After inserting the connector assembly into the housing, be sure to confirm that the lead wire will not come off by lightly pulling the wire.

Furthermore, do not reuse the lead wire after it has been inserted and removed.

Note 3) Wiring is set longer than the actual wiring distance.

# 5 Port Solenoid Valve Base Mounted Manifold Stacking Type/DIN Rail Mounted/Plug-in

## Series SY3000/5000

Type 45 

### How to Order Manifold

Type 45F (D-sub connector, 25 pins)

SS5Y **3** - 45 **F** **D** - 05 **U** - C4 - - -

Series

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |

Common specifications

|     |                 |
|-----|-----------------|
| Nil | Positive common |
| N   | Negative common |

Connector mounting position

| Symbol | Mounting position |
|--------|-------------------|
| U      | U side            |
| D      | D side            |

Voltage

|     |        |
|-----|--------|
| Nil | 24 VDC |
| 12V | 12 VDC |

Valve stations

| Symbol | Stations    | Note                                                           |
|--------|-------------|----------------------------------------------------------------|
| 02     | 2 stations  | Single winding spec.<br>(Applicable up to 20 solenoid valves.) |
| ⋮      | ⋮           |                                                                |
| 20     | 20 stations |                                                                |

- \* This also includes the number of blanking plate assemblies.
- \* Two stations are necessary for the double, 3 position (Dual body type).

SUP/EXH block assembly mounting position

| Symbol | Mounting position      | Stations         |
|--------|------------------------|------------------|
| U      | U side                 | 2 to 10 stations |
| D      | D side                 | 2 to 10 stations |
| B      | (Both sides)           | 2 to 20 stations |
| M      | Special specifications |                  |

- \* For special specifications, indicate separately by the manifold specification

A, B port size

One-touch fitting (Metric size)

| Symbol | Port size                      | Applicable series |
|--------|--------------------------------|-------------------|
| C4     | One-touch fitting for $\phi 4$ | SY3000            |
| C6     | One-touch fitting for $\phi 6$ |                   |
| M      | Mixed                          | SY5000            |
| C4     | One-touch fitting for $\phi 4$ |                   |
| C6     | One-touch fitting for $\phi 6$ |                   |
| C8     | One-touch fitting for $\phi 8$ |                   |
| M      | Mixed                          |                   |

One-touch fitting (Inch size)

| Symbol | Port size                           | Applicable series |
|--------|-------------------------------------|-------------------|
| N3     | One-touch fitting for $\phi 5/32$ " | SY3000            |
| N7     | One-touch fitting for $\phi 1/4$ "  |                   |
| M      | Mixed                               | SY5000            |
| N3     | One-touch fitting for $\phi 5/32$ " |                   |
| N7     | One-touch fitting for $\phi 1/4$ "  |                   |
| N9     | One-touch fitting for $\phi 5/16$ " |                   |
| M      | Mixed                               |                   |

- \* In the case of mixed specifications (M), indicate separately on the manifold specification sheet.

Option

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (20 stations at maximum)

CE-compliant

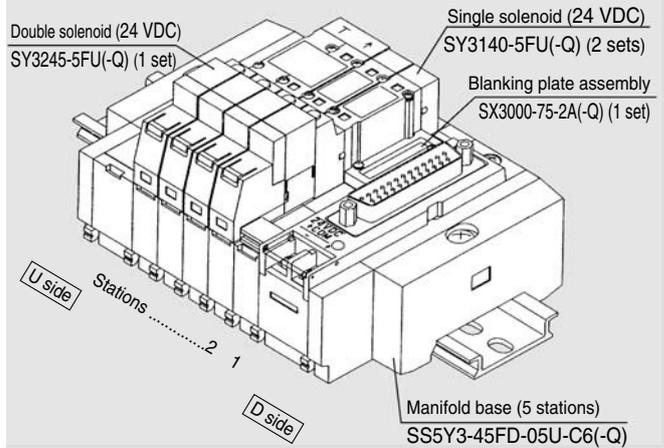
|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |



Refer to pages 324 to 328 for external pilot specifications and built-in silencer.

### How to Order Manifold Assembly (Example)

Example (Type 45F/D-sub connector (25 pin))



SS5Y3-45FD-05U-C6 .. 1 set (Type 45F, D-sub connector 5-station manifold base part no.)  
 \* SX3000-75-2A ..... 1 set (Blanking plate assembly part no.)  
 \* SY3140-5FU ..... 2 sets (Single solenoid part no.)  
 \* SY3245-5FU ..... 1 set (Double solenoid part no.)

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

- \* The valve arrangement is numbered as the 1st. station from D side regardless of the mounting position of connector box.
- \* When ordering double solenoid valves/3 position (Dual body type), please keep in mind that they require two manifold stations.

### How to Order Valve (Type 45F, 45P□, 45T, 45T1)

2 position single SY **3** **1** 40 - **5** FU - - -

Double, 3 position SY **3** **2** 45 - **5** FU - - -

Series

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |

Type of actuation

|   |                            |
|---|----------------------------|
| 2 | 2 position double          |
| 3 | 3 position closed center   |
| 4 | 3 position exhaust center  |
| 5 | 3 position pressure center |

Rated voltage

|   |        |
|---|--------|
| 5 | 24 VDC |
| 6 | 12 VDC |

Dual body type

(Double, 3 position)

Manual override

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

Made to Order

|     |                                               |
|-----|-----------------------------------------------|
| Nil | —                                             |
| X90 | Main valve fluoro rubber (Refer to page 332.) |

CE-compliant

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |



When ordering plug-in type valve as a single unit, gaskets are not included. Order them separately, if necessary. (Refer to page 300 for details.)

## How to Order Manifold

### Type 45P (Flat ribbon cable)

**SS5Y 3 - 45 P D - 05 U - C4 - - - -**

**Series**

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |

**Common specifications**

|     |                 |
|-----|-----------------|
| Nil | Positive common |
| N   | Negative common |

**Connector poles**

| Symbol | Poles | Stations         |
|--------|-------|------------------|
| Nil    | 26    | 2 to 20 stations |
| G      | 20    | 2 to 16 stations |
| H      | 10    | 2 to 8 stations  |

**Connector mounting position**

| Symbol | Mounting position |
|--------|-------------------|
| U      | U side            |
| D      | D side            |

**Voltage**

|     |        |
|-----|--------|
| Nil | 24 VDC |
| 12V | 12 VDC |

**A, B port size**

**One-touch fitting (Metric size)**

| Symbol | Port size                      | Applicable series |
|--------|--------------------------------|-------------------|
| C4     | One-touch fitting for $\phi 4$ | SY3000            |
| C6     | One-touch fitting for $\phi 6$ |                   |
| M      | Mixed                          |                   |
| C4     | One-touch fitting for $\phi 4$ | SY5000            |
| C6     | One-touch fitting for $\phi 6$ |                   |
| C8     | One-touch fitting for $\phi 8$ |                   |
| M      | Mixed                          |                   |

**One-touch fitting (Inch size)**

| Symbol | Port size                           | Applicable series |
|--------|-------------------------------------|-------------------|
| N3     | One-touch fitting for $\phi 5/32$ " | SY3000            |
| N7     | One-touch fitting for $\phi 1/4$ "  |                   |
| M      | Mixed                               |                   |
| N3     | One-touch fitting for $\phi 5/32$ " | SY5000            |
| N7     | One-touch fitting for $\phi 1/4$ "  |                   |
| N9     | One-touch fitting for $\phi 9/16$ " |                   |
| M      | Mixed                               |                   |

\* In the case of mixed specifications, indicate separately on the manifold specification sheet.

**SUP/EXH block assembly mounting position**

| Symbol | Mounting position      | Stations         |
|--------|------------------------|------------------|
| U      | U side                 | 2 to 10 stations |
| D      | D side                 | 2 to 10 stations |
| B      | Both sides             | 2 to 20 stations |
| M      | Special specifications |                  |

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (20 stations at maximum)

**Option**

**CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

**Valve stations (Blanking plate assemblies are included.)**

**26 pins (P) connector**

| Symbol | Stations    | Note                                                       |
|--------|-------------|------------------------------------------------------------|
| 02     | 2 stations  | Single wiring spec. (Applicable up to 20 solenoid valves.) |
| :      | :           |                                                            |
| 20     | 20 stations |                                                            |

**20 pins (PG) connector**

| Symbol | Stations    | Note                                                       |
|--------|-------------|------------------------------------------------------------|
| 02     | 2 stations  | Single wiring spec. (Applicable up to 16 solenoid valves.) |
| :      | :           |                                                            |
| 16     | 16 stations |                                                            |

**10 pins (PH) connector**

| Symbol | Stations   | Note                                                     |
|--------|------------|----------------------------------------------------------|
| 02     | 2 stations | Single wiring spec. (Applicable up to 8 solenoid valves) |
| :      | :          |                                                          |
| 08     | 8 stations |                                                          |

\* Two stations are necessary for the double, 3 position (Dual body type).

### Type 45T (9 pins terminal block)

**SS5Y 3 - 45T D - 05 U - C4 - - - -**

**Series**

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |

**Terminal block mounting position**

| Symbol | Mounting position |
|--------|-------------------|
| U      | U side            |
| D      | D side            |

**Valve stations**

| Symbol | Stations   | Note                                                     |
|--------|------------|----------------------------------------------------------|
| 02     | 2 stations | Single wiring spec. (Applicable up to 8 solenoid valves) |
| :      | :          |                                                          |
| 08     | 8 stations |                                                          |

\* This also includes the number of blanking plate assemblies.  
\* Two stations are necessary for the double, 3 position (Dual body type).

**SUP/EXH block assembly mounting position**

| Symbol | Mounting position      | Stations        |
|--------|------------------------|-----------------|
| U      | U side                 | 2 to 8 stations |
| D      | D side                 | 2 to 8 stations |
| B      | Both sides             | 2 to 8 stations |
| M      | Special specifications |                 |

\* For special specifications, indicate separately by the manifold specification sheet.

Note) The terminal block (45T) manifold has no common polarity. It can be used for both positive and negative common.

**Option**

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (20 stations at maximum)

**CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

**A, B port size**

**One-touch fitting (Metric size)**

| Symbol | Port size                      | Applicable series |
|--------|--------------------------------|-------------------|
| C4     | One-touch fitting for $\phi 4$ | SY3000            |
| C6     | One-touch fitting for $\phi 6$ |                   |
| M      | Mixed                          |                   |
| C4     | One-touch fitting for $\phi 4$ | SY5000            |
| C6     | One-touch fitting for $\phi 6$ |                   |
| C8     | One-touch fitting for $\phi 8$ |                   |
| M      | Mixed                          |                   |

**One-touch fitting (Inch size)**

| Symbol | Port size                           | Applicable series |
|--------|-------------------------------------|-------------------|
| N3     | One-touch fitting for $\phi 5/32$ " | SY3000            |
| N7     | One-touch fitting for $\phi 1/4$ "  |                   |
| M      | Mixed                               |                   |
| N3     | One-touch fitting for $\phi 5/32$ " | SY5000            |
| N7     | One-touch fitting for $\phi 1/4$ "  |                   |
| N9     | One-touch fitting for $\phi 9/16$ " |                   |
| M      | Mixed                               |                   |

\* In the case of mixed specifications (M), indicate separately on the manifold

### Type 45T1 (18 pins terminal block)

**SS5Y 3 - 45T1 D - 15 B - C4 - - - -**

**Series**

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |

**Terminal block mounting position**

| Symbol | Mounting position |
|--------|-------------------|
| U      | U side            |
| D      | D side            |

**Valve stations**

| Symbol | Stations    | Note                                                       |
|--------|-------------|------------------------------------------------------------|
| 02     | 2 stations  | Single wiring spec. (Applicable up to 17 solenoid valves.) |
| :      | :           |                                                            |
| 17     | 17 stations |                                                            |

\* This also includes the number of blanking plate assemblies.  
\* Two stations are necessary for the double, 3 position (Dual body type).

**SUP/EXH block assembly mounting position**

| Symbol | Mounting position      | Stations         |
|--------|------------------------|------------------|
| U      | U side                 | 2 to 10 stations |
| D      | D side                 | 2 to 10 stations |
| B      | Both sides             | 2 to 17 stations |
| M      | Special specifications |                  |

\* For special specifications, indicate separately by the manifold specification sheet.

**Option**

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (20 stations at maximum)

**CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

**A, B port size**

**One-touch fitting (Metric size)**

| Symbol | Port size                      | Applicable series |
|--------|--------------------------------|-------------------|
| C4     | One-touch fitting for $\phi 4$ | SY3000            |
| C6     | One-touch fitting for $\phi 6$ |                   |
| M      | Mixed                          |                   |
| C4     | One-touch fitting for $\phi 4$ | SY5000            |
| C6     | One-touch fitting for $\phi 6$ |                   |
| C8     | One-touch fitting for $\phi 8$ |                   |
| M      | Mixed                          |                   |

**One-touch fitting (Inch size)**

| Symbol | Port size                           | Applicable series |
|--------|-------------------------------------|-------------------|
| N3     | One-touch fitting for $\phi 5/32$ " | SY3000            |
| N7     | One-touch fitting for $\phi 1/4$ "  |                   |
| M      | Mixed                               |                   |
| N3     | One-touch fitting for $\phi 5/32$ " | SY5000            |
| N7     | One-touch fitting for $\phi 1/4$ "  |                   |
| N9     | One-touch fitting for $\phi 9/16$ " |                   |
| M      | Mixed                               |                   |

\* In the case of mixed specifications (M), indicate separately on the manifold

- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

## How to Order Manifold

Type 45G (Flat ribbon cable, PC Wiring System compatible)

**SS5Y 3 - 45G D - 05 U - C4 - [ ] - [ ]**

Series

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |

Connector mounting position

| Symbol | Mounting position |
|--------|-------------------|
| U      | U side            |
| D      | D side            |

Valve stations

| Symbol | Stations    | Note                                                          |
|--------|-------------|---------------------------------------------------------------|
| 02     | 2 stations  | Single wiring spec.<br>(Applicable up to 16 solenoid valves.) |
| ⋮      | ⋮           |                                                               |
| 16     | 16 stations |                                                               |

\* Two stations are necessary for the double, 3 position (Dual body type).

\* This also includes the number of blanking plate assemblies.

CE-compliant

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

Option

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (20 stations at maximum)

A, B port size

One-touch fitting (Metric size)

| Symbol | Port size                      | Applicable series |
|--------|--------------------------------|-------------------|
| C4     | One-touch fitting for $\phi 4$ | SY3000            |
| C6     | One-touch fitting for $\phi 6$ |                   |
| M      | Mixed                          |                   |
| C4     | One-touch fitting for $\phi 4$ | SY5000            |
| C6     | One-touch fitting for $\phi 6$ |                   |
| C8     | One-touch fitting for $\phi 8$ |                   |
| M      | Mixed                          |                   |

One-touch fitting (Inch size)

| Symbol | Port size                          | Applicable series |
|--------|------------------------------------|-------------------|
| N3     | One-touch fitting for $\phi 5/32"$ | SY3000            |
| N7     | One-touch fitting for $\phi 1/4"$  |                   |
| M      | Mixed                              |                   |
| N3     | One-touch fitting for $\phi 5/32"$ | SY5000            |
| N7     | One-touch fitting for $\phi 1/4"$  |                   |
| M      | Mixed                              |                   |

\* In the case of mixed specifications, indicate separately on the manifold specification sheet.

SUP/EXH block assembly mounting position

| Symbol | Mounting position      | Stations         |
|--------|------------------------|------------------|
| U      | U side                 | 2 to 10 stations |
| D      | D side                 | 2 to 10 stations |
| B      | Both sides             | 2 to 16 stations |
| M      | Special specifications |                  |

\* For special specifications, indicate separately by the manifold specification sheet.

SUP/EXH block assembly specifications

| Symbol | Specifications                     |
|--------|------------------------------------|
| Nil    | Internal pilot specifications      |
| R      | External pilot specifications      |
| S      | Internal pilot / Built-in silencer |
| RS     | External pilot / Built-in silencer |

## How to Order Valve

2 position single **SY 3 1 4 0 - 5 FU**

Double, 3 position **SY 3 2 4 5 - 5 FU**

Series

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |

Type of actuation

|   |                            |
|---|----------------------------|
| 2 | 2 position double          |
| 3 | 3 position closed center   |
| 4 | 3 position exhaust center  |
| 5 | 3 position pressure center |

Rated voltage

|   |        |
|---|--------|
| 5 | 24 VDC |
|---|--------|

Pilot type

|     |                |
|-----|----------------|
| Nil | Internal pilot |
| R   | External pilot |

Manual override

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

Made to Order

|     |                                               |
|-----|-----------------------------------------------|
| Nil | —                                             |
| X90 | Main valve fluoro rubber (Refer to page 332.) |

CE-compliant

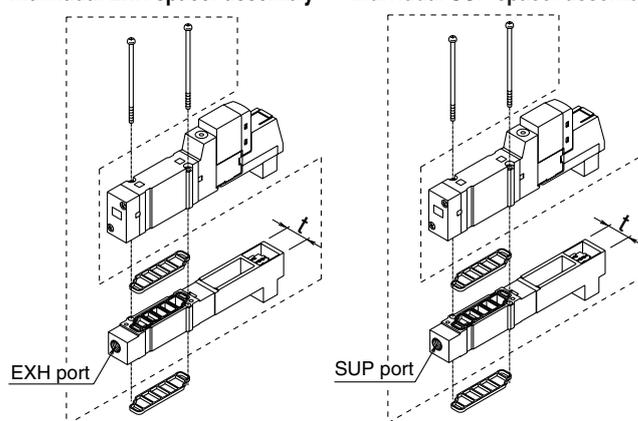
|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

Dual body type (Double, 3 position)

When ordering plug-in type valve as a single unit, gaskets are not included. Order them separately, if necessary. (Refer to page 300 for details.)

## Manifold Option

Individual EXH spacer assembly    Individual SUP spacer assembly



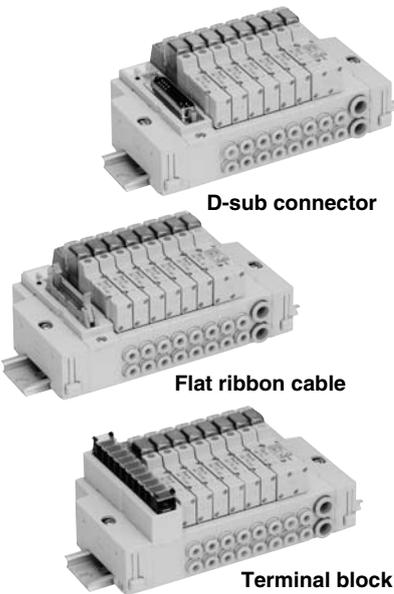
| Series | Assembly part no. | Port no. | t  | Series | Assembly part no. | Port no. | t  |
|--------|-------------------|----------|----|--------|-------------------|----------|----|
| SY3000 | SY3000-39-3A(-Q)  | M5 x 0.8 | 11 | SY3000 | SY3000-38-3A(-Q)  | M5 x 0.8 | 11 |
| SY5000 | SY5000-39-17A(-Q) | 1/8      | 15 | SY5000 | SY5000-38-17A(-Q) | 1/8      | 15 |

Note) Please be careful because the dual body type (double solenoid, 3-position) requires two pieces. In this case, the exhaust is performed in the direction of the arrow mark indicated on the valve surface.

Note) Please be careful because the dual body type (double solenoid, 3-position) requires two pieces. In this case, both supply ports require the piping.

### Manifold Specifications

| Model                                           | D-sub connector<br>Type 45F | Flat ribbon cable Type 45PI                                                               |                                                                                                            |                                                                                                            | Terminal block                                                                                             |                                  | Flat ribbon cable<br>PC wiring system compatible |                                                                                                            |
|-------------------------------------------------|-----------------------------|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|----------------------------------|--------------------------------------------------|------------------------------------------------------------------------------------------------------------|
|                                                 |                             | Type 45P                                                                                  | Type 45PG                                                                                                  | Type 45PH                                                                                                  | Type 45T                                                                                                   | Type 45T1                        | Type 45G                                         |                                                                                                            |
| <b>Manifold</b>                                 |                             |                                                                                           |                                                                                                            |                                                                                                            |                                                                                                            |                                  |                                                  |                                                                                                            |
| Plug-in                                         |                             |                                                                                           |                                                                                                            |                                                                                                            |                                                                                                            |                                  |                                                  |                                                                                                            |
| <b>P (SUP)/R (EXH)</b>                          |                             |                                                                                           |                                                                                                            |                                                                                                            |                                                                                                            |                                  |                                                  |                                                                                                            |
| Common SUP, Common EXH                          |                             |                                                                                           |                                                                                                            |                                                                                                            |                                                                                                            |                                  |                                                  |                                                                                                            |
| <b>Valve stations</b> <small>Note 1, 2)</small> |                             | 2 to 20 stations                                                                          | 2 to 16 stations                                                                                           | 2 to 8 stations                                                                                            | 2 to 17 stations                                                                                           | 2 to 16 stations                 |                                                  |                                                                                                            |
| <b>A, B port</b>                                |                             | Base                                                                                      |                                                                                                            |                                                                                                            |                                                                                                            |                                  |                                                  |                                                                                                            |
| <b>Porting specifications</b>                   |                             | Side                                                                                      |                                                                                                            |                                                                                                            |                                                                                                            |                                  |                                                  |                                                                                                            |
| <b>Port size</b>                                | P, R port                   | C8 (One-touch fitting for ø8)                                                             |                                                                                                            |                                                                                                            |                                                                                                            |                                  |                                                  |                                                                                                            |
|                                                 |                             | C10 (One-touch fitting for ø10)                                                           |                                                                                                            |                                                                                                            |                                                                                                            |                                  |                                                  |                                                                                                            |
|                                                 | A, B port                   | C4 (One-touch fitting for ø4)/C6 (One-touch fitting for ø6)                               |                                                                                                            |                                                                                                            |                                                                                                            |                                  |                                                  |                                                                                                            |
|                                                 |                             | C4 (One-touch fitting for ø4)/C6 (One-touch fitting for ø6)/C8 (One-touch fitting for ø8) |                                                                                                            |                                                                                                            |                                                                                                            |                                  |                                                  |                                                                                                            |
| <b>Applicable connector</b>                     |                             | D-sub connector<br>Complies with MIL-C-24308<br>JIS-X-5101                                | Flat ribbon cable connector<br>Socket: 26 pins MIL type<br>with strain relief<br>Conforming to MIL-C-83503 | Flat ribbon cable connector<br>Socket: 20 pins MIL type<br>with strain relief<br>Conforming to MIL-C-83503 | Flat ribbon cable connector<br>Socket: 10 pins MIL type<br>with strain relief<br>Conforming to MIL-C-83503 | Terminal block<br>(M3)<br>9 pins | Terminal block<br>(M3)<br>18 pins                | Flat ribbon cable connector<br>Socket: 20 pins MIL type<br>with strain relief<br>Conforming to MIL-C-83503 |
| <b>Internal wiring</b>                          |                             | +COM (Type 45□), -COM (Type 45N□)                                                         |                                                                                                            |                                                                                                            | In common between +COM and -COM.                                                                           |                                  | + COM                                            |                                                                                                            |
| <b>Manifold base mass w (g)</b>                 |                             | SY3000                                                                                    | 2 to 10 stations: W = 26n + 172                                                                            |                                                                                                            |                                                                                                            |                                  |                                                  |                                                                                                            |
| <b>n: Stations (D-sub connector)</b>            |                             |                                                                                           | SY5000                                                                                                     | 11 to 20 stations: W = 26n + 199                                                                           |                                                                                                            |                                  |                                                  |                                                                                                            |
|                                                 |                             | SY3000                                                                                    |                                                                                                            | 2 to 10 stations: W = 54n + 227                                                                            |                                                                                                            |                                  |                                                  |                                                                                                            |
|                                                 |                             |                                                                                           | SY5000                                                                                                     | 11 to 20 stations: W = 52n + 264                                                                           |                                                                                                            |                                  |                                                  |                                                                                                            |



Note 1) For more than 11 stations, supply pressure to P port on both sides and exhaust from R port on both sides.  
 Note 2) There is a limit depending on the number of solenoids. Refer to "How to Order".

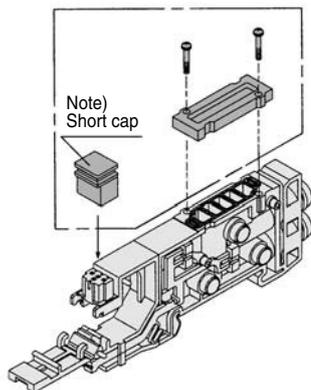
### Flow Characteristics

| Model     | Port size              |                | Flow characteristics |      |      |                         |      |      |
|-----------|------------------------|----------------|----------------------|------|------|-------------------------|------|------|
|           | 1, 5, 3<br>(P, EA, EB) | 4, 2<br>(A, B) | 1 → 4/2 (P → A/B)    |      |      | 4/2 → 5/3 (A/B → EA/EB) |      |      |
|           |                        |                | C (dm³/(s·bar))      | b    | Cv   | C (dm³/(s·bar))         | b    | Cv   |
| SS5Y3-45□ | C8                     | C6             | 0.88                 | 0.21 | 0.22 | 0.95                    | 0.18 | 0.22 |
| SS5Y5-45□ | C10                    | C8             | 2.2                  | 0.24 | 0.53 | 2.5                     | 0.18 | 0.58 |

Note) The value is for manifold base with 5 stations and individually operated 2 position type.

### Manifold Option

#### Blanking plate assembly



| Series | Assembly part no. |
|--------|-------------------|
| SY3000 | SX3000-75-2A(-Q)  |
| SY5000 | SX5000-76-6A(-Q)  |

Note) • When mounting blanking plate, be sure to mount a short cap.  
 • Two stations are necessary for the double, 3 position (Dual body type).

#### SUP blocking disk

By installing a SUP blocking disk in the pressure supply passage of a manifold valve, it is possible to supply two or more different high and low pressures to one manifold.



| Series | Part no.     |
|--------|--------------|
| SY3000 | SX3000-77-1A |
| SY5000 | SX5000-77-1A |

#### EXH blocking disk

By installing an EXH blocking disk in the exhaust passage of a manifold valve, it is possible to divide the valve's exhaust so that it does not affect another valve. (Two blocking disks are needed to divide both exhausts.)

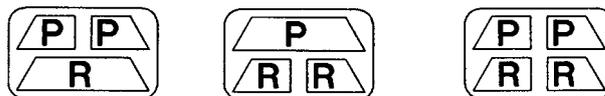


| Series | Part no.     |
|--------|--------------|
| SY3000 | SX3000-77-1A |
| SY5000 | SX5000-77-1A |

#### Label for block disk

The labels shown below are used on manifold stations containing SUP/EXH block disk(s) to show their location. (3 pcs. each)  
**VZ3000-123-1A** (In common with SY3000, 5000)

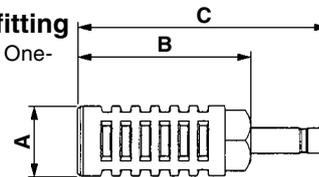
Label for SUP block disk    Label for EXH block disk    Label for SUP/EXH block disk



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

#### Silencer with One-touch fitting

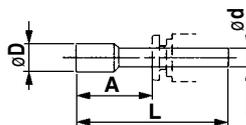
The silencer plugs directly into the One-touch fittings of the manifold.



| Series           | Model      | Effective area | A   | B    | C    |
|------------------|------------|----------------|-----|------|------|
| For SY3000 (ø8)  | AN203-KM8  | 14 mm²         | ø16 | 26   | 51   |
| For SY5000 (ø10) | AN200-KM10 | 26 mm²         | ø22 | 53.8 | 80.8 |
|                  | AN300-KM10 | 30 mm²         | ø25 | 70   | 97   |

#### Plug (white)

These are inserted in unused cylinder ports and SUP, EXH ports. Purchasing order is available in units of 10 pieces.



#### Dimensions

| Applicable fittings size ød | Model   | A    | L    | D   |
|-----------------------------|---------|------|------|-----|
| 4                           | KQ2P-04 | 16   | 32   | 6   |
| 6                           | KQ2P-06 | 18   | 35   | 8   |
| 8                           | KQ2P-08 | 20.5 | 39   | 10  |
| 10                          | KQ2P-10 | 22   | 43   | 12  |
| 1/8"                        | KQ2P-01 | 16   | 31.5 | 5   |
| 5/32"                       | KQ2P-03 | 16   | 32   | 6   |
| 1/4"                        | KQ2P-07 | 18   | 35   | 8.5 |
| 5/16"                       | KQ2P-09 | 20.5 | 39   | 10  |

### Caution

#### Mounting screw tightening torques

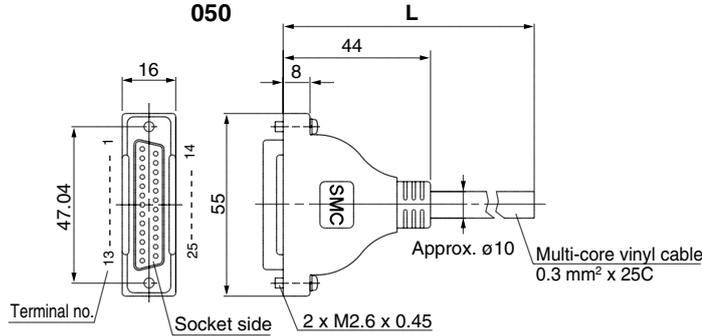
- M2: 0.17 N·m
- M3: 0.8 N·m
- M4: 1.4 N·m

SJ  
SY  
SV  
SYJ  
SZ  
VP4  
S0700  
VQ  
VQ4  
VQ5  
VQC  
VQZ  
SQ  
VFS  
VFR  
VQ7

## Manifold Option

### ■ D-sub connector (25 pins)/Cable assembly

015  
AXT100-DS25-030  
050



### D-sub connector cable assembly

#### Terminal numbers

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

### D-sub connector cable

| Cable length (L) | Assembly part no. | Note                   |
|------------------|-------------------|------------------------|
| 1.5 m            | AXT100-DS25-015   | Cable 25 core x 24 AWG |
| 3 m              | AXT100-DS25-030   |                        |
| 5 m              | AXT100-DS25-050   |                        |

### Electric characteristics

| Item                                | Characteristics |
|-------------------------------------|-----------------|
| Conductor resistance<br>Ω/km, 20°C  | 65 or less      |
| Voltage limit<br>V, 1 min, AC       | 1000            |
| Insulation resistance<br>MΩkm, 20°C | 5 or more       |

Note) The min. bending radius of D-sub cable assembly is 20 mm.

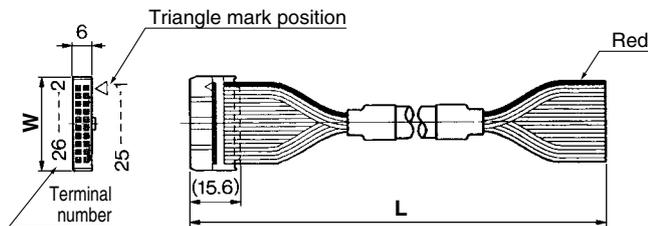
\* When a commercially available connector is required, use a 25 pin female connector conforming to MIL-C24308.

### Connector manufacturers' example

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

### ■ Flat Ribbon Cable Connector/Cable assembly

AXT100-FC□- $\frac{1}{3}$

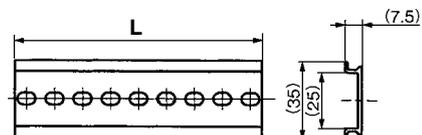


### ■ Dimensions/DIN rail

VZ1000-11-1-□

#### Refer to L dimensions

\* Fill in □ with an appropriate no. listed on the table of DIN rail dimensions shown below.



### Flat Ribbon Cable Assembly

| Cable length (L)    | 10 pins       | 20 pins       | 26 pins       |
|---------------------|---------------|---------------|---------------|
| 1.5 m               | AXT100-FC10-1 | AXT100-FC20-1 | AXT100-FC26-1 |
| 3 m                 | AXT100-FC10-2 | AXT100-FC20-2 | AXT100-FC26-2 |
| 5 m                 | AXT100-FC10-3 | AXT100-FC20-3 | AXT100-FC26-3 |
| Connector width (W) | 17.2          | 30            | 37.5          |

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

### Connector manufacturers' example

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

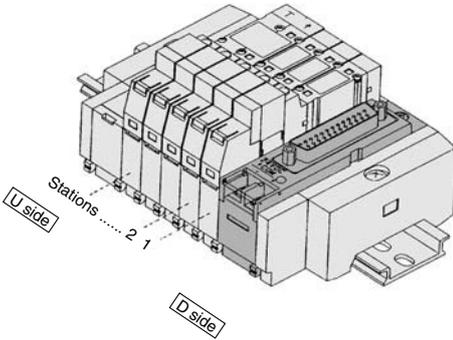
| No.         | 0     | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L Dimension | 98    | 110.5 | 123   | 135.5 | 148   | 160.5 | 173   | 185.5 | 198   | 210.5 | 223   |
| No.         | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    |
| L Dimension | 235.5 | 248   | 260.5 | 273   | 285.5 | 298   | 310.5 | 323   | 335.5 | 348   | 360.5 |
| No.         | 22    | 23    | 24    | 25    | 26    | 27    | 28    | 29    | 30    | 31    | 32    |
| L Dimension | 373   | 385.5 | 398   | 410.5 | 423   | 435.5 | 448   | 460.5 | 473   | 485.5 | 498   |
| No.         | 33    | 34    | 35    | 36    | 37    | 38    | 39    | 40    | 41    | 42    | 43    |
| L Dimension | 510.5 | 523   | 535.5 | 548   | 560.5 | 573   | 585.5 | 598   | 610.5 | 623   | 635.5 |
| No.         | 44    | 45    | 46    | 47    | 48    | 49    | 50    | 51    | 52    | 53    | 54    |
| L Dimension | 648   | 660.5 | 673   | 685.5 | 698   | 710.5 | 723   | 735.5 | 748   | 760.5 | 773   |
| No.         | 55    | 56    | 57    | 58    | 59    | 60    | 61    | 62    | 63    | 64    | 65    |
| L Dimension | 785.5 | 798   | 810.5 | 823   | 835.5 | 848   | 860.5 | 873   | 885.5 | 898   | 910.5 |
| No.         | 66    | 67    | 68    | 69    | 70    | 71    |       |       |       |       |       |
| L Dimension | 923   | 935.5 | 948   | 960.5 | 973   | 985.5 |       |       |       |       |       |

\* Refer to L1 dimension on pages starting with pages 282 to 299 for lengths that correspond to the number of manifold stations.

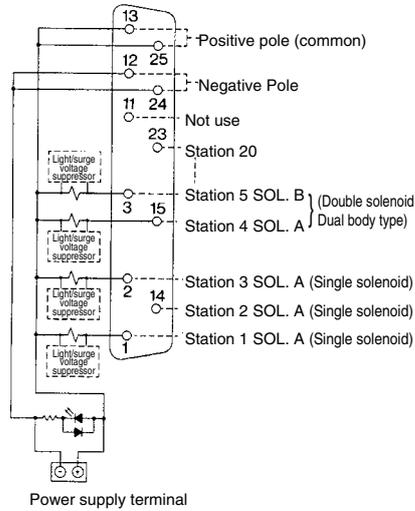
## Manifold Internal Wiring

### 45(N)F/D-sub Connector

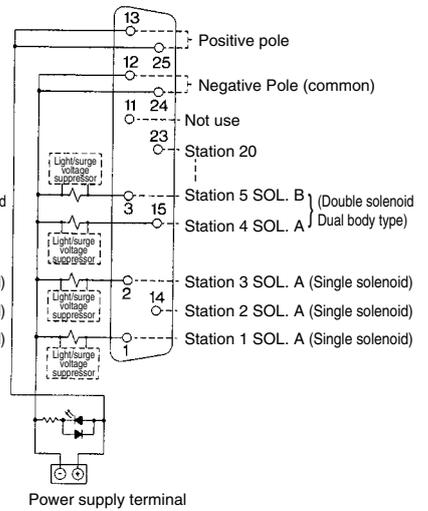
A D-sub connector used for electric wiring reduces labor during wiring operation. Connectors conforming to MIL are used for interchangeability.



#### <For positive common (45F)>



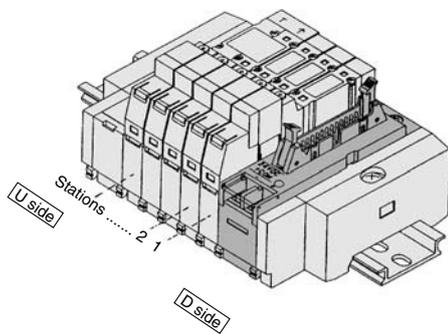
#### <For negative common (45NF)>



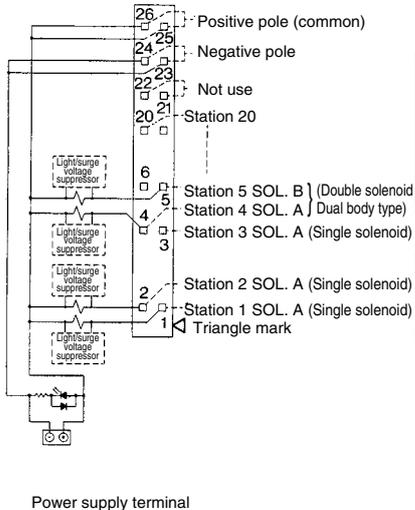
- The power source terminal is used for connecting to an external power source.
- The maximum number of stations that can be accommodated is 20 manifold stations, with up to 20 solenoids. (For more stations, please contact SMC.)
- Regardless of the connector mounting position, stations are to be counted from D side as the 1st one.

### Type 45(N)P/Flat Ribbon Cable (26 pins)

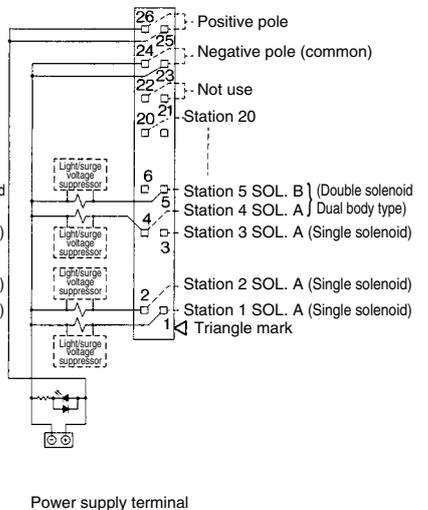
A flat ribbon cable connector used for electric wiring reduces labor during wiring operation. Connectors conforming to MIL are used for interchangeability.



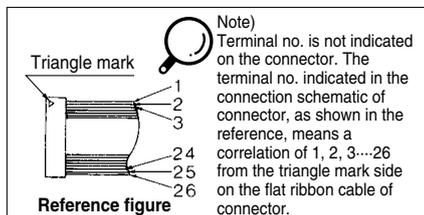
#### <For positive common (45P)>



#### <For negative common (45NP)>



- The power source terminal is used for connecting to an external power source.
- The maximum number of stations that can be accommodated is 20 manifold stations, with up to 20 solenoids. (For more stations, please contact SMC.)
- Regardless of the connector mounting position, stations are to be counted from D side as the 1st one.

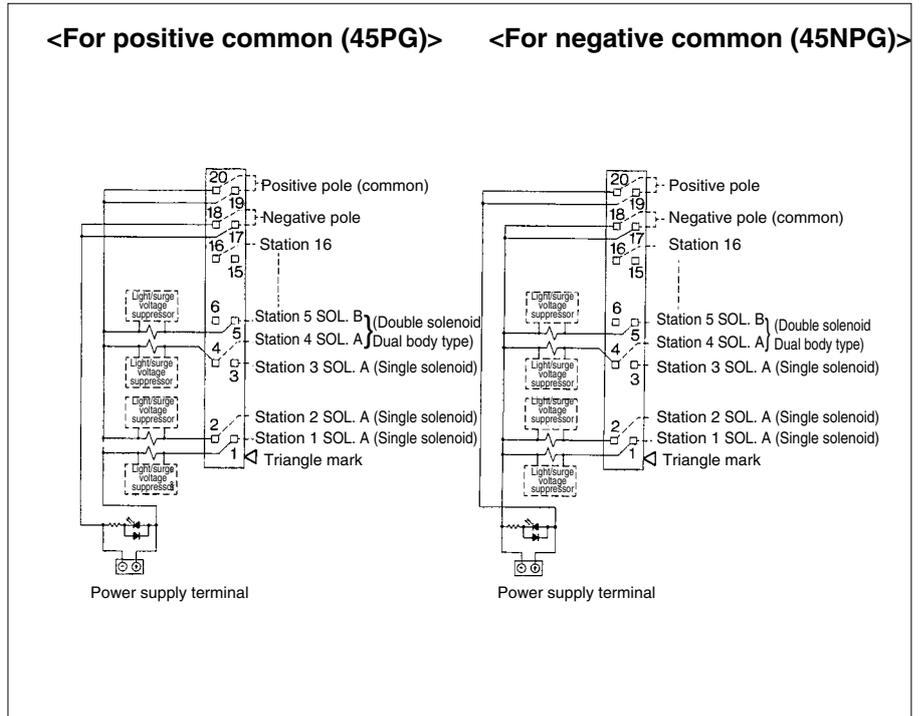
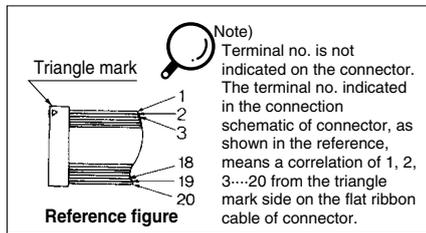
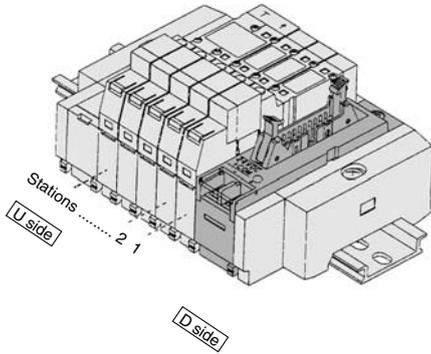


- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

## Manifold Internal Wiring

### Type 45(N)PG/Flat Ribbon Cable (20 pins)

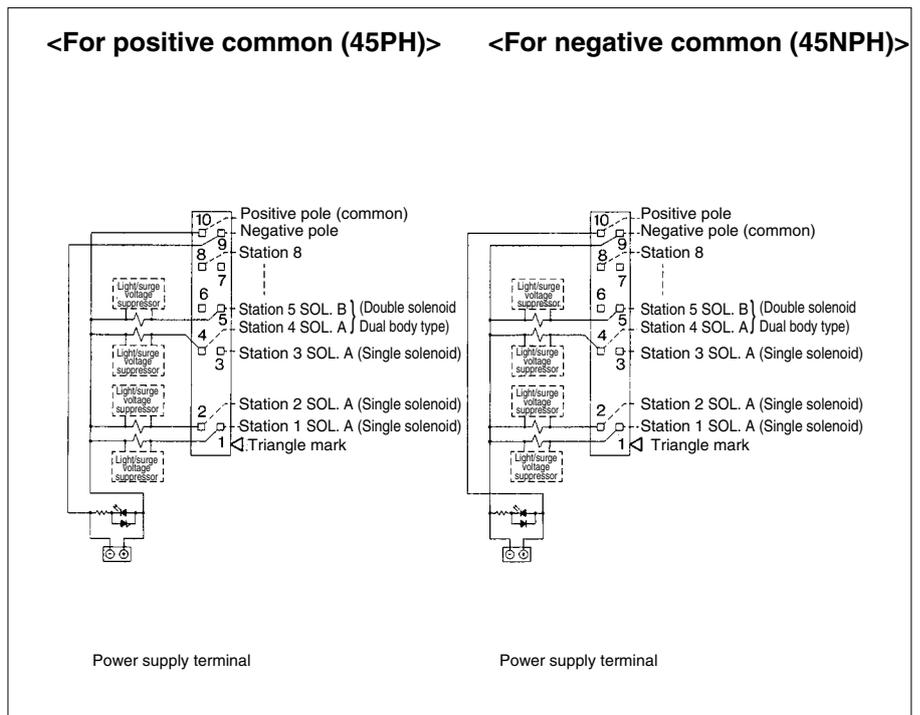
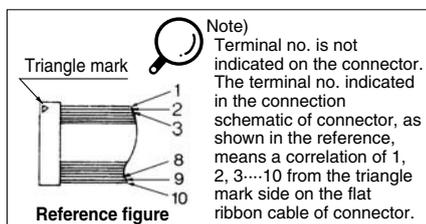
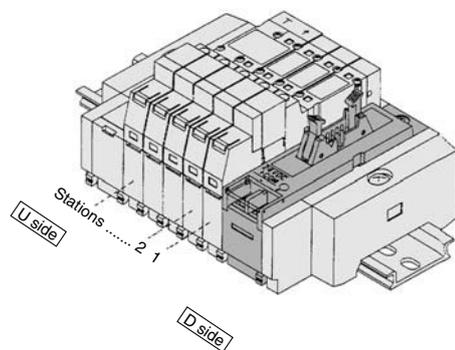
A flat ribbon cable connector used for electric wiring reduces labor during wiring operation. Connectors conforming to MIL are used for interchangeability.



- The power source terminal is used for connecting to an external power source.
- The maximum number of stations that can be accommodated is 16 manifold stations, with up to 16 solenoids. (For more stations, please contact SMC.)
- Regardless of the connector mounting position, stations are to be counted from D side as the 1st one.

### Type 45(N)PH/Flat Ribbon Cable (10 pins)

A flat ribbon cable connector used for electric wiring reduces labor during wiring operation. Connectors conforming to MIL are used for interchangeability.

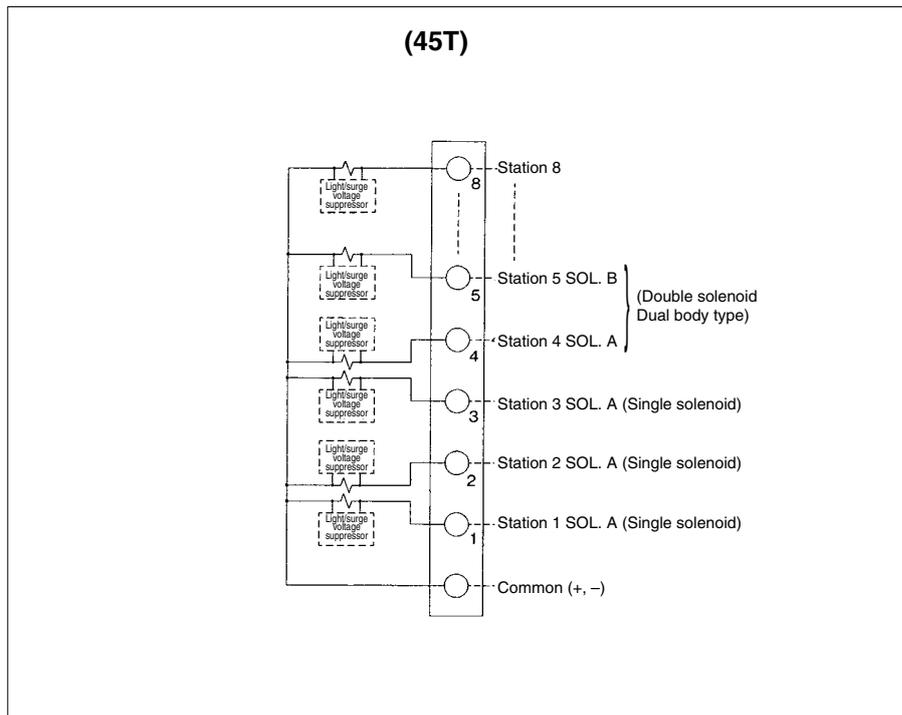
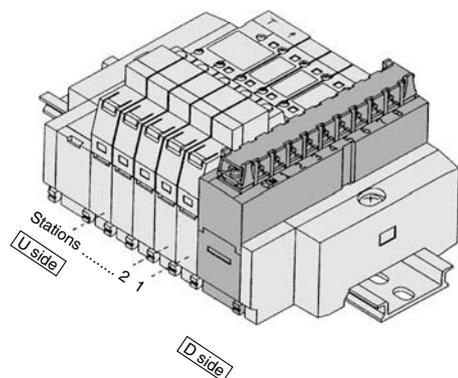


- The power source terminal is used for connecting to an external power source.
- The maximum number of stations that can be accommodated is 8 manifold stations, with up to 8 solenoids. (For more stations, please contact SMC.)
- Regardless of the connector mounting position, stations are to be counted from D side as the 1st one.

## Manifold Internal Wiring

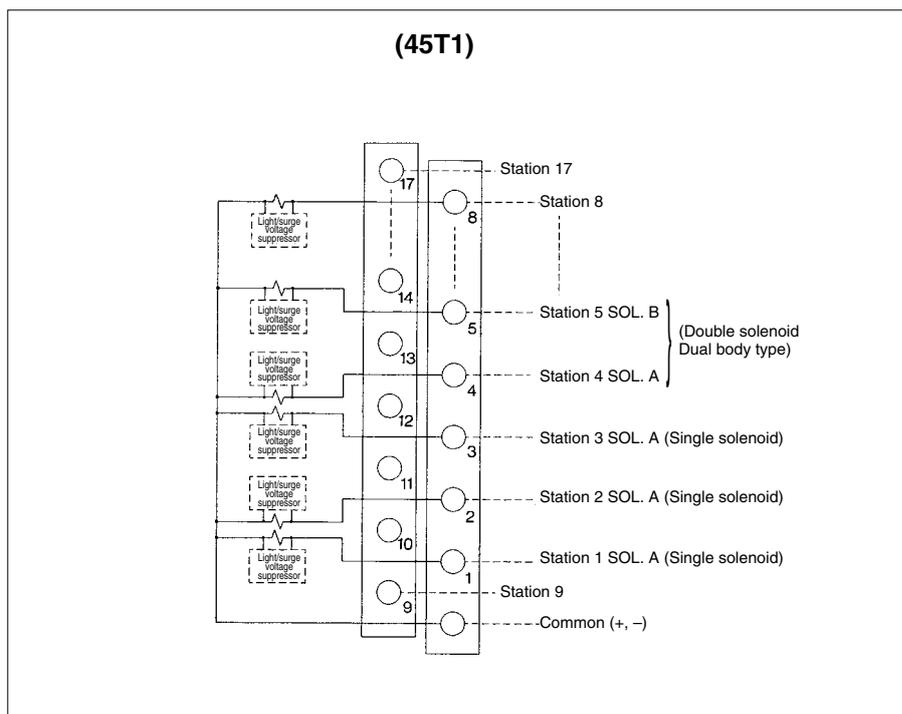
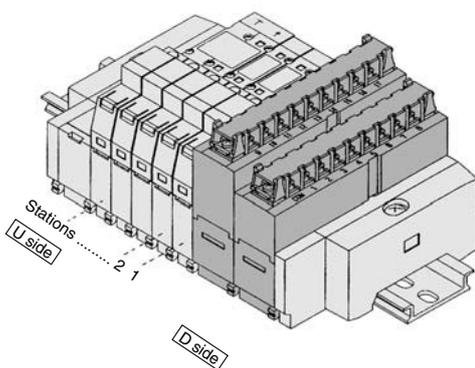
### Type 45T/Terminal Block

A terminal block style permits direct cable connection without treatment of lead wires.



- The maximum number of stations that can be accommodated is 8 manifold stations, with up to 8 solenoids. (For more stations, please contact SMC.)
- Regardless of the connector mounting position, stations are to be counted from D side as the 1st one.
- There is no polarity in the COM wiring. Supply positive power for +COM spec. and negative power for -COM spec.

### Type 45T1/Terminal Block



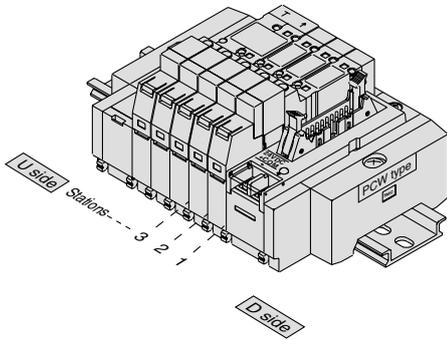
- The maximum number of stations that can be accommodated is 17 manifold stations, with up to 17 solenoids. (For more stations, please contact SMC.)
- Regardless of the connector mounting position, stations are to be counted from D side as the 1st one.
- There is no polarity in the COM wiring. Supply positive power for +COM spec. and negative power for -COM spec.

|       |
|-------|
| SJ    |
| SY    |
| SV    |
| SYJ   |
| SZ    |
| VP4   |
| S0700 |
| VQ    |
| VQ4   |
| VQ5   |
| VQC   |
| VQZ   |
| SQ    |
| VFS   |
| VFR   |
| VQ7   |

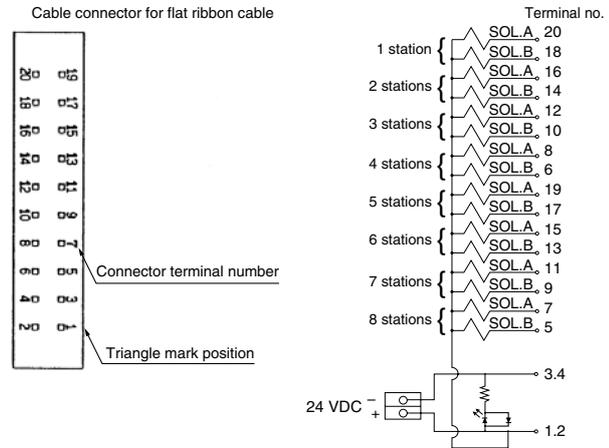
## Manifold Internal Wiring

### Type 45G Flat Ribbon Cable (PC Wiring System compatible)

It's the manifold for 20 pins flat ribbon cable connector which is compliant for PC wiring system.



Electric circuit diagram  
(Below wiring is the case of all double solenoid connections.)

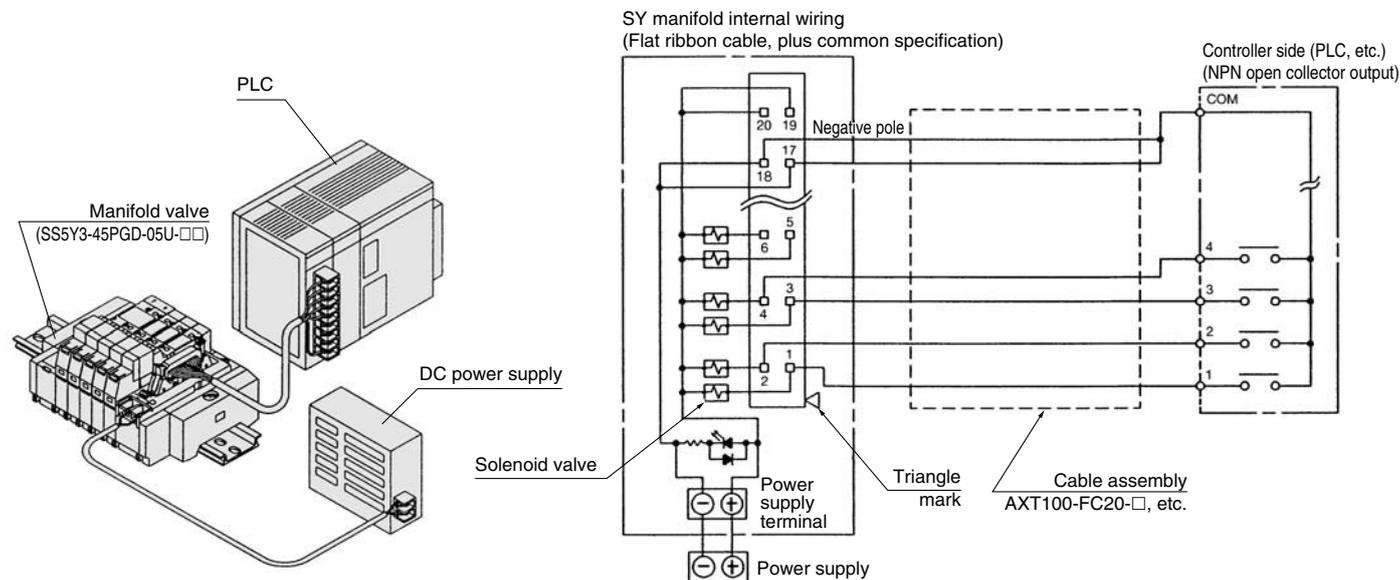


- The maximum number of stations that can be accommodated is 16 manifold stations, with up to 16 solenoids. (For more stations, please contact SMC.)
- Regardless of the connector mounting position, stations are to be counted from D side as the 1st one.  
( For details about the PC wiring system, refer to catalog )  
CAT.E02-20 separately.

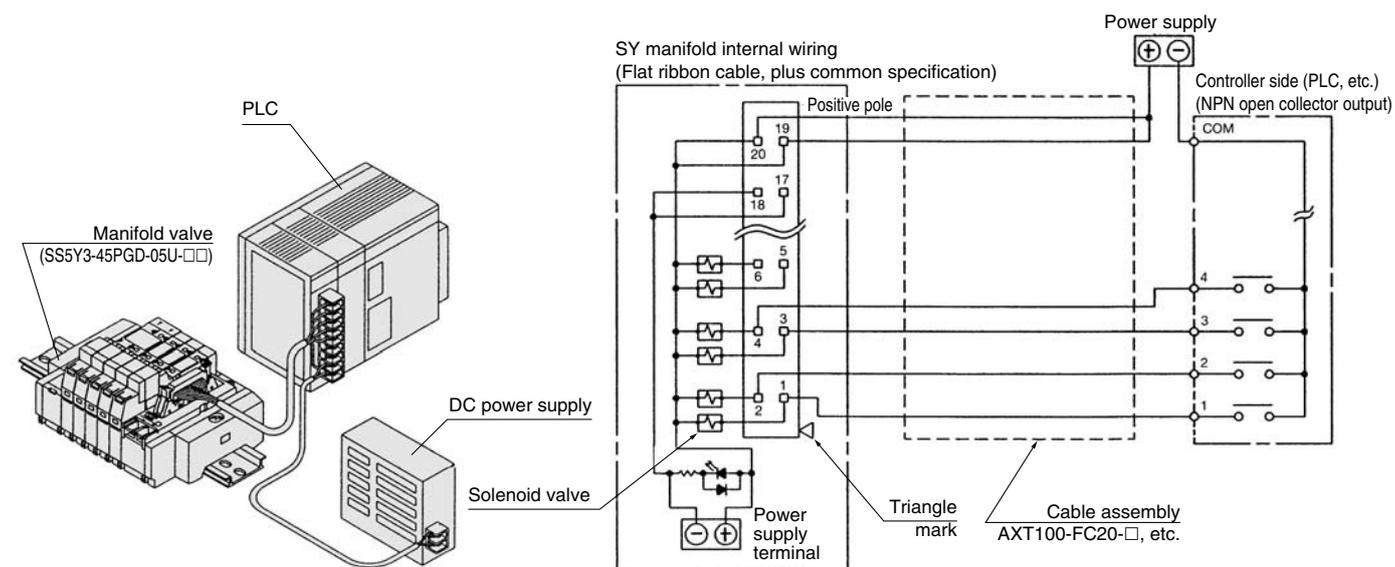
## How to Connect SS5Y□-45□ (Plug-in)

Power terminal is equipped with plug-in manifold of Series SY as standard.  
 Power terminal enables the power supply to valve from either of manifold or controller side.  
 The wiring examples should be used for reference when wiring is performed.

### 1. Wiring example when using manifold power supply terminals



### 2. Wiring example when not using manifold power supply terminals (Power is supplied to the controller side or along the wiring, etc.)



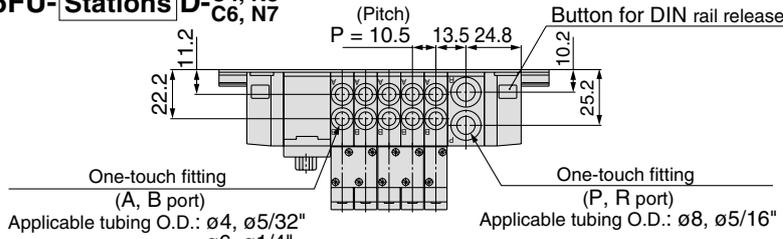
### ⚠ Caution

- Single wire, COM position, etc. of PLC are different from each manufacturer. When connecting with PLC, read the specifications carefully and understand the electrical circuit. Poor wiring could cause damage to PLC, power source, etc. as well as manifold and valve.

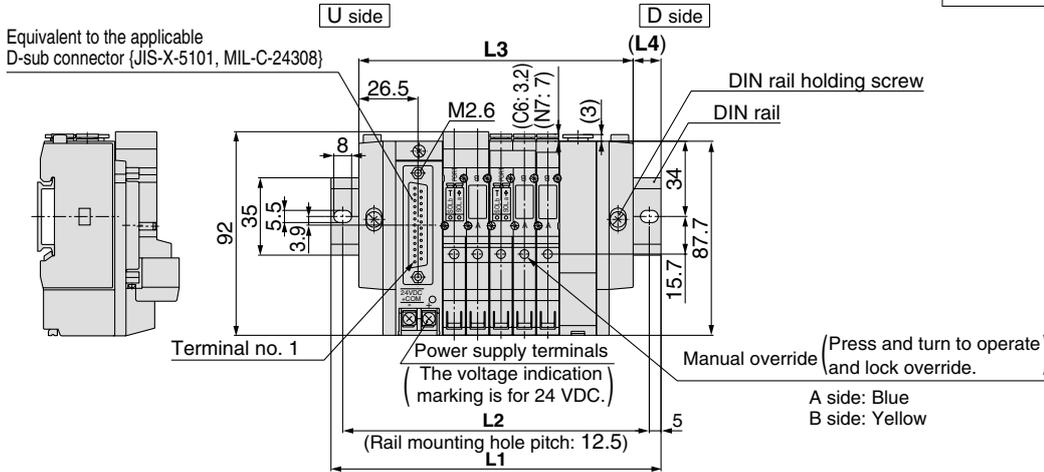
|           |
|-----------|
| SJ        |
| <b>SY</b> |
| SV        |
| SYJ       |
| SZ        |
| VP4       |
| S0700     |
| VQ        |
| VQ4       |
| VQ5       |
| VQC       |
| VQZ       |
| SQ        |
| VFS       |
| VFR       |
| VQ7       |

**SY3000: D-sub Connector/Plug-in**

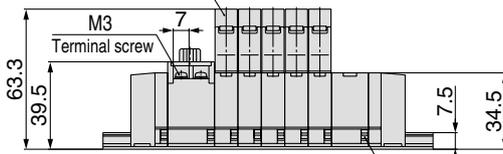
**SS5Y3-45FU- Stations D-C4, N3  
C6, N7**



Note) The L1 to L4 dimensions of **SS5Y3-45FU- Stations U-C4, N3 C6, N7** are identical to those of **SS5Y3-45FU- Stations D-C4, N3 C6, N7**.

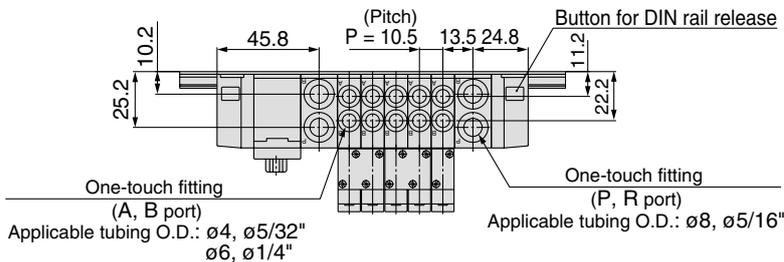


(Station n) --- (Station 1)  
(Light/surge voltage suppressor)

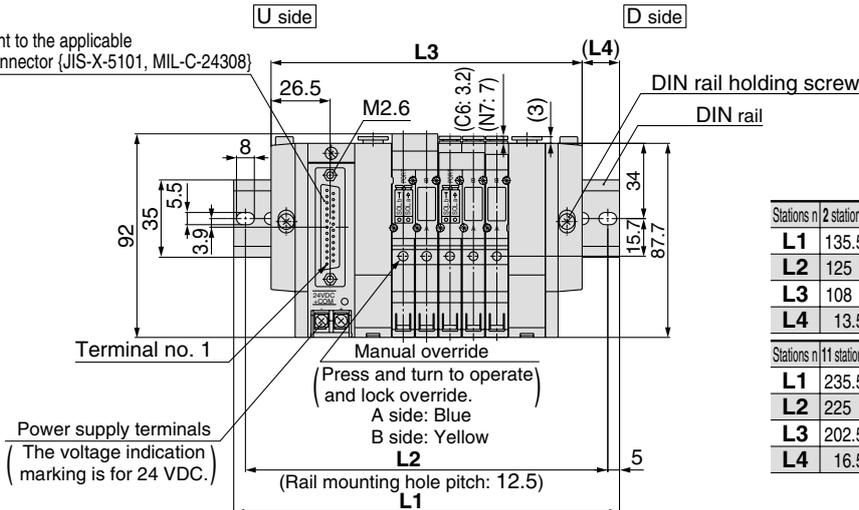


| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 123        | 135.5 | 148   | 148   | 160.5 | 173   | 185.5 | 198   | 210.5       |
| <b>L2</b>  | 112.5      | 125   | 137.5 | 137.5 | 150   | 162.5 | 175   | 187.5 | 200         |
| <b>L3</b>  | 91.5       | 102   | 112.5 | 123   | 133.5 | 144   | 154.5 | 165   | 175.5       |
| <b>L4</b>  | 15.5       | 16.5  | 17.5  | 12.5  | 13.5  | 14.5  | 15.5  | 16.5  | 17.5        |

**SS5Y3-45FU- Stations B-C4, N3  
C6, N7**



Equivalent to the applicable  
D-sub connector (JIS-X-5101, MIL-C-24308)

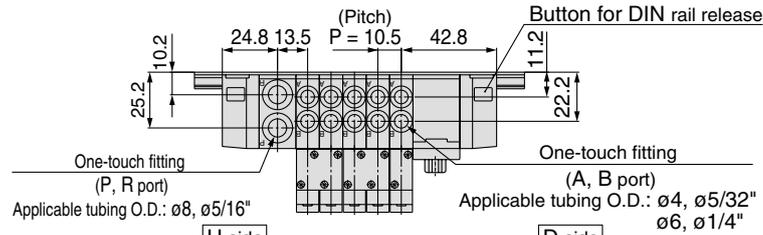


| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 135.5      | 148   | 160.5 | 173   | 185.5 | 185.5 | 198   | 210.5 | 223         |
| <b>L2</b>  | 125        | 137.5 | 150   | 162.5 | 175   | 175   | 187.5 | 200   | 212.5       |
| <b>L3</b>  | 108        | 118.5 | 129   | 139.5 | 150   | 160.5 | 171   | 181.5 | 192         |
| <b>L4</b>  | 13.5       | 14.5  | 15.5  | 16.5  | 17.5  | 12.5  | 13.5  | 14.5  | 15.5        |

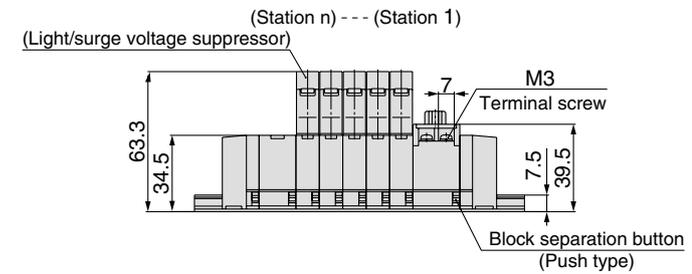
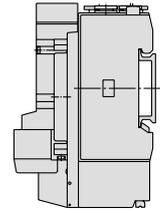
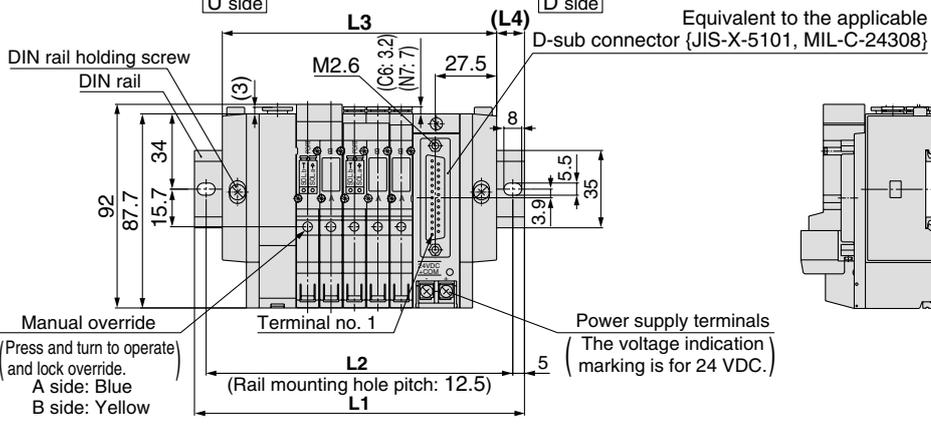
| Stations n | 11 stations | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20 stations |
|------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 235.5       | 248   | 248   | 260.5 | 273   | 285.5 | 298   | 310.5 | 310.5 | 323         |
| <b>L2</b>  | 225         | 237.5 | 237.5 | 250   | 262.5 | 275   | 287.5 | 300   | 300   | 312.5       |
| <b>L3</b>  | 202.5       | 213   | 223.5 | 234   | 244.5 | 255   | 265.5 | 276   | 286.5 | 297         |
| <b>L4</b>  | 16.5        | 17.5  | 12    | 13    | 14    | 15    | 16    | 17    | 12    | 13          |

**SY3000: D-sub Connector/Plug-in**

**SS5Y3-45FD- Stations U-C4, N3  
C6, N7**

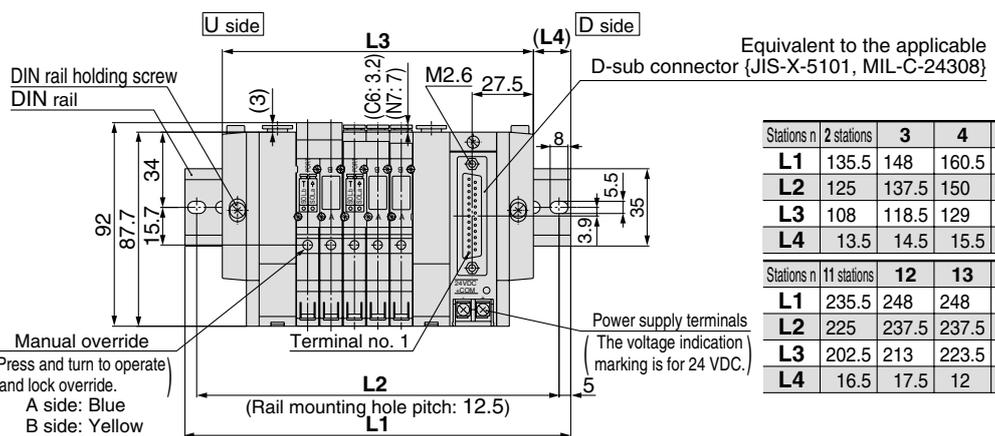
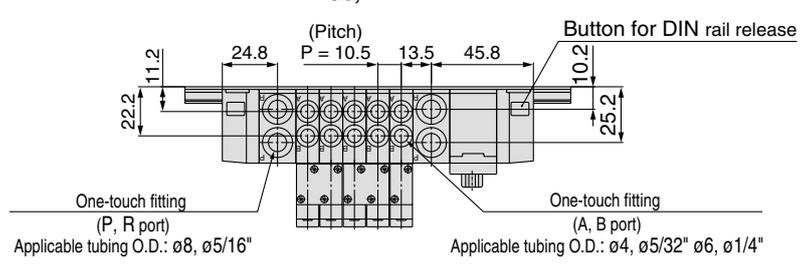


Note) The L1 to L4 dimensions of **SS5Y3-45FD- Stations D-C4, N3  
C6, N7** are identical to those of **SS5Y3-45FD- Stations U-C4, N3  
C6, N7**.



| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 123        | 135.5 | 148   | 148   | 160.5 | 173   | 185.5 | 198   | 210.5       |
| <b>L2</b>  | 112.5      | 125   | 137.5 | 137.5 | 150   | 162.5 | 175   | 187.5 | 200         |
| <b>L3</b>  | 91.5       | 102   | 112.5 | 123   | 133.5 | 144   | 154.5 | 165   | 175.5       |
| <b>L4</b>  | 15.5       | 16.5  | 17.5  | 12.5  | 13.5  | 14.5  | 15.5  | 16.5  | 17.5        |

**SS5Y3-45FD- Stations B-C4, N3  
C6, N7**



| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 135.5      | 148   | 160.5 | 173   | 185.5 | 185.5 | 198   | 210.5 | 223         |
| <b>L2</b>  | 125        | 137.5 | 150   | 162.5 | 175   | 175   | 187.5 | 200   | 212.5       |
| <b>L3</b>  | 108        | 118.5 | 129   | 139.5 | 150   | 160.5 | 171   | 181.5 | 192         |
| <b>L4</b>  | 13.5       | 14.5  | 15.5  | 16.5  | 17.5  | 12.5  | 13.5  | 14.5  | 15.5        |

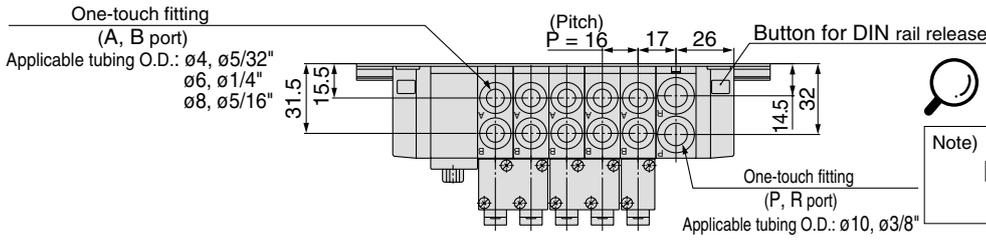
  

| Stations n | 11 stations | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20 stations |
|------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 235.5       | 248   | 248   | 260.5 | 273   | 285.5 | 298   | 310.5 | 310.5 | 323         |
| <b>L2</b>  | 225         | 237.5 | 237.5 | 250   | 262.5 | 275   | 287.5 | 300   | 300   | 312.5       |
| <b>L3</b>  | 202.5       | 213   | 223.5 | 234   | 244.5 | 255   | 265.5 | 276   | 286.5 | 297         |
| <b>L4</b>  | 16.5        | 17.5  | 12    | 13    | 14    | 15    | 16    | 17    | 12    | 13          |

- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

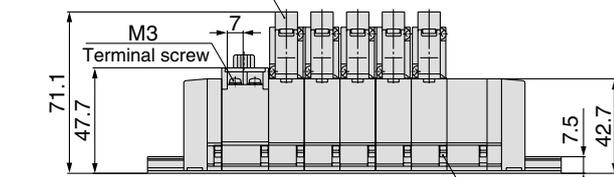
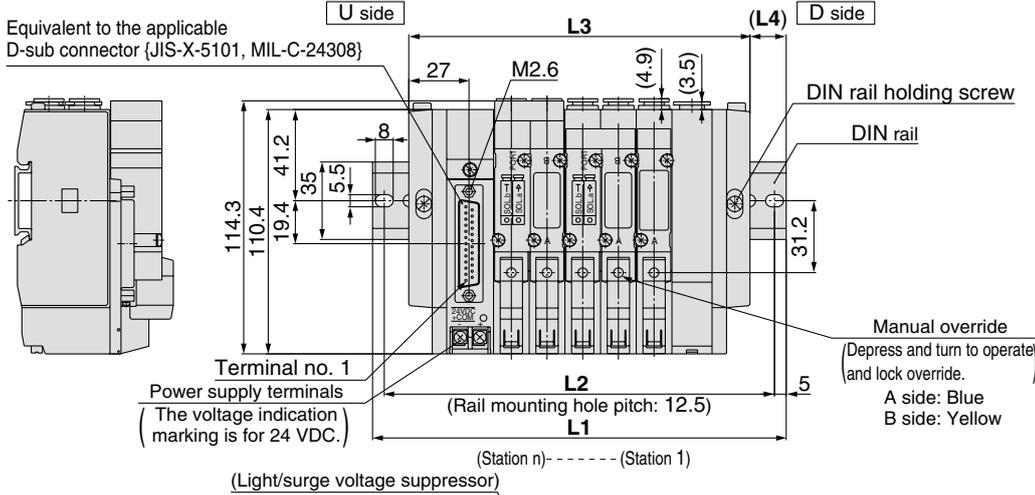
**SY5000: D-sub Connector/Plug-in**

**SS5Y5-45FU- Stations D-** <sup>C4, N3</sup>  
<sup>C6, N7</sup>  
<sup>C8, N9</sup>



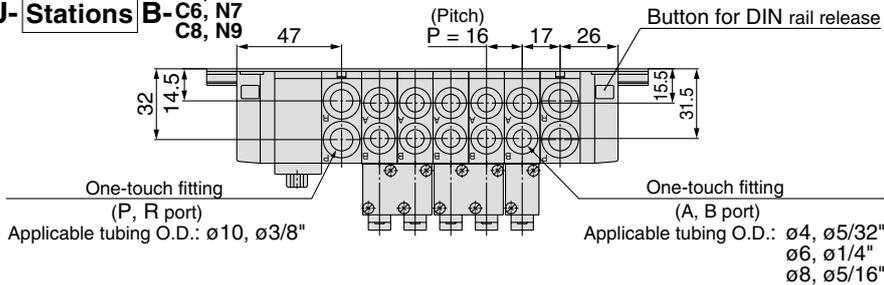
Note) The L1 to L4 dimensions of **SS5Y5-45FU- Stations U-** <sup>C4, N3</sup>  
<sup>C6, N7</sup> are identical to those of **SS5Y5-45FU- Stations D-** <sup>C4, N3</sup>  
<sup>C6, N7</sup>.

Equivalent to the applicable D-sub connector {JIS-X-5101, MIL-C-24308}

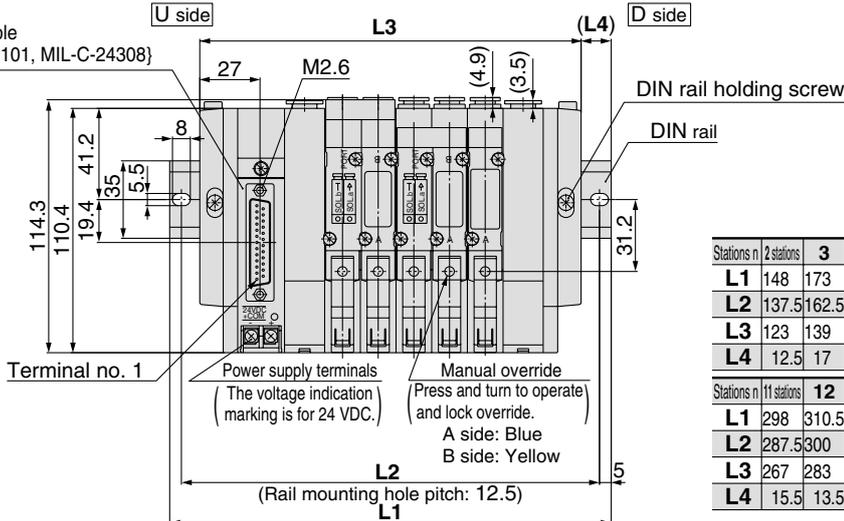


| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 135.5      | 148   | 160.5 | 185.5 | 198   | 210.5 | 235.5 | 248   | 260.5       |
| <b>L2</b>  | 125        | 137.5 | 150   | 175   | 187.5 | 200   | 225   | 237.5 | 250         |
| <b>L3</b>  | 105        | 121   | 137   | 153   | 169   | 185   | 201   | 217   | 233         |
| <b>L4</b>  | 15         | 13.5  | 11.5  | 16    | 14.5  | 12.5  | 17    | 15.5  | 13.5        |

**SS5Y5-45FU- Stations B-** <sup>C4, N3</sup>  
<sup>C6, N7</sup>  
<sup>C8, N9</sup>



Equivalent to the applicable D-sub connector {JIS-X-5101, MIL-C-24308}



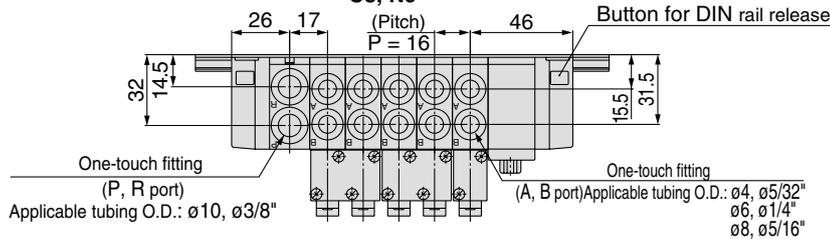
| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 148        | 173   | 185.5 | 198   | 210.5 | 235.5 | 248   | 260.5 | 285.5       |
| <b>L2</b>  | 137.5      | 162.5 | 175   | 187.5 | 200   | 225   | 237.5 | 250   | 275         |
| <b>L3</b>  | 123        | 139   | 155   | 171   | 187   | 203   | 219   | 235   | 251         |
| <b>L4</b>  | 12.5       | 17    | 15    | 13.5  | 11.5  | 16    | 14.5  | 12.5  | 17          |

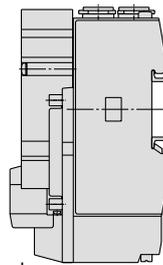
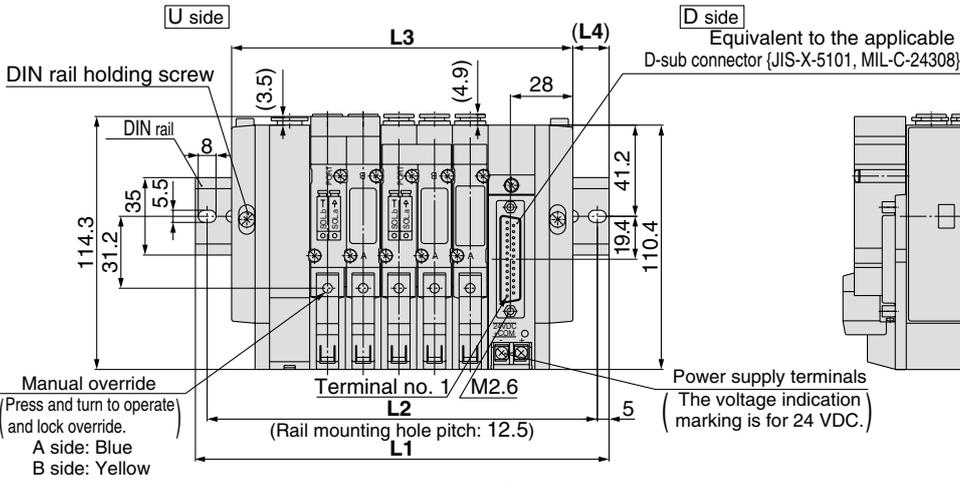
| Stations n | 11 stations | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20 stations |
|------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 298         | 310.5 | 323   | 348   | 360.5 | 373   | 398   | 410.5 | 423   | 435.5       |
| <b>L2</b>  | 287.5       | 300   | 312.5 | 337.5 | 350   | 362.5 | 387.5 | 400   | 412.5 | 425         |
| <b>L3</b>  | 267         | 283   | 299   | 315   | 331   | 347   | 363   | 379   | 395   | 411         |
| <b>L4</b>  | 15.5        | 13.5  | 12    | 16.5  | 14.5  | 13    | 17.5  | 15.5  | 14    | 12          |

**SY5000: D-sub Connector/Plug-in**

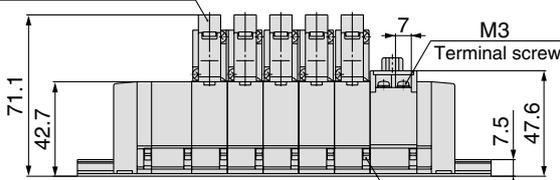
**SS5Y5-45FD- Stations U-** C4, N3  
C6, N7  
C8, N9



Note) The L1 to L4 dimensions of **SS5Y5-45FD- Stations D-** C4, N3  
C6, N7 are identical to those of  
SS5Y5-45FD- Stations U- C4, N3  
C6, N7.

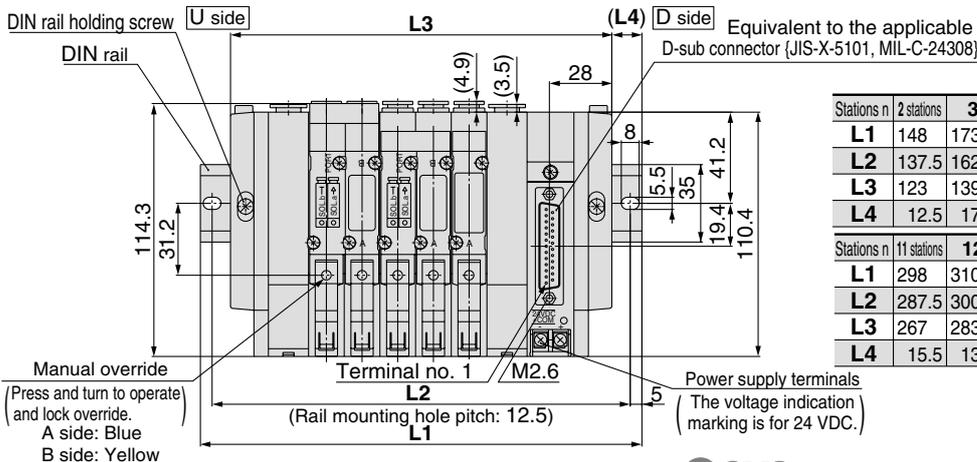
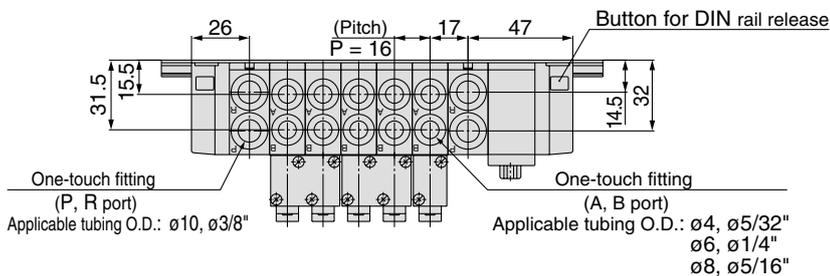


(Station n) - - - - - (Station 1)  
(Light/surge voltage suppressor)



| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 135.5      | 148   | 160.5 | 185.5 | 198   | 210.5 | 235.5 | 248   | 260.5       |
| L2         | 125        | 137.5 | 150   | 175   | 187.5 | 200   | 225   | 237.5 | 250         |
| L3         | 105        | 121   | 137   | 153   | 169   | 185   | 201   | 217   | 233         |
| L4         | 15         | 13.5  | 11.5  | 16    | 14.5  | 12.5  | 17    | 15.5  | 13.5        |

**SS5Y5-45FD- Stations B-** C4, N3  
C6, N7  
C8, N9



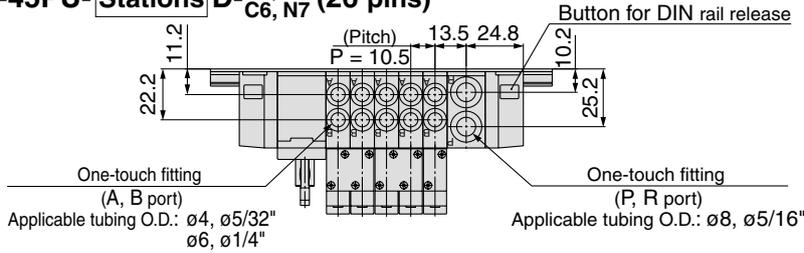
| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 148        | 173   | 185.5 | 198   | 210.5 | 235.5 | 248   | 260.5 | 285.5       |
| L2         | 137.5      | 162.5 | 175   | 187.5 | 200   | 225   | 237.5 | 250   | 275         |
| L3         | 123        | 139   | 155   | 171   | 187   | 203   | 219   | 235   | 251         |
| L4         | 12.5       | 17    | 15    | 13.5  | 11.5  | 16    | 14.5  | 12.5  | 17          |

| Stations n | 11 stations | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20 stations |
|------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 298         | 310.5 | 323   | 348   | 360.5 | 373   | 398   | 410.5 | 423   | 435.5       |
| L2         | 287.5       | 300   | 312.5 | 337.5 | 350   | 362.5 | 387.5 | 400   | 412.5 | 425         |
| L3         | 267         | 283   | 299   | 315   | 331   | 347   | 363   | 379   | 395   | 411         |
| L4         | 15.5        | 13.5  | 12    | 16.5  | 14.5  | 13    | 17.5  | 15.5  | 14    | 12          |

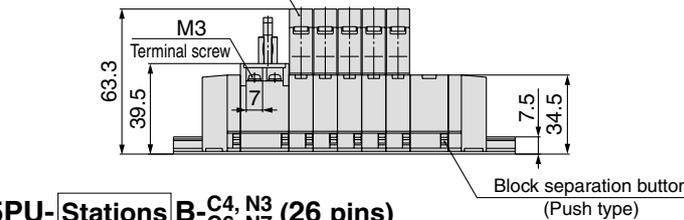
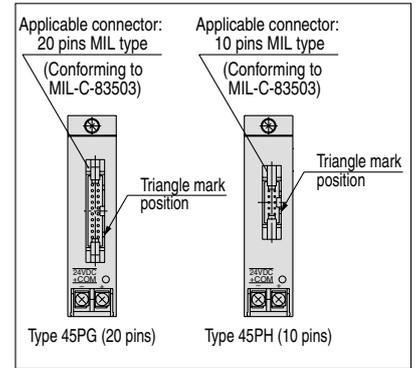
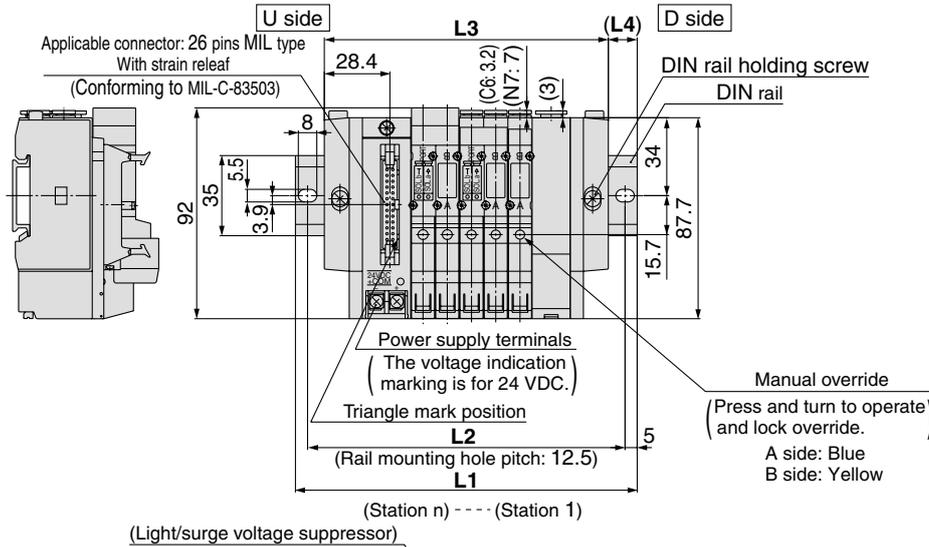
- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

**SY3000: Flat Ribbon Cable/Plug-in**

**SS5Y3-45PU- Stations D-C<sub>4</sub>, N<sub>3</sub> C<sub>6</sub>, N<sub>7</sub> (26 pins)**

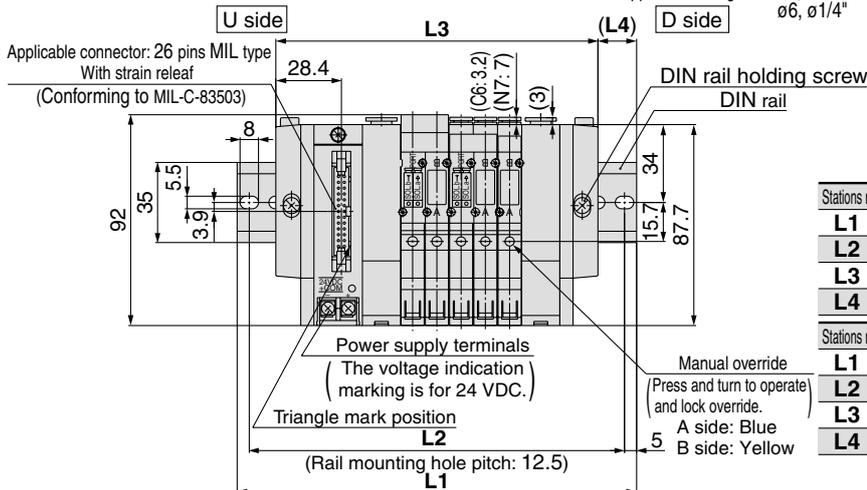
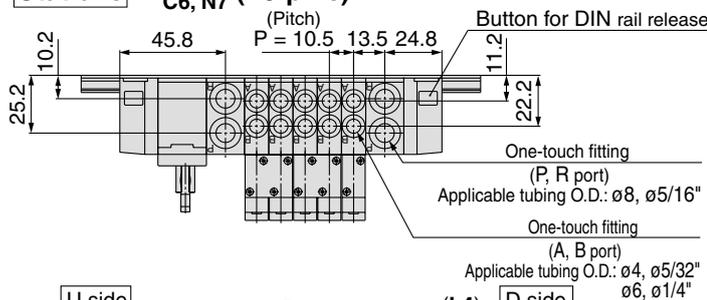


Note) The L1 to L4 dimensions of **SS5Y3-45P□U- Stations U-C<sub>4</sub>, N<sub>3</sub> C<sub>6</sub>, N<sub>7</sub>** are identical to those of **SS5Y3-45PIU- Stations D-C<sub>4</sub>, N<sub>3</sub> C<sub>6</sub>, N<sub>7</sub>**.



| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 123        | 135.5 | 148   | 148   | 160.5 | 173   | 185.5 | 198   | 210.5       |
| <b>L2</b>  | 112.5      | 125   | 137.5 | 137.5 | 150   | 162.5 | 175   | 187.5 | 200         |
| <b>L3</b>  | 91.5       | 102   | 112.5 | 123   | 133.5 | 144   | 154.5 | 165   | 175.5       |
| <b>L4</b>  | 15.5       | 16.5  | 17.5  | 12.5  | 13.5  | 14.5  | 15.5  | 16.5  | 17.5        |

**SS5Y3-45PU- Stations B-C<sub>4</sub>, N<sub>3</sub> C<sub>6</sub>, N<sub>7</sub> (26 pins)**



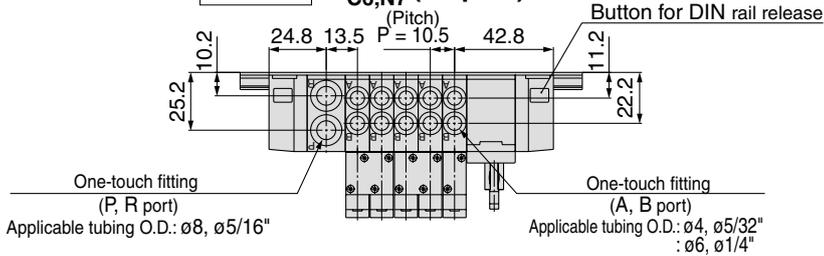
| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 135.5      | 148   | 160.5 | 173   | 185.5 | 185.5 | 198   | 210.5 | 223         |
| <b>L2</b>  | 125        | 137.5 | 150   | 162.5 | 175   | 175   | 187.5 | 200   | 212.5       |
| <b>L3</b>  | 108        | 118.5 | 129   | 139.5 | 150   | 160.5 | 171   | 181.5 | 192         |
| <b>L4</b>  | 13.5       | 14.5  | 15.5  | 16.5  | 17.5  | 12.5  | 13.5  | 14.5  | 15.5        |

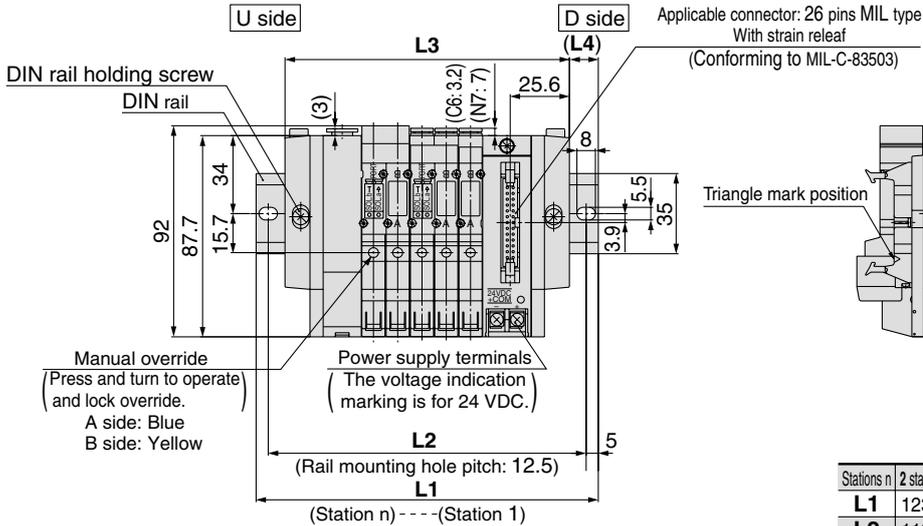
| Stations n | 11 stations | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20 stations |
|------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 235.5       | 248   | 248   | 260.5 | 273   | 285.5 | 298   | 310.5 | 310.5 | 323         |
| <b>L2</b>  | 225         | 237.5 | 237.5 | 250   | 262.5 | 275   | 287.5 | 300   | 300   | 312.5       |
| <b>L3</b>  | 202.5       | 213   | 223.5 | 234   | 244.5 | 255   | 265.5 | 276   | 286.5 | 297         |
| <b>L4</b>  | 16.5        | 17.5  | 12    | 13    | 14    | 15    | 16    | 17    | 12    | 13          |

**SY3000: Flat Ribbon Cable/Plug-in**

**SS5Y3-45PD- Stations U-C<sub>4,N3</sub> C<sub>6,N7</sub> (26 pins)**

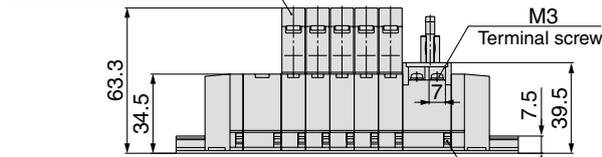


Note) The L1 to L4 dimensions of SS5Y3-45P□D- Stations D-C<sub>4,N3</sub> C<sub>6,N7</sub> are identical to those of SS5Y3-45P□D- Stations U-C<sub>4,N3</sub> C<sub>6,N7</sub>.

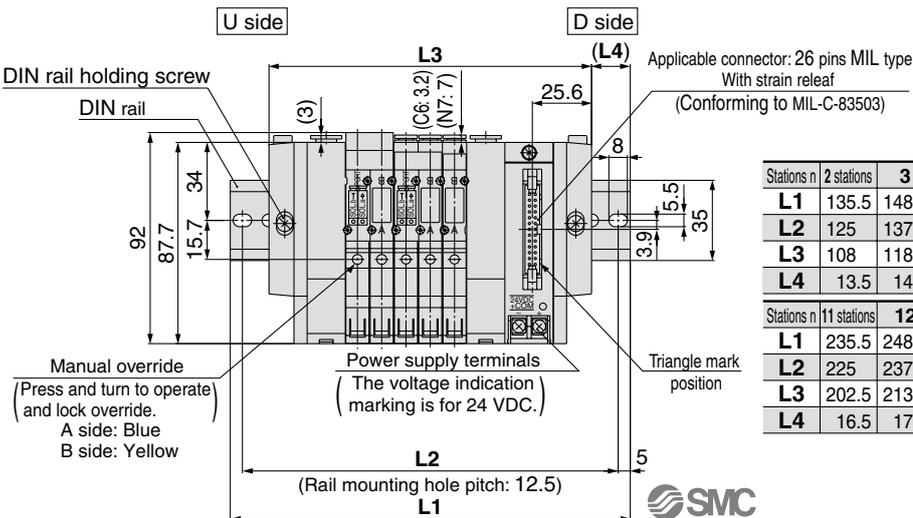
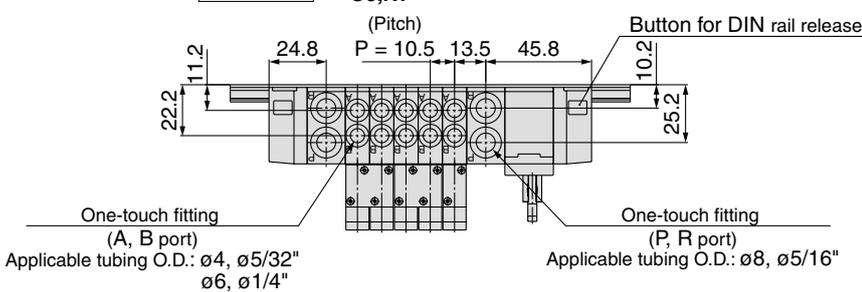


| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 123        | 135.5 | 148   | 148   | 160.5 | 173   | 185.5 | 198   | 210.5       |
| L2         | 112.5      | 125   | 137.5 | 137.5 | 150   | 162.5 | 175   | 187.5 | 200         |
| L3         | 91.5       | 102   | 112.5 | 123   | 133.5 | 144   | 154.5 | 165   | 175.5       |
| L4         | 15.5       | 16.5  | 17.5  | 12.5  | 13.5  | 14.5  | 15.5  | 16.5  | 17.5        |

(Light/surge voltage suppressor)



**SS5Y3-45PD- Stations B-C<sub>4,N3</sub> C<sub>6,N7</sub> (26 pins)**



| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 135.5      | 148   | 160.5 | 173   | 185.5 | 185.5 | 198   | 210.5 | 223         |
| L2         | 125        | 137.5 | 150   | 162.5 | 175   | 175   | 187.5 | 200   | 212.5       |
| L3         | 108        | 118.5 | 129   | 139.5 | 150   | 160.5 | 171   | 181.5 | 192         |
| L4         | 13.5       | 14.5  | 15.5  | 16.5  | 17.5  | 12.5  | 13.5  | 14.5  | 15.5        |

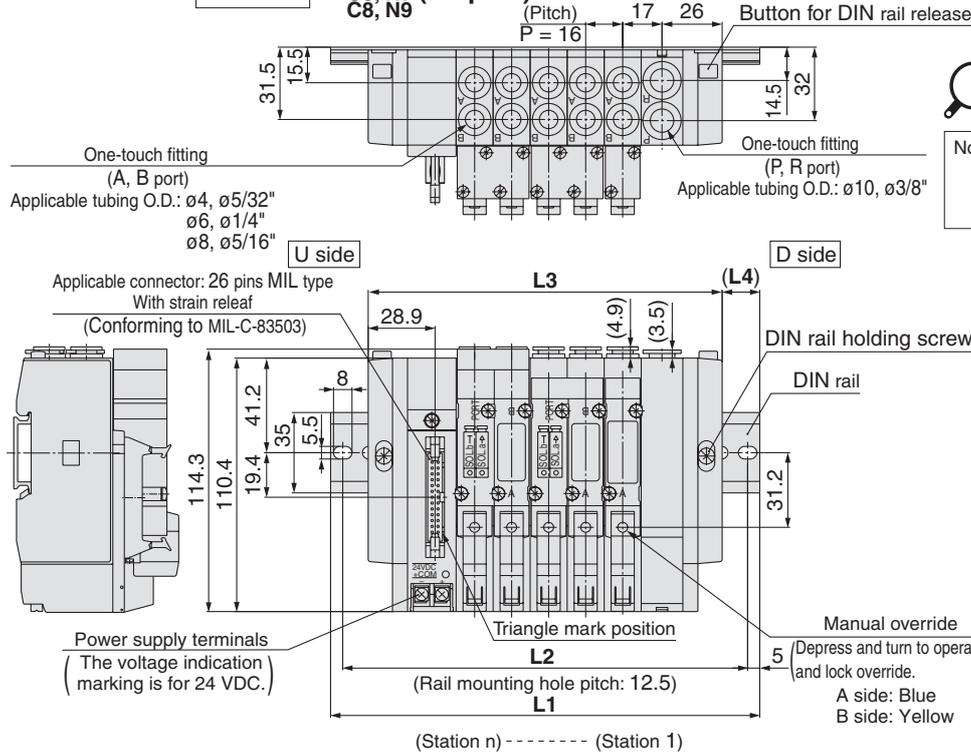
| Stations n | 11 stations | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20 stations |
|------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 235.5       | 248   | 248   | 260.5 | 273   | 285.5 | 298   | 310.5 | 310.5 | 323         |
| L2         | 225         | 237.5 | 237.5 | 250   | 262.5 | 275   | 287.5 | 300   | 300   | 312.5       |
| L3         | 202.5       | 213   | 223.5 | 234   | 244.5 | 255   | 265.5 | 276   | 286.5 | 297         |
| L4         | 16.5        | 17.5  | 12    | 13    | 14    | 15    | 16    | 17    | 12    | 13          |



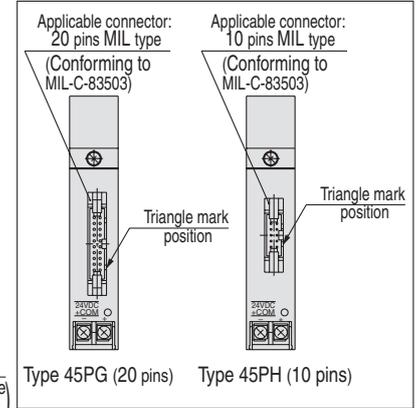
- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

**SY5000: Flat Ribbon Cable/Plug-in**

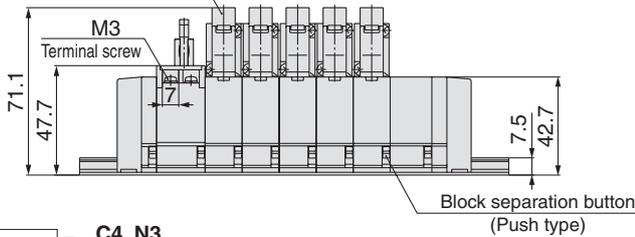
**SS5Y5-45PU- Stations D-<sup>C4, N3</sup><sub>C6, N7</sub> (26 pins)**  
<sup>C8, N9</sup>



Note) The L1 to L4 dimensions of SS5Y5-45P□U- Stations U-<sup>C4, N3</sup><sub>C6, N7</sub> are identical to those of SS5Y5-45P□U- Stations D-<sup>C4, N3</sup><sub>C6, N7</sub>.

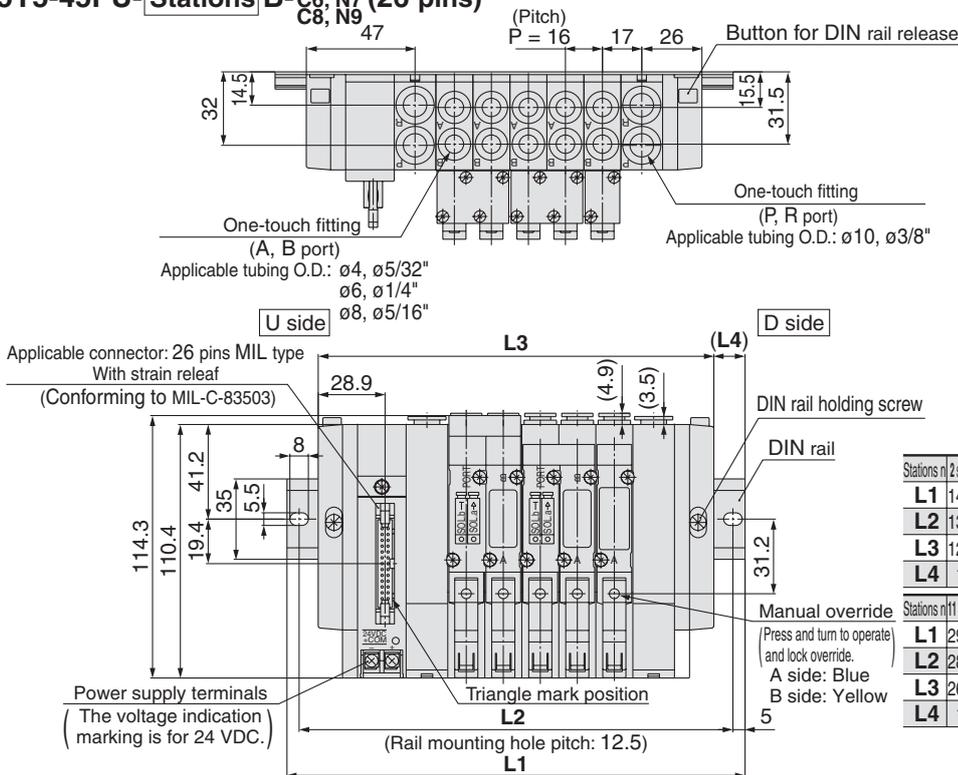


(Light/surge voltage suppressor)



| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 135.5      | 148   | 160.5 | 185.5 | 198   | 210.5 | 235.5 | 248   | 260.5       |
| L2         | 125        | 137.5 | 150   | 175   | 187.5 | 200   | 225   | 237.5 | 250         |
| L3         | 105        | 121   | 137   | 153   | 169   | 185   | 201   | 217   | 233         |
| L4         | 15         | 13.5  | 11.5  | 16    | 14.5  | 12.5  | 17    | 15.5  | 13.5        |

**SS5Y5-45PU- Stations B-<sup>C4, N3</sup><sub>C6, N7</sub> (26 pins)**  
<sup>C8, N9</sup>



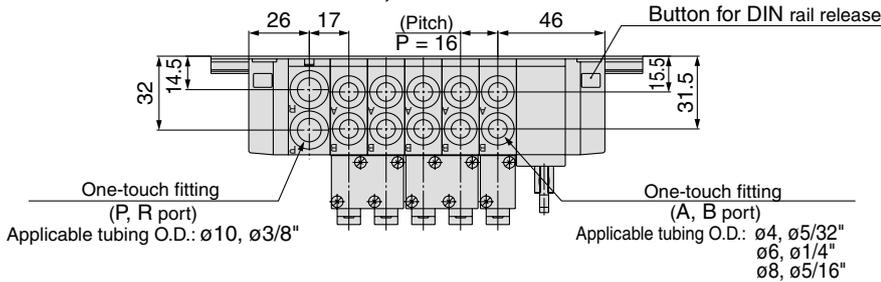
| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 148        | 173   | 185.5 | 198   | 210.5 | 235.5 | 248   | 260.5 | 285.5       |
| L2         | 137.5      | 162.5 | 175   | 187.5 | 200   | 225   | 237.5 | 250   | 275         |
| L3         | 123        | 139   | 155   | 171   | 187   | 203   | 219   | 235   | 251         |
| L4         | 12.5       | 17    | 15    | 13.5  | 11.5  | 16    | 14.5  | 12.5  | 17          |

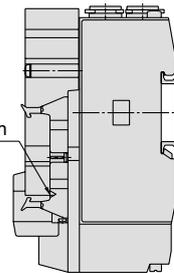
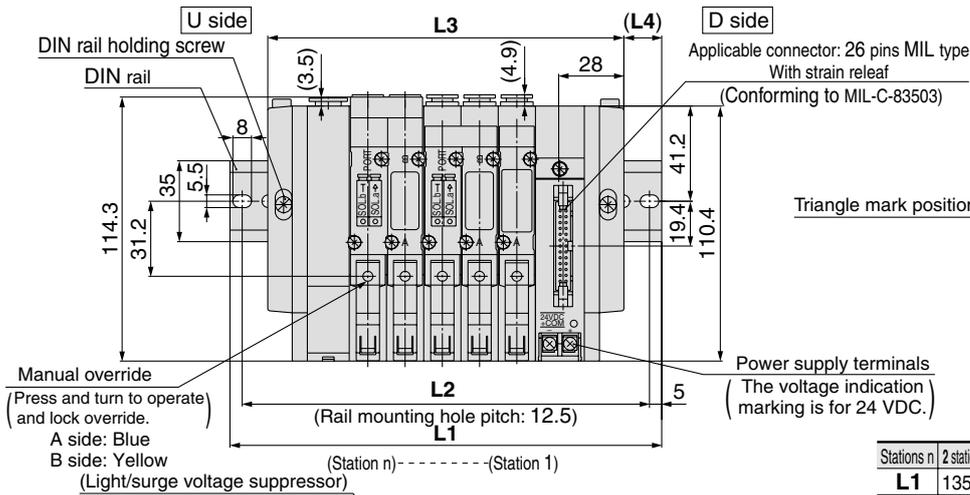
| Stations n | 11 stations | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20 stations |
|------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 298         | 310.5 | 323   | 348   | 360.5 | 373   | 398   | 410.5 | 423   | 435.5       |
| L2         | 287.5       | 300   | 312.5 | 337.5 | 350   | 362.5 | 387.5 | 400   | 412.5 | 425         |
| L3         | 267         | 283   | 299   | 315   | 331   | 347   | 363   | 379   | 395   | 411         |
| L4         | 15.5        | 13.5  | 12    | 16.5  | 14.5  | 13    | 17.5  | 15.5  | 14    | 12          |

**SY5000: Flat Ribbon Cable/Plug-in**

**SS5Y5-45PD- Stations U-<sup>C4, N3</sup><sub>C6, N7</sub> (26 pins)**  
<sup>C8, N9</sup>

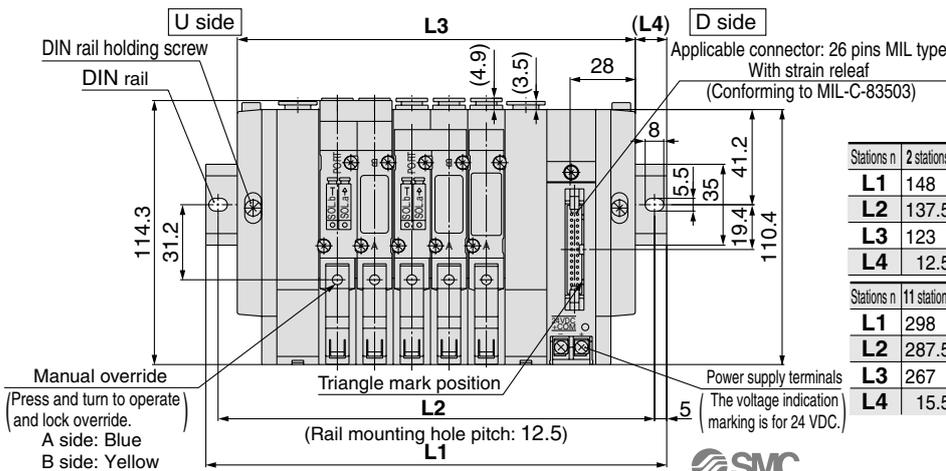
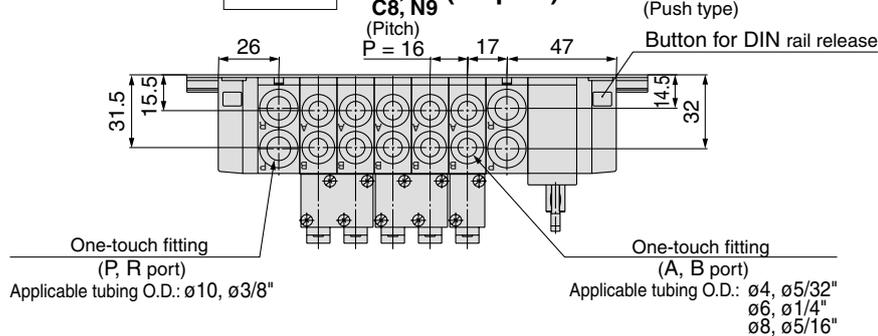


Note) The L1 to L4 dimensions of **SS5Y5-45P□D-**  
<sup>C4, N3</sup>  
**Stations** <sup>C6, N7</sup>**D-** are identical to those of  
<sup>C4, N3</sup>  
**SS5Y3-45P□D-** <sup>C6, N7</sup>**Stations** <sup>C8, N9</sup>**U-**



| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 135.5      | 148   | 160.5 | 185.5 | 198   | 210.5 | 235.5 | 248   | 260.5       |
| <b>L2</b>  | 125        | 137.5 | 150   | 175   | 187.5 | 200   | 225   | 237.5 | 250         |
| <b>L3</b>  | 105        | 121   | 137   | 153   | 169   | 185   | 201   | 217   | 233         |
| <b>L4</b>  | 15         | 13.5  | 11.5  | 16    | 14.5  | 12.5  | 17    | 15.5  | 13.5        |

**SS5Y5-45PD- Stations B-<sup>C4, N3</sup><sub>C6, N7</sub> (26 pins)**  
<sup>C8, N9</sup>



| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 148        | 173   | 185.5 | 198   | 210.5 | 235.5 | 248   | 260.5 | 285.5       |
| <b>L2</b>  | 137.5      | 162.5 | 175   | 187.5 | 200   | 225   | 237.5 | 250   | 275         |
| <b>L3</b>  | 123        | 139   | 155   | 171   | 187   | 203   | 219   | 235   | 251         |
| <b>L4</b>  | 12.5       | 17    | 15    | 13.5  | 11.5  | 16    | 14.5  | 12.5  | 17          |

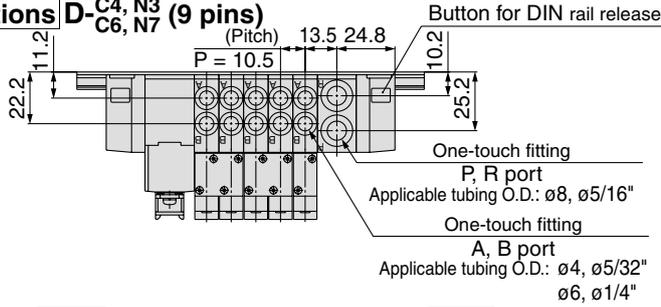
  

| Stations n | 11 stations | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20 stations |
|------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 298         | 310.5 | 323   | 348   | 360.5 | 373   | 398   | 410.5 | 423   | 435.5       |
| <b>L2</b>  | 287.5       | 300   | 312.5 | 337.5 | 350   | 362.5 | 387.5 | 400   | 412.5 | 425         |
| <b>L3</b>  | 267         | 283   | 299   | 315   | 331   | 347   | 363   | 379   | 395   | 411         |
| <b>L4</b>  | 15.5        | 13.5  | 12    | 16.5  | 14.5  | 13    | 17.5  | 15.5  | 14    | 12          |

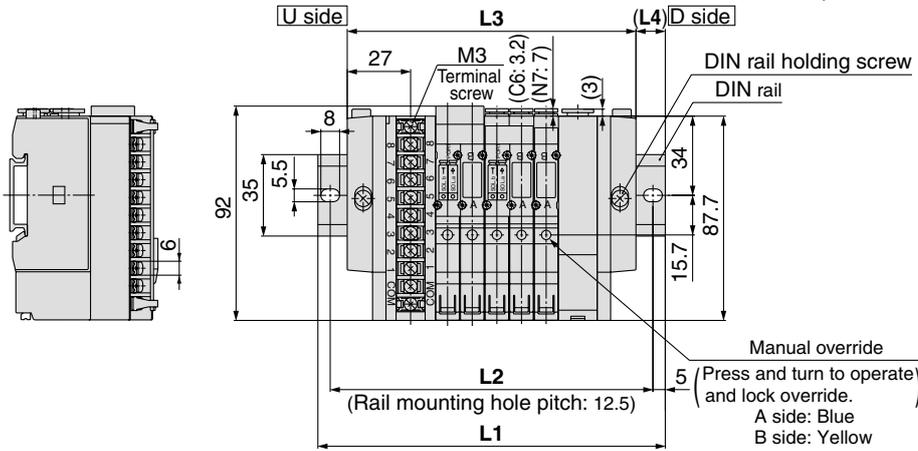
- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

**SY3000: 9 Pins Terminal Block/Plug-in**

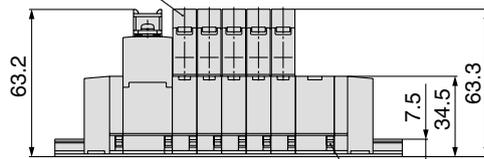
**SS5Y3-45TU- Stations D-C<sub>4</sub>, N<sub>3</sub> C<sub>6</sub>, N<sub>7</sub> (9 pins)**



Note) The L1 to L4 dimensions of **SS5Y3-45TU- Stations U-C<sub>4</sub>, N<sub>3</sub> C<sub>6</sub>, N<sub>7</sub>**, **SS5Y3-45TD- Stations U-C<sub>4</sub>, N<sub>3</sub> C<sub>6</sub>, N<sub>7</sub>**, **SS5Y3-45TD- Stations D-C<sub>4</sub>, N<sub>3</sub> C<sub>6</sub>, N<sub>7</sub>** are identical those of SS5Y3-45TU- Stations D-C<sub>4</sub>, N<sub>3</sub> C<sub>6</sub>, N<sub>7</sub>.



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

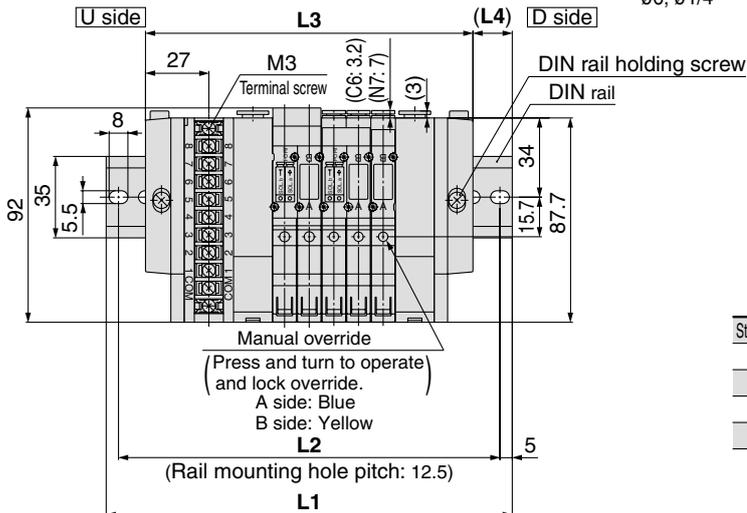
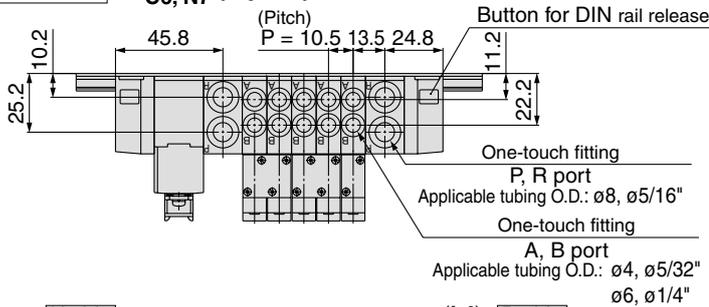


| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8 stations |
|------------|------------|-------|-------|-------|-------|-------|------------|
| <b>L1</b>  | 123        | 135.5 | 148   | 148   | 160.5 | 173   | 185.5      |
| <b>L2</b>  | 112.5      | 125   | 137.5 | 137.5 | 150   | 162.5 | 175        |
| <b>L3</b>  | 91.5       | 102   | 112.5 | 123   | 133.5 | 144   | 154.5      |
| <b>L4</b>  | 15.5       | 16.5  | 17.5  | 12.5  | 13.5  | 14.5  | 15.5       |



Note) The L1 to L4 dimensions of **SS5Y3-45TD- Stations B-C<sub>4</sub>, N<sub>3</sub> C<sub>6</sub>, N<sub>7</sub>** are identical to those of SS5Y3-45TU- Stations B-C<sub>4</sub>, N<sub>3</sub> C<sub>6</sub>, N<sub>7</sub>.

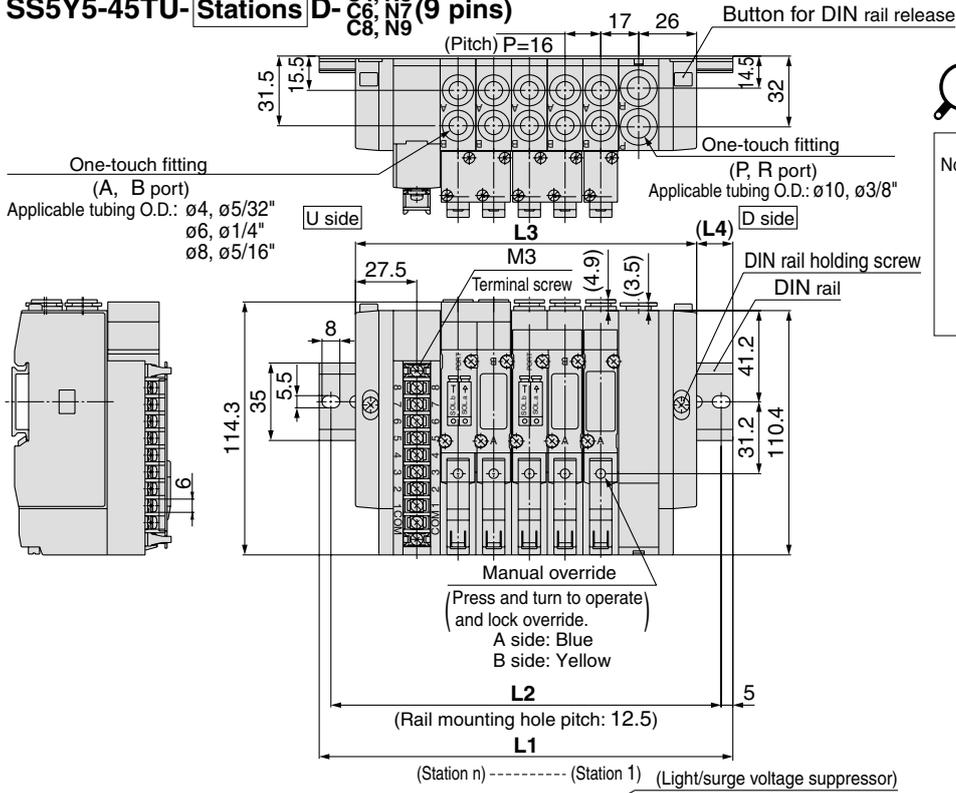
**SS5Y3-45TU- Stations B-C<sub>4</sub>, N<sub>3</sub> C<sub>6</sub>, N<sub>7</sub> (9 pins)**



| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8 stations |
|------------|------------|-------|-------|-------|-------|-------|------------|
| <b>L1</b>  | 135.5      | 148   | 160.5 | 173   | 185.5 | 185.5 | 198        |
| <b>L2</b>  | 125        | 137.5 | 150   | 162.5 | 175   | 175   | 187.5      |
| <b>L3</b>  | 108        | 118.5 | 129   | 139.5 | 150   | 160.5 | 171        |
| <b>L4</b>  | 13.5       | 14.5  | 15.5  | 16.5  | 17.5  | 12.5  | 13.5       |

**SY5000: 9 Pins Terminal Block/Plug-in**

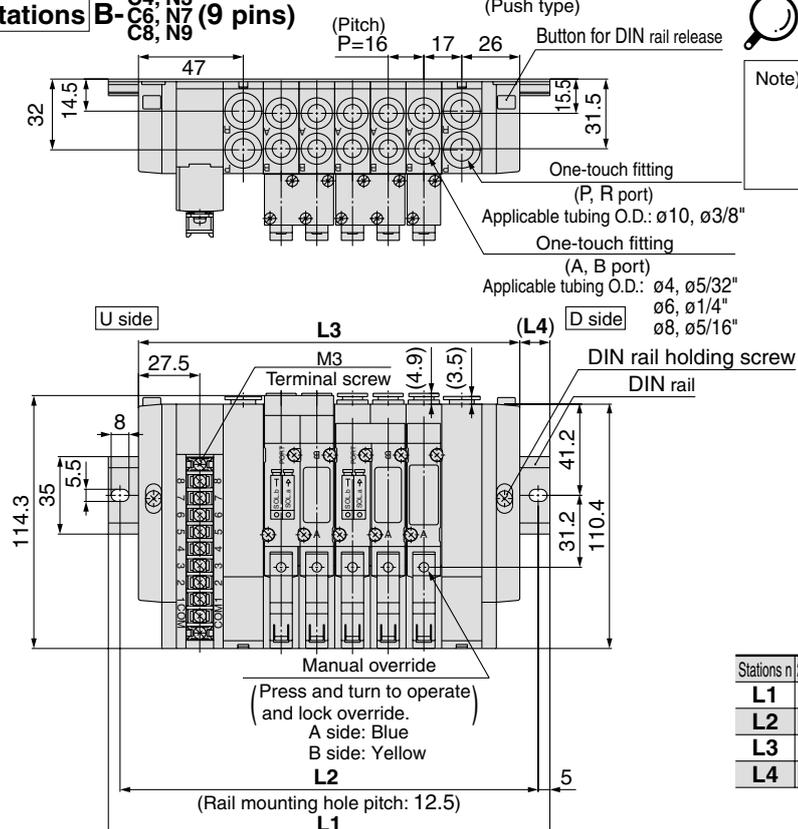
**SS5Y5-45TU- Stations D-<sup>C4, N3</sup><sub>C6, N7, C8, N9</sub> (9 pins)**



Note) The L1 to L4 dimensions of **SS5Y5-45TU-**  
**Stations U-<sup>C4, N3</sup><sub>C6, N7, C8, N9</sub>**, **SS5Y5-45TD-**  
**Stations U-<sup>C4, N3</sup><sub>C6, N7, C8, N9</sub>** are identical those  
of SS5Y5-45TU-**Stations D-<sup>C4, N3</sup><sub>C6, N7, C8, N9</sub>**

| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8 stations |
|------------|------------|-------|-------|-------|-------|-------|------------|
| <b>L1</b>  | 135.5      | 148   | 160.5 | 185.5 | 198   | 210.5 | 235.5      |
| <b>L2</b>  | 125        | 137.5 | 150   | 175   | 187.5 | 200   | 225        |
| <b>L3</b>  | 105        | 121   | 137   | 153   | 169   | 185   | 201        |
| <b>L4</b>  | 15         | 13.5  | 11.5  | 16    | 14.5  | 12.5  | 17         |

**SS5Y5-45TU- Stations B-<sup>C4, N3</sup><sub>C6, N7, C8, N9</sub> (9 pins)**



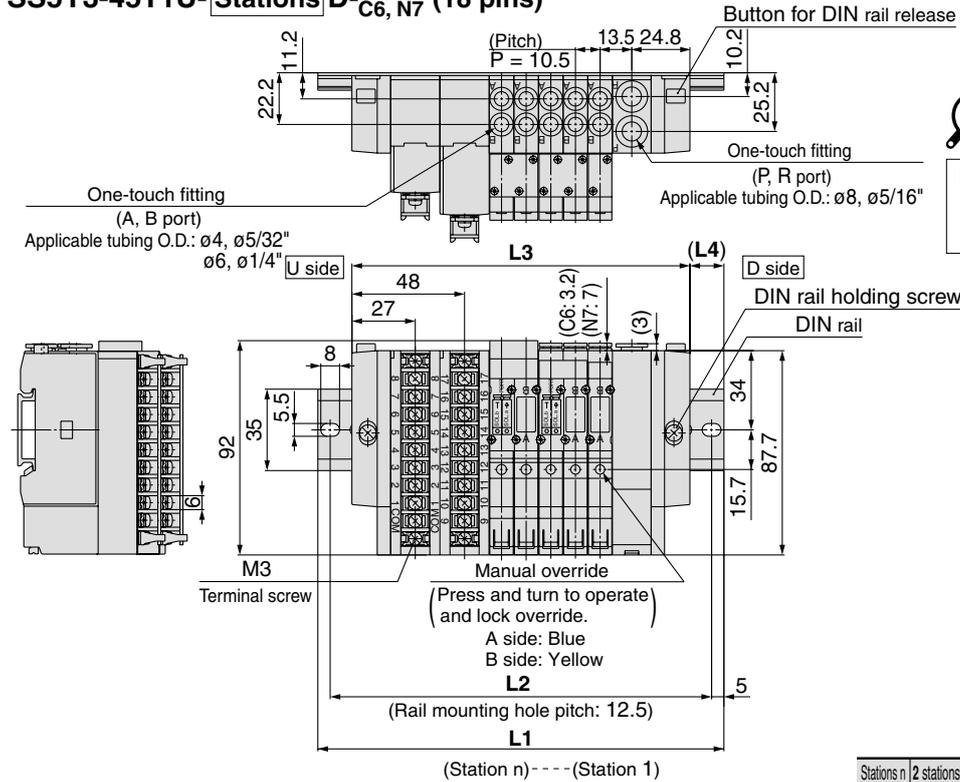
Note) The L1 to L4 dimensions of **SS5Y5-45TD-**  
**Stations B-<sup>C4, N3</sup><sub>C6, N7, C8, N9</sub>** are identical to those of  
**SS5Y5-45TU- Stations B-<sup>C4, N3</sup><sub>C6, N7, C8, N9</sub>**

| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8 stations |
|------------|------------|-------|-------|-------|-------|-------|------------|
| <b>L1</b>  | 148        | 173   | 185.5 | 198   | 210.5 | 235.5 | 248        |
| <b>L2</b>  | 137.5      | 162.5 | 175   | 187.5 | 200   | 225   | 237.5      |
| <b>L3</b>  | 123        | 139   | 155   | 171   | 187   | 203   | 219        |
| <b>L4</b>  | 12.5       | 17    | 15    | 13.5  | 11.5  | 16    | 14.5       |

- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

**SY3000: 18 Pins Terminal Block/Plug-in**

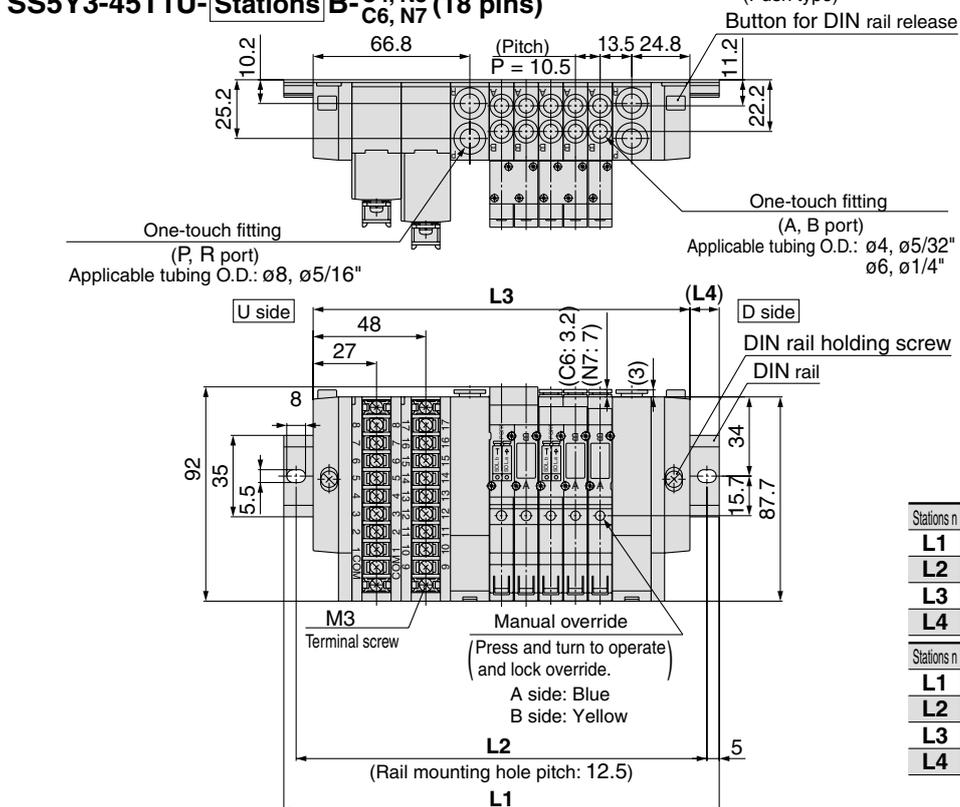
**SS5Y3-45T1U- Stations D-C<sub>4</sub>, N<sub>3</sub> C<sub>6</sub>, N<sub>7</sub> (18 pins)**



Note) The L1 to L4 dimensions of **SS5Y3-45T1U- Stations U-C<sub>4</sub>, N<sub>3</sub> C<sub>6</sub>, N<sub>7</sub>** are identical to those of **SS5Y3-45T1U- Stations D-C<sub>4</sub>, N<sub>3</sub> C<sub>6</sub>, N<sub>7</sub>**.

| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 148        | 148   | 160.5 | 173   | 185.5 | 198   | 210.5 | 210.5 | 223         |
| <b>L2</b>  | 137.5      | 137.5 | 150   | 162.5 | 175   | 187.5 | 200   | 200   | 212.5       |
| <b>L3</b>  | 112.5      | 123   | 133.5 | 144   | 154.5 | 165   | 175.5 | 186   | 196.5       |
| <b>L4</b>  | 17.5       | 12.5  | 13.5  | 14.5  | 15.5  | 16.5  | 17.5  | 12    | 13          |

**SS5Y3-45T1U- Stations B-C<sub>4</sub>, N<sub>3</sub> C<sub>6</sub>, N<sub>7</sub> (18 pins)**



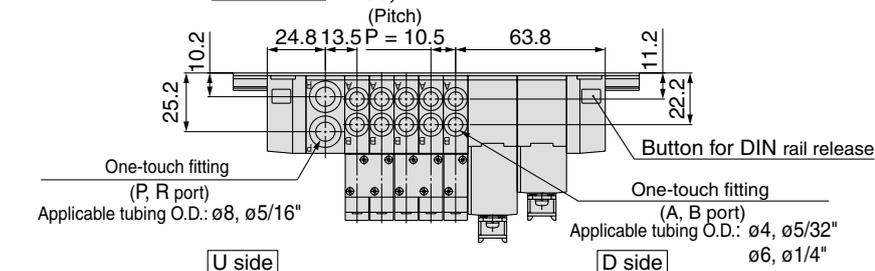
| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|------------|
| <b>L1</b>  | 160.5      | 173   | 185.5 | 185.5 | 198   | 210.5 | 223   | 235.5      |
| <b>L2</b>  | 150        | 162.5 | 175   | 175   | 187.5 | 200   | 212.5 | 225        |
| <b>L3</b>  | 129        | 139.5 | 150   | 160.5 | 171   | 181.5 | 192   | 202.5      |
| <b>L4</b>  | 15.5       | 16.5  | 17.5  | 12.5  | 13.5  | 14.5  | 15.5  | 16.5       |

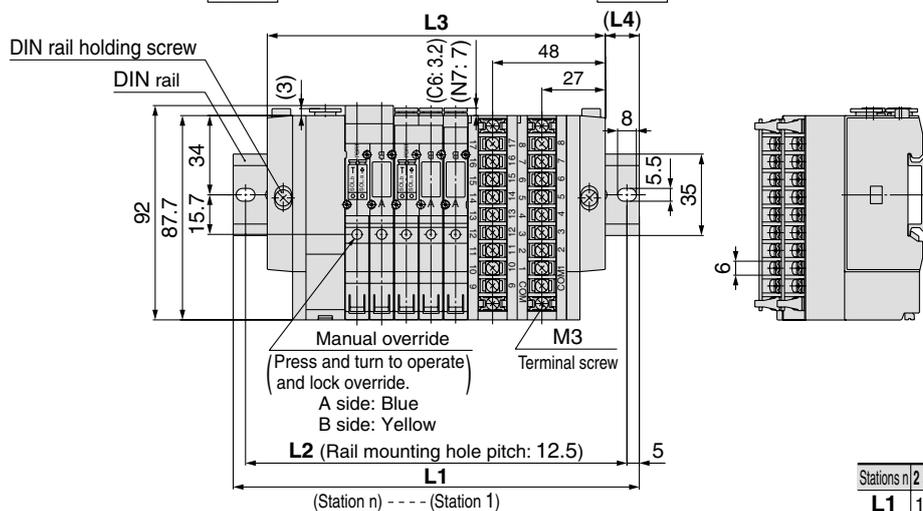
| Stations n | 10 stations | 11    | 12    | 13    | 14    | 15    | 16    | 17 stations |
|------------|-------------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 248         | 248   | 260.5 | 273   | 285.5 | 298   | 310.5 | 310.5       |
| <b>L2</b>  | 237.5       | 237.5 | 250   | 262.5 | 275   | 287.5 | 300   | 300         |
| <b>L3</b>  | 213         | 223.5 | 234   | 244.5 | 255   | 265.5 | 276   | 286.5       |
| <b>L4</b>  | 17.5        | 12    | 13    | 14    | 15    | 16    | 17    | 12          |

**SY3000: 9 Pins Terminal Block/Plug-in**

**SS5Y3-45T1D- Stations U-C<sub>6</sub><sup>N3</sup> (18 pins)**

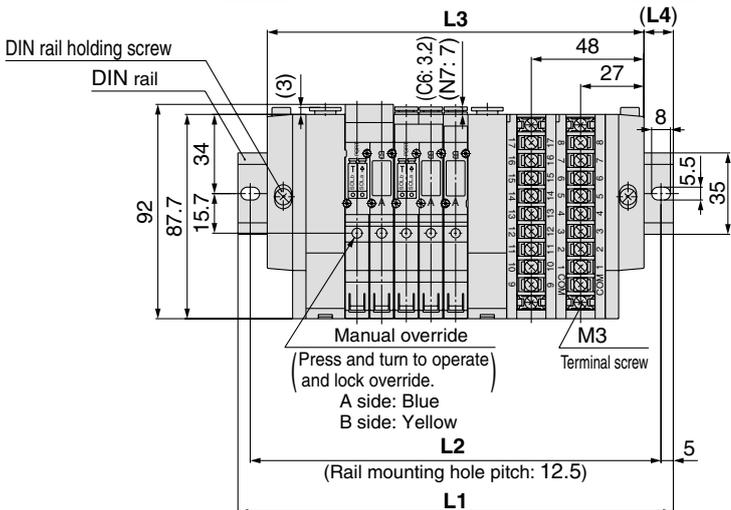
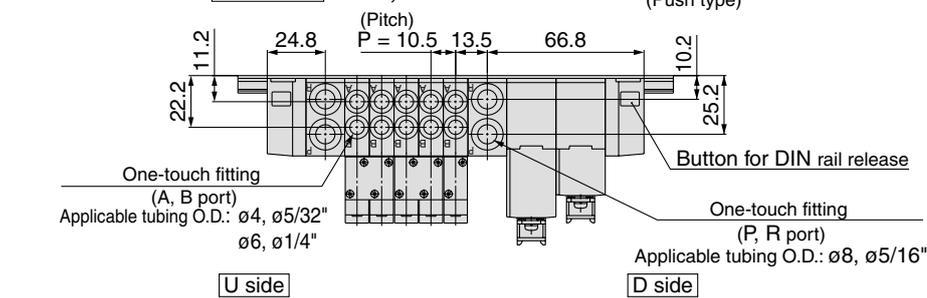


Note) The L1 to L4 dimensions of **SS5Y3-45T1D- Stations D-C<sub>6</sub><sup>N3</sup>** are identical to those of **SS5Y3-45T1D- Stations U-C<sub>6</sub><sup>N3</sup>**.



| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 148        | 148   | 160.5 | 173   | 185.5 | 198   | 210.5 | 210.5 | 223         |
| <b>L2</b>  | 137.5      | 137.5 | 150   | 162.5 | 175   | 187.5 | 200   | 200   | 212.5       |
| <b>L3</b>  | 112.5      | 123   | 133.5 | 144   | 154.5 | 165   | 175.5 | 186   | 196.5       |
| <b>L4</b>  | 17.5       | 12.5  | 13.5  | 14.5  | 15.5  | 16.5  | 17.5  | 12    | 13          |

**SS5Y3-45T1D- Stations B-C<sub>6</sub><sup>N3</sup> (18 pins)**



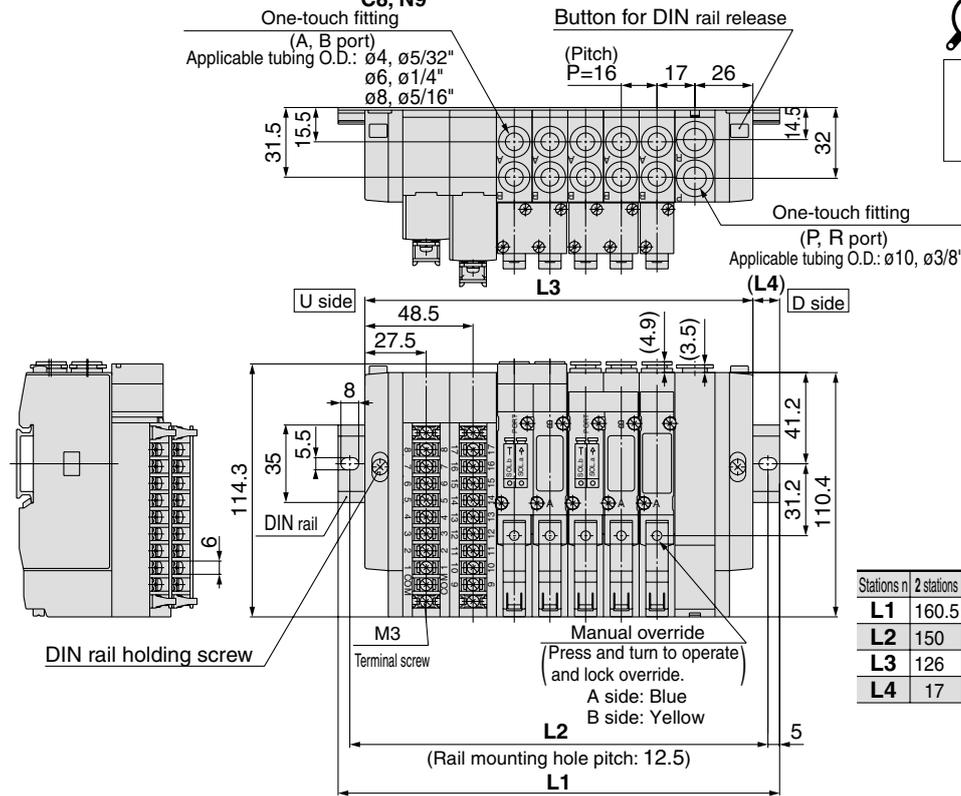
| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|------------|
| <b>L1</b>  | 160.5      | 173   | 185.5 | 185.5 | 198   | 210.5 | 223   | 235.5      |
| <b>L2</b>  | 150        | 162.5 | 175   | 175   | 187.5 | 200   | 212.5 | 225        |
| <b>L3</b>  | 129        | 139.5 | 150   | 160.5 | 171   | 181.5 | 192   | 202.5      |
| <b>L4</b>  | 15.5       | 16.5  | 17.5  | 12.5  | 13.5  | 14.5  | 15.5  | 16.5       |

| Stations n | 10 stations | 11    | 12    | 13    | 14    | 15    | 16    | 17 stations |
|------------|-------------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 248         | 248   | 260.5 | 273   | 285.5 | 298   | 310.5 | 310.5       |
| <b>L2</b>  | 237.5       | 237.5 | 250   | 262.5 | 275   | 287.5 | 300   | 300         |
| <b>L3</b>  | 213         | 223.5 | 234   | 244.5 | 255   | 265.5 | 276   | 286.5       |
| <b>L4</b>  | 17.5        | 12    | 13    | 14    | 15    | 16    | 17    | 12          |

- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

**SY5000: 18 Pins Terminal Block/Plug-in**

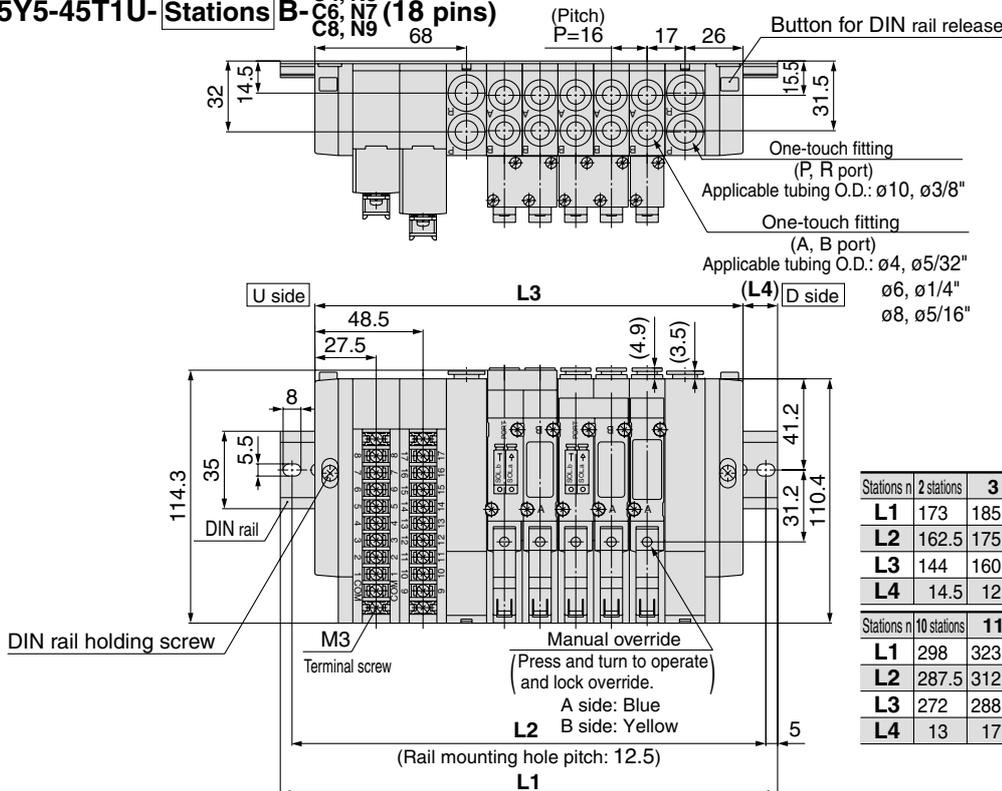
**SS5Y5-45T1U- Stations D-C<sub>4, N3</sub>, C<sub>6, N7</sub>, C<sub>8, N9</sub> (18 pins)**



Note) The L1 to L4 dimensions of **SS5Y5-45T1U- Stations U-C<sub>4, N3</sub>, C<sub>6, N7</sub>, C<sub>8, N9</sub>** are identical to those of **SS5Y5-45T1U- Stations D-C<sub>4, N3</sub>, C<sub>6, N7</sub>, C<sub>8, N9</sub>**

| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 160.5      | 173   | 185.5 | 198   | 223   | 235.5 | 248   | 273   | 285.5       |
| L2         | 150        | 162.5 | 175   | 187.5 | 212.5 | 225   | 237.5 | 262.5 | 275         |
| L3         | 126        | 142   | 158   | 174   | 190   | 206   | 222   | 238   | 254         |
| L4         | 17         | 15.5  | 13.5  | 12    | 16.5  | 14.5  | 13    | 17.5  | 15.5        |

**SS5Y5-45T1U- Stations B-C<sub>4, N3</sub>, C<sub>6, N7</sub>, C<sub>8, N9</sub> (18 pins)**



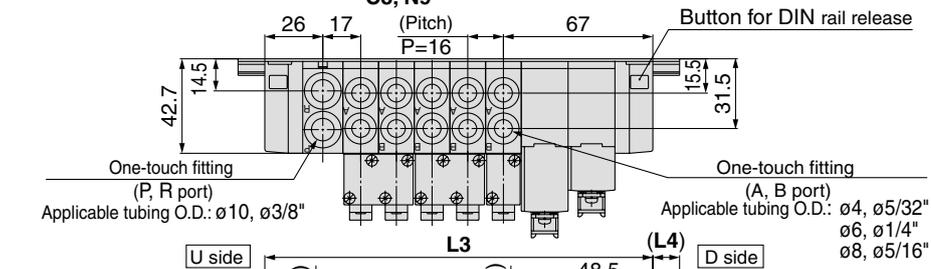
| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|------------|
| L1         | 173        | 185.5 | 210.5 | 223   | 235.5 | 248   | 273   | 285.5      |
| L2         | 162.5      | 175   | 200   | 212.5 | 225   | 237.5 | 262.5 | 275        |
| L3         | 144        | 160   | 176   | 192   | 208   | 224   | 240   | 256        |
| L4         | 14.5       | 12.5  | 17    | 15.5  | 13.5  | 12    | 16.5  | 14.5       |

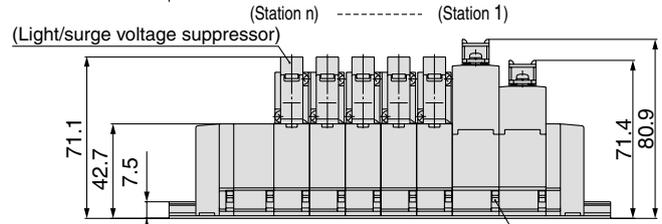
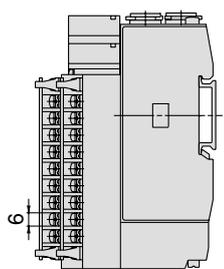
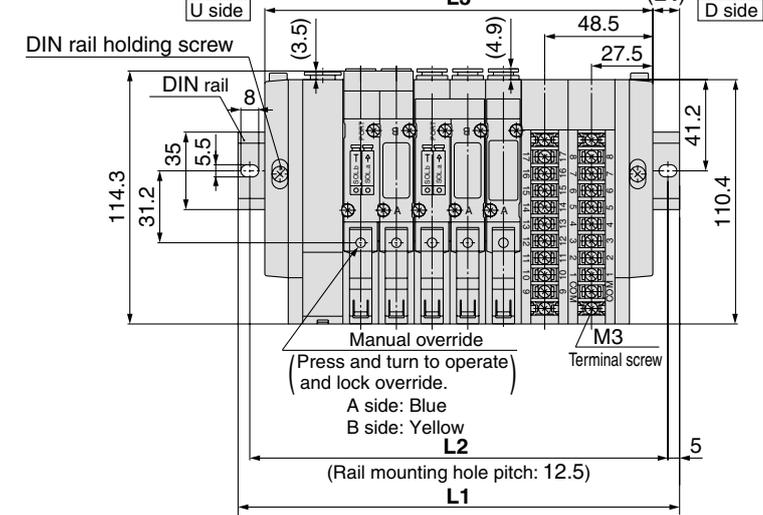
| Stations n | 10 stations | 11    | 12    | 13    | 14    | 15    | 16    | 17 stations |
|------------|-------------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 298         | 323   | 335.5 | 348   | 360.5 | 385.5 | 398   | 410.5       |
| L2         | 287.5       | 312.5 | 325   | 337.5 | 350   | 375   | 387.5 | 400         |
| L3         | 272         | 288   | 304   | 320   | 336   | 352   | 368   | 384         |
| L4         | 13          | 17.5  | 15.5  | 14    | 12    | 16.5  | 15    | 13          |

**SY5000: 18 Pins Terminal Block/Plug-in**

**SS5Y5-45T1D- Stations U-C<sub>4</sub>, N<sub>3</sub>  
C<sub>6</sub>, N<sub>7</sub> (18 pins)  
C<sub>8</sub>, N<sub>9</sub>**

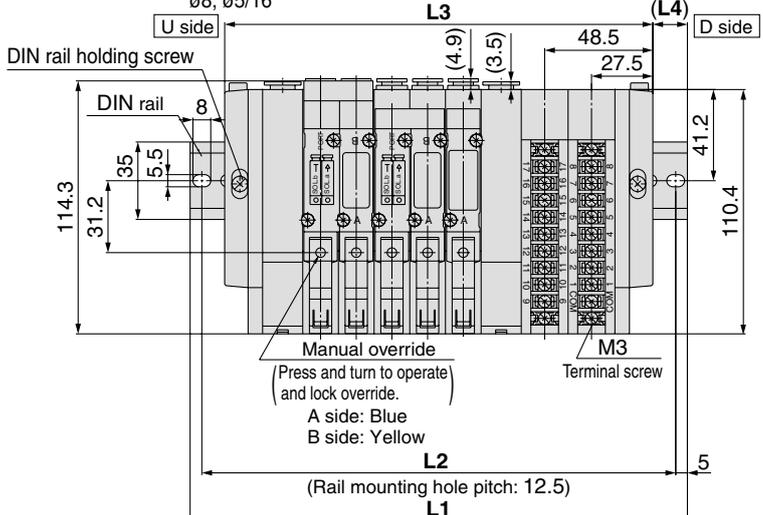
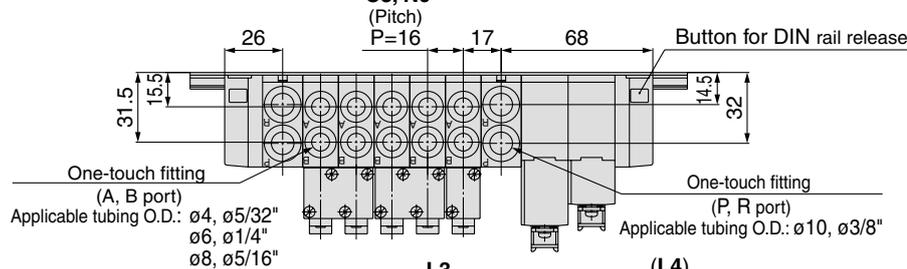


Note) The L1 to L4 dimensions of SS5Y5-45T1D- Stations D-C<sub>4</sub>, N<sub>3</sub>  
C<sub>6</sub>, N<sub>7</sub> are identical to those of SS5Y5-45T1D- Stations U-C<sub>4</sub>, N<sub>3</sub>  
C<sub>6</sub>, N<sub>7</sub>, C<sub>8</sub>, N<sub>9</sub>



| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 160.5      | 173   | 185.5 | 198   | 223   | 235.5 | 248   | 273   | 285.5       |
| L2         | 150        | 162.5 | 175   | 187.5 | 212.5 | 225   | 237.5 | 262.5 | 275         |
| L3         | 126        | 142   | 158   | 174   | 190   | 206   | 222   | 238   | 254         |
| L4         | 17         | 15.5  | 13.5  | 12    | 16.5  | 14.5  | 13    | 17.5  | 15.5        |

**SS5Y5-45T1D- Stations B-C<sub>4</sub>, N<sub>3</sub>  
C<sub>6</sub>, N<sub>7</sub> (18 pins)  
C<sub>8</sub>, N<sub>9</sub>**



| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|------------|
| L1         | 173        | 185.5 | 210.5 | 223   | 235.5 | 248   | 273   | 285.5      |
| L2         | 162.5      | 175   | 200   | 212.5 | 225   | 237.5 | 262.5 | 275        |
| L3         | 144        | 160   | 176   | 192   | 208   | 224   | 240   | 256        |
| L4         | 14.5       | 12.5  | 17    | 15.5  | 13.5  | 12    | 16.5  | 14.5       |

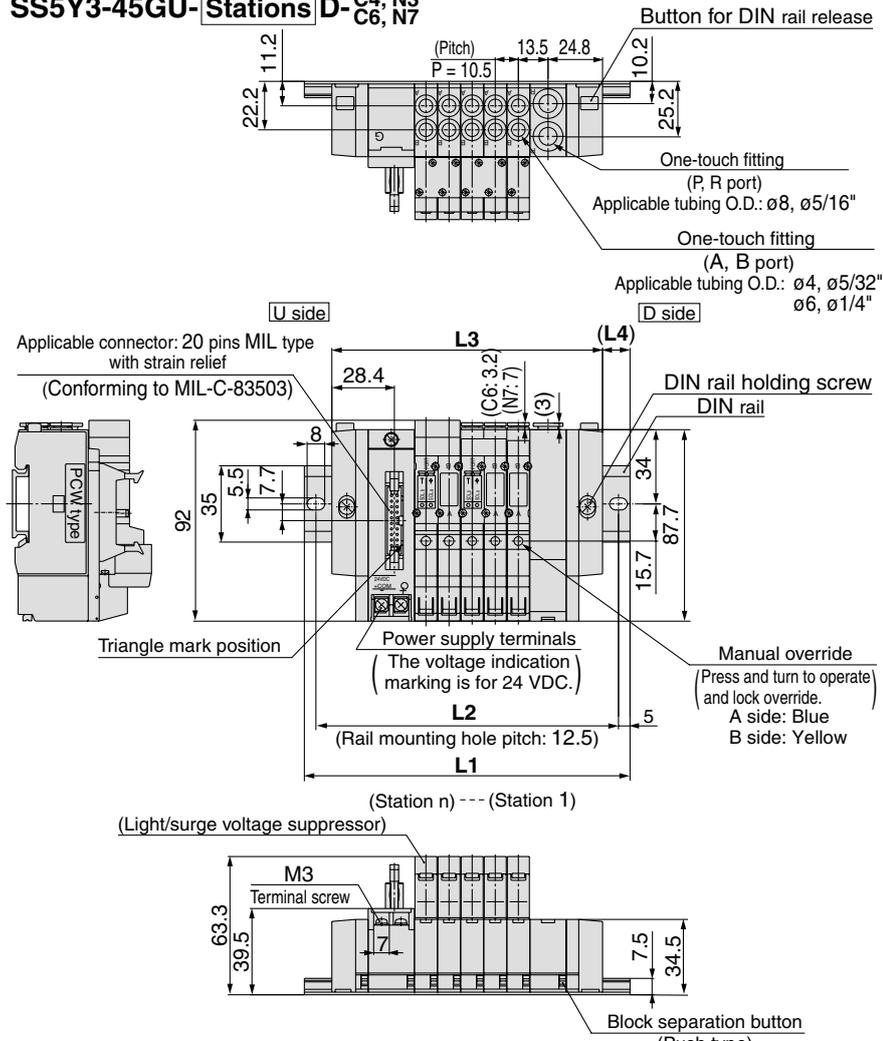
  

| Stations n | 10 stations | 11    | 12    | 13    | 14    | 15    | 16    | 17 stations |
|------------|-------------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 298         | 323   | 335.5 | 348   | 360.5 | 385.5 | 398   | 410.5       |
| L2         | 287.5       | 312.5 | 325   | 337.5 | 350   | 375   | 387.5 | 400         |
| L3         | 272         | 288   | 304   | 320   | 336   | 352   | 368   | 384         |
| L4         | 13          | 17.5  | 15.5  | 14    | 12    | 16.5  | 15    | 13          |

- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

**SY3000: PC Wiring System Compatible (Flat ribbon cable/Plug-in)**

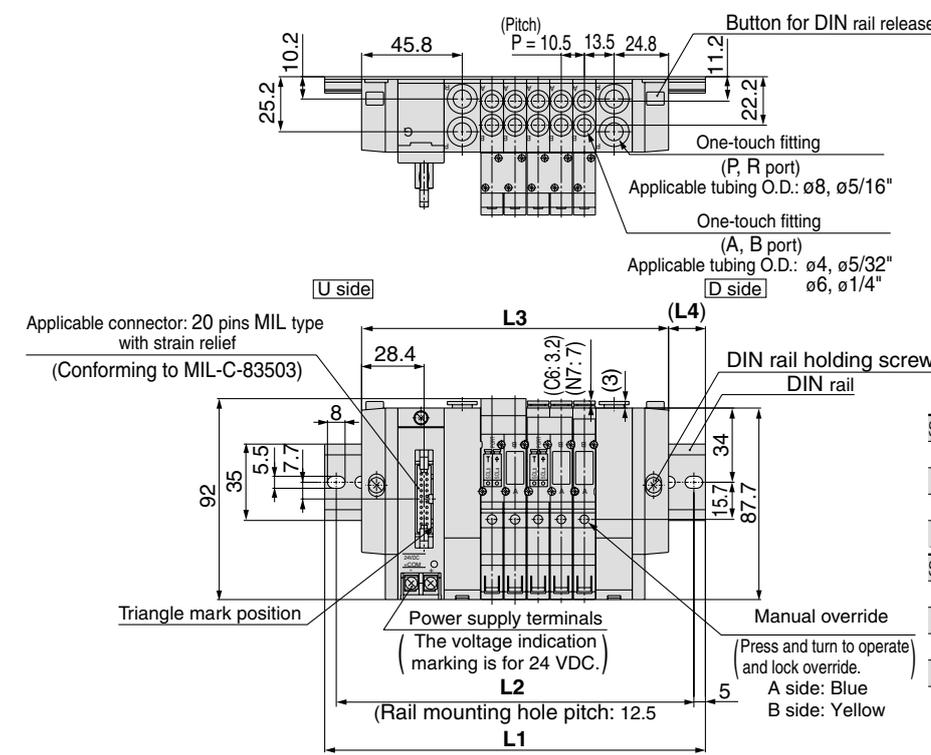
**SS5Y3-45GU- Stations D- C4, N3  
C6, N7**



Note) The L1 to L4 dimensions of **SS5Y3-45GU- Stations U- C4, N3  
C6, N7** are identical to those of **SS5Y3-45GU- Stations D- C4, N3  
C6, N7**.

| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 123        | 135.5 | 148   | 148   | 160.5 | 173   | 185.5 | 198   | 210.5       |
| L2         | 112.5      | 125   | 137.5 | 137.5 | 150   | 162.5 | 175   | 187.5 | 200         |
| L3         | 91.5       | 102   | 112.5 | 123   | 133.5 | 144   | 154.5 | 165   | 175.5       |
| L4         | 15.5       | 16.5  | 17.5  | 12.5  | 13.5  | 14.5  | 15.5  | 16.5  | 17.5        |

**SS5Y3-45GU- Stations B- C4, N3  
C6, N7**

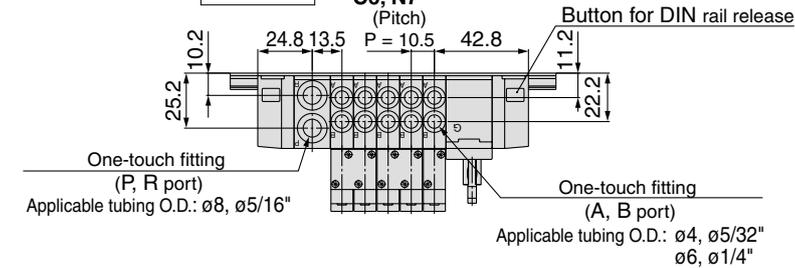


| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 135.5      | 148   | 160.5 | 173   | 185.5 | 185.5 | 198   | 210.5 | 223         |
| L2         | 125        | 137.5 | 150   | 162.5 | 175   | 175   | 187.5 | 200   | 212.5       |
| L3         | 108        | 118.5 | 129   | 139.5 | 150   | 160.5 | 171   | 181.5 | 192         |
| L4         | 13.5       | 14.5  | 15.5  | 16.5  | 17.5  | 12.5  | 13.5  | 14.5  | 15.5        |

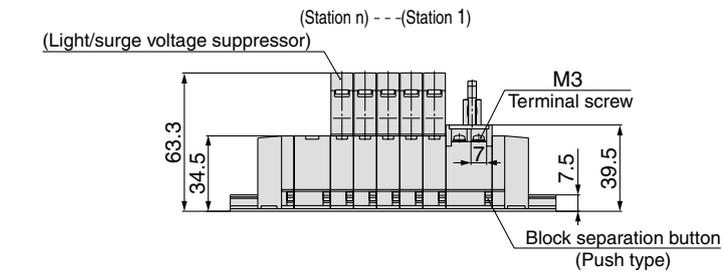
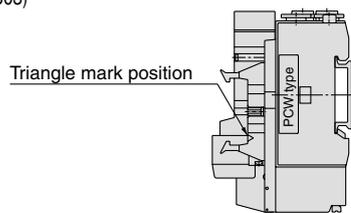
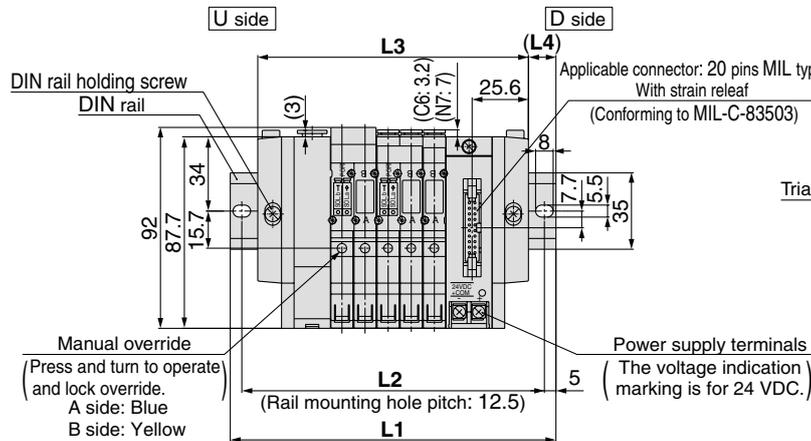
| Stations n | 11 stations | 12    | 13    | 14    | 15    | 16 stations |
|------------|-------------|-------|-------|-------|-------|-------------|
| L1         | 235.5       | 248   | 248   | 260.5 | 273   | 285.5       |
| L2         | 225         | 237.5 | 237.5 | 250   | 262.5 | 275         |
| L3         | 202.5       | 213   | 223.5 | 234   | 244.5 | 255         |
| L4         | 16.5        | 17.5  | 12    | 13    | 14    | 15          |

**SY3000: PC Wiring System Compatible (Flat ribbon cable/Plug-in)**

**SS5Y3-45GD- Stations U-<sup>C4, N3</sup><sub>C6, N7</sub>**

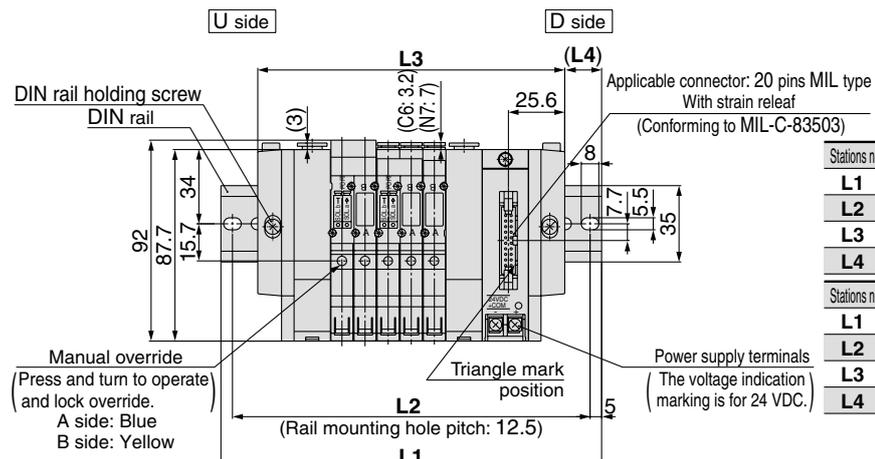
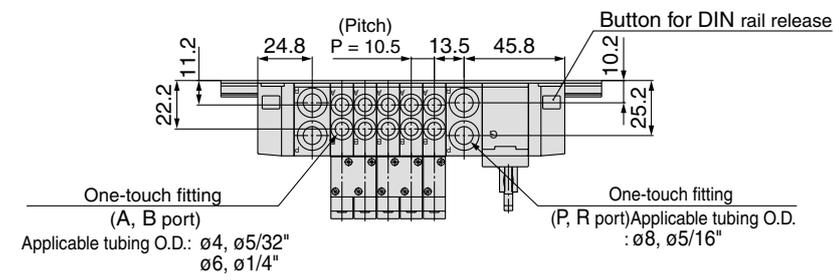


Note) The L1 to L4 dimensions of **SS5Y3-45GD- Stations D-<sup>C4, N3</sup><sub>C6, N7</sub>** are identical to those of **SS5Y3-45GD- Stations U-<sup>C4, N3</sup><sub>C6, N7</sub>**



| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 123        | 135.5 | 148   | 148   | 160.5 | 173   | 185.5 | 198   | 210.5       |
| L2         | 112.5      | 125   | 137.5 | 137.5 | 150   | 162.5 | 175   | 187.5 | 200         |
| L3         | 91.5       | 102   | 112.5 | 123   | 133.5 | 144   | 154.5 | 165   | 175.5       |
| L4         | 15.5       | 16.5  | 17.5  | 12.5  | 13.5  | 14.5  | 15.5  | 16.5  | 17.5        |

**SS5Y3-45GD- Stations B-<sup>C4, N3</sup><sub>C6, N7</sub>**



| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 135.5      | 148   | 160.5 | 173   | 185.5 | 185.5 | 198   | 210.5 | 223         |
| L2         | 125        | 137.5 | 150   | 162.5 | 175   | 175   | 187.5 | 200   | 212.5       |
| L3         | 108        | 118.5 | 129   | 139.5 | 150   | 160.5 | 171   | 181.5 | 192         |
| L4         | 13.5       | 14.5  | 15.5  | 16.5  | 17.5  | 12.5  | 13.5  | 14.5  | 15.5        |

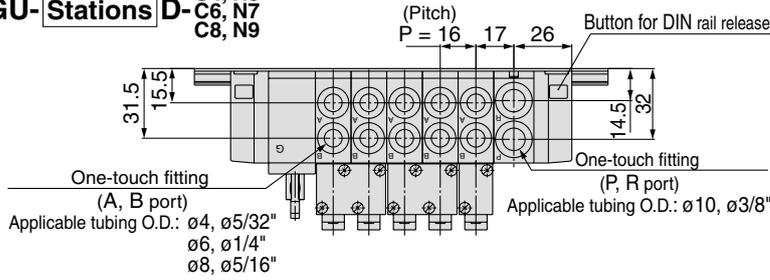
  

| Stations n | 11 stations | 12    | 13    | 14    | 15    | 16 stations |
|------------|-------------|-------|-------|-------|-------|-------------|
| L1         | 235.5       | 248   | 248   | 260.5 | 273   | 285.5       |
| L2         | 225         | 237.5 | 237.5 | 250   | 262.5 | 275         |
| L3         | 202.5       | 213   | 223.5 | 234   | 244.5 | 255         |
| L4         | 16.5        | 17.5  | 12    | 13    | 14    | 15          |

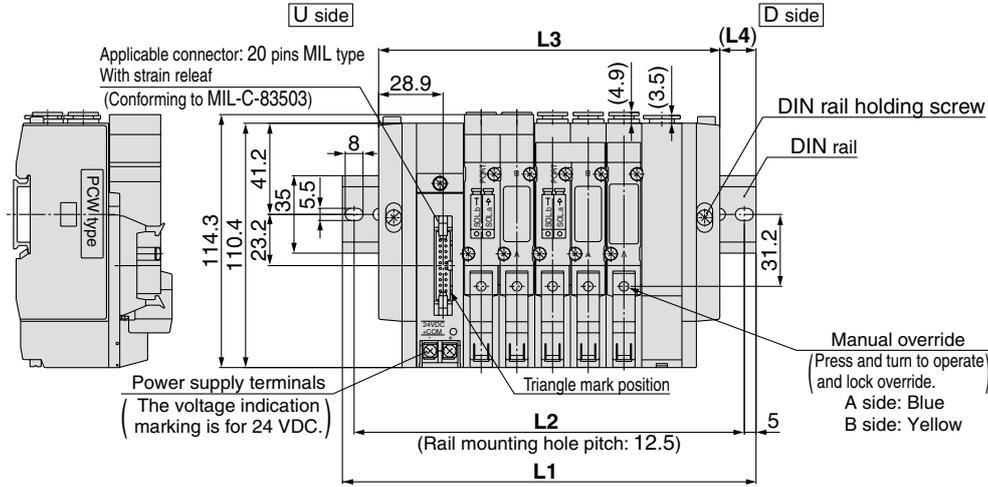
- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

**SY5000: PC Wiring System Compatible (Flat ribbon cable/Plug-in)**

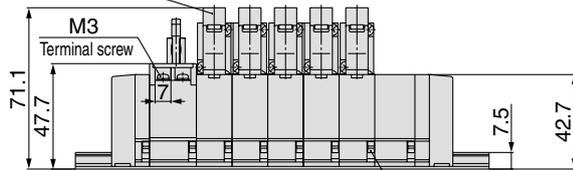
**SS5Y5-45GU- Stations D-** C4, N3  
C6, N7  
C8, N9



Note) The L1 to L4 dimensions of **SS5Y5-45GU- Stations U-** C4, N3  
C6, N7  
C8, N9 are identical to those of **SS5Y5-45GU- Stations D-** C4, N3  
C6, N7  
C8, N9.

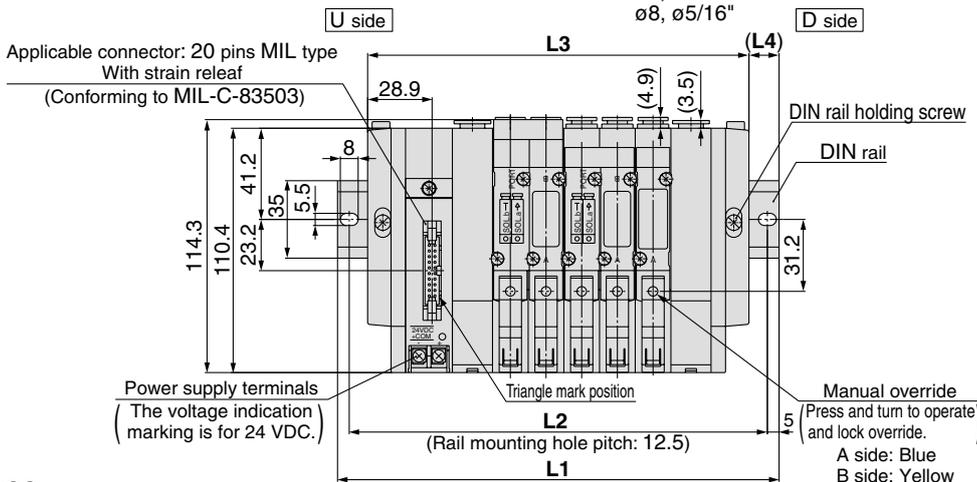
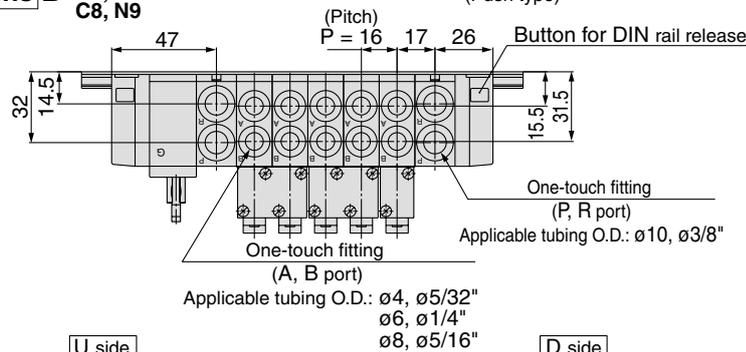


(Light/surge voltage suppressor) (Station n) ----- (Station 1)



| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 135.5      | 148   | 160.5 | 185.5 | 198   | 210.5 | 235.5 | 248   | 260.5       |
| <b>L2</b>  | 125        | 137.5 | 150   | 175   | 187.5 | 200   | 225   | 237.5 | 250         |
| <b>L3</b>  | 105        | 121   | 137   | 153   | 169   | 185   | 201   | 217   | 233         |
| <b>L4</b>  | 15         | 13.5  | 11.5  | 16    | 14.5  | 12.5  | 17    | 15.5  | 13.5        |

**SS5Y5-45GU- Stations B-** C4, N3  
C6, N7  
C8, N9

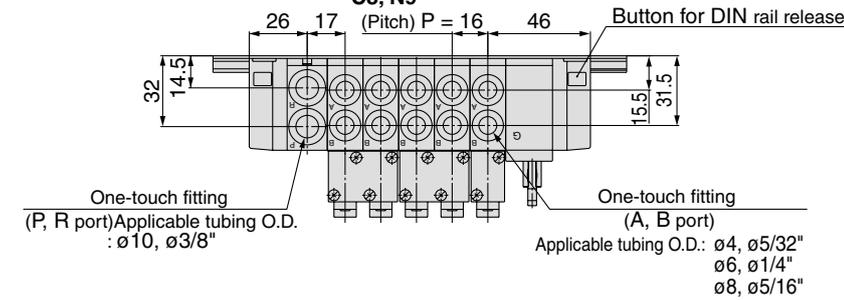


| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 148        | 173   | 185.5 | 198   | 210.5 | 235.5 | 248   | 260.5 | 285.5       |
| <b>L2</b>  | 137.5      | 162.5 | 175   | 187.5 | 200   | 225   | 237.5 | 250   | 275         |
| <b>L3</b>  | 123        | 139   | 155   | 171   | 187   | 203   | 219   | 235   | 251         |
| <b>L4</b>  | 12.5       | 17    | 15    | 13.5  | 11.5  | 16    | 14.5  | 12.5  | 17          |

| Stations n | 11 stations | 12    | 13    | 14    | 15    | 16 stations |
|------------|-------------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 298         | 310.5 | 323   | 348   | 360.5 | 373         |
| <b>L2</b>  | 287.5       | 300   | 312.5 | 337.5 | 350   | 362.5       |
| <b>L3</b>  | 267         | 283   | 299   | 315   | 331   | 347         |
| <b>L4</b>  | 15.5        | 13.5  | 12    | 16.5  | 14.5  | 13          |

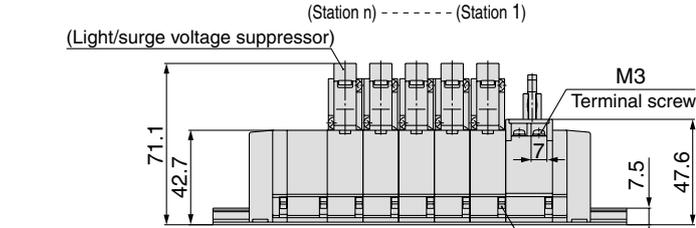
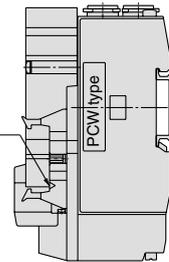
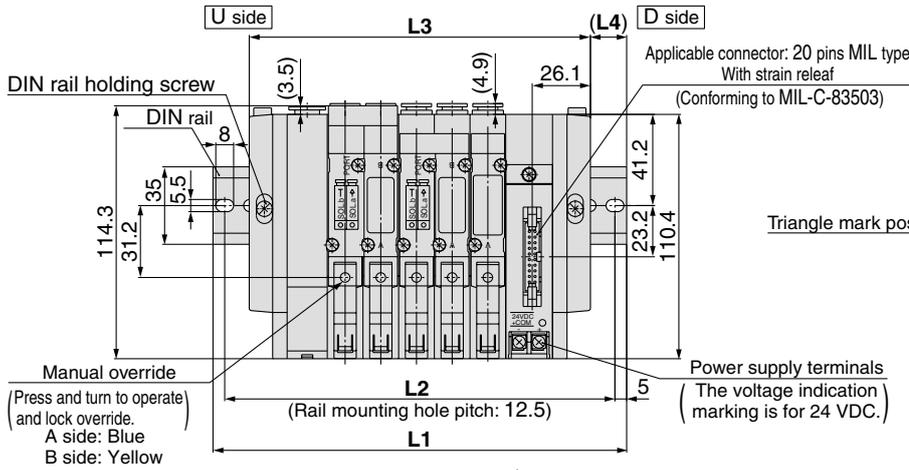
**SY5000: PC Wiring System Compatible (Flat ribbon cable/Plug-in)**

**SS5Y5-45GD- Stations U-** C4, N3  
C6, N7  
C8, N9



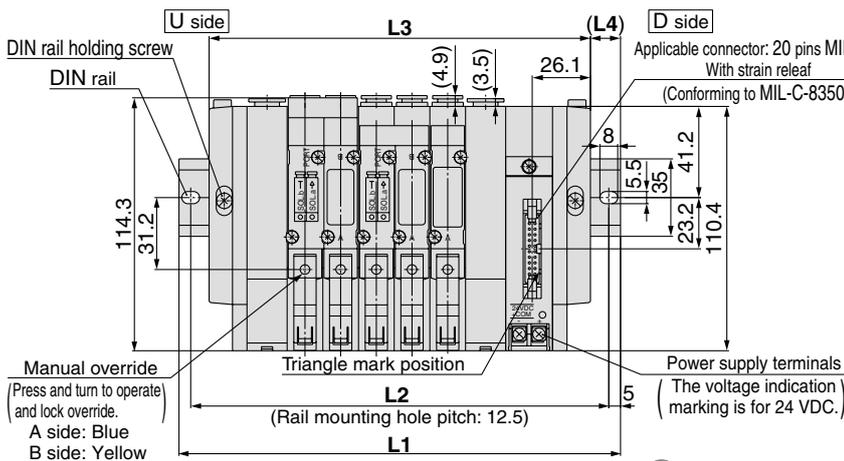
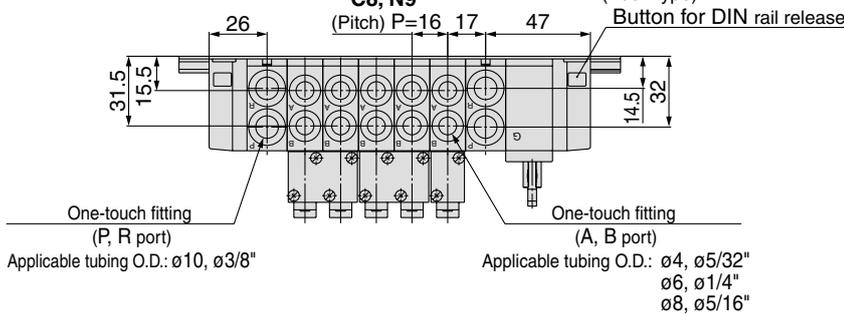
Note) The L1 to L4 dimensions of SS5Y5-45GD-

Stations D-<sup>C4, N3</sup>  
C6, N7  
C8, N9 are identical to those of  
SS5Y5-45GD- Stations U-<sup>C4, N3</sup>  
C6, N7  
C8, N9



| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 135.5      | 148   | 160.5 | 185.5 | 198   | 210.5 | 235.5 | 248   | 260.5       |
| L2         | 125        | 137.5 | 150   | 175   | 187.5 | 200   | 225   | 237.5 | 250         |
| L3         | 105        | 121   | 137   | 153   | 169   | 185   | 201   | 217   | 233         |
| L4         | 15         | 13.5  | 11.5  | 16    | 14.5  | 12.5  | 17    | 15.5  | 13.5        |

**SS5Y5-45GD- Stations B-** C4, N3  
C6, N7  
C8, N9



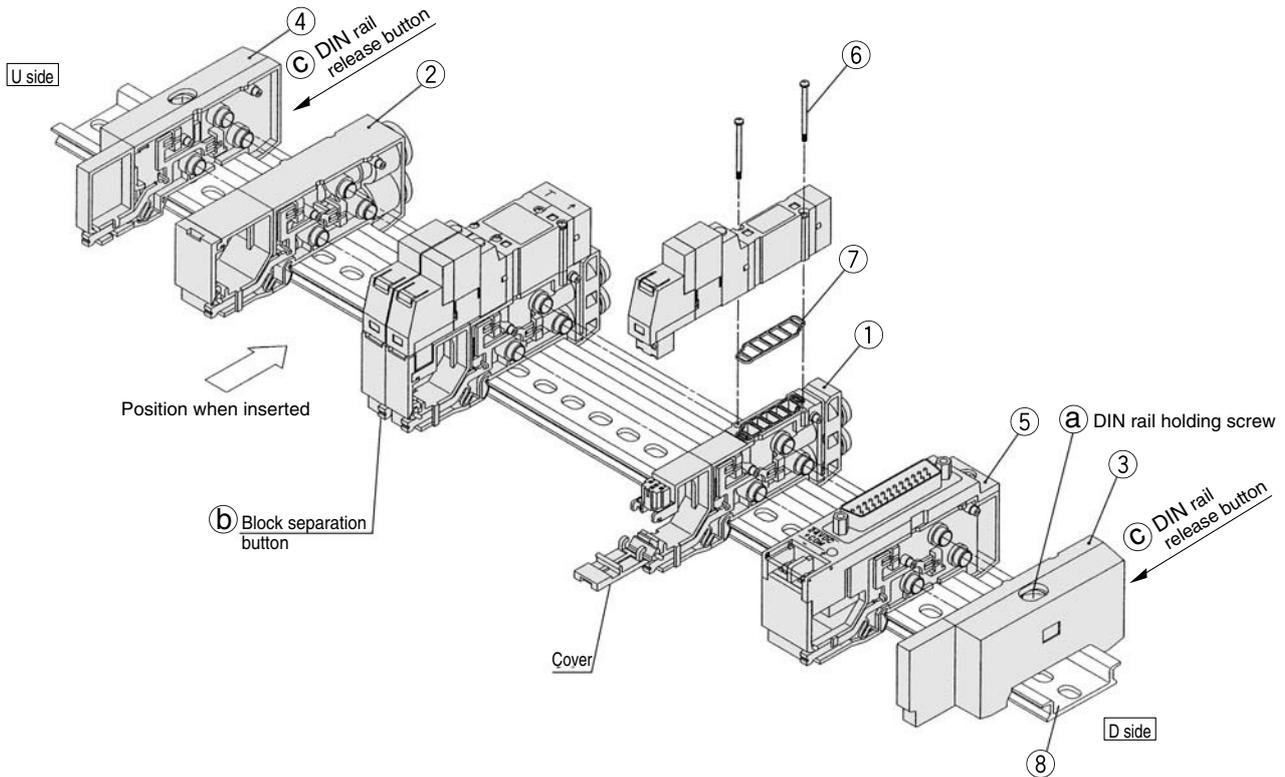
| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 148        | 173   | 185.5 | 198   | 210.5 | 235.5 | 248   | 260.5 | 285.5       |
| L2         | 137.5      | 162.5 | 175   | 187.5 | 200   | 225   | 237.5 | 250   | 275         |
| L3         | 123        | 139   | 155   | 171   | 187   | 203   | 219   | 235   | 251         |
| L4         | 12.5       | 17    | 15    | 13.5  | 11.5  | 16    | 14.5  | 12.5  | 17          |

| Stations n | 11 stations | 12    | 13    | 14    | 15    | 16 stations |
|------------|-------------|-------|-------|-------|-------|-------------|
| L1         | 298         | 310.5 | 323   | 348   | 360.5 | 373         |
| L2         | 287.5       | 300   | 312.5 | 337.5 | 350   | 362.5       |
| L3         | 267         | 283   | 299   | 315   | 331   | 347         |
| L4         | 15.5        | 13.5  | 12    | 16.5  | 14.5  | 13          |

- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

### DIN Rail Manifold Exploded View

#### Type 45F (D-sub Connector) Manifold



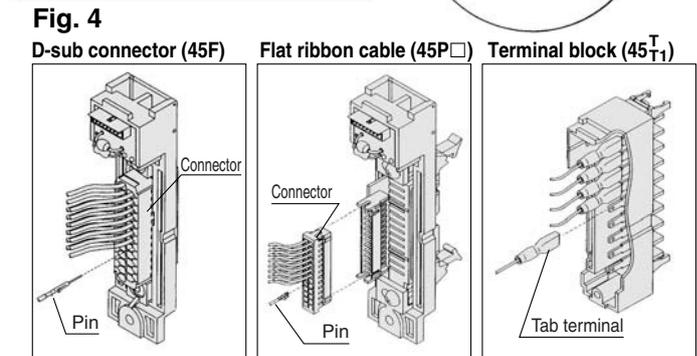
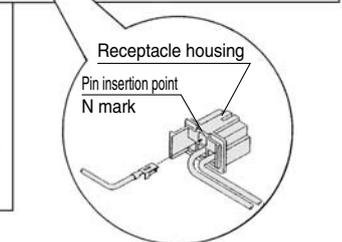
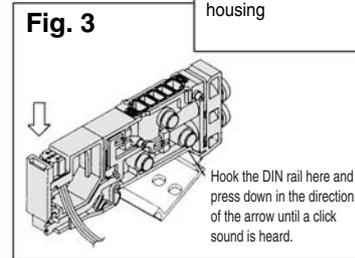
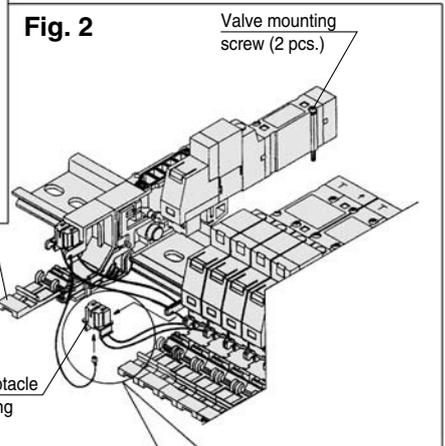
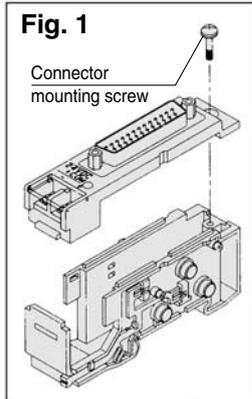
| No. | Description                                                           | Part no.                                                                                                                                                                                                                                                          |                                                               | Note                                                                                                                                                                                                                                   |
|-----|-----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |                                                                       | SY3000                                                                                                                                                                                                                                                            | SY5000                                                        |                                                                                                                                                                                                                                        |
| 1   | Manifold block assembly                                               | Manifold block assembly part number differs according to an attached lead wire assembly based on the connector spec. Select an appropriate part number from the table of manifold block assembly part number shown below. (Gasket 7 is supplied as an accessory.) |                                                               |                                                                                                                                                                                                                                        |
| 2   | SUP/EXH block assembly                                                | (Metric size)<br>SX3000-51-2A<br>(Inch size)<br>SX3000-51-16A                                                                                                                                                                                                     | (Metric size)<br>SX3000-51-2A<br>(Inch size)<br>SX5000-51-16A | Metric size<br>SY3000: P, R port with one-touch fitting for $\phi 8$<br>SY5000: P, R port with one-touch fitting for $\phi 10$<br><br>Inch size<br>With one-touch fitting for $\phi 5/16''$<br>With one-touch fitting for $\phi 3/8''$ |
| 3   | End block assembly                                                    | SX3000-52-2A(-Q)                                                                                                                                                                                                                                                  | SX5000-52-2A(-Q)                                              | For D side                                                                                                                                                                                                                             |
| 4   | End block assembly                                                    | SX3000-53-2A(-Q)                                                                                                                                                                                                                                                  | SX5000-53-2A(-Q)                                              | For U side                                                                                                                                                                                                                             |
| 5-1 | Connector block assembly (for D-sub connector)                        | SX3000-64- <sup>1A</sup> <sub>1NA</sub>                                                                                                                                                                                                                           | SX5000-64- <sup>1A</sup> <sub>1NA</sub>                       | -1A: +COM<br>-1NA: -COM                                                                                                                                                                                                                |
| 5-2 | Connector block assembly (for 26 pins flat cable)                     | SX3000-64- <sup>2A</sup> <sub>2NA</sub> -26                                                                                                                                                                                                                       | SX5000-64- <sup>2A</sup> <sub>2NA</sub> -26                   | -2A: +COM<br>-2NA: -COM<br><br>Note)<br>For 24 VDC                                                                                                                                                                                     |
| 5-3 | Connector block assembly (for 20 pins flat cable)                     | SX3000-64- <sup>2A</sup> <sub>2NA</sub> -20                                                                                                                                                                                                                       | SX5000-64- <sup>2A</sup> <sub>2NA</sub> -20                   |                                                                                                                                                                                                                                        |
| 5-4 | Connector block assembly (for 10 pins flat cable)                     | SX3000-64- <sup>2A</sup> <sub>2NA</sub> -10                                                                                                                                                                                                                       | SX5000-64- <sup>2A</sup> <sub>2NA</sub> -10                   |                                                                                                                                                                                                                                        |
| 5-5 | Connector block assembly (for 2 to 8 stations (T, T1) terminal block) | SX3000-64-3A                                                                                                                                                                                                                                                      | SX5000-64-3A                                                  | In common between +COM and -COM.                                                                                                                                                                                                       |
| 5-6 | Connector block assembly (for 9 to 17 stations (T1) terminal block)   | SX3000-64-8A                                                                                                                                                                                                                                                      | SX5000-64-8A                                                  |                                                                                                                                                                                                                                        |
| 6   | Round head combination screw                                          | SY3000-23-4                                                                                                                                                                                                                                                       | M3 x 26,<br>Matt nickel plated                                |                                                                                                                                                                                                                                        |
| 7   | Gasket                                                                | SX3000-57-4                                                                                                                                                                                                                                                       | SX5000-57-6                                                   |                                                                                                                                                                                                                                        |
| 8   | DIN rail                                                              | VZ1000-11-1-I□                                                                                                                                                                                                                                                    |                                                               | Refer to page 276.                                                                                                                                                                                                                     |

Note 1) The numbers 5-1 to 4 are for 24 VDC. For 12 VDC, suffix "-12V" to the end of parts number. (Example) SX3000-64-1A-12 V  
 Note 2) Two manifold block assemblies are necessary for the double, 3 position (Dual body type).

| Style of manifold                                        | Manifold block assembly part no. | Note                                                                                                                                                                                                                                                                                                                          |
|----------------------------------------------------------|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| For 45(N)F (D-sub connector)                             | SX <sub>5</sub> 000-50-3A-□□(-Q) | □□:<br>AB port SY3000 (metric size)<br>(inch size)<br>C4: With one-touch fitting for $\phi 4$<br>C6: With one-touch fitting for $\phi 6$<br>N3: With one-touch fitting for $\phi 5/32''$<br>N7: With one-touch fitting for $\phi 1/4''$                                                                                       |
| For 45(N) <sub>PH</sub> <sup>P</sup> (Flat ribbon cable) | SX <sub>5</sub> 000-50-5A-□□(-Q) |                                                                                                                                                                                                                                                                                                                               |
| For 45G PC Wiring System compatible                      | SX <sub>5</sub> 000-50-5A-□□(-Q) | A, B port SY5000 (metric size)<br>(inch size)<br>C4: With one-touch fitting for $\phi 4$<br>C6: With one-touch fitting for $\phi 6$<br>C8: With one-touch fitting for $\phi 8$<br>N3: With one-touch fitting for $\phi 5/32''$<br>N7: With one-touch fitting for $\phi 1/4''$<br>N9: With one-touch fitting for $\phi 5/16''$ |
| For 45 <sub>T1</sub> (Terminal block)                    | SX <sub>5</sub> 000-50-7A-□□(-Q) |                                                                                                                                                                                                                                                                                                                               |

### How to Increase Manifold Bases

- 1** Loosen DIN rail holding screw (a) fixing the manifold base until it begins to turn idly. (While pressing DIN rail releasing buttons (c), at two locations, separate the manifold base from the DIN rail.)
- 2** Additional bases are to be added to the U side. Press splitting button (b) of the manifold block assembly on the U side until button (b) locks, and then separate the block assemblies.
- 3** Separate the connector block assembly in the same manner as 2, and remove the connector mounting screw shown in Fig. 1.
- 4** Loosen the valve mounting screw on the U side, remove the valve, and take out the receptacle housing. (Refer to Fig. 2.)
- 5** Insert the common wire (red) of the manifold block assembly to be added into the pin insertion section (N mark) of the receptacle housing that was taken out in 4, mount it on the manifold block, and mount the removed valve.
- 6** As shown in Fig. 3, mount the additional manifold block assembly on the DIN rail on the U side. Refer to the circuit diagram, and insert the lead wire (black) as shown in Fig. 4.
- 7** Press the blocks against each other until a click sound is produced, place the lead wire in the manifold block, and close the lid without pinching the lead wire.
- 8** While lightly holding the blocks together so that there are no gaps between them, secure them to the DIN rail by tightening the DIN rail holding screws (a). (Tightening torque: 1.4 N·m)



Note) After inserting pins, lightly pull lead wire to check that pins are locked.

Note) Insert pins after removing the connector from the main unit. After inserting pins, lightly pull lead wires to check that the pins are locked.

Note) Insert tab terminals completely.

- ⚠ Caution**
1. Depending on the connector, there is a limit to the number of solenoids that can be used. Manifold bases that can be added cannot exceed the number of usable solenoids.
  2. The manifold block assembly mounting position for additional manifold bases is always on the U side, because wires are connected to respective connectors sequentially from the D side.
  3. When DIN rail holding screw (a) for the end block is not sufficiently tightened during reassembly, air leakage may result. Before supplying air, check that there is no gap between blocks and that the manifold block is firmly fixed to the DIN rail in order to ensure air supply without leakage.

- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

### How to Change Fitting Assembly

Type 45 manifold permits change in the A and B port sizes by changing the manifold block fitting assembly. After removing the valve, remove the clip with a screwdriver, etc. For mounting a new fitting assembly, insert it and then insert a clip until it will not come out of the manifold block.

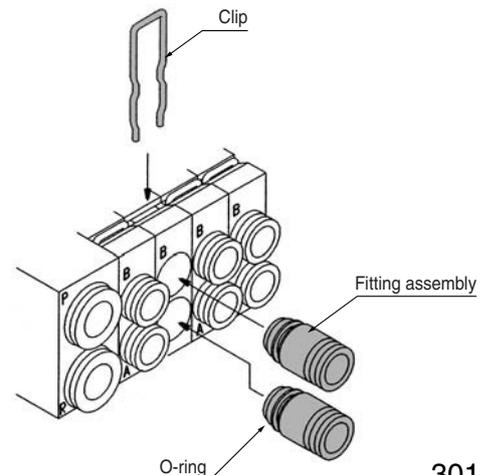
#### Fitting Assembly Part No.

##### Metric size

|        |                          |                |
|--------|--------------------------|----------------|
| SY3000 | One-touch fitting for ø4 | VVQ1000-50A-C4 |
|        | One-touch fitting for ø6 | VVQ1000-50A-C6 |
| SY5000 | One-touch fitting for ø4 | VVQ1000-51A-C4 |
|        | One-touch fitting for ø6 | VVQ1000-51A-C6 |
|        | One-touch fitting for ø8 | VVQ1000-51A-C8 |

##### Inch size

|        |                                          |                |
|--------|------------------------------------------|----------------|
| SY3000 | One-touch fitting for ø $\frac{5}{32}$ " | VVQ1000-50A-N3 |
|        | One-touch fitting for ø $\frac{1}{4}$ "  | VVQ1000-50A-N7 |
| SY5000 | One-touch fitting for ø $\frac{5}{32}$ " | VVQ1000-51A-N3 |
|        | One-touch fitting for ø $\frac{1}{4}$ "  | VVQ1000-51A-N7 |
|        | One-touch fitting for ø $\frac{5}{16}$ " | VVQ1000-51A-N9 |



- Note 1) P and R ports cannot be changed.  
Note 2) Use caution that O-rings must be free from scratches and dust. Otherwise, air leakage may result.

# SY3000/5000 Base Mounted Manifold Stacking Type/DIN Rail Mounted EX122 Integrated Type (for Output) Serial Transmission System



## How to Order Manifold

**SS5Y 3-45S V-05 U-C6**

**Series**

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |

**SI unit specifications**

| Symbol | Protocol type                                   |
|--------|-------------------------------------------------|
| 0      | Without SI unit                                 |
| F1     | NKE Corp.: Uni-wire System                      |
| H      | NKE Corp.: Uni-wire H System                    |
| J1     | SUNX Corp.: S-LINK (16 outputs)                 |
| J2     | SUNX Corp.: S-LINK (8 outputs)                  |
| Q      | DeviceNet                                       |
| R1     | OMRON Corp.: CompoBus/S (16 outputs) compatible |
| R2     | OMRON Corp.: CompoBus/S (8 outputs) compatible  |
| V      | CC-LINK                                         |

Even though when it is not equipped with SI unit, DIN rail length is long enough for future expectancy of mounting SI unit.

**Valve stations**

| Symbol | Stations    | Note                                                          |
|--------|-------------|---------------------------------------------------------------|
| 02     | 2 stations  | Single wiring spec.<br>(Applicable up to 16 solenoid valves.) |
| :      | :           |                                                               |
| 16     | 16 stations |                                                               |

This also includes the number of blanking plate assemblies.  
Two stations are necessary for the double, 3 position (Dual body type).

**SUP/EXH block assembly mounting position**

| Symbol | Mounting position      | Stations         |
|--------|------------------------|------------------|
| U      | U side                 | 2 to 10 stations |
| D      | D side                 | 2 to 10 stations |
| B      | (Both sides)           | 2 to 16 stations |
| M      | Special specifications |                  |

For special specifications, indicate separately by the manifold specification sheet.

**A, B port size**

**One-touch fitting (Metric size)**

| Symbol | Port size                | Applicable series |
|--------|--------------------------|-------------------|
| C4     | One-touch fitting for ø4 | SY3000            |
| C6     | One-touch fitting for ø6 |                   |
| M      | Mixed                    |                   |
| C4     | One-touch fitting for ø4 | SY5000            |
| C6     | One-touch fitting for ø6 |                   |
| C8     | One-touch fitting for ø8 |                   |
| M      | Mixed                    |                   |

**One-touch fitting (Inch size)**

| Symbol | Port size                                | Applicable series |
|--------|------------------------------------------|-------------------|
| N3     | One-touch fitting for ø $\frac{5}{32}$ " | SY3000            |
| N7     | One-touch fitting for ø $\frac{1}{4}$ "  |                   |
| M      | Mixed                                    |                   |
| N3     | One-touch fitting for ø $\frac{9}{32}$ " | SY5000            |
| N7     | One-touch fitting for ø $\frac{1}{4}$ "  |                   |
| N9     | One-touch fitting for ø $\frac{5}{16}$ " |                   |
| M      | Mixed                                    |                   |

In the case of mixed specifications, indicate separately on the manifold specification sheet.

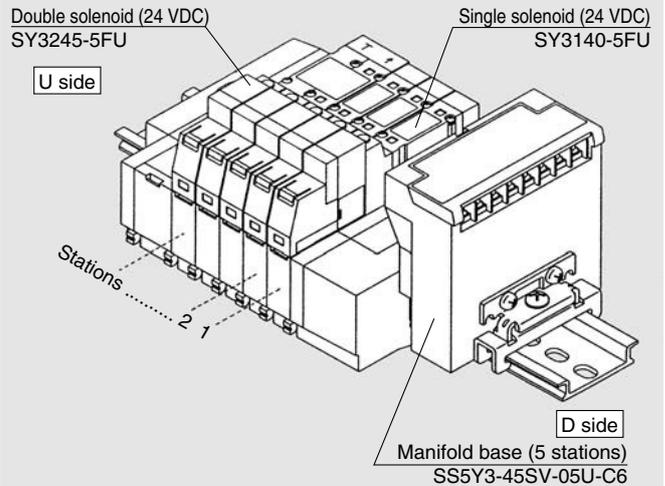
**SI Unit Part No.**

| Symbol | Protocol type                   | SI unit No. | CE-compliant | Symbol | Protocol type                                   | SI unit No. | CE-compliant |
|--------|---------------------------------|-------------|--------------|--------|-------------------------------------------------|-------------|--------------|
| F1     | NKE Corp.: Uni-wire System      | EX122-SUW1  | —            | Q      | DeviceNet                                       | EX122-SDN1  | ○            |
| H      | NKE Corp.: Uni-wire H System    | EX122-SUH1  | —            | R1     | OMRON Corp.: CompoBus/S (16 outputs) compatible | EX122-SCS1  | ○            |
| J1     | SUNX Corp.: S-LINK (16 outputs) | EX122-SSL1  | —            | R2     | OMRON Corp.: CompoBus/S (8 outputs) compatible  | EX122-SCS2  | ○            |
| J2     | SUNX Corp.: S-LINK (8 outputs)  | EX122-SSL2  | —            | V      | CC-LINK                                         | EX122-SMJ1  | ○            |

Refer to pages 1650 to 1652 for the details of the EX122 integrated type (for output) serial transmission system.

## How to Order Manifold Assembly (Example)

**Example**



SS5Y3-45SV-05U-C6 ..... 1 set (45S with SI unit 5-station manifold base part number)

\* SY3140-5FU ..... 3 sets (Single solenoid part no.)  
\* SY3245-5FU ..... 1 set (Double solenoid part no.)

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

\* The valve arrangement is numbered as the 1st. station from D side.  
\* When ordering double solenoid valves/3 position (Dual body type), please keep in mind that they require two manifold stations.  
\* SI unit is available only for the D-side mounting type.

## How to Order Valve

2 position single **SY 3 1 4 0 - 5 FU**  
Double, 3 position **SY 3 2 4 5 - 5 FU**

**Series**

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |

**Type of actuation**

|   |                            |
|---|----------------------------|
| 2 | 2 position double          |
| 3 | 3 position closed center   |
| 4 | 3 position exhaust center  |
| 5 | 3 position pressure center |

Dual body type (Double, 3 position)

**Rated voltage**

|   |        |
|---|--------|
| 5 | 24 VDC |
|---|--------|

**Manual override**

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

**Made to Order**

|     |                                               |
|-----|-----------------------------------------------|
| Nil | —                                             |
| X90 | Main valve fluoro rubber (Refer to page 332.) |

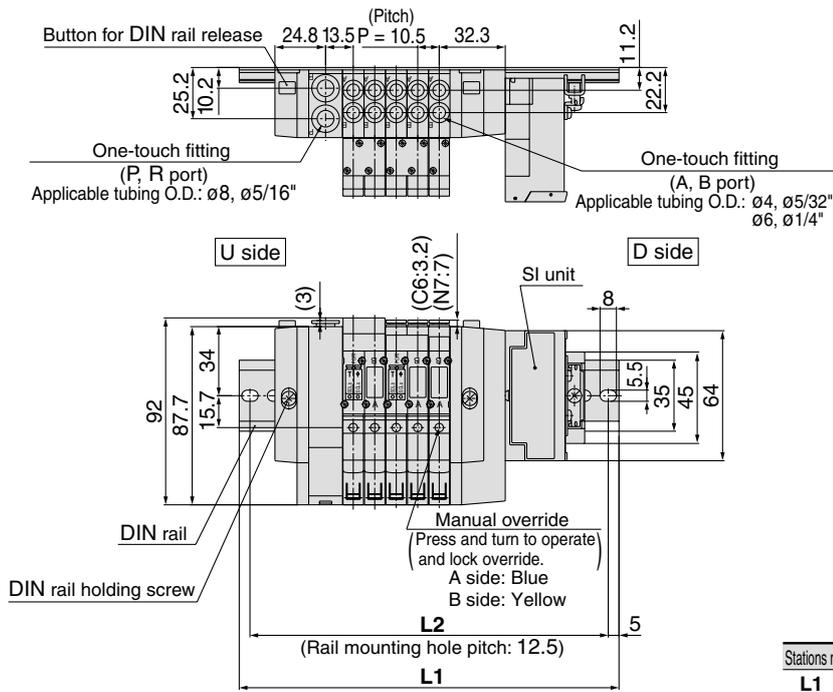
**CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

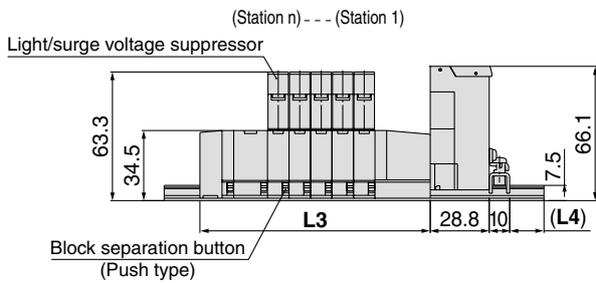
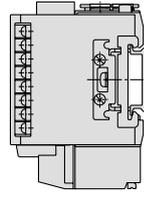
When ordering plug-in type valve as a single unit, gaskets are not included. Order them separately, if necessary. (Refer to page 300 for details.)

**Series SY3000: EX122 Integrated Type (for Output) Serial Transmission System/Plug-in**

**SS5Y3-45S** - Stations **U-C<sub>4</sub>, N<sub>3</sub>**  
**C<sub>6</sub>, N<sub>7</sub>**

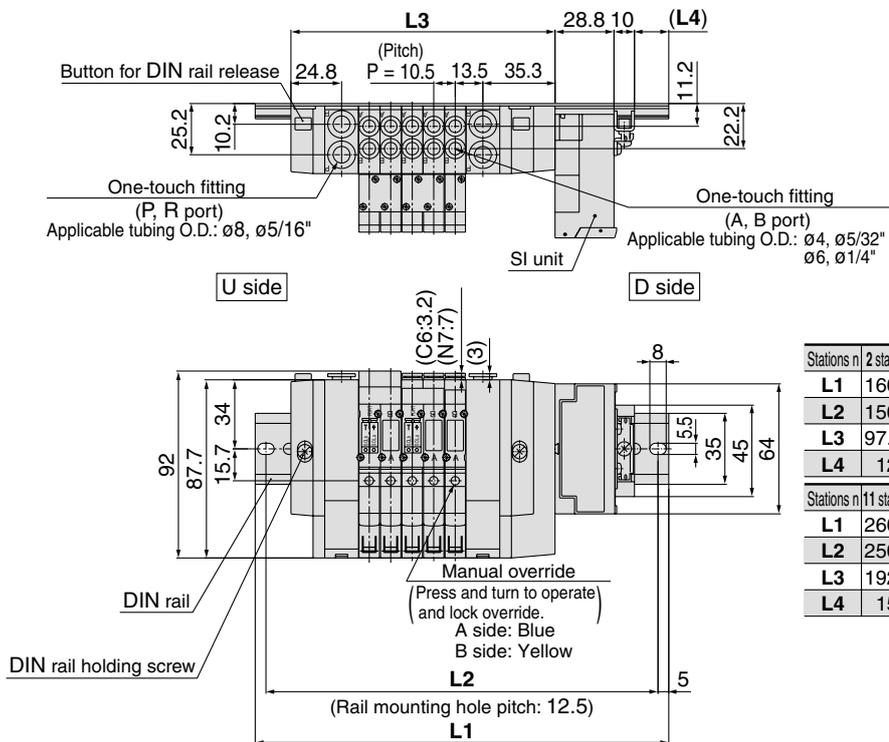


Note) The L1 to L4 dimensions of **SS5Y3-45S** - Stations **U-C<sub>4</sub>, N<sub>3</sub>** are identical to those of **SS5Y3-45S** - Stations **D-C<sub>4</sub>, N<sub>3</sub>** **C<sub>6</sub>, N<sub>7</sub>**.



| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 148        | 160.5 | 173   | 185.5 | 185.5 | 198   | 210.5 | 223   | 235.5       |
| L2         | 137.5      | 150   | 162.5 | 175   | 175   | 187.5 | 200   | 212.5 | 225         |
| L3         | 81         | 91.5  | 102   | 112.5 | 123   | 133.5 | 144   | 154.5 | 165         |
| L4         | 14.5       | 15.5  | 16.5  | 17.5  | 12    | 13    | 14    | 15    | 16          |

**SS5Y3-45S** - Stations **B-C<sub>4</sub>, N<sub>3</sub>**  
**C<sub>6</sub>, N<sub>7</sub>**



| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 160.5      | 173   | 185.5 | 198   | 210.5 | 223   | 223   | 235.5 | 248         |
| L2         | 150        | 162.5 | 175   | 187.5 | 200   | 212.5 | 212.5 | 225   | 237.5       |
| L3         | 97.5       | 108   | 118.5 | 129   | 139.5 | 150   | 160.5 | 171   | 181.5       |
| L4         | 12.5       | 13.5  | 14.5  | 15.5  | 16.5  | 17.5  | 12    | 13    | 14          |

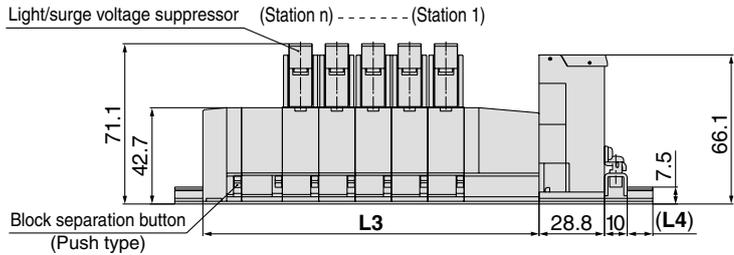
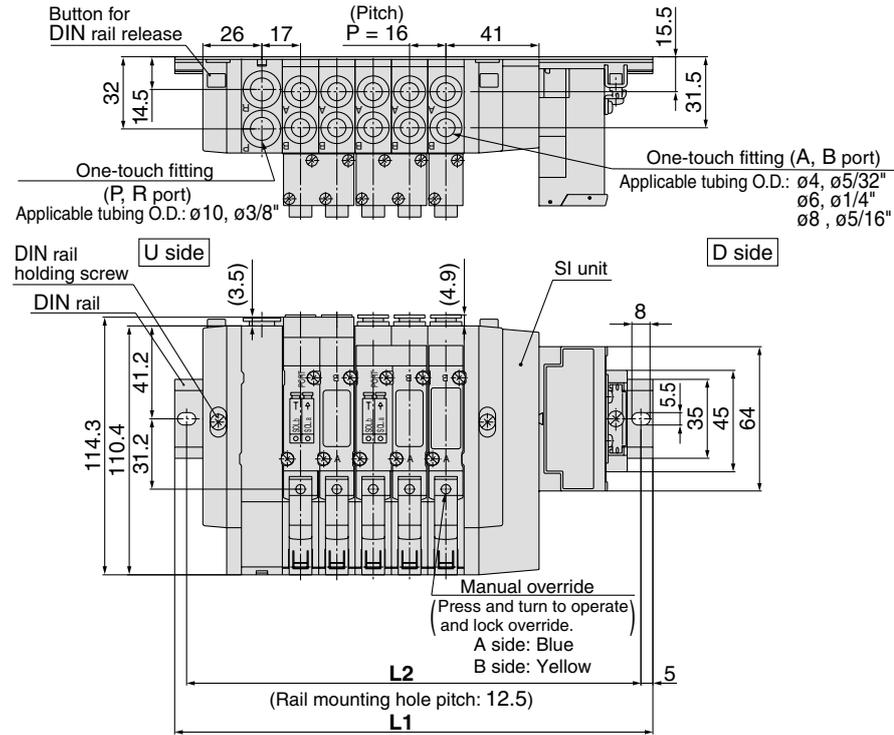
  

| Stations n | 11 stations | 12    | 13    | 14    | 15    | 16 stations |
|------------|-------------|-------|-------|-------|-------|-------------|
| L1         | 260.5       | 273   | 285.5 | 285.5 | 298   | 310.5       |
| L2         | 250         | 262.5 | 275   | 275   | 287.5 | 300         |
| L3         | 192         | 202.5 | 213   | 223.5 | 234   | 244.5       |
| L4         | 15          | 16    | 17    | 12    | 13    | 14          |

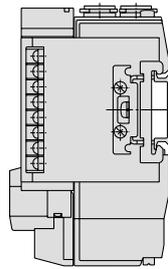
- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

**Series SY5000: EX122 Integrated Type (for Output) Serial Transmission System/Plug-in**

**SS5Y5-45S** - Stations **U**-<sup>C4, N3</sup><sub>C6, N7</sub>  
<sub>C8, N9</sub>

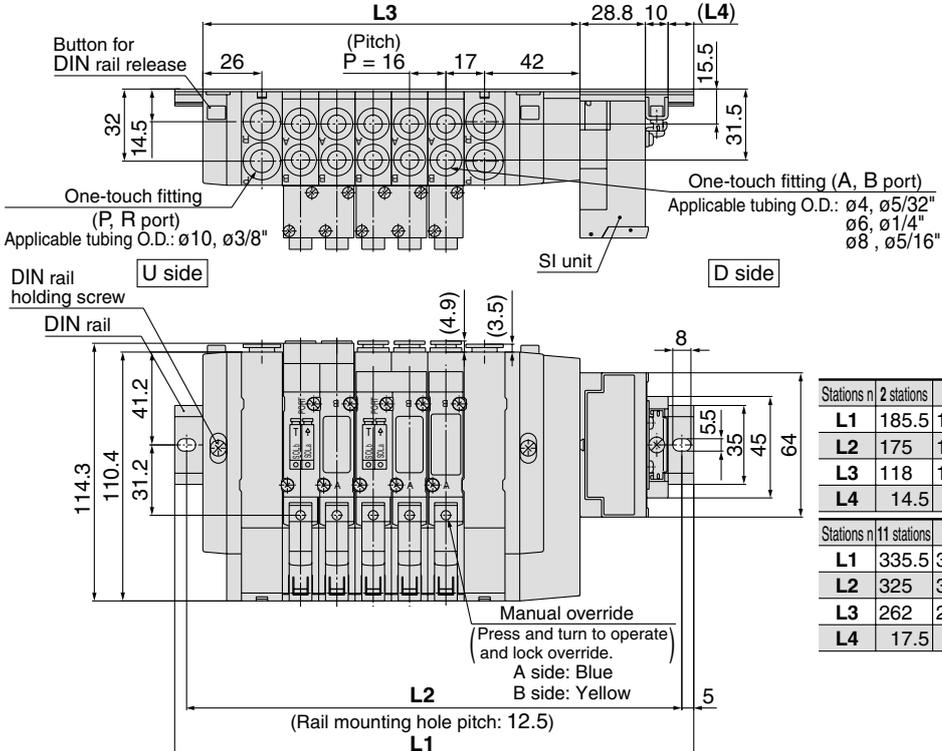


Note) The L1 to L4 dimensions of **SS5Y5-45S** - Stations **U**-<sup>C4, N3</sup><sub>C6, N7</sub>  
<sub>C8, N9</sub> are identical to those of **SS5Y5-45S** - Stations **D**-<sup>C4, N3</sup><sub>C6, N7</sub>  
<sub>C8, N9</sub>.



| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 173        | 185.5 | 198   | 210.5 | 235.5 | 248   | 260.5 | 285.5 | 298         |
| L2         | 162.5      | 175   | 187.5 | 200   | 225   | 237.5 | 250   | 275   | 287.5       |
| L3         | 100        | 116   | 132   | 148   | 164   | 180   | 196   | 212   | 228         |
| L4         | 17.5       | 15.5  | 14    | 12    | 16.5  | 15    | 13    | 17.5  | 16          |

**SS5Y5-45S** - Stations **B**-<sup>C4, N3</sup><sub>C6, N7</sub>  
<sub>C8, N9</sub>

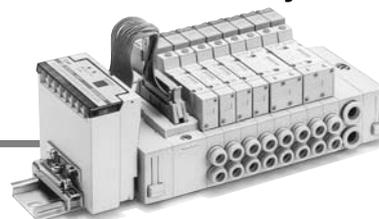


| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 185.5      | 198   | 223   | 235.5 | 248   | 260.5 | 285.5 | 298   | 310.5       |
| L2         | 175        | 187.5 | 212.5 | 225   | 237.5 | 250   | 275   | 287.5 | 300         |
| L3         | 118        | 134   | 150   | 166   | 182   | 198   | 214   | 230   | 246         |
| L4         | 14.5       | 13    | 17.5  | 15.5  | 14    | 12    | 16.5  | 15    | 13          |

| Stations n | 11 stations | 12    | 13    | 14    | 15    | 16 stations |
|------------|-------------|-------|-------|-------|-------|-------------|
| L1         | 335.5       | 348   | 360.5 | 373   | 398   | 410.5       |
| L2         | 325         | 337.5 | 350   | 362.5 | 387.5 | 400         |
| L3         | 262         | 278   | 294   | 310   | 326   | 342         |
| L4         | 17.5        | 16    | 14    | 12.5  | 17    | 15          |

# SY3000/5000 Base Mounted Manifold Stacking Type/DIN Rail Mounted EX 121 Separate Type (for Output) Serial Transmission System



## How to Order Manifold

SS5Y 3 - 45S1 V D - 05 U - C4 - [ ] - [ ]

### Series

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |

### SI unit specifications

| Symbol | Protocol type                                   |
|--------|-------------------------------------------------|
| 0      | Without SI unit                                 |
| F1     | NKE Corp.: Uni-wire System                      |
| H      | NKE Corp.: Uni-wire H System                    |
| J1     | SUNX Corp.: S-LINK (16 outputs)                 |
| J2     | SUNX Corp.: S-LINK (8 outputs)                  |
| Q      | DeviceNet                                       |
| R1     | OMRON Corp.: CompoBus/S (16 outputs) compatible |
| R2     | OMRON Corp.: CompoBus/S (8 outputs) compatible  |
| V      | CC-LINK                                         |

• Even though when it is not equipped with SI unit, DIN rail length is long enough for future expectancy of mounting SI unit. When a shorter rail is required (same as type 45□), suffix "0" in the optional blank at the end of part number.

### SI unit mounting position

| Symbol | Mounting position |
|--------|-------------------|
| U      | U side            |
| D      | D side            |

### CE-compliant

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

\* Refer to the SI unit part no. for the SI unit compatible with CE.

### Option

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (Max. 20 stations)

### A, B port size

#### One-touch fitting (Metric size)

| Symbol | Port size                | Applicable series |
|--------|--------------------------|-------------------|
| C4     | One-touch fitting for ø4 | SY3000            |
| C6     | One-touch fitting for ø6 |                   |
| M      | Mixed                    | SY5000            |
| C4     | One-touch fitting for ø4 |                   |
| C6     | One-touch fitting for ø6 |                   |
| C8     | One-touch fitting for ø8 |                   |
| M      | Mixed                    |                   |

#### One-touch fitting (Inch size)

| Symbol | Port size                     | Applicable series |
|--------|-------------------------------|-------------------|
| N3     | One-touch fitting for ø 5/32" | SY3000            |
| N7     | One-touch fitting for ø 1/4"  |                   |
| M      | Mixed                         | SY5000            |
| N3     | One-touch fitting for ø 5/32" |                   |
| N7     | One-touch fitting for ø 1/4"  |                   |
| N9     | One-touch fitting for ø 5/16" |                   |
| M      | Mixed                         |                   |

\* In the case of mixed specifications, indicate separately on the manifold specification sheet.

### SUP/EXH block assembly mounting position

| Symbol | Mounting position      | Stations         |
|--------|------------------------|------------------|
| U      | U side                 | 2 to 10 stations |
| D      | D side                 | 2 to 10 stations |
| B      | Both sides             | 2 to 16 stations |
| M      | Special specifications |                  |

\* For special specifications, indicate separately by the manifold specification sheet.

### Valve stations

| Symbol | Stations    | Note                                                       |
|--------|-------------|------------------------------------------------------------|
| 02     | 2 stations  | Single wiring spec. (Applicable up to 16 solenoid valves.) |
| ⋮      | ⋮           |                                                            |
| 16     | 16 stations |                                                            |

\* This also includes the number of blanking plate assemblies.  
\* Two stations are necessary for the double, 3 position (Dual body type).

### SI Unit Part No.

| Symbol | Protocol type                   | SI unit No. | CE-compliant | Symbol | Protocol type                                   | SI unit No. | CE-compliant |
|--------|---------------------------------|-------------|--------------|--------|-------------------------------------------------|-------------|--------------|
| F1     | NKE Corp.: Uni-wire System      | EX121-SUW1  | —            | Q      | DeviceNet                                       | EX121-SDN1  | ○            |
| H      | NKE Corp.: Uni-wire H System    | EX121-SUH1  | —            | R1     | OMRON Corp.: CompoBus/S (16 outputs) compatible | EX121-SCS1  | ○            |
| J1     | SUNX Corp.: S-LINK (16 outputs) | EX121-SSL1  | —            | R2     | OMRON Corp.: CompoBus/S (8 outputs) compatible  | EX121-SCS2  | ○            |
| J2     | SUNX Corp.: S-LINK (8 outputs)  | EX121-SSL2  | —            | V      | CC-LINK                                         | EX121-SMJ1  | ○            |

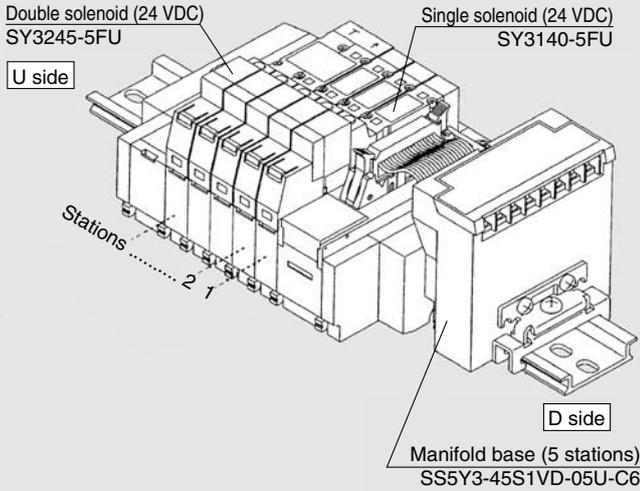
• For external pilot specifications and built-in silencer, refer to pages 324 to 328.

Refer to pages 1650 to 1652 for the details of the EX121 separate type (for output) serial transmission system.

- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

## How to Order Valve Manifold Assembly (Example)

### Example



SS5Y3-45S1VD-05U-C6 1 set... (Type 45S1 with serial unit 5-station manifold base part no.)  
 \* SY3140-5FU ..... 3 sets (Single solenoid part no.)  
 \* SY3245-5FU ..... 1 set (Double solenoid part no.)

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

- The valve arrangement is numbered as the 1st. station from D side regardless of the mounting position of SI unit.
- When ordering double solenoid valves/3 position (Dual body type), please keep in mind that they require two manifold stations.

## How to Order Valve

2 position single **SY 3 1 4 0 - 5 FU**

Double, 3 position **SY 3 2 4 5 - 5 FU**

**Series**

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |

**Type of actuation**

|   |                            |
|---|----------------------------|
| 2 | 2 position double          |
| 3 | 3 position closed center   |
| 4 | 3 position exhaust center  |
| 5 | 3 position pressure center |

**Dual body type (Double, 3 position)**

**Rated voltage**

|   |        |
|---|--------|
| 5 | 24 VDC |
|---|--------|

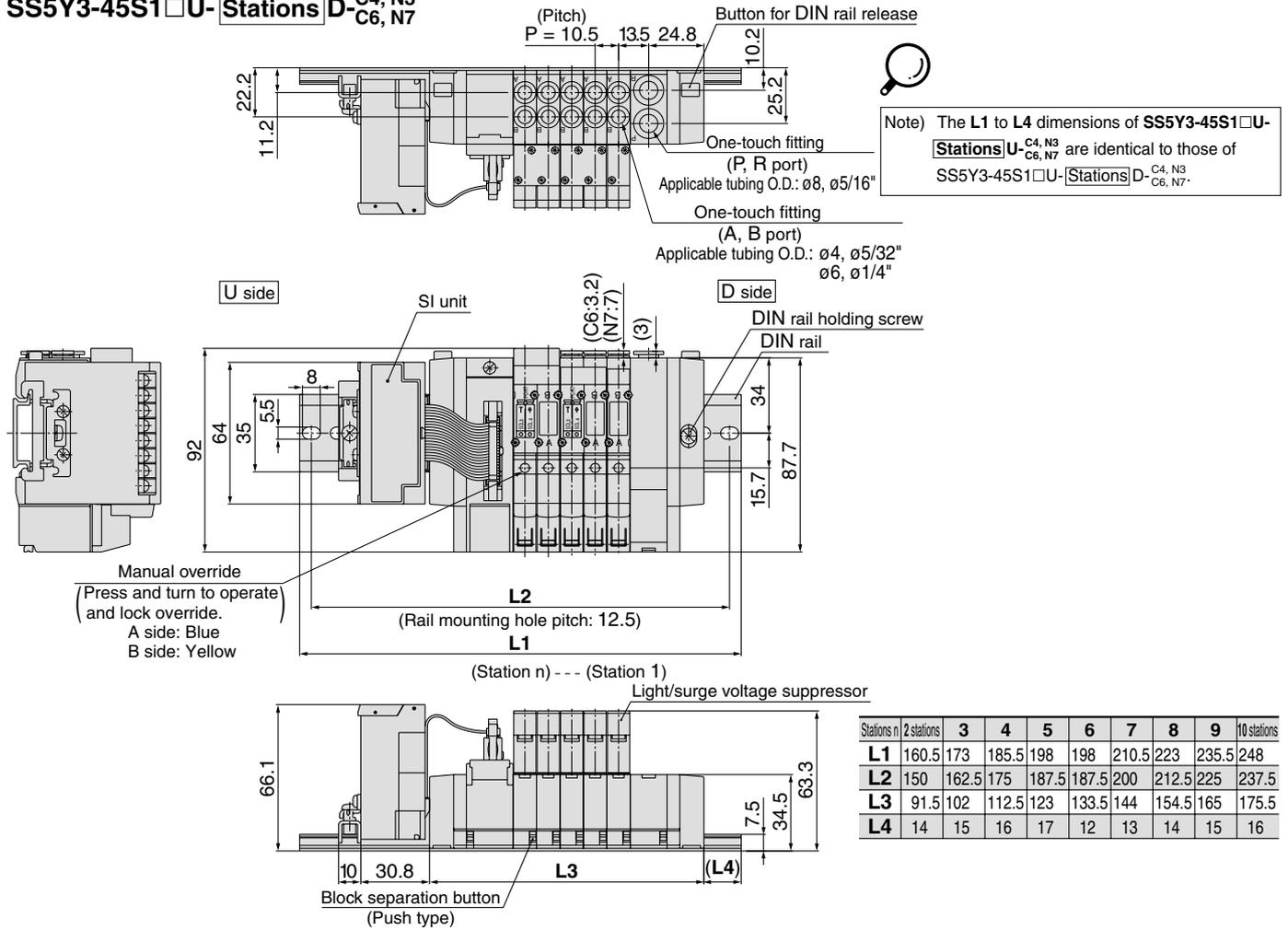
**Manual override**

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

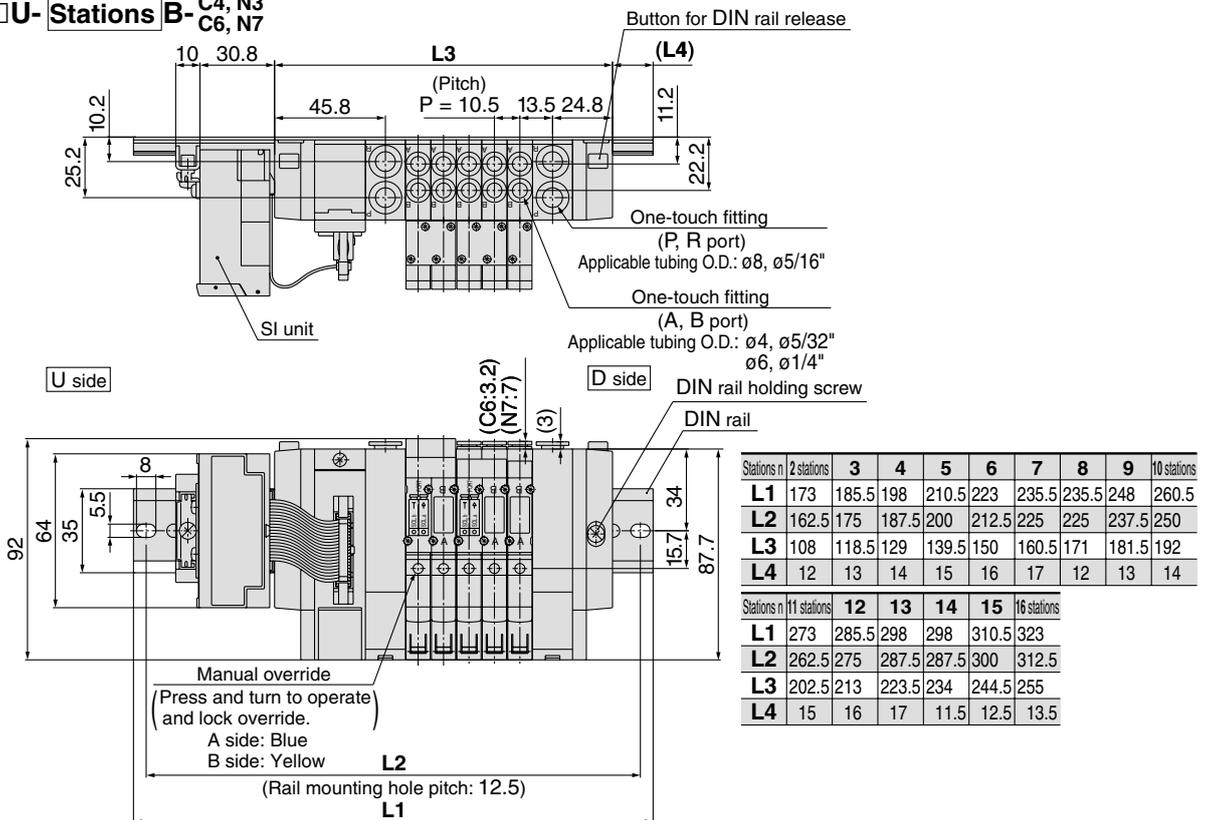
When ordering plug-in type valve as a single unit, gaskets are not included. Order them separately, if necessary. (Refer to page 300 for details.)

**SY3000: EX121 Separate Type (for Output) Serial Transmission System/Plug-in**

**SS5Y3-45S1 □ U - Stations D<sup>C4, N3</sup><sub>C6, N7</sub>**



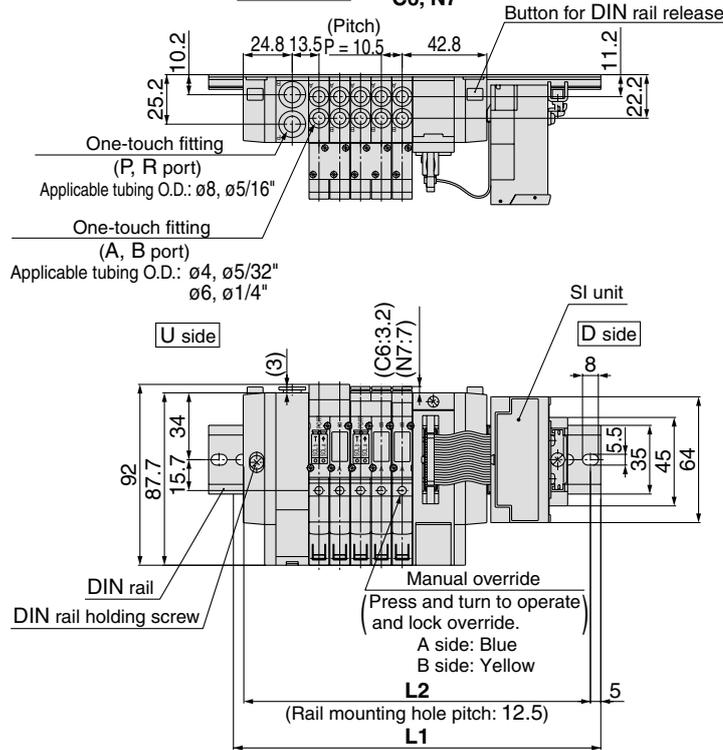
**SS5Y3-45S1 □ U - Stations B<sup>C4, N3</sup><sub>C6, N7</sub>**



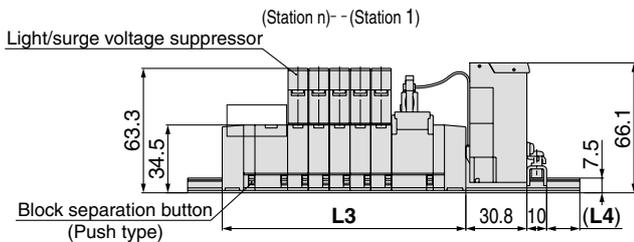
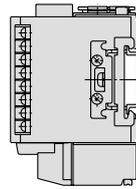
- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

**SY3000: EX121 Separate Type (for Output) Serial Transmission System/Plug-in**

**SS5Y3-45S1 □D- Stations U- C4, N3  
C6, N7**

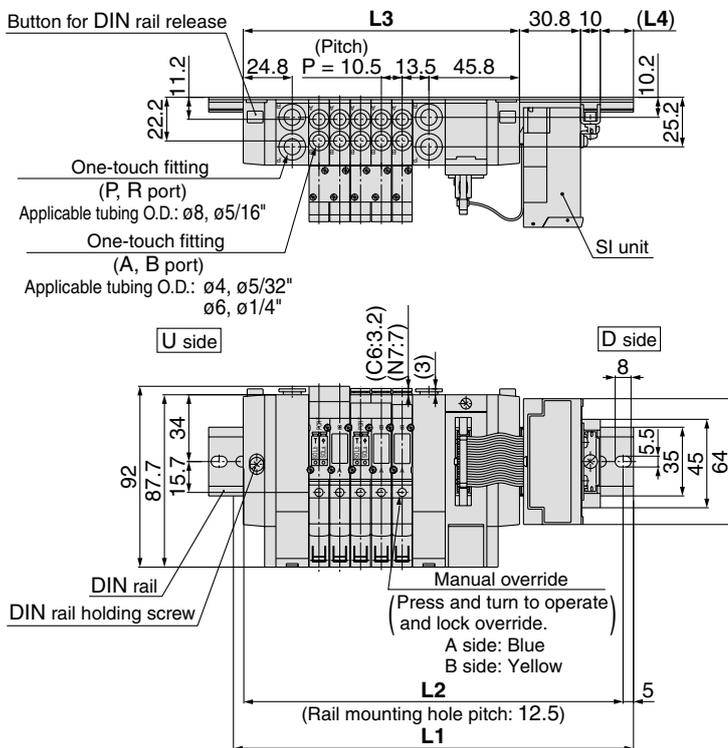


Note) The L1 to L4 dimensions of **SS5Y3-45S1 □D- Stations D- C4, N3 C6, N7** are identical to those of **SS5Y3-45S1 □D- Stations U- C4, N3 C6, N7**.



| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 160.5      | 173   | 185.5 | 198   | 198   | 210.5 | 223   | 235.5 | 248         |
| <b>L2</b>  | 150        | 162.5 | 175   | 187.5 | 187.5 | 200   | 212.5 | 225   | 237.5       |
| <b>L3</b>  | 91.5       | 102   | 112.5 | 123   | 133.5 | 144   | 154.5 | 165   | 175.5       |
| <b>L4</b>  | 14         | 15    | 16    | 17    | 12    | 13    | 14    | 15    | 16          |

**SS5Y3-45S1 □D- Stations B- C4, N3  
C6, N7**



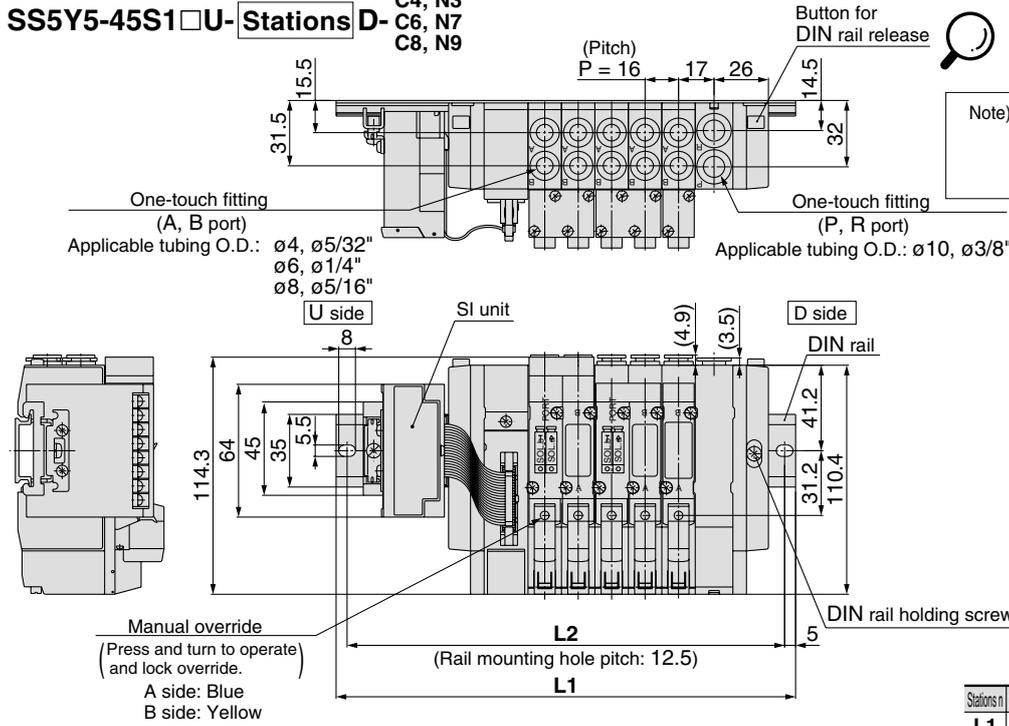
| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 173        | 185.5 | 198   | 210.5 | 223   | 235.5 | 235.5 | 248   | 260.5       |
| <b>L2</b>  | 162.5      | 175   | 187.5 | 200   | 212.5 | 225   | 225   | 237.5 | 250         |
| <b>L3</b>  | 108        | 118.5 | 129   | 139.5 | 150   | 160.5 | 171   | 181.5 | 192         |
| <b>L4</b>  | 12         | 13    | 14    | 15    | 16    | 17    | 12    | 13    | 14          |

| Stations n | 11 stations | 12    | 13    | 14    | 15    | 16 stations |
|------------|-------------|-------|-------|-------|-------|-------------|
| <b>L1</b>  | 273         | 285.5 | 298   | 298   | 310.5 | 323         |
| <b>L2</b>  | 262.5       | 275   | 287.5 | 287.5 | 300   | 312.5       |
| <b>L3</b>  | 202.5       | 213   | 223.5 | 234   | 244.5 | 255         |
| <b>L4</b>  | 15          | 16    | 17    | 11.5  | 12.5  | 13.5        |

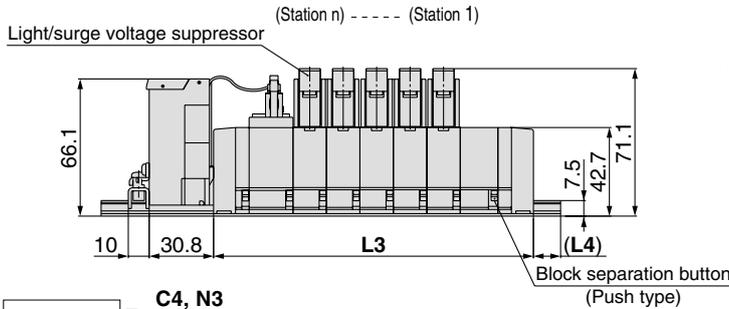
**SY5000: EX121 Separate Type (for Output) Serial Transmission System/Plug-in**

**SS5Y5-45S1 □ U- Stations D-** C4, N3  
C6, N7  
C8, N9

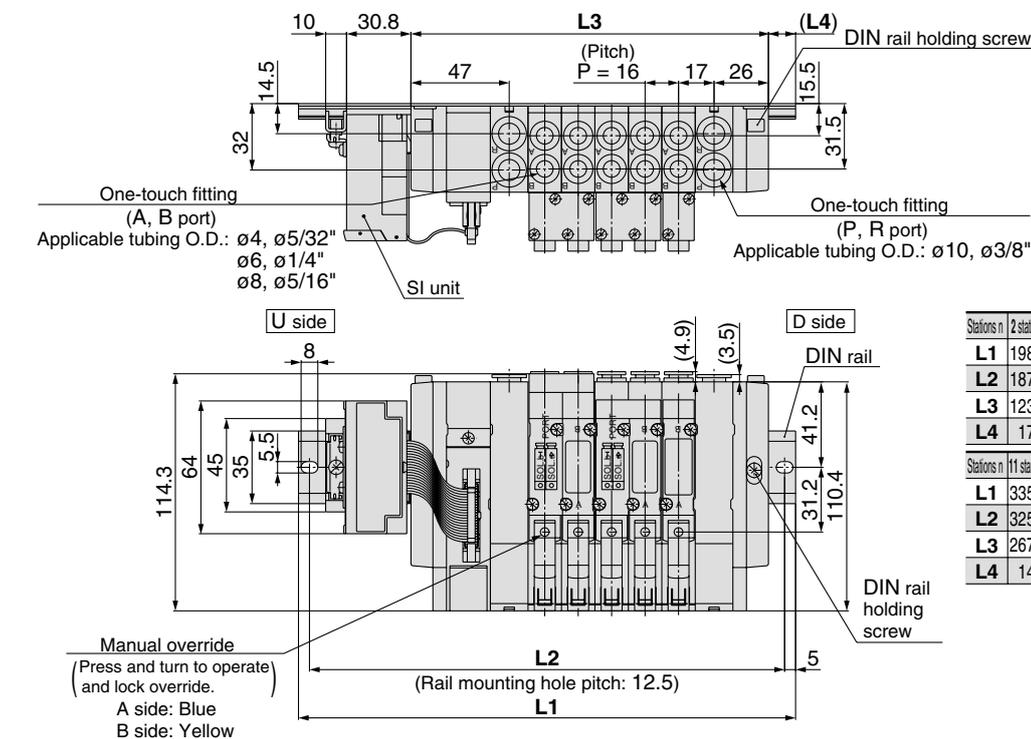


Note) The L1 to L4 dimensions of SS5Y5-45S1 □ U- Stations U-C4, N3 C6, N7 C8, N9 are identical to those of SS5Y5-45S1 □ U- Stations D-C4, N3 C6, N7 C8, N9.

| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 173        | 185.5 | 210.5 | 223   | 235.5 | 260.5 | 273   | 285.5 | 298         |
| L2         | 162.5      | 175   | 200   | 212.5 | 225   | 250   | 262.5 | 275   | 287.5       |
| L3         | 105        | 121   | 137   | 153   | 169   | 185   | 201   | 217   | 233         |
| L4         | 13.5       | 12    | 16.5  | 14.5  | 13    | 17.5  | 15.5  | 14    | 12          |



**SS5Y5-45S1 □ U- Stations B-** C4, N3  
C6, N7  
C8, N9



| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 198        | 210.5 | 223   | 235.5 | 260.5 | 273   | 285.5 | 310.5 | 323         |
| L2         | 187.5      | 200   | 212.5 | 225   | 250   | 262.5 | 275   | 300   | 312.5       |
| L3         | 123        | 139   | 155   | 171   | 187   | 203   | 219   | 235   | 251         |
| L4         | 17         | 15.5  | 13.5  | 12    | 16.5  | 14.5  | 13    | 17.5  | 15.5        |

| Stations n | 11 stations | 12    | 13    | 14    | 15    | 16 stations |
|------------|-------------|-------|-------|-------|-------|-------------|
| L1         | 335.5       | 348   | 373   | 385.5 | 398   | 410.5       |
| L2         | 325         | 337.5 | 362.5 | 375   | 387.5 | 400         |
| L3         | 267         | 283   | 299   | 315   | 331   | 347         |
| L4         | 14          | 12    | 16.5  | 15    | 13    | 11.5        |

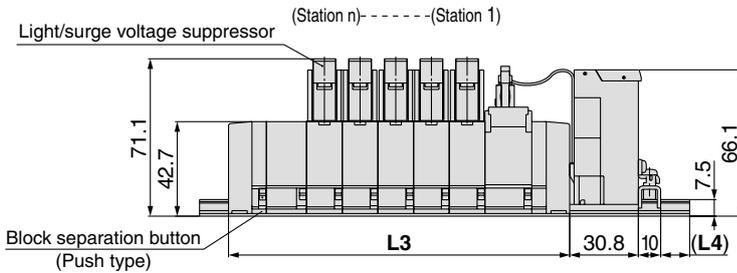
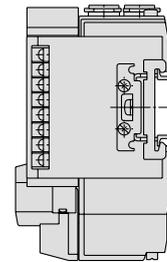
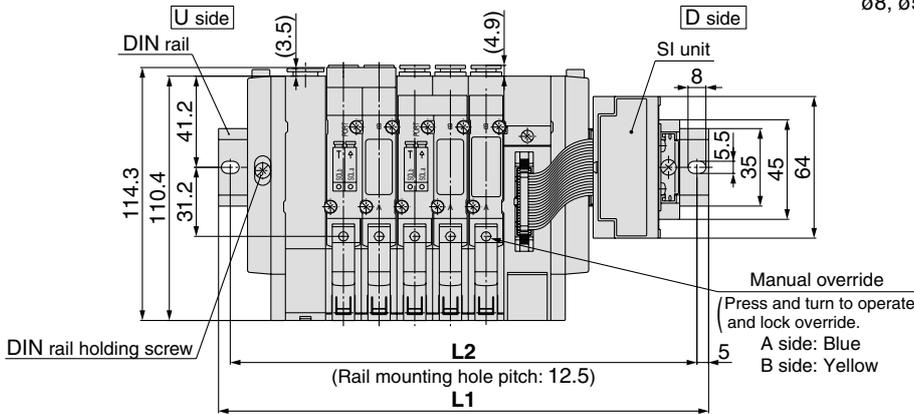
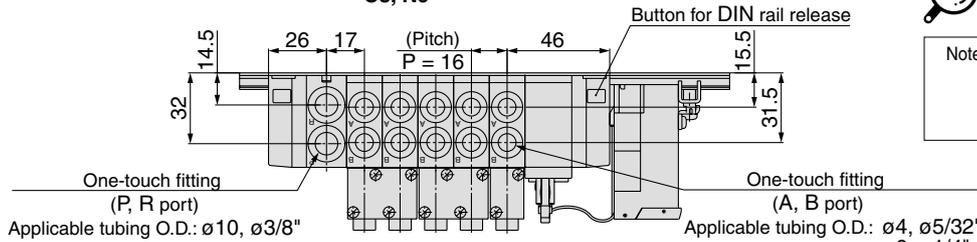
- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

**SY5000: EX121 Separate Type (for Output) Serial Transmission System/Plug-in**

**SS5Y5-45S1 □ D- Stations U** <sup>C4, N3</sup>  
<sup>C6, N7</sup>  
<sup>C8, N9</sup>

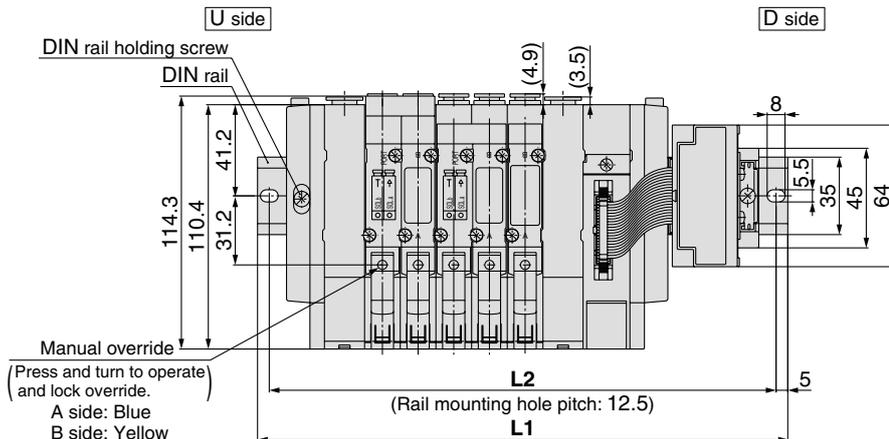
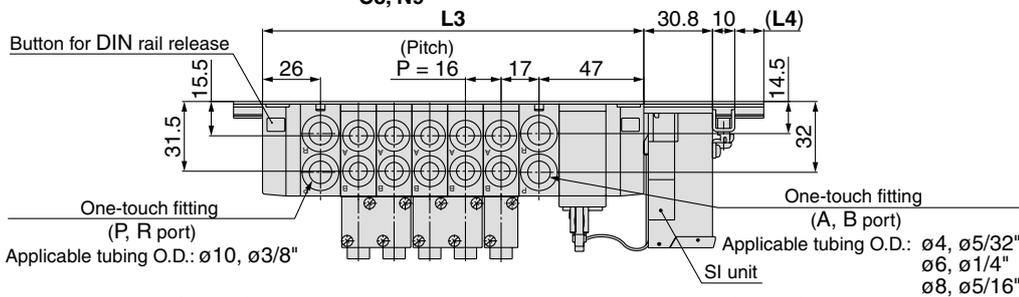


Note) The L1 to L4 dimensions of **SS5Y5-45S1 □ D- Stations U** <sup>C4, N3</sup>  
<sup>C6, N7</sup>  
<sup>C8, N9</sup> are identical to those of **SS5Y5-45S1 □ D- Stations U** <sup>C4, N3</sup>  
<sup>C6, N7</sup>  
<sup>C8, N9</sup>.



| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 173        | 185.5 | 210.5 | 223   | 235.5 | 260.5 | 273   | 285.5 | 298         |
| L2         | 162.5      | 175   | 200   | 212.5 | 225   | 250   | 262.5 | 275   | 287.5       |
| L3         | 105        | 121   | 137   | 153   | 169   | 185   | 201   | 217   | 233         |
| L4         | 13.5       | 12    | 16.5  | 14.5  | 13    | 17.5  | 15.5  | 14    | 12          |

**SS5Y5-45S1 □ D- Stations B** <sup>C4, N3</sup>  
<sup>C6, N7</sup>  
<sup>C8, N9</sup>



| Stations n | 2 stations | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10 stations |
|------------|------------|-------|-------|-------|-------|-------|-------|-------|-------------|
| L1         | 198        | 210.5 | 223   | 235.5 | 260.5 | 273   | 285.5 | 310.5 | 323         |
| L2         | 187.5      | 200   | 212.5 | 225   | 250   | 262.5 | 275   | 300   | 312.5       |
| L3         | 123        | 139   | 155   | 171   | 187   | 203   | 219   | 235   | 251         |
| L4         | 17         | 15.5  | 13.5  | 12    | 16.5  | 14.5  | 13    | 17.5  | 15.5        |

| Stations n | 11 stations | 12    | 13    | 14    | 15    | 16 stations |
|------------|-------------|-------|-------|-------|-------|-------------|
| L1         | 335.5       | 348   | 373   | 385.5 | 398   | 410.5       |
| L2         | 325         | 337.5 | 362.5 | 375   | 387.5 | 400         |
| L3         | 267         | 283   | 299   | 315   | 331   | 347         |
| L4         | 14          | 12    | 16.5  | 15    | 13    | 11.5        |

# EX510 Gateway System Serial Transmission System Base Mounted Manifold/Stacking Type/Plug-in Type

## Series SY3000/5000

Type **45S6B**

### How to Order Manifold

**SS5Y 3 - 45S6B U - 02 U - C4 -**

**Manifold series**

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |

**SI unit**

|     |                    |
|-----|--------------------|
| Nil | NPN output (+COM.) |
| N   | PNP output (-COM.) |

**SI unit mounting position**

|   |        |
|---|--------|
| U | U side |
| D | D side |

**Valve stations**

| Symbol | Stations    | Note                               |
|--------|-------------|------------------------------------|
| 02     | 2 stations  | Compatible with 16 solenoid valves |
| :      | :           |                                    |
| 16     | 16 stations |                                    |

\*The number of the blanking plate assembly is also included.

**CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

**Option**  
When a DIN rail that is longer than the specified stations is desired, specify the required station number. (Max. 20 stations)

**A, B port size**

**One-touch fitting (Metric size)**

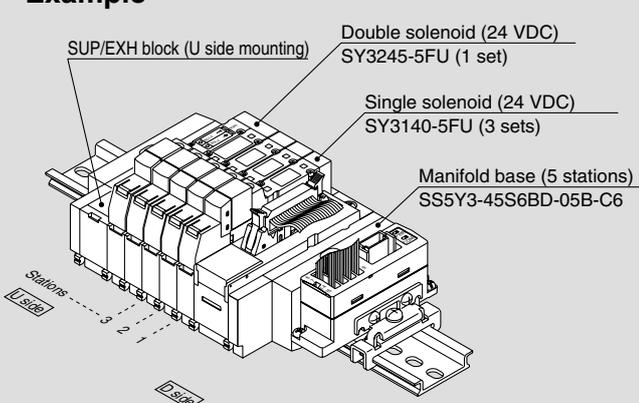
| Symbol | Port size                | Applicable series |
|--------|--------------------------|-------------------|
| C4     | One-touch fitting for ø4 | SY3000            |
| C6     | One-touch fitting for ø6 |                   |
| M      | Mixed                    |                   |
| C4     | One-touch fitting for ø4 | SY5000            |
| C6     | One-touch fitting for ø6 |                   |
| C8     | One-touch fitting for ø8 |                   |
| M      | Mixed                    |                   |

### SI unit part no.

| Symbol | SI unit specifications | SI unit part no. | Page           |
|--------|------------------------|------------------|----------------|
| Nil    | NPN output (+COM.)     | EX510-S002A      | P.1715 to 1717 |
| N      | PNP output (-COM.)     | EX510-S102A      |                |

### How to Order Manifold Assembly (Example)

**Example**



**SS5Y3-45S6BD-05U-C6 · 1 set (45S6B type 5-station manifold part no.)**  
 \*SY3140-5FU ..... 3 sets (Single solenoid part no.)  
 \*SY3245-5FU ..... 1 set (Double solenoid part no.)

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

- They will be assembled in the order listed starting at the first station at the D side whether the connector box is located at either end.
- When ordering double solenoid valves/3 position (dual body style), please keep in mind that they require two manifold stations.

### One-touch fitting (Inch size)

| Symbol | Port size                    | Applicable series |
|--------|------------------------------|-------------------|
| N3     | One-touch fitting for ø5/32" | SY3000            |
| N7     | One-touch fitting for ø1/4"  |                   |
| M      | Mixed                        |                   |
| N3     | One-touch fitting for ø5/32" | SY5000            |
| N7     | One-touch fitting for ø1/4"  |                   |
| N9     | One-touch fitting for ø5/16" |                   |
| M      | Mixed                        |                   |

• For the mixed specification, indicate separately on a manifold specification sheet.

### Pilot specifications

|     |                                  |
|-----|----------------------------------|
| Nil | Internal pilot                   |
| S   | Internal pilot/built-in silencer |
| R   | External pilot                   |
| RS  | External pilot/built-in silencer |

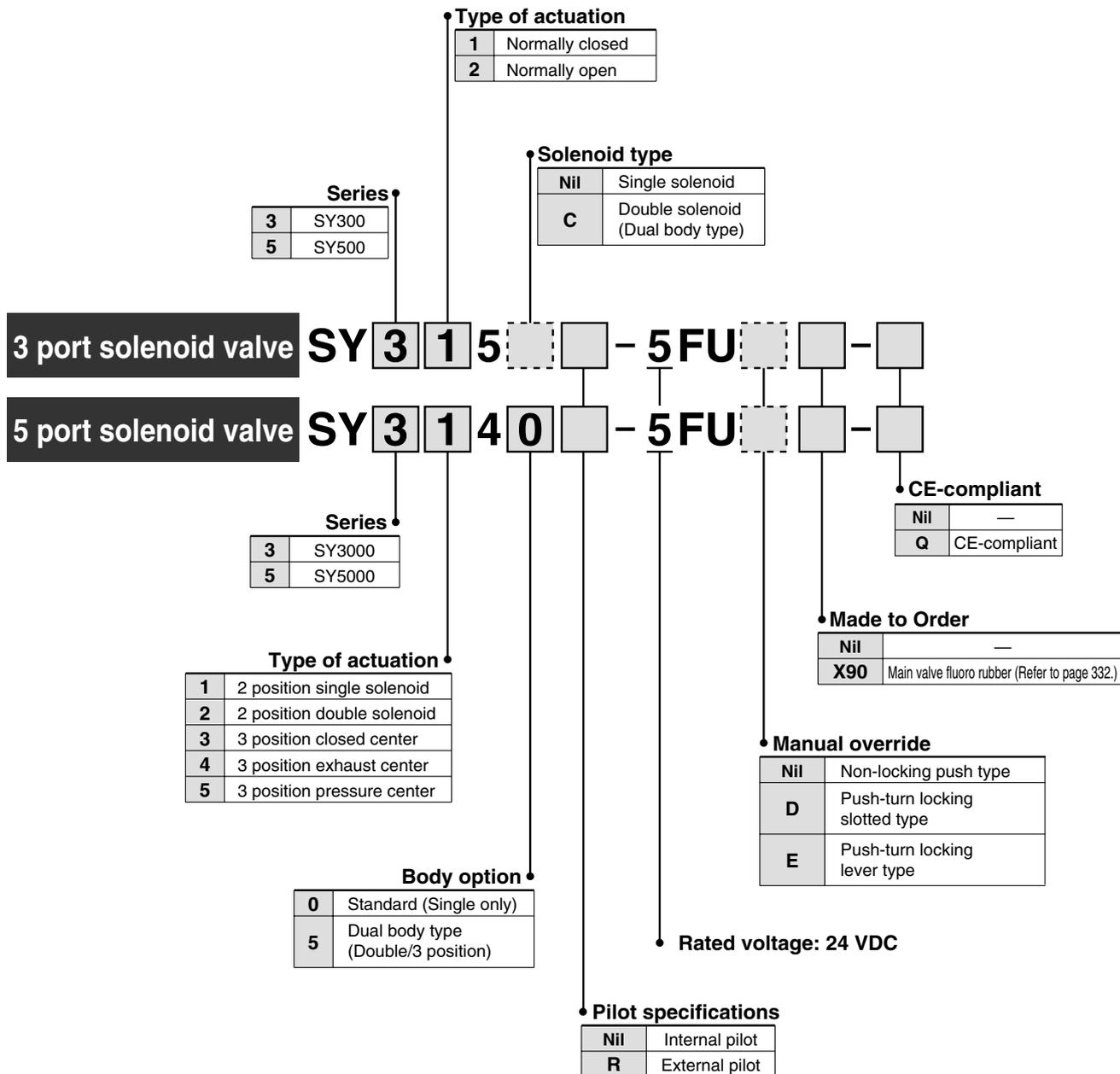
### SUP/EXH block assembly mounting position

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

\*For the special specifications, indicate separately on a manifold specification sheet.

For details of "Gateway System Serial Transmission System, Series EX510", refer to pages 1696 through to 1724.

### How to Order Valves

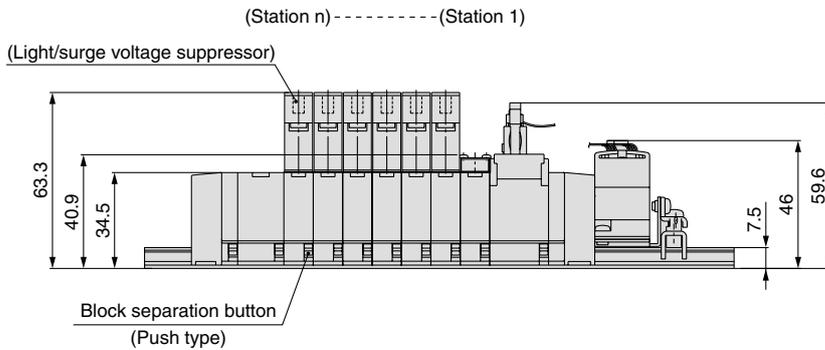
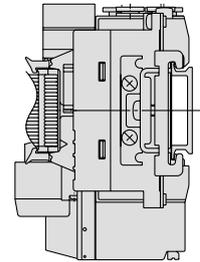
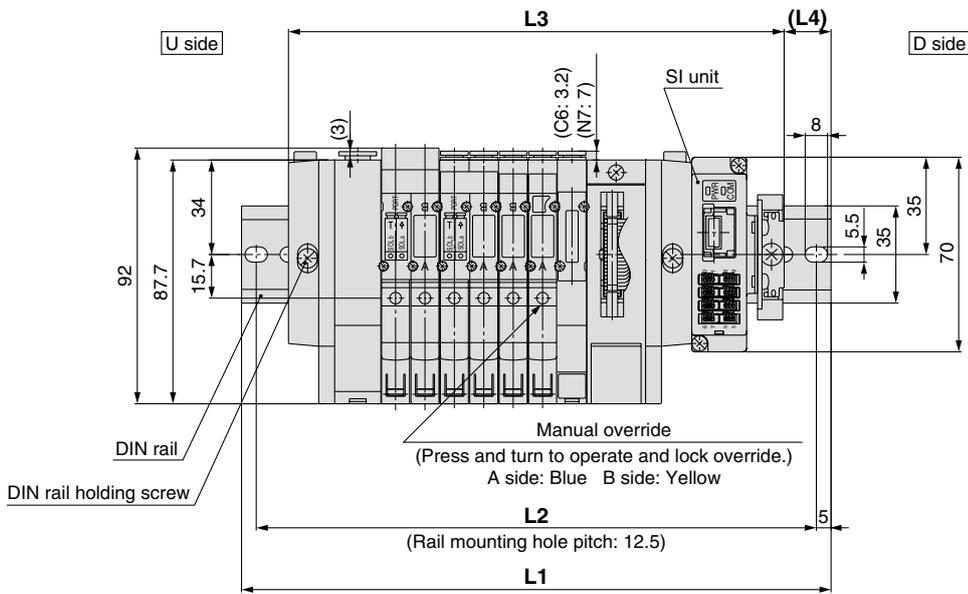
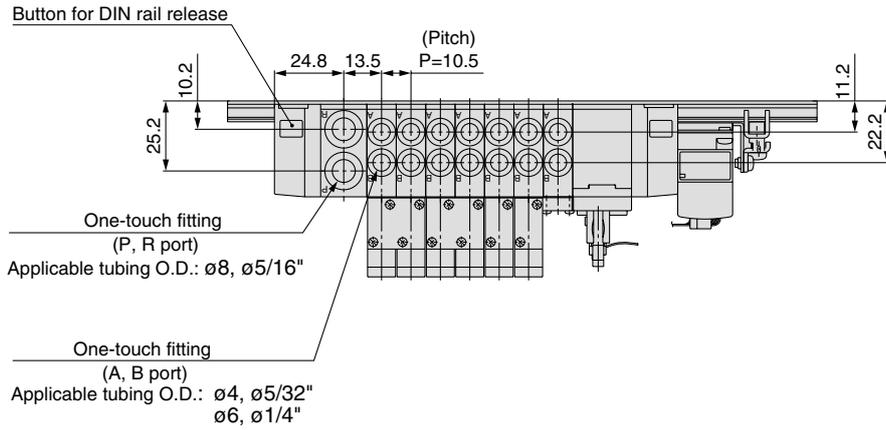


- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

 When ordering plug-in type valve as a single unit, gaskets are not included. Order them separately, if necessary. (Refer to page 300 for details.)

# Type **45S6B** Series **SY3000/5000**

**SS5Y3-45S6B** □ **D-Stations U-** C4, N3  
C6, N7

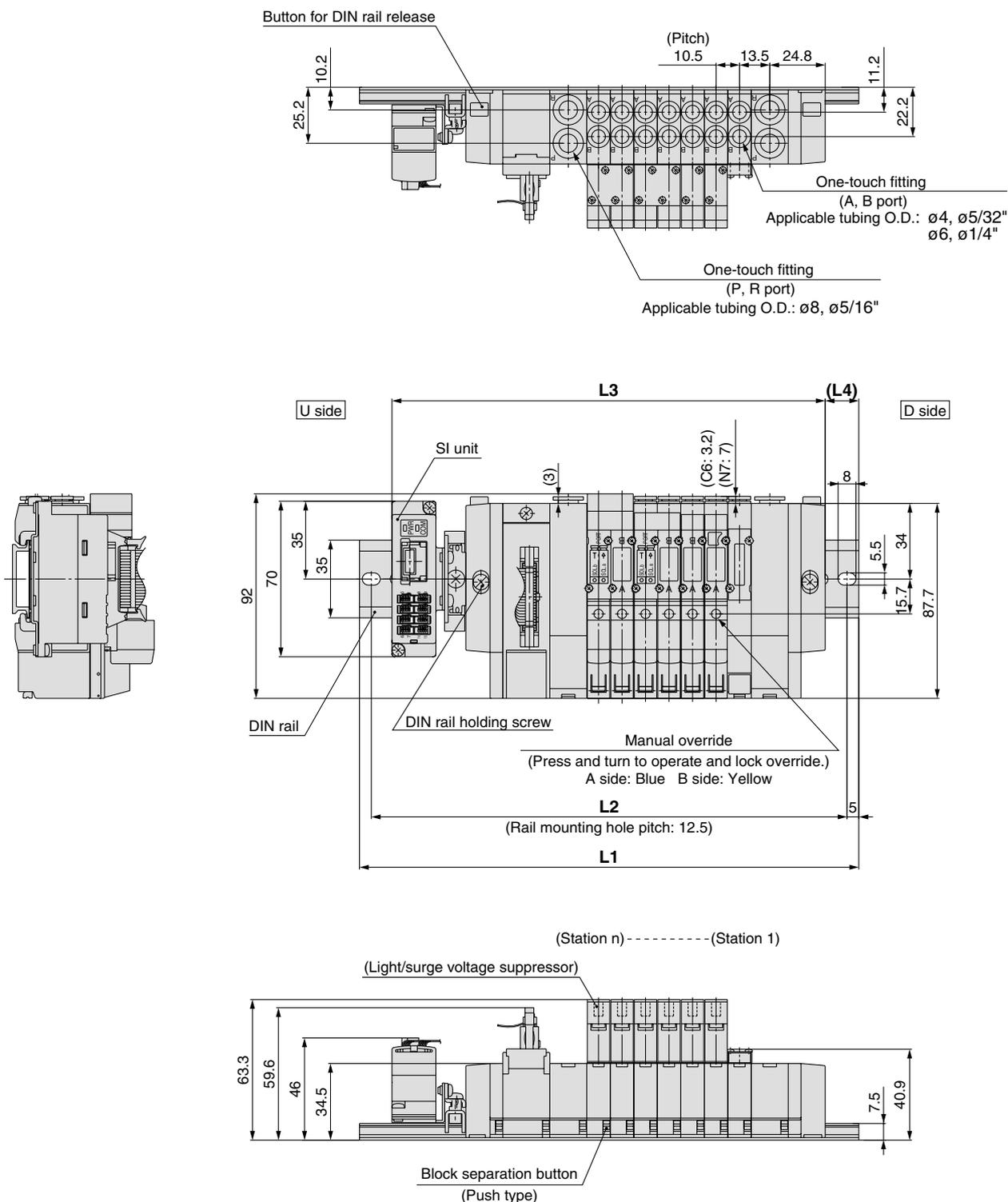


## L: Dimensions

n: Stations

| L \ n     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>L1</b> | 148   | 160.5 | 173   | 185.5 | 198   | 210.5 | 223   | 223   | 235.5 |
| <b>L2</b> | 137.5 | 150   | 162.5 | 175   | 187.5 | 200   | 212.5 | 212.5 | 225   |
| <b>L3</b> | 124.5 | 135   | 145.5 | 156   | 166.5 | 177   | 187.5 | 198   | 208.5 |
| <b>L4</b> | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 12.5  | 13.5  |

SS5Y3-45S6B  U-Stations B-C4, N3  
C6, N7



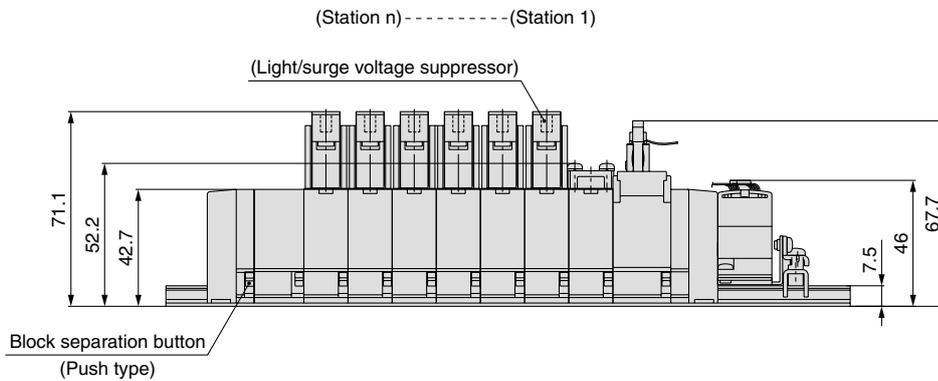
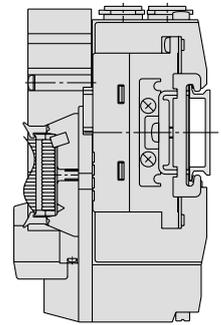
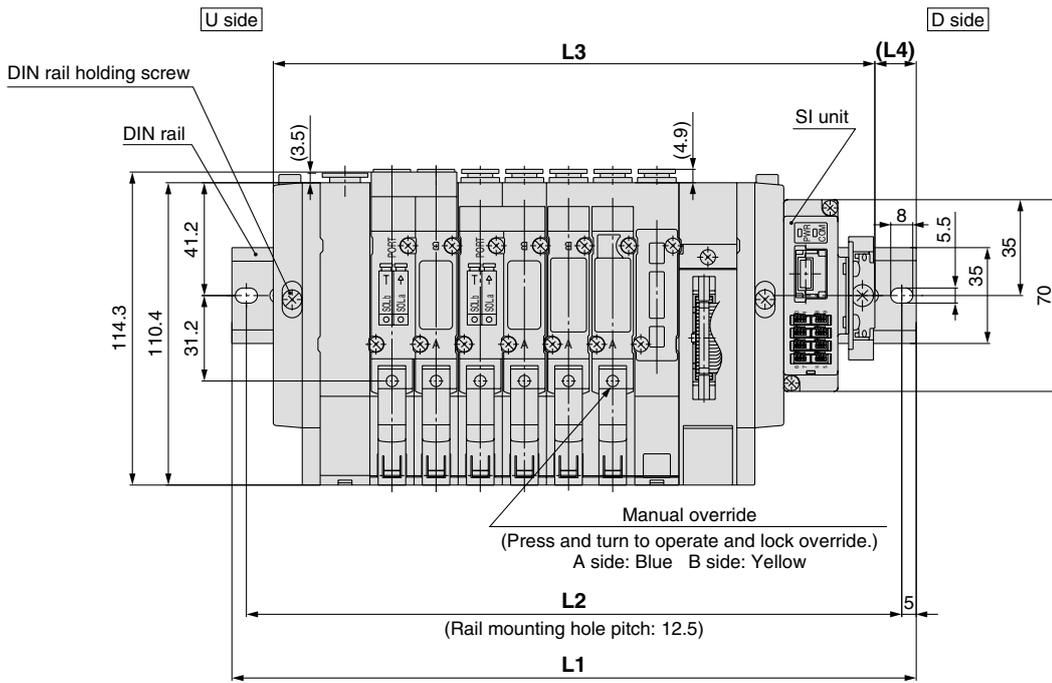
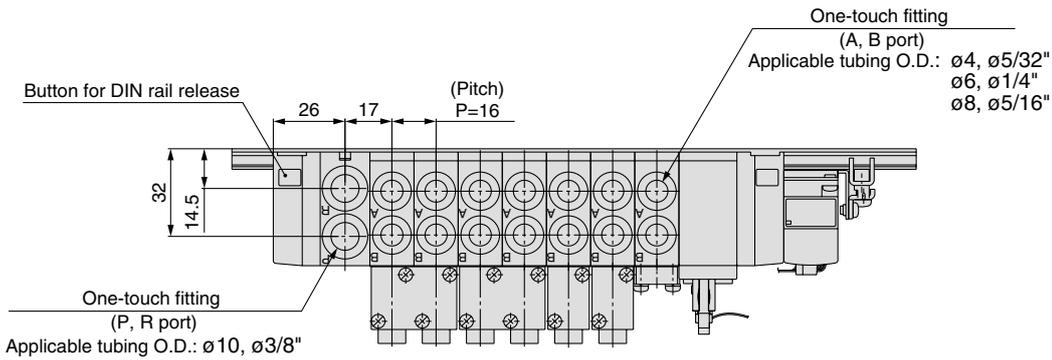
- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

**L: Dimensions**

| L \ n | n: Stations |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |
|-------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|
|       | 2           | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    |  |
| L1    | 173         | 185.5 | 198   | 198   | 210.5 | 223   | 235.5 | 248   | 260.5 | 273   | 273   | 285.5 | 298   | 310.5 | 323   |  |
| L2    | 162.5       | 175   | 187.5 | 187.5 | 200   | 212.5 | 225   | 237.5 | 250   | 262.5 | 262.5 | 275   | 287.5 | 300   | 312.5 |  |
| L3    | 141         | 151.5 | 162   | 172.5 | 183   | 193.5 | 204   | 214.5 | 225   | 235.5 | 246   | 256.5 | 267   | 277.5 | 288   |  |
| L4    | 16          | 17    | 18    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 13.5  | 14.5  | 15.5  | 16.5  | 17.5  |  |

# Type **45S6B** Series **SY3000/5000**

**SS5Y5-45S6B**  **D- Stations**  **U-** C4, N3  
C6, N7  
C8, N9



## L: Dimensions

|       |       | n: Stations |       |       |       |       |       |       |       |  |
|-------|-------|-------------|-------|-------|-------|-------|-------|-------|-------|--|
| L \ n | 2     | 3           | 4     | 5     | 6     | 7     | 8     | 9     | 10    |  |
| L1    | 173   | 185.5       | 198   | 210.5 | 235.5 | 248   | 260.5 | 285.5 | 298   |  |
| L2    | 162.5 | 175         | 187.5 | 200   | 225   | 237.5 | 250   | 275   | 287.5 |  |
| L3    | 138   | 154         | 170   | 186   | 202   | 218   | 234   | 250   | 266   |  |
| L4    | 17.5  | 16          | 14    | 12.5  | 17    | 15    | 13.5  | 18    | 16    |  |

# 3 Port Valve Mixed Mounting Type on 5 Port Valve Manifold



# Series SY300/500

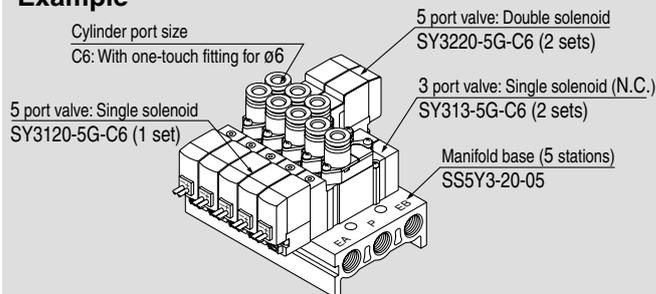
3 port valve can be mounted on manifold for 5 port valve.

## Applications

Possible to be mounted on all kinds of manifolds for Series SY3000/5000.  
Refer to "How to Order Manifold" for the details.

## How to Order Manifold Assembly (Example)

### Example



SS5Y3-20-05 ..... 1 set (Type 20, 5-station manifold base part no.)  
 \* SY313-5G-C6 ..... 2 sets (3 port valve, type NC part no.)  
 \* SY3120-5G-C6 ..... 1 set (5 port valve, single solenoid part no.)  
 \* SY3220-5G-C6 ..... 2 sets (5 port valve, double solenoid part no.)

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

Add the valve and option part number under the manifold base part number. In the case of complex arrangement, specify them on the manifold specification sheet.

## Body Ported/How to Order Valve

### Individual Wiring: For SS5Y<sup>3</sup><sub>5</sub>-20

**SY** 5 1 3     - 5 L     - 01   -  

**Series**

|   |       |
|---|-------|
| 3 | SY300 |
| 5 | SY500 |

**Type of actuation**

|   |                        |
|---|------------------------|
| 1 | Normally closed (N.C.) |
| 2 | Normally open (N.O.)   |

**Solenoid type**

|     |                 |
|-----|-----------------|
| Nil | Single solenoid |
| D   | Double solenoid |

**Coil specifications**

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

\* Power saving circuit is not available in the case of D, Y, DO, YO or W□ type.

**Rated voltage**

| For DC |        | For AC |                   |
|--------|--------|--------|-------------------|
| 5      | 24 VDC | 1      | 100 VAC           |
| 6      | 12 VDC | 2      | 200 VAC           |
| V      | 6 VDC  | 3      | 110 VAC [115 VAC] |
| S      | 5 VDC  | 4      | 220 VAC [230 VAC] |
| R      | 3 VDC  |        |                   |

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

**Electrical entry**

| 24, 12, 6, 5, 3 VDC/<br>100, 110, 200, 220 VAC |                                          |                                          | 24, 12 VDC/<br>100, 110,<br>200, 220 VAC | 24, 12,<br>6, 5, 3 VDC                 |
|------------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|----------------------------------------|
| Grommet                                        | L plug connector                         | M plug connector                         | DIN terminal                             | M8 connector                           |
| <b>G:</b> Lead wire length 300 mm              | <b>L:</b> With lead wire (Length 300 mm) | <b>M:</b> With lead wire (Length 300 mm) | <b>D:</b> With connector                 | <b>WO:</b> Without connector cable     |
| <b>H:</b> Lead wire length 600 mm              | <b>LN:</b> Without lead wire             | <b>MN:</b> Without lead wire             | <b>DO:</b> Without connector             | <b>W□:</b> With connector cable (Note) |
|                                                | <b>LO:</b> Without connector             | <b>MO:</b> Without connector             | <b>Y:</b> With connector                 |                                        |
|                                                |                                          |                                          | <b>YO:</b> Without connector             |                                        |

\* LN, MN type: with 2 sockets.  
\* Refer to page 337 for DIN terminal of SY300 series.  
\* "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). For details, refer to page 336.  
\* For connector cable of M8 connector, refer to page 339.  
\* M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 331 for details.  
\* Refer to page 336 for the lead wire length of L and M plug connectors.  
\* Refer to page 337 for the connector assembly with cover for L and M plug connectors.  
Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.

**CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

\* For DC only except DIN terminal.

**Thread type**

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

\* Except for M5

**A port size**

**Thread piping**

| Symbol | Port size | Applicable series |
|--------|-----------|-------------------|
| M5     | M5 x 0.8  | SY300             |
| 01     | 1/8       | SY500             |

**One-touch fitting (Metric size)**

| Symbol | Port size                | Applicable series |
|--------|--------------------------|-------------------|
| C4     | One-touch fitting for ø4 | SY300             |
| C6     | One-touch fitting for ø6 |                   |
| C4     | One-touch fitting for ø4 | SY500             |
| C6     | One-touch fitting for ø6 |                   |
| C8     | One-touch fitting for ø8 |                   |

**One-touch fitting (Inch size)**

| Symbol | Port size                     | Applicable series |
|--------|-------------------------------|-------------------|
| N3     | One-touch fitting for ø 5/32" | SY300             |
| N7     | One-touch fitting for ø 1/4"  |                   |
| N3     | One-touch fitting for ø 5/32" | SY500             |
| N7     | One-touch fitting for ø 1/4"  |                   |
| N9     | One-touch fitting for ø 5/16" |                   |

**Manual override**

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

**Light/surge voltage suppressor**

**Electrical entry for G, H, L, M, W**

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

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

**Electrical entry for D, Y (SY500 only)**

|     |                                        |
|-----|----------------------------------------|
| Nil | Without light/surge voltage suppressor |
| S   | With surge voltage suppressor          |
| Z   | With light/surge voltage suppressor    |

\* DOZ and YOZ are not available.  
\* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

Note) When placing an order for body ported solenoid valve as a single unit, mounting screw for manifold and gasket are not attached. Order them separately, if necessary. (Refer to page 173 for details.)

# Series SY300/500

## Body Ported/How to Order Valve

Flat ribbon cable: SS5Y<sup>3</sup>-20P

**Light/surge voltage suppressor**

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

Note) Z: Positive common specifications only.

**Rated voltage**

|   |        |
|---|--------|
| 5 | 24 VDC |
| 6 | 12 VDC |

**A port size**

**Thread piping**

| Symbol | Port size | Applicable series |
|--------|-----------|-------------------|
| M5     | M5 x 0.8  | SY300             |
| 01     | 1/8       | SY500             |

**One-touch fitting (Metric size)**

| Symbol | Port size                | Applicable series |
|--------|--------------------------|-------------------|
| C4     | One-touch fitting for ø4 | SY300             |
| C6     | One-touch fitting for ø6 | SY300             |
| C6     | One-touch fitting for ø6 | SY500             |
| C8     | One-touch fitting for ø8 | SY500             |

**One-touch fitting (Inch size)**

| Symbol | Port size                    | Applicable series |
|--------|------------------------------|-------------------|
| N3     | One-touch fitting for ø5/32" | SY300             |
| N7     | One-touch fitting for ø1/4"  | SY300             |
| N7     | One-touch fitting for ø1/4"  | SY500             |
| N9     | One-touch fitting for ø5/16" | SY500             |

**CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

**For DC: SY**

|   |
|---|
| 5 |
|---|

|   |
|---|
| 1 |
|---|

|   |
|---|
| 3 |
|---|

 - 

|   |
|---|
| 5 |
|---|

 LO 

|   |
|---|
| Z |
|---|

 - 

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**For AC: SY**

|   |
|---|
| 5 |
|---|

|   |
|---|
| 1 |
|---|

|   |
|---|
| 3 |
|---|

 - 

|   |
|---|
| 1 |
|---|

 LO 

|   |
|---|
| Z |
|---|

 - 

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**Series**

|   |       |
|---|-------|
| 3 | SY300 |
| 5 | SY500 |

**Rated voltage**

|   |                   |
|---|-------------------|
| 1 | 100 VAC           |
| 3 | 110 VAC [115 VAC] |

**Manual override**

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

**Thread type**

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

\* Except for M5

**Type of actuation**

|   |                        |
|---|------------------------|
| 1 | Normally closed (N.C.) |
| 2 | Normally open (N.C.)   |

**Solenoid type**

|     |                 |
|-----|-----------------|
| Nil | Single solenoid |
| D   | Double solenoid |

## Base Mounted/How to Order Valve

Individual wiring: For SS5Y<sup>3</sup>-41/42/45

**SY**

|   |
|---|
| 5 |
|---|

|   |
|---|
| 1 |
|---|

|   |
|---|
| 5 |
|---|

 - 

|   |
|---|
| 5 |
|---|

 L 

|  |
|--|
|  |
|--|

 - 

|  |
|--|
|  |
|--|

**Series**

|   |       |
|---|-------|
| 3 | SY300 |
| 5 | SY500 |

**Type of actuation**

|   |                        |
|---|------------------------|
| 1 | Normally closed (N.C.) |
| 2 | Normally open (N.C.)   |

**Solenoid type**

|     |                 |
|-----|-----------------|
| Nil | Single solenoid |
| D   | Double solenoid |

**Pilot type**

|     |                |
|-----|----------------|
| Nil | Internal pilot |
| R   | External pilot |

\* External pilot is not available for Type 41 manifold.

**Coil specifications**

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

\* Power saving circuit is not available in the case of D, Y, DO, YO or W□ type.

**Rated voltage**

| For DC |        | AC |                   |
|--------|--------|----|-------------------|
| 5      | 24 VDC | 1  | 100 VAC           |
| 6      | 12 VDC | 2  | 200 VAC           |
| V      | 6 VDC  | 3  | 110 VAC [115 VAC] |
| S      | 5 VDC  | 4  | 220 VAC [230 VAC] |
| R      | 3 VDC  |    |                   |

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

**Light/surge voltage suppressor**

**Electrical entry for G, H, L, M, W**

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

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

**Electrical entry for D, Y (SY500 only)**

|     |                                        |
|-----|----------------------------------------|
| Nil | Without light/surge voltage suppressor |
| S   | With surge voltage suppressor          |
| Z   | With light/surge voltage suppressor    |

\* DOZ and YOZ are not available.  
\* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

**CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

\* For DC only except DIN terminal.

**Manual override**

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

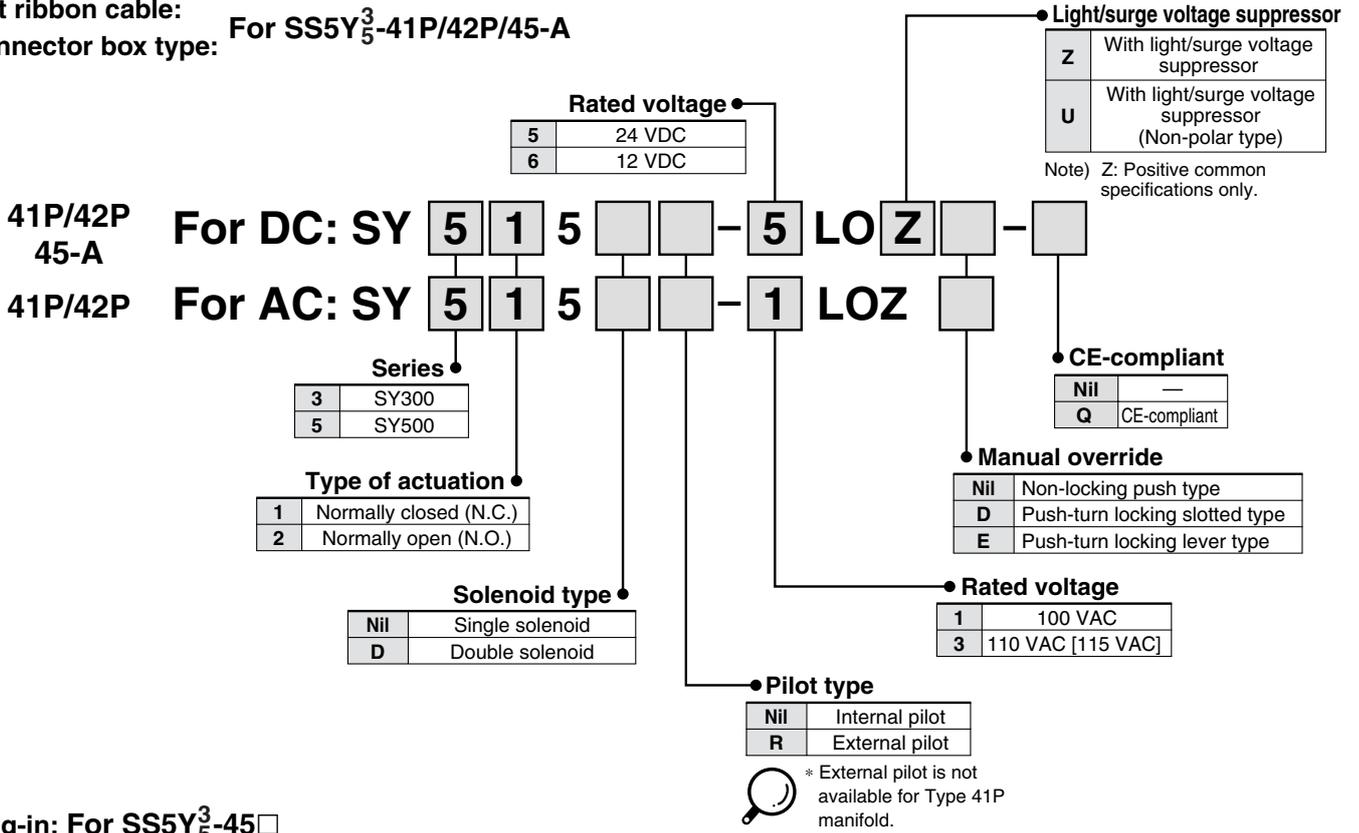
**Electrical entry**

|                                             |                                   |                                    |                       |                                 |  |
|---------------------------------------------|-----------------------------------|------------------------------------|-----------------------|---------------------------------|--|
| 24, 12, 6, 5, 3 VDC/ 100, 110, 200, 220 VAC |                                   | 24, 12 VDC/ 100, 110, 200, 220 VAC |                       | 24, 12, 6, 5, 3 VDC             |  |
| Grommet                                     | L plug connector                  | M plug connector                   | DIN terminal          | M8 connector                    |  |
| G: Lead wire length 300 mm                  | L: With lead wire (Length 300 mm) | M: With lead wire (Length 300 mm)  | D: With connector     | WO: Without connector cable     |  |
| H: Lead wire length 600 mm                  | LN: Without lead wire             | MN: Without lead wire              | DO: Without connector | W□: With connector cable (Note) |  |
|                                             | LO: Without connector             | MO: Without connector              | Y: With connector     |                                 |  |
|                                             |                                   |                                    | YO: Without connector |                                 |  |

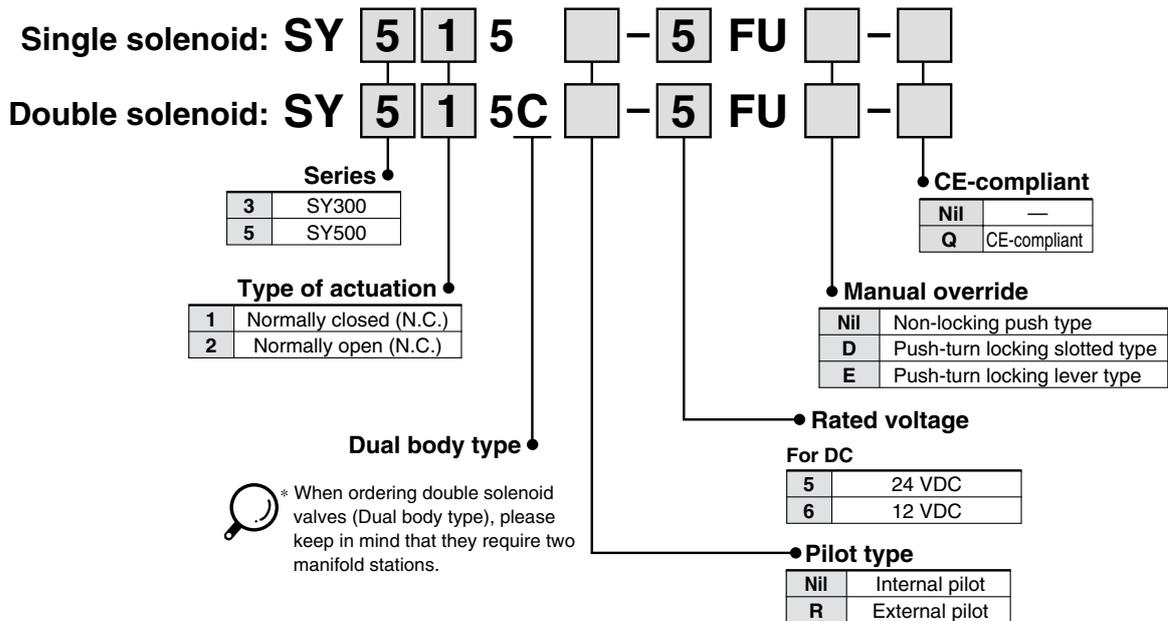
\* LN, MN type: with 2 sockets.  
\* Refer to page 337 for DIN terminal of SY300 series.  
\* "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). For details, refer to page 336.  
\* Refer to page 339 for connector cable of M8 connector.  
\* M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 331 for details.  
\* Refer to page 336 for the lead wire length of L and M plug connectors.  
\* Refer to page 337 for the connector assembly with cover for L and M plug connectors.  
Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.

## Base Mounted/How to Order Valve

Flat ribbon cable:  
Connector box type: For SS5Y<sup>3</sup><sub>5</sub>-41P/42P/45-A



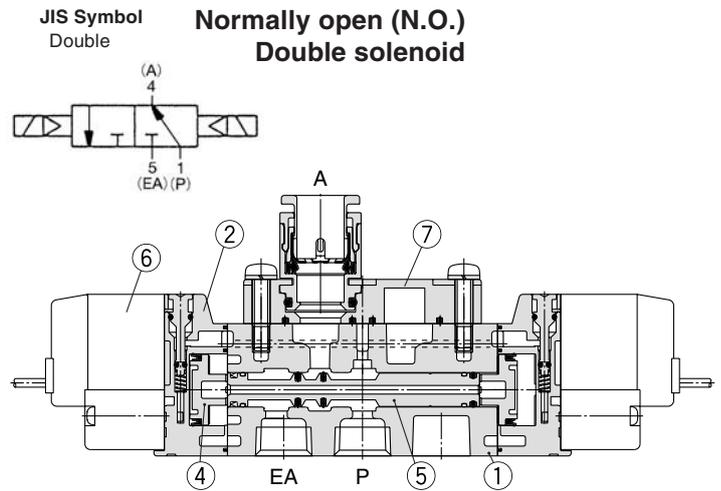
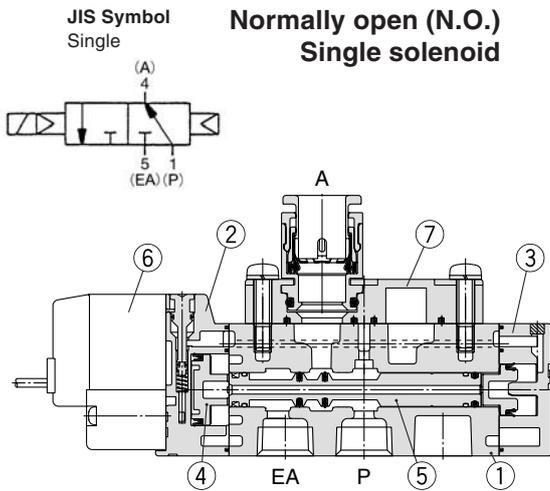
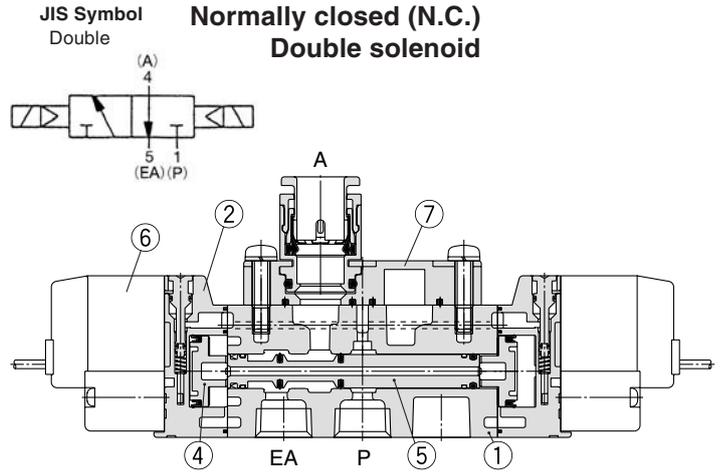
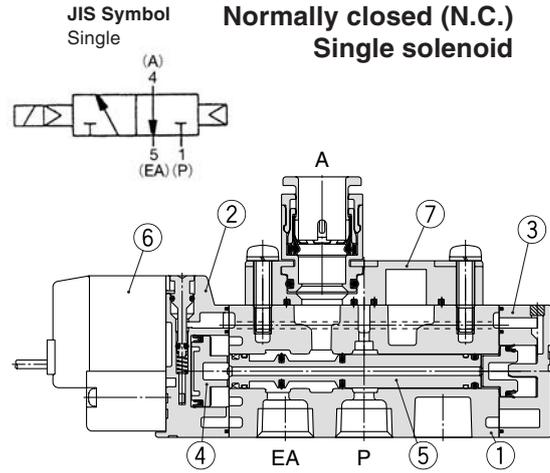
Plug-in: For SS5Y<sup>3</sup><sub>5</sub>-45□



- SJ
- SY**
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

# Series SY300/500

## Construction



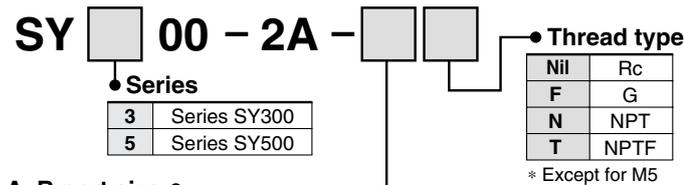
### Component Parts

| No. | Description          | Material                                      | Note  |
|-----|----------------------|-----------------------------------------------|-------|
| 1   | Body                 | Aluminum die-casted (SY3000: Zinc die-casted) | White |
| 2   | Adapter plate        | Resin                                         | White |
| 3   | End plate            | Resin                                         | White |
| 4   | Piston               | Resin                                         | -     |
| 5   | Spool valve assembly | Aluminum, H-NBR                               | -     |

### Replacement Parts

| No. | Description            | No.                                                       |
|-----|------------------------|-----------------------------------------------------------|
| 6   | Pilot valve assembly   | Refer to "How to Order Pilot Valve Assembly" on page 112. |
| 7   | M5 port block assembly | Refer to "How to Order Port Block Assembly" below.        |

### How to Order M5 Port Block Assembly



**A, B port size**

**Thread piping**

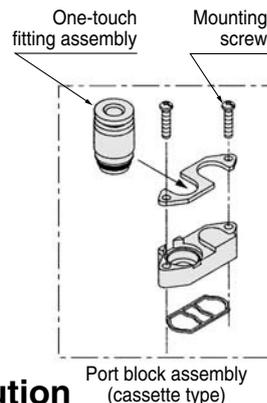
| Symbol | Port size | Applicable series |
|--------|-----------|-------------------|
| M5     | M5 x 0.8  | SY300             |
| O1     | 1/8       | SY500             |

**One-touch fitting (Metric size)**

| Symbol | Port size                | Applicable series |
|--------|--------------------------|-------------------|
| C4     | One-touch fitting for ø4 | SY300             |
| C6     | One-touch fitting for ø6 |                   |
| C4     | One-touch fitting for ø4 | SY500             |
| C6     | One-touch fitting for ø6 |                   |
| C8     | One-touch fitting for ø8 |                   |

**One-touch fitting (Inch size)**

| Symbol | Port size                    | Applicable series |
|--------|------------------------------|-------------------|
| N3     | One-touch fitting for ø5/32" | SY300             |
| N7     | One-touch fitting for ø1/4"  |                   |
| N3     | One-touch fitting for ø5/32" | SY500             |
| N7     | One-touch fitting for ø1/4"  |                   |
| N9     | One-touch fitting for ø5/16" |                   |



\* Only replacement of the fittings assembly is possible.

#### Metric size

|              |                          |                |
|--------------|--------------------------|----------------|
| <b>SY300</b> | One-touch fitting for ø4 | VVQ1000-50A-C4 |
|              | One-touch fitting for ø6 | VVQ1000-50A-C6 |
|              | One-touch fitting for ø4 | VVQ1000-51A-C4 |
| <b>SY500</b> | One-touch fitting for ø6 | VVQ1000-51A-C6 |
|              | One-touch fitting for ø8 | VVQ1000-51A-C8 |

#### Inch size

|              |                              |                |
|--------------|------------------------------|----------------|
| <b>SY300</b> | One-touch fitting for ø5/32" | VVQ1000-50A-N3 |
|              | One-touch fitting for ø1/4"  | VVQ1000-50A-N7 |
| <b>SY500</b> | One-touch fitting for ø5/32" | VVQ1000-51A-N3 |
|              | One-touch fitting for ø1/4"  | VVQ1000-51A-N7 |
|              | One-touch fitting for ø5/16" | VVQ1000-51A-N9 |



### Caution

#### Mounting screw tightening torques

**SY300 (M2) : 0.12 N·m**  
**SY500 (M3) : 0.6 N·m**

## Specifications

Dimensions, specifications, solenoid specifications, response time and effective area are the same as 5 port valve.

## Mass

### Series SY300

| Valve model       | Type of actuation | Mass (g) |                     |
|-------------------|-------------------|----------|---------------------|
|                   |                   | Grommet  | L, M plug connector |
| SY3□3-□□-M5       | Single            | 51       | 53                  |
|                   | Double            | 68       | 74                  |
| SY3□3-□□-C4<br>N3 | Single            | 56       | 59                  |
|                   | Double            | 74       | 79                  |
| SY3□3-□□-C6<br>N7 | Single            | 54       | 57                  |
|                   | Double            | 72       | 77                  |
| SY3□5-□□          | Single            | 47       | 50                  |
|                   | Double            | 65       | 70                  |

### Series SY500

| Valve model      | Type of actuation | Mass (g) |                     |              |
|------------------|-------------------|----------|---------------------|--------------|
|                  |                   | Grommet  | L, M plug connector | DIN terminal |
| SY5□3-□-01□      | Single            | 69       | 72                  | 93           |
|                  | Double            | 87       | 93                  | 135          |
| SY5□3-□-C4<br>N3 | Single            | 82       | 82                  | 103          |
|                  | Double            | 100      | 102                 | 144          |
| SY5□3-□-C6<br>N7 | Single            | 79       | 77                  | 98           |
|                  | Double            | 97       | 98                  | 140          |
| SY5□3-□-C8<br>N9 | Single            | 75       | 84                  | 105          |
|                  | Double            | 93       | 105                 | 147          |
| SY5□5-□□         | Single            | 55       | 58                  | 79           |
|                  | Double            | 73       | 78                  | 120          |

SJ

**SY**

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

VQZ

SQ

VFS

VFR

VQ7

# SY3000/5000

Made to Order

## External Pilot/Built-in Silencer

External pilot manifold bases for low-pressure/vacuum use are added to split style/DIN rail manifolds. The built-in silencer has materialized a clear-cut appearance.



Type **45**

### Individual Wiring/Connector Box Type

#### How to Order Manifold

Type 45

**SS5Y<sup>3</sup><sub>5</sub>-45(-A)-05 U R - C6**

Series

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |

Valve stations

| Symbol | Stations    |
|--------|-------------|
| 02     | 2 stations  |
| ⋮      | ⋮           |
| 20     | 20 stations |

The number of blanking plate assembly is included.

SUP/EXH block assembly mounting position

| Symbol | Mounting position      | Stations         |
|--------|------------------------|------------------|
| U      | U side                 | 2 to 10 stations |
| D      | D side                 |                  |
| B      | Both sides             | 2 to 20 stations |
| M      | Special specifications |                  |

\* For special specifications, indicate separately by the manifold specification

SUP/EXH block assembly specifications

| Symbol | Specifications                   |
|--------|----------------------------------|
| R      | External pilot specifications    |
| S      | Internal pilot/Built-in silencer |
| RS     | External pilot/Built-in silencer |

A, B port size

One-touch fitting (Metric size)

| Symbol | Port size                | Applicable series |
|--------|--------------------------|-------------------|
| C4     | One-touch fitting for ø4 | SY3000            |
| C6     | One-touch fitting for ø6 |                   |
| M      | Mixed                    |                   |
| C4     | One-touch fitting for ø4 | SY5000            |
| C6     | One-touch fitting for ø6 |                   |
| C8     | One-touch fitting for ø8 |                   |
| M      | Mixed                    |                   |

One-touch fitting (Inch size)

| Symbol | Port size                    | Applicable series |
|--------|------------------------------|-------------------|
| N3     | One-touch fitting for ø5/32" | SY3000            |
| N7     | One-touch fitting for ø1/4"  |                   |
| M      | Mixed                        |                   |
| N3     | One-touch fitting for ø5/32" | SY5000            |
| N7     | One-touch fitting for ø1/4"  |                   |
| N9     | One-touch fitting for ø9/16" |                   |
| M      | Mixed                        |                   |

\* In the case of mixed specifications, indicate separately on the manifold specification sheet.

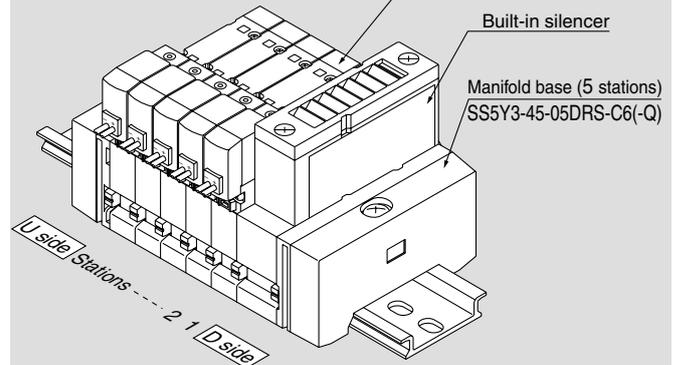
CE-compliant

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

#### How to Order Manifold Assembly (Example)

##### Example

Single solenoid (external pilot specifications)  
SY3140R-5G(-Q) (5 sets)



**SS5Y3-45-05DRS-C6** ..... 1 set (External pilot specification with built-in silencer part no.)

\* **SY3140R-5G** ..... 5 sets (Single solenoid part no.)

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

The valve arrangement is numbered as the 1st. station from D side regardless of the mounting position of SUP/EXH block assembly. In ordering, specify the part nos. in the order from the 1st. station on D side. Besides, when the arrangement will be complicated, fill out the manifold specification sheet to instruct us. For manifolds with SUP/EXH block assembly at each end of the manifold, external pilot ports and silencers will be also located at each end of the manifold. The SUP/EXH block assembly (SX3/5000-51-1A), for special usage, as shown on page 254, can also be mounted. Please specify the mounting position, by correctly filling in the blank space on the manifold specification sheet.

## How to Order Valve

**SY 5 2 40**   - **5 L**   -  -

**Series**

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |

**Type of actuation**

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

**Pilot type**

|     |                |
|-----|----------------|
| Nil | Internal pilot |
| R   | External pilot |

**Coil specifications**

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

\* Power saving circuit is not available in the case of D, Y, DO, YO or W□ type.

**Rated voltage**

**For DC**

|   |        |
|---|--------|
| 5 | 24 VDC |
| 6 | 12 VDC |
| V | 6 VDC  |
| S | 5 VDC  |
| R | 3 VDC  |

**For AC (50/60 Hz)**

|   |                   |
|---|-------------------|
| 1 | 100 VAC           |
| 2 | 200 VAC           |
| 3 | 110 VAC [115 VAC] |
| 4 | 220 VAC [230 VAC] |

\* DC specifications of Type D, Y, DO and YO is only available with 12 and 24 VDC.  
\* For type W□, DC voltage is only available.  
\* D, Y, DO and YO only available for SY5000.

**CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

\* For DC only except DIN terminal.

**Made to Order**

|     |                                               |
|-----|-----------------------------------------------|
| Nil | —                                             |
| X90 | Main valve fluoro rubber (Refer to page 332.) |

**Manual override**

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

**Light/surge voltage suppressor**

**Electrical entry for G, H, L, M, W**

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

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

**Electrical entry for D, Y (SY5000 only)**

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

\* DOZ and YOZ are not available.  
\* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

**Electrical entry**

|                                                                        |                                                                                                          |                                                                                                          |                                                                                                                                              |                                                                                        |
|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC                             |                                                                                                          | 24, 12 VDC/<br>100, 110,<br>200, 220 VAC                                                                 |                                                                                                                                              | 24, 12, 6, 5, 3 VDC                                                                    |
| Grommet                                                                | L plug connector                                                                                         | M plug connector                                                                                         | DIN terminal                                                                                                                                 | M8 connector                                                                           |
| <b>G:</b> Lead wire length 300 mm<br><b>H:</b> Lead wire length 600 mm | <b>L:</b> With lead wire (Length 300 mm)<br><b>LN:</b> Without lead wire<br><b>LO:</b> Without connector | <b>M:</b> With lead wire (Length 300 mm)<br><b>MN:</b> Without lead wire<br><b>MO:</b> Without connector | <b>(SY5000 only)</b><br><b>D:</b> With connector<br><b>DO:</b> Without connector<br><b>Y:</b> With connector<br><b>YO:</b> Without connector | <b>WO:</b> Without connector cable<br><b>W□:</b> With connector cable <sup>Note)</sup> |

SJ  
SY  
SV  
SYJ  
SZ  
VP4  
S0700  
VQ  
VQ4  
VQ5  
VQC  
VQZ  
SQ  
VFS  
VFR  
VQ7

- \* LN, MN type: with 2 sockets.  
\* D, Y, DO and YO only available for SY5000.  
\* "Y" type is a DIN terminal conforming to EN-175301-803C (former DIN43650C). Refer to page 336 for details.  
\* Setting "-5LOU" is available only for connector box type.  
\* Refer to page 339 for connector cable of M8 connector.  
\* M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 331 for details.  
\* Refer to page 336 for the lead wire length of L and M plug connectors.  
\* Refer to page 337 for the connector assembly with cover for L and M plug connectors.  
Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.

## Plug-in

### How to Order Manifold

Type 45

**SS5Y<sup>3</sup><sub>5</sub>-45FU-05UR**

**Series**

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |

**Common specifications**

|     |                 |
|-----|-----------------|
| Nil | Positive common |
| N   | Negative common |

No symbol is used for T, T1, S□ types.

**Connector type**

| Symbol | Mounting position         |
|--------|---------------------------|
| F      | D-sub connector           |
| P      | Flat ribbon cable 26 pins |
| PG     | Flat ribbon cable 20 pins |
| PH     | Flat ribbon cable 10 pins |
| T      | Terminal block 9 pins     |
| T1     | Terminal block 18 pins    |
| S□     | Serial Transmission Type  |

\* For details, refer to pages from 272.

**Connector mounting position**

| Symbol | Mounting position |
|--------|-------------------|
| U      | U side            |
| D      | D side            |

**Valve stations**

| Symbol | Stations    | Note                |
|--------|-------------|---------------------|
| 02     | 2 stations  | Single wiring spec. |
| ⋮      | ⋮           |                     |
| 20     | 20 stations |                     |

- \* This also includes the number of blanking plate assemblies.
- \* Depending on the connector, the number of stations is limited. Refer to page 275.
- \* Two stations are necessary for the double, 3 position (Dual body type).

**SUP/EXH block assembly mounting position**

| Symbol | Mounting position      | Stations         |
|--------|------------------------|------------------|
| U      | U side                 | 2 to 10 stations |
| D      | D side                 |                  |
| B      | Both sides             | 2 to 20 stations |
| M      | Special specifications |                  |

\* For special specifications, indicate separately by the manifold specification

**SUP/EXH block assembly specifications**

| Symbol | Specifications                   |
|--------|----------------------------------|
| R      | External pilot specifications    |
| S      | Internal pilot/Built-in silencer |
| RS     | External pilot/Built-in silencer |

**A, B port size**

| One-touch fitting (Metric size) |                          |                   | One-touch fitting (Inch size) |                              |                   |
|---------------------------------|--------------------------|-------------------|-------------------------------|------------------------------|-------------------|
| Symbol                          | Port size                | Applicable series | Symbol                        | Port size                    | Applicable series |
| C4                              | One-touch fitting for ø4 | SY3000            | N3                            | One-touch fitting for ø5/32" | SY3000            |
| C6                              | One-touch fitting for ø6 |                   | N7                            | One-touch fitting for ø1/4"  |                   |
| M                               | Mixed                    |                   | M                             | Mixed                        |                   |
| C4                              | One-touch fitting for ø4 | SY5000            | N3                            | One-touch fitting for ø5/32" | SY5000            |
| C6                              | One-touch fitting for ø6 |                   | N7                            | One-touch fitting for ø1/4"  |                   |
| C8                              | One-touch fitting for ø8 |                   | N9                            | One-touch fitting for ø5/16" |                   |
| M                               | Mixed                    | M                 | Mixed                         |                              |                   |

\* In the case of mixed specifications, indicate separately on the manifold specification sheet.

**Voltage**

|     |        |
|-----|--------|
| Nil | 24 VDC |
| 12V | 12 VDC |

**Option**

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (20 stations at maximum)

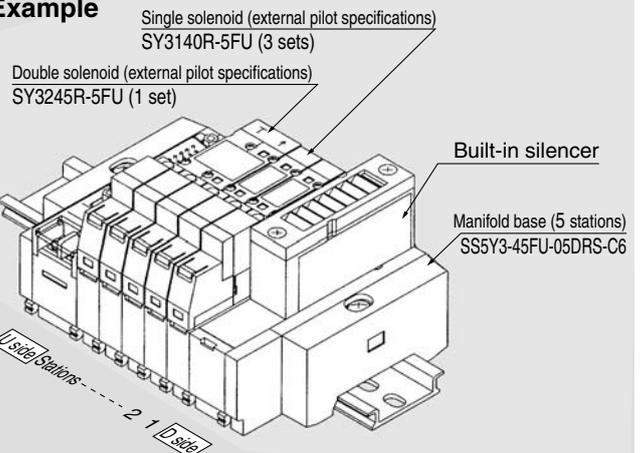
No symbol is used for T, T1, S□ types.

**CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

### How to Order Manifold Assembly (Example)

**Example**



**SS5Y3-45FU-05DRS-C6 ... 1 set (External pilot specification with built-in silencer part no.)**  
 \* **SY3140R-5FU** ..... 3 sets (Single solenoid part no.)  
 \* **SY3245R-5FU** ..... 1 set (Double solenoid part no.)

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

The valve arrangement is numbered as the 1st. station from D side regardless of the mounting position of SUP/EXH block assembly. In ordering, specify the part nos. in the order from the 1st. station on D side. Besides, when the arrangement will be complicated, fill out the manifold specification sheet to instruct us. For manifolds with SUP/EXH block at each end of the manifold, external pilot ports and silencers will be also located at each end of the manifold. The SUP/EXH block assembly (SX3/5000-51-1A), for special usage, can also be mounted. Please specify the mounting position, by correctly filling in the blank space on the manifold specification sheet. Two stations of the manifold base are necessary for the double, 3 position (Dual body type). Use caution when specifying the number of stations required for the manifold base.

### How to Order Valve

**SY 3 1 4** - **5FU**

**Series**

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |

**Type of actuation**

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

**Body Option**

|   |                                     |
|---|-------------------------------------|
| 0 | Standard (Single only)              |
| 5 | Dual body type (Double, 3 position) |

**Pilot type**

|     |                |
|-----|----------------|
| Nil | Internal pilot |
| R   | External pilot |

**Rated voltage**

|    |        |
|----|--------|
| 5  | 24 VDC |
| 6  | 12 VDC |
| V* | 6 VDC  |
| S* | 5 VDC  |
| R* | 3 VDC  |

**Manual override**

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

**Made to Order**

|     |                                               |
|-----|-----------------------------------------------|
| Nil | —                                             |
| X90 | Main valve fluoro rubber (Refer to page 332.) |

\* Mark: 45T and T1 only  
 S□ type is available for 24 VDC only.

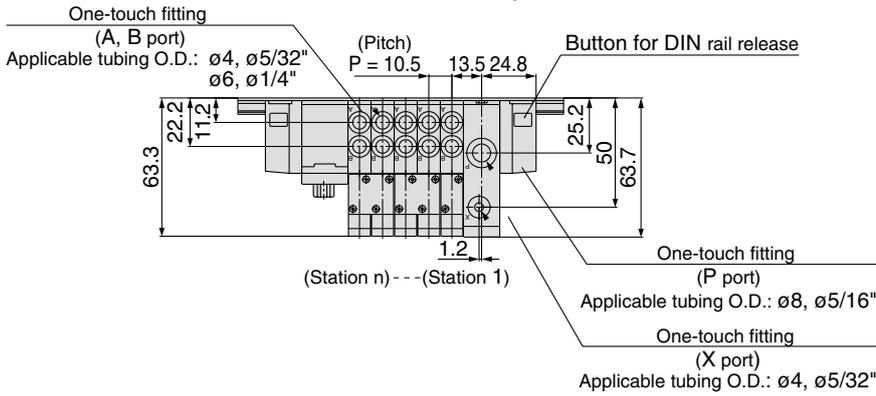
**CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

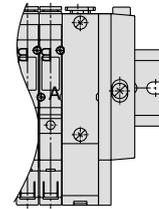
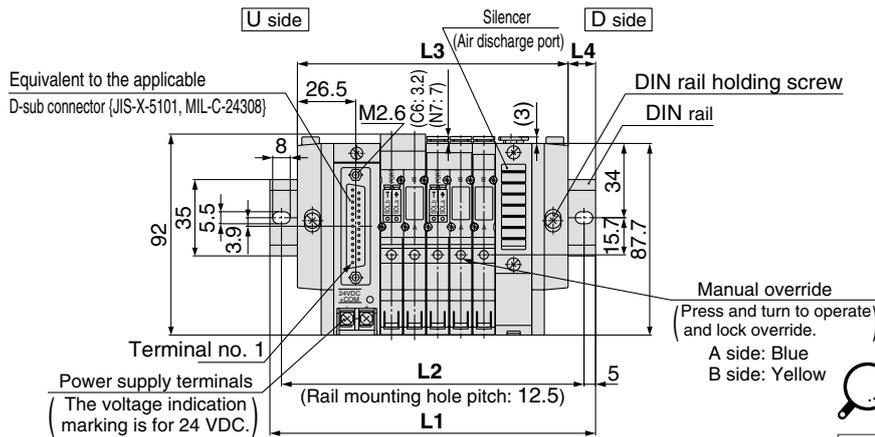
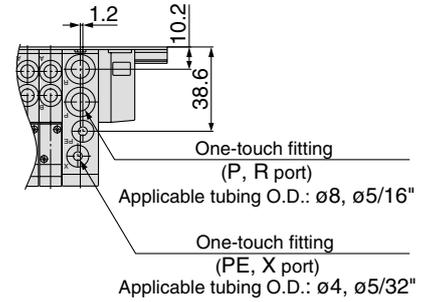


**External Pilot/Built-in Silencer**

**SY3000: SS5Y3-45FU- Stations DRS-<sup>C4,N3</sup><sub>C6,N7</sub>**

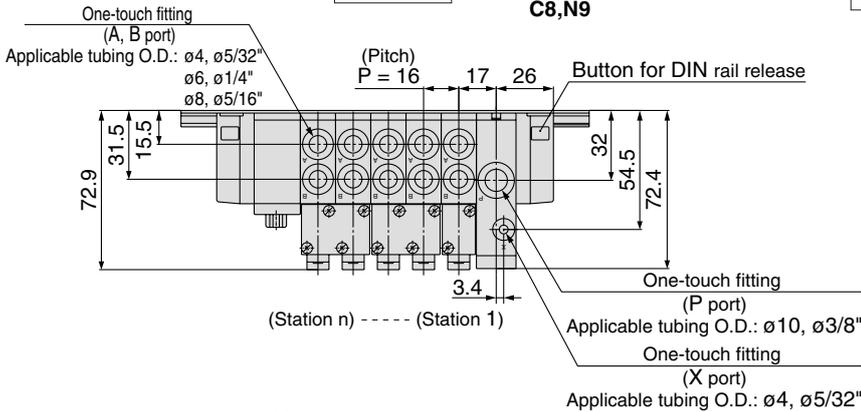


**SS5Y3-45FU- Stations DR-<sup>C4,N3</sup><sub>C6,N7</sub>**

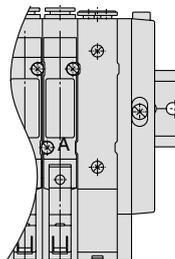
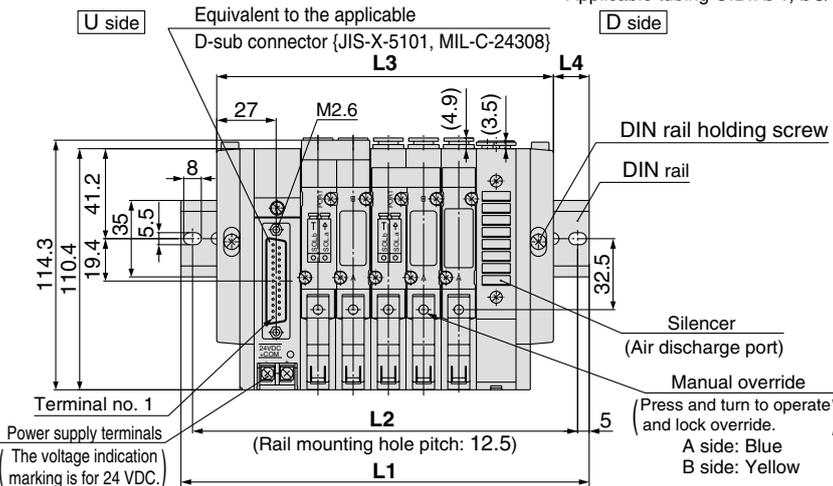
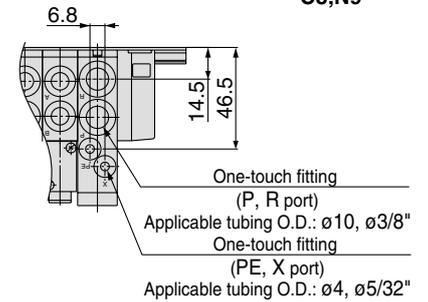


\* The dimensions L1 to L4 are identical to those of SS5Y3-45FU-<sup>U</sup> Stations <sup>D</sup> <sup>C4, N3</sup> <sub>C6, N7</sub>.

**SY5000: SS5Y5-45FU- Stations DRS-<sup>C4,N3</sup><sub>C6,N7</sub>  
<sup>C8,N9</sup>**



**SS5Y5-45FU- Stations DR-<sup>C4,N3</sup><sub>C6,N7</sub>  
<sup>C8,N9</sup>**



\* The dimensions L1 to L4 are identical to those of SS5Y5-45FU-<sup>U</sup> Stations <sup>D</sup> <sup>C4, N3</sup> <sub>C6, N7</sub> <sup>C8, N9</sup>.

\* The dimensions of SS5Y<sub>5</sub>-45FU- Stations URS are identical to those of SS5Y<sub>5</sub>-45FU- Stations DRS.

# SY3000/5000

## Made to Order

### Mixed Mounting Type



Type **M45**

Non plug-in

This manifold makes it possible to mount SY3000 onto base of SY5000.

### How to Order Manifold

#### Type M45 (Mixed mounting style)

**SS5Y5-M45 05 U - C86**

• Mixed mounting style

| Valve stations  | SUP/EXH block assembly mounting position |
|-----------------|------------------------------------------|
| Symbol Stations | Symbol Mounting position Stations        |
| 02 2 stations   | U U side 2 to 10 stations                |
| ⋮ ⋮             | D D side 2 to 10 stations                |
| 20 20 stations  | B Both sides 2 to 20 stations            |
|                 | M Special specifications                 |

The number of blanking plate ass'y is included, too.

\* For special specifications, indicate separately by the manifold specification sheet.

#### SUP/EXH block assembly specifications

| Symbol | Specifications                         |
|--------|----------------------------------------|
| Nil    | Standard/Internal pilot specifications |
| S      | Built-in silencer                      |

\* External pilot specification is unavailable for mixed mounting style.

• CE-compliant

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

\* For DC only.

• Option

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (Max. 20 stations)

A, B port size

#### One-touch fitting (Metric size)

| Symbol | Port size                                                            |
|--------|----------------------------------------------------------------------|
| C44    | SY5000: One-touch fitting for ø4<br>SY3000: One-touch fitting for ø4 |
| C46    | SY5000: One-touch fitting for ø4<br>SY3000: One-touch fitting for ø6 |
| C64    | SY5000: One-touch fitting for ø6<br>SY3000: One-touch fitting for ø4 |
| C66    | SY5000: One-touch fitting for ø6<br>SY3000: One-touch fitting for ø6 |
| C84    | SY5000: One-touch fitting for ø8<br>SY3000: One-touch fitting for ø4 |
| C86    | SY5000: One-touch fitting for ø8<br>SY3000: One-touch fitting for ø6 |
| M      | Mixed                                                                |

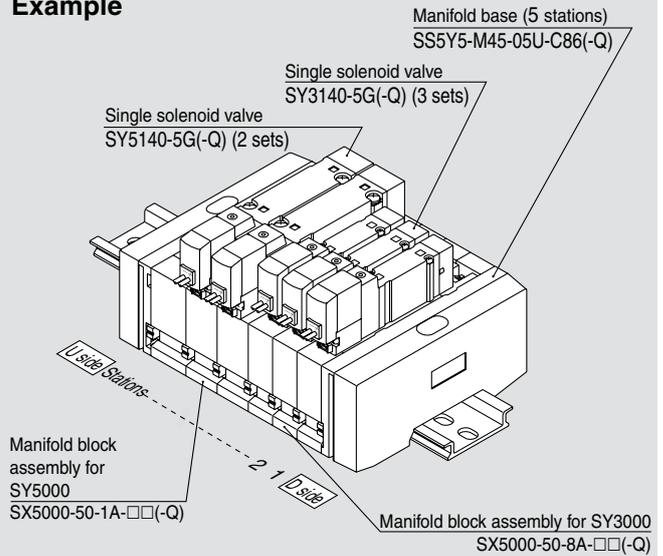
#### One-touch fitting (Inch size)

| Symbol | Port size                                                                                                                        |
|--------|----------------------------------------------------------------------------------------------------------------------------------|
| N33    | SY5000: One-touch fitting for ø <sup>5</sup> / <sub>32</sub> "<br>SY3000: One-touch fitting for ø <sup>5</sup> / <sub>32</sub> " |
| N37    | SY5000: One-touch fitting for ø <sup>9</sup> / <sub>32</sub> "<br>SY3000: One-touch fitting for ø <sup>1</sup> / <sub>4</sub> "  |
| N73    | SY5000: One-touch fitting for ø <sup>1</sup> / <sub>4</sub> "<br>SY3000: One-touch fitting for ø <sup>5</sup> / <sub>32</sub> "  |
| N77    | SY5000: One-touch fitting for ø <sup>1</sup> / <sub>4</sub> "<br>SY3000: One-touch fitting for ø <sup>1</sup> / <sub>4</sub> "   |
| N93    | SY5000: One-touch fitting for ø <sup>5</sup> / <sub>16</sub> "<br>SY3000: One-touch fitting for ø <sup>9</sup> / <sub>32</sub> " |
| N97    | SY5000: One-touch fitting for ø <sup>5</sup> / <sub>16</sub> "<br>SY3000: One-touch fitting for ø <sup>1</sup> / <sub>4</sub> "  |
| M      | Mixed                                                                                                                            |

\* In the case of mixed specifications, indicate separately on the manifold specification sheet.

### How to Order Manifold Assembly (Example)

#### Example



**SS5Y5-M45-05U-C86** · 1 set (Type M45, manifold base part no.)  
 \* **SY3140-5G** ..... 3 sets (Single solenoid part no.)  
 \* **SY5140-5G** ..... 2 sets (Single solenoid part no.)

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

The valve arrangement is numbered as the 1st. station from D side regardless of the mounting position of SUP/EXH block assembly. In ordering, specify the part nos. in the order from the 1st. station on D side. Besides, when the arrangement will be complicated, fill out the manifold specification sheet to instruct us.

### How to Order Valve

**SY 5 2 40 - 5 L**

Series

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |

Type of actuation

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

Coil specifications

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

\* Power saving circuit is not available in the case of W□ type.

Rated voltage

For DC

|   |        |
|---|--------|
| 5 | 24 VDC |
| 6 | 12 VDC |
| V | 6 VDC  |
| S | 5 VDC  |
| R | 3 VDC  |

For AC (50/60 Hz)

|   |                   |
|---|-------------------|
| 1 | 100 VAC           |
| 2 | 200 VAC           |
| 3 | 110 VAC [115 VAC] |
| 4 | 220 VAC [230 VAC] |

\* For type W□, DC voltage is only available.

Electrical entry for G, H, L, M, W

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

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

Electrical entry

| 24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC |                                   |                                   |                                 |
|--------------------------------------------|-----------------------------------|-----------------------------------|---------------------------------|
| Grommet                                    | L plug connector                  | M plug connector                  | M8 connector                    |
| G: Lead wire length 300 mm                 | L: With lead wire (Length 300 mm) | M: With lead wire (Length 300 mm) | WO: Without connector cable     |
| H: Lead wire length 600 mm                 | LN: Without lead wire             | MN: Without lead wire             | W□: With connector cable (Note) |
|                                            | LO: Without connector             | MO: Without connector             |                                 |

\* LN, MN type: with 2 sockets.

\* Refer to page 339 for connector cable of M8 connector.

\* M8 connector conforming to IEC60947-5-2 standard is also available. Refer to page 331 for details.

\* Refer to page 336 for the lead wire length of L and M plug connectors.

\* Refer to page 337 for the connector assembly with cover for L and M plug connectors.

Note) Enter the cable length symbols in □. Please be sure to fill in the blank referring to page 340.

SJ

SY

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

VQZ

SQ

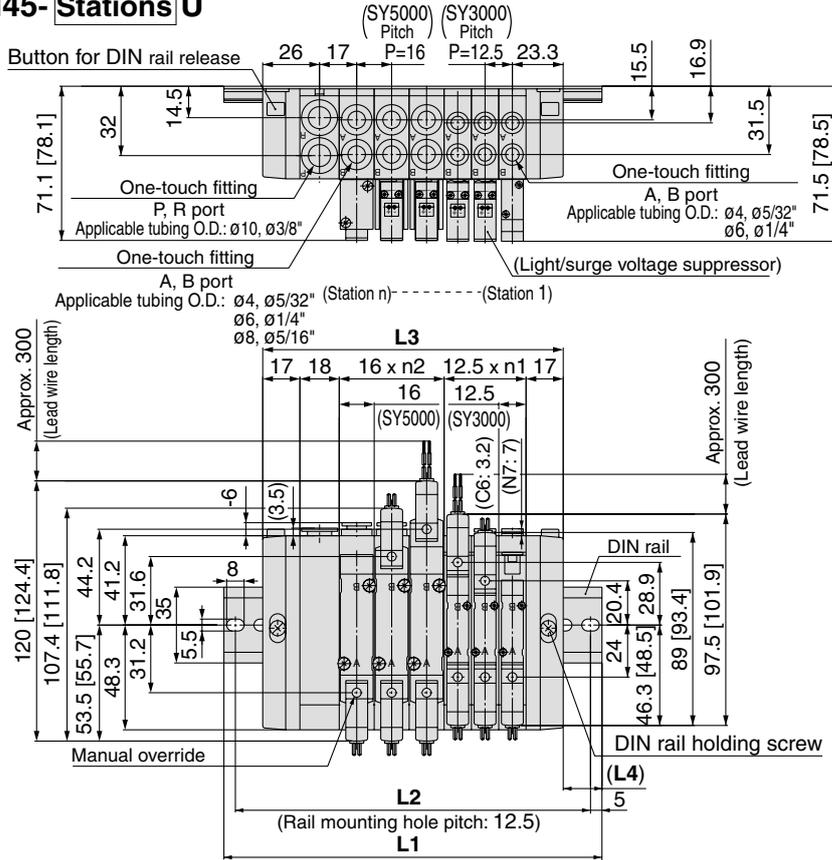
VFS

VFR

VQ7

**Dimensions: Mixed Mounting**

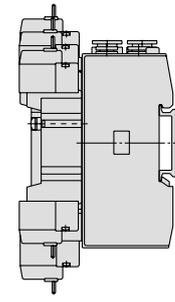
**SS5Y5-M45- Stations U**



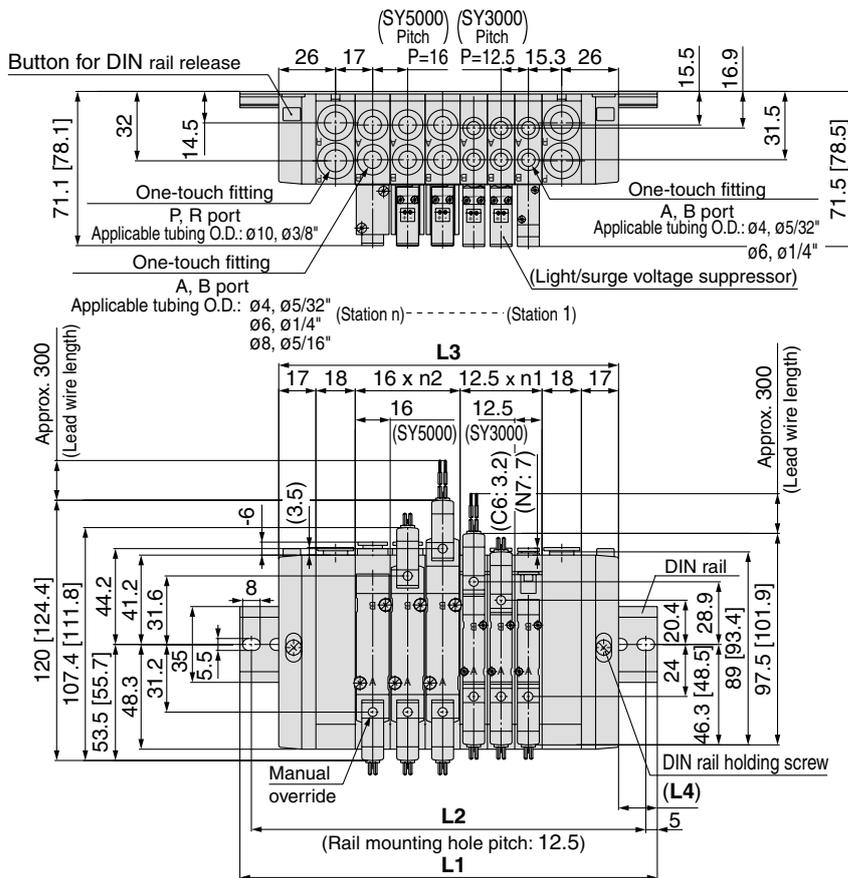
L dimension: Formulae for L1 to L4  
 $L3 = 12.5 \times n1 + 16 \times n2 + 52$   
 $M = \left( \frac{L3}{12.5} + 1 \right)$  Omit decimals  
 $L1 = 12.5 \times M + 23$   
 $L2 = L1 - 10.5$   
 $L4 = (L1 - L3) / 2$

n1 = Number of SY3000  
 n2 = Number of SY5000

Note) The L1 to L4 dimensions of **SS5Y5-M45- Stations D** are identical to those of **SS5Y5-M45- Stations U**.

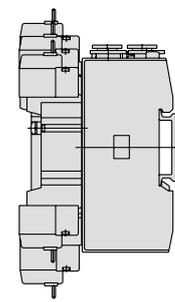


**SS5Y5-M45- Stations B**



L dimension: Formulae for L1 to L4  
 $L3 = 12.5 \times n1 + 16 \times n2 + 70$   
 $M = \left( \frac{L3}{12.5} + 1 \right)$  Omit decimals  
 $L1 = 12.5 \times M + 23$   
 $L2 = L1 - 10.5$   
 $L4 = (L1 - L3) / 2$

n1 = Number of SY3000  
 n2 = Number of SY5000



# [Series SY3000/5000/7000/9000/SY300/500] Made to Order M8 Connector Conforming to IEC60947-5-2



## How to Order Valve

**Type of actuation**

|   |              |
|---|--------------|
| 3 | Body ported  |
| 5 | Base mounted |

**Type of actuation**

|   |                 |
|---|-----------------|
| 1 | Normally open   |
| 2 | Normally closed |

**Series**

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |

**3 port valve**  
(5 port valve mixed mounting style)

**5 port valve**

**Series**

|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |
| 7 | SY7000 |
| 9 | SY9000 |

**Type of actuation**

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

**Body type**

|   |                           |
|---|---------------------------|
| 2 | Body ported               |
| 4 | Base mounted              |
| 6 | Body ported cassette type |

\* The body ported cassette type is not available for series SY9000.

**Note** When placing an order for body ported solenoid valve as a single unit, gaskets are not included. Order them separately, if necessary. (Refer to catalog on page 173 for details.)

**A port size Thread piping**

| Symbol | Port size    | Applicable series |
|--------|--------------|-------------------|
| Nil    | Base mounted |                   |
| M5     | M5 x 0.8     | SY300             |
| O1     | 1/8          | SY500             |

**One-touch fitting (Metric size)**

| Symbol | Port size                | Applicable series |
|--------|--------------------------|-------------------|
| C4     | One-touch fitting for ø4 | SY300             |
| C6     | One-touch fitting for ø6 | SY300             |
| C4     | One-touch fitting for ø4 | SY500             |
| C6     | One-touch fitting for ø6 | SY500             |
| C8     | One-touch fitting for ø8 | SY500             |

**One-touch fitting (Inch size)**

| Symbol | Port size                   | Applicable series |
|--------|-----------------------------|-------------------|
| N3     | One-touch fitting for 5/32" | SY300             |
| N7     | One-touch fitting for 1/4"  | SY300             |
| N7     | One-touch fitting for 1/4"  | SY500             |
| N9     | One-touch fitting for 5/16" | SY500             |

**Thread type**

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

**CE-compliant**

| Nil | —            |
|-----|--------------|
| Q   | CE-compliant |

**Pilot type**

|     |                |
|-----|----------------|
| Nil | Internal pilot |
| R*  | External pilot |

\* Base mounted type only.

**Rated voltage**

**For DC**

|   |        |
|---|--------|
| 5 | 24 VDC |
| 6 | 12 VDC |
| V | 6 VDC  |
| S | 5 VDC  |
| R | 3 VDC  |

**Electrical entry**

WAO: Without connector cable

WA□: With connector cable (Note 1)

Note 1) □: Enter a symbol for cable length. Enter referring page 340.

**Light/surge voltage suppressor**

|     |                                                         |
|-----|---------------------------------------------------------|
| Nil | Without light/surge voltage suppressor                  |
| S   | With surge voltage suppressor                           |
| Z   | With indicator light and surge voltage suppressor       |
| R   | Without surge voltage suppressor (non-polar type)       |
| U   | Without light/surge voltage suppressor (non-polar type) |

**Manual override**

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

**Made to Order**

| Nil | —                                               |
|-----|-------------------------------------------------|
| X20 | Body ported external pilot (Refer to page 332.) |
| X90 | Main valve fluoro rubber (Refer to page 332.)   |

\* X20 for series SY9000 is not available.  
\* X20 for the base mounted type is not available.

**A, B port size Thread piping**

| Symbol | Port size | Applicable series |
|--------|-----------|-------------------|
| M5     | M5 x 0.8  | SY3000            |
| O1     | 1/8       | SY5000            |
| O2     | 1/4       | SY7000            |
| O2     | 1/4       | SY9000            |
| O3     | 3/8       | SY9000            |

**One-touch fitting (Metric size)**

| Symbol | Port size                 | Applicable series |
|--------|---------------------------|-------------------|
| C4     | One-touch fitting for ø4  | SY3000            |
| C6     | One-touch fitting for ø6  | SY3000            |
| C4     | One-touch fitting for ø4  | SY5000            |
| C6     | One-touch fitting for ø6  | SY5000            |
| C8     | One-touch fitting for ø8  | SY5000            |
| C8     | One-touch fitting for ø8  | SY7000            |
| C10    | One-touch fitting for ø10 | SY7000            |
| C8     | One-touch fitting for ø8  | SY9000            |
| C10    | One-touch fitting for ø10 | SY9000            |
| C12    | One-touch fitting for ø12 | SY9000            |

**One-touch fitting (Inch size)**

| Symbol | Port size                     | Applicable series |
|--------|-------------------------------|-------------------|
| N3     | One-touch fitting for ø 5/32" | SY3000            |
| N7     | One-touch fitting for ø 1/4"  | SY3000            |
| N3     | One-touch fitting for ø 5/32" | SY5000            |
| N7     | One-touch fitting for ø 1/4"  | SY5000            |
| N9     | One-touch fitting for ø 5/16" | SY5000            |
| N9     | One-touch fitting for ø 5/16" | SY7000            |
| N11    | One-touch fitting for ø 3/8"  | SY7000            |
| N9     | One-touch fitting for ø 5/16" | SY9000            |
| N11    | One-touch fitting for ø 3/8"  | SY9000            |

**For Base Mounted**

| Symbol | Port size          | Applicable series |
|--------|--------------------|-------------------|
| Nil    | Without sub-plate  |                   |
| O1     | 1/8 With sub-plate | SY3000            |
| O2     | 1/4 With sub-plate | SY5000<br>SY7000  |
| O3     | 3/8 With sub-plate | SY7000<br>SY9000  |
| O4     | 1/2 With sub-plate | SY9000            |

- SJ
- SY
- SV
- SYJ
- SZ
- VP4
- S0700
- VQ
- VQ4
- VQ5
- VQC
- VQZ
- SQ
- VFS
- VFR
- VQ7

## How to Order Pilot Valve

V111- 5 WAO □

**Rated voltage**

**For DC**

|   |        |
|---|--------|
| 5 | 24 VDC |
| 6 | 12 VDC |
| V | 6 VDC  |
| S | 5 VDC  |
| R | 3 VDC  |

**Light/surge voltage suppressor**

|     |                                                         |
|-----|---------------------------------------------------------|
| Nil | Without light/surge voltage suppressor                  |
| S   | With surge voltage suppressor                           |
| Z   | With indicator light and surge voltage suppressor       |
| R   | Without surge voltage suppressor (non-polar type)       |
| U   | Without light/surge voltage suppressor (non-polar type) |

**Electrical entry**

|     |           |                               |
|-----|-----------|-------------------------------|
| WAO | M8        | Without connector cable       |
| WA□ | connector | With connector cable (Note 1) |

Note 1) □: Enter a symbol for cable length. Enter referring page 340.

**Note** Since V111 is CE-compliant as standard, the suffix "-Q" is not necessary.





# Series SY Specific Product Precautions 1

Be sure to read before handling.

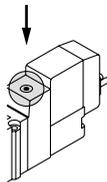
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

## Manual Override Operation

### Warning

#### Non-locking push type [Standard]

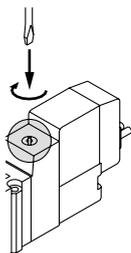
Press in the direction of the arrow



#### Push-turn locking slotted type [Type D]

While pressing, turn in the direction of the arrow.

If it is not turned, it can be operated the same way as the non-locking type.



Locked position



### Caution

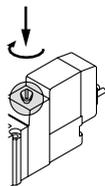
When operating the locking type D with a screw driver, turn it gently using a watchmakers screw driver.

[Torque: Less than 0.1 N·m]

#### Push-turn locking lever type [Type E]

While pressing, turn it the direction of the arrow.

If it is not turned, it can be operated the same way as the non-locking type.



Locked position



### Caution

When locking the manual override on the push-turn locking types (D, E), be sure to push it down before turning.

Turning without first pushing it down can cause damage to the manual override and trouble such as air leakage, etc.

## Solenoid Valve for 200, 220 VAC Specifications

### Warning

Solenoid valves with grommet and L/M type plug connector AC specifications have a built-in rectifier circuit in the pilot section to operate the DC coil.

With 200 V, 220 VAC specification pilot valves, this built-in rectifier generates heat when energized. The surface may become hot depending on the energized condition; therefore, do not touch the solenoid valves.

## Exhaust Throttle

### Caution

With series SY, the pilot valve and main valve share a common exhaust inside the valve. Therefore, do not block the exhaust port when arranging the piping.

## Series SY3000/5000/7000/9000 Used as a 3-Port Valve

### Caution

#### In case of using a 5-port valve as a 3-port valve

Series SY3000/5000/7000/9000 can be used as normally closed (N.C.) or normally open (N.O.) 3-port port valves by closing one of the cylinder ports (A or B) with a plug. However, they should be used with the exhaust ports kept open. (Refer to pages 318 to 323 for dedicated 3-port solenoid valve.)

| Plug position       |        | B port | A port |
|---------------------|--------|--------|--------|
| Configuration       |        | N.C.   | N.O.   |
| Number of solenoids | Single |        |        |
|                     | Double |        |        |

SJ

SY

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

VQZ

SQ

VFS

VFR

VQ7



# Series SY Specific Product Precautions 2

Be sure to read before handling.

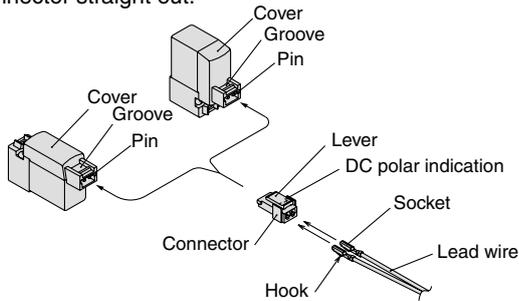
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

## How to Use Plug Connector

### ⚠ Caution

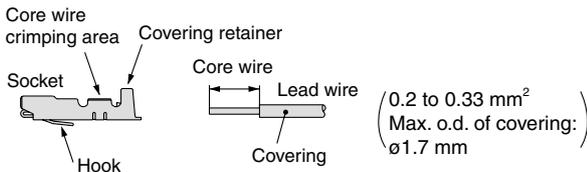
#### 1. Attaching and detaching connectors

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



#### 2. Crimping connection of lead wire and socket

Strip 3.2 to 3.7 mm at the end of lead wires, insert the end of the core wires evenly into the sockets, and then crimp it by a crimping tool. When this is done, take care that the coverings of the lead wires do not enter the core wire crimping area. (Crimping tool: Model no. DXT170-75-1)



#### 3. Attaching and detaching lead wires with sockets

##### • Attaching

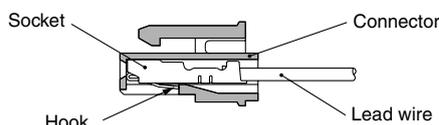
Insert the sockets into the square holes of the connector (+, - indication), and continue to push the sockets all the way in until they lock by hooking into the seats in the connector.

(When they are pushed in, their hooks open and they are locked automatically.) Then confirm that they are locked by pulling lightly on the lead wires.

##### • Detaching

To detach a socket from a connector, pull out the lead wire while pressing the socket's hook with a stick having a thin tip (approx. 1 mm).

If the socket will be used again, first spread the hook outward.



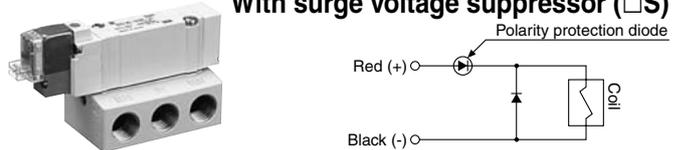
## Surge Voltage Suppressor

### ⚠ Caution

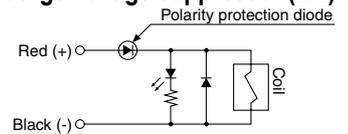
<For DC>

#### Grommet, L/M Plug Connector

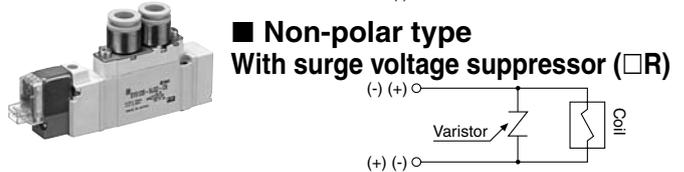
##### ■ Standard type (With polarity) With surge voltage suppressor (□S)



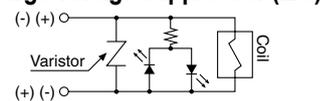
##### With light/surge voltage suppressor (□Z)



##### ■ Non-polar type With surge voltage suppressor (□R)



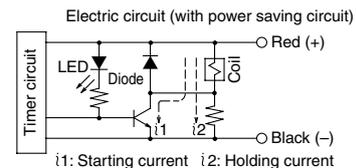
##### With light/surge voltage suppressor (□U)



- Connect the standard type in accordance with the +, - polarity indication. (The non-polar type can be used with the connections made either way.)
- Since voltage specifications other than standard 24 V and 12 VDC do not have diodes for polarity protection, be careful not to make errors in the polarity.
- Please use caution regarding the allowable voltage fluctuation because there is about a 1 volt drop for a valve with polarity protection. (For details, refer to the solenoid specifications for the individual valve.)
- When wiring is done at the factory, positive (+) is red and negative (-) is black.

##### ■ With power saving circuit

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

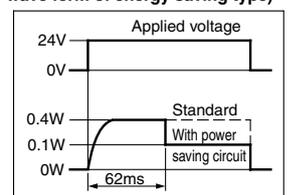


## Operating Principle

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

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

(In the case of SY<sup>3/4</sup>OT, the electric wave form of energy saving type)





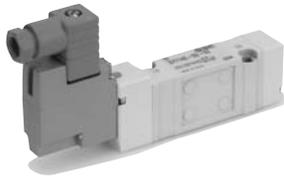
# Series SY Specific Product Precautions 3

Be sure to read before handling.

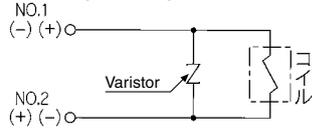
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

## Surge Voltage Suppressor

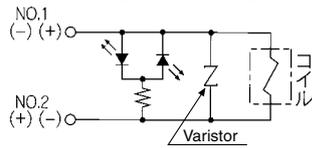
### DIN Terminal



#### With surge voltage suppressor (DS)



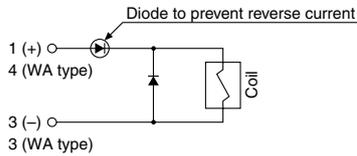
#### With light/surge voltage suppressor (DZ)



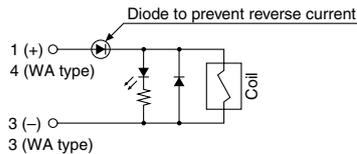
DIN terminal has no polarity.

### M8 Connector

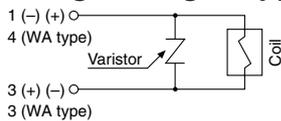
#### Standard type (without polarity) With surge voltage suppressor (□S)



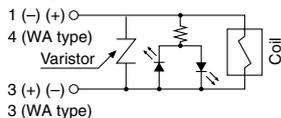
#### With light/surge voltage suppressor (□Z)



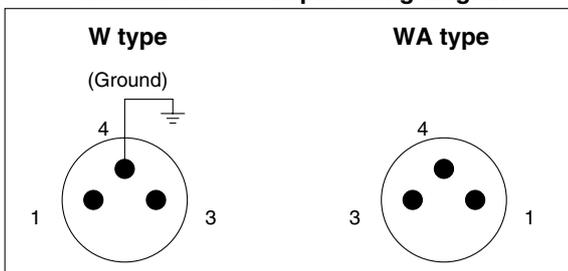
#### Non-polar type With surge voltage suppressor (□R)



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



#### Solenoid valve side pin wiring diagram

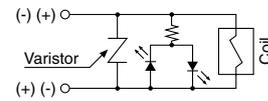


### M8 Connector

- For the standard type, connect + to 1 and - to 3 for Type VA according to polarity, while + to 4 and - to 3 for Type WA.
- For DC voltages other than 12 V and 24 V, incorrect wiring will cause damage to the surge suppressor circuit.
- Please use caution regarding the allowable voltage fluctuation because there is about a 1 volt drop for a valve with polarity protection. (For details, refer to the solenoid specifications for the individual valve.)
- The WA-type valve cannot be grounded.

### Plug-in

#### Circuit for non-polar (FU)



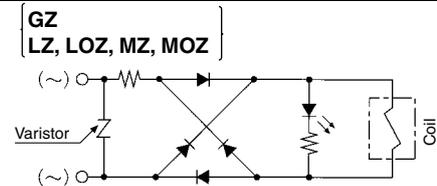
Plug-in valve has no polarity, so its possible to use for both manifold bases for positive (SS5Y<sup>3</sup>-45□) and negative its common (SS5Y<sup>3</sup>-45N□) types.

#### <For AC>

(There is no "S" option, because the generation of surge voltage is prevented by a rectifier.)

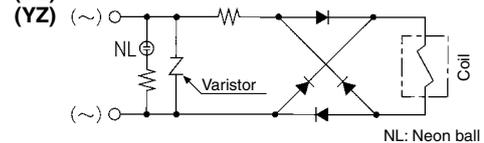
### Grommet, L/M Plug Connector

#### With light



### DIN Terminal

#### With light (DZ)



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

SJ

SY

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

VQZ

SQ

VFS

VFR

VQ7



# Series SY Specific Product Precautions 4

Be sure to read before handling.

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

## Plug Connector Lead Wire Length

### ⚠ Caution

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

### How to Order Connector Assembly

For DC: **SY100-30-4A** - □

For 100 VAC: **SY100-30-1A** - □

For 200 VAC: **SY100-30-2A** - □

For other voltages of AC: **SY100-30-3A** - □

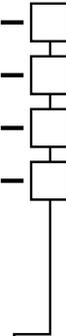
Without lead wire: **SY100-30-A**  
(with connector and 2 of sockets only)

#### • How to Order

Specify the part numbers of the solenoid valve without connector and the connector assembly with protective cover separately.

<Example> Lead wire length 2000 mm

|                       |                       |
|-----------------------|-----------------------|
| <b>For DC</b>         | <b>For AC</b>         |
| <b>SY3120-5LO-M5</b>  | <b>SY3120-1LO-M5</b>  |
| <b>SY100-30-4A-20</b> | <b>SY100-30-1A-20</b> |



● Lead wire length

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

## How to Use DIN Terminal

### ⚠ Caution

#### Connection

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

#### ⚠ Caution

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

#### Changing the entry direction

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

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

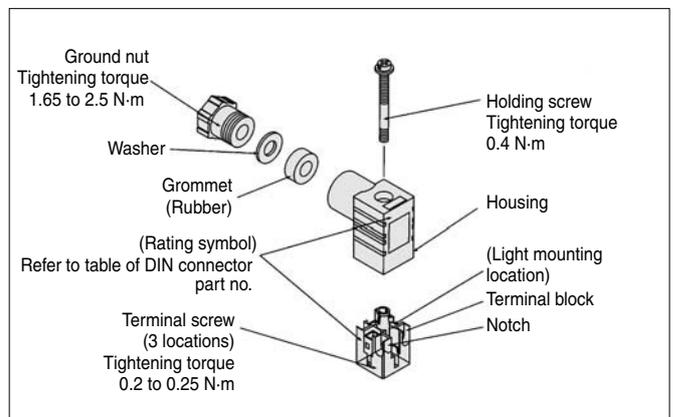
#### Precautions

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

#### Compatible cable

Cord O.D.: ø3.5 to ø7

(Reference) 0.5mm<sup>2</sup>, 2-core or 3-core, equivalent to JIS C 3306



#### Type "Y"

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

- D type DIN connector with 9.4 mm pitch between terminals is not interchangeable.
- To distinguish from the D type DIN connector, "N" is listed at the end of voltage symbol. (For connector parts without lights, "N" is not indicated. Please refer to the name plate to distinguish.)
- Dimensions are completely the same as D type DIN connector.
- When exchanging the pilot valve assembly only, "SY115-□D" is interchangeable with "SY115-□Y". Do not replace SY114 (G, L, M) to SY115-□D/□Y (DIN terminal), and vice versa.



# Series SY Specific Product Precautions 5

Be sure to read before handling.

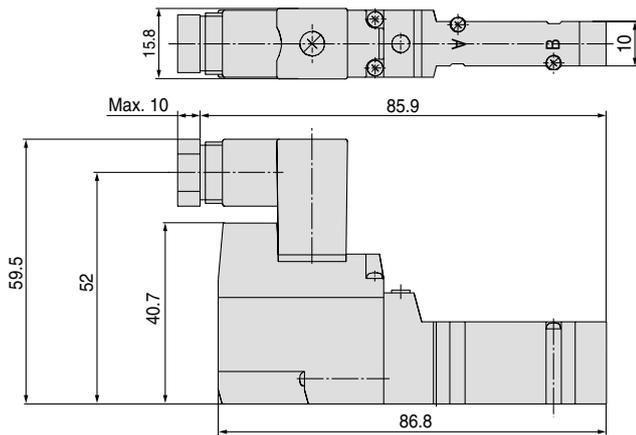
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

## Series SY300, SY3000 How to Use DIN Terminal Connector

### ⚠ Caution

- SMC can provide a DIN style terminal connector (body ported type, sub-plate type) for the series SY300 and SY3000. This cannot be assembled to a standard manifold since the DIN connector width (15.8mm) exceeds that of the valve body (10mm). Contact SMC if you wish to use with a manifold. Please also note: that bracket F1 cannot be mounted.

\* The external pilot type is not available.



## DIN Connector Part No.

### ⚠ Caution

#### <Type D>

|               |            |
|---------------|------------|
| Without light | SY100-61-1 |
|---------------|------------|

#### With light

| Rated voltage | Voltage symbol | Part no.      |
|---------------|----------------|---------------|
| 24 VDC        | 24 V           | SY100-61-3-05 |
| 12 VDC        | 12 V           | SY100-61-3-06 |
| 100 VAC       | 100 V          | SY100-61-2-01 |
| 200 VAC       | 200 V          | SY100-61-2-02 |
| 110 VAC       | 110 V          | SY100-61-2-03 |
| 220 VAC       | 220 V          | SY100-61-2-04 |

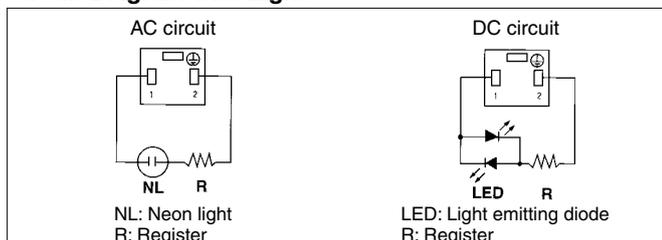
#### <Type Y>

|               |            |
|---------------|------------|
| Without light | SY100-82-1 |
|---------------|------------|

#### With light

| Rated voltage     | Voltage symbol | Part no.      |
|-------------------|----------------|---------------|
| 24 VDC            | 24 VN          | SY100-82-3-05 |
| 12 VDC            | 12 VN          | SY100-82-3-06 |
| 100 VAC           | 100 VN         | SY100-82-2-01 |
| 200 VAC           | 200 VN         | SY100-82-2-02 |
| 110 VAC (115 VAC) | 110 VN         | SY100-82-2-03 |
| 220 VAC (230 VAC) | 220 VN         | SY100-82-2-04 |

## Circuit Diagram with Light



## Connector Assembly with Cover

### ⚠ Caution

Connector assembly with dust proof protective cover.

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

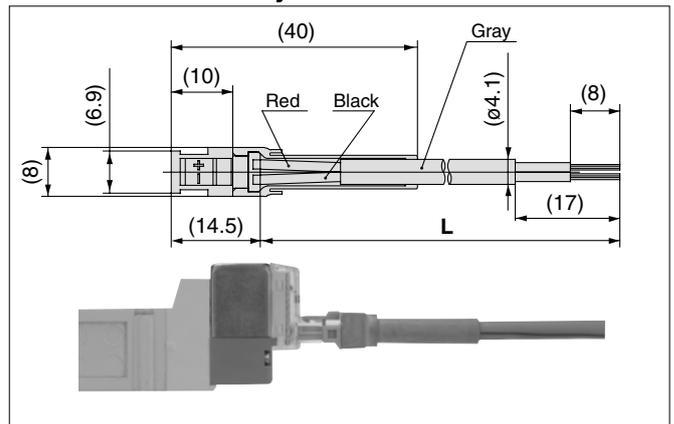
## How to Order

SY100-68-A -

### • Lead wire length (L)

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

## Connector Assembly with Cover: Dimensions



## How to Order

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

<Example 1> Lead wire length of 2000 mm

**SY3120-5LOZ-M5**  
**SY100-68-A-20**

<Example 2> Lead wire length of 300 mm (standard)

**SY3120-5LPZ-M5**

Symbol for connector assembly with cover

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

SJ  
SY  
SV  
SYJ  
SZ  
VP4  
S0700  
VQ  
VQ4  
VQ5  
VQC  
VQZ  
SQ  
VFS  
VFR  
VQ7



# Series SY Specific Product Precautions 6

Be sure to read before handling.

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

## Plug-in

### ⚠ Caution

■ When using a double solenoid valve (Dual body type: SY<sup>3</sup><sub>5</sub>245-□FU) on the plug-in style manifold (SS5Y<sup>3</sup><sub>5</sub>-45(N)□), two manifold stations are required per valve.

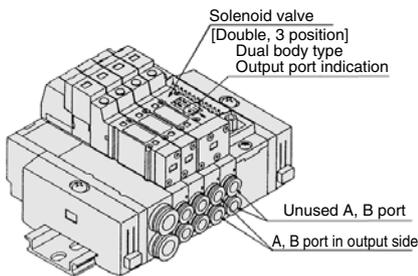
Output to A/B ports will be made through the manifold block on the side indicated by an arrow on the top of the solenoid valve. Therefore, arrange the piping on the side indicated by the arrow.

Although the “T” side will not be used, plugs will not be necessary since it is sealed with the valve.

(However, insert a plug into the A/B ports if dust intrusion is possible. Refer to page 275.)

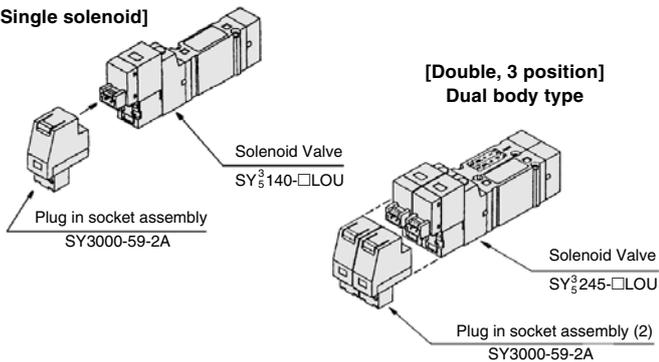
### Manifold valve

SS5Y<sup>3</sup><sub>5</sub>-45 (N)□



Plug-in type solenoid valves consist of a non-polar solenoid valve and a plug-in socket. When ordering them separately, refer to the following part numbers.

#### [Single solenoid]



Note) Using a valve other than a non-polar type may cause trouble.

## DIN Rail for Series SY7000/9000

### ⚠ Caution

The DIN rail used with Series SY7000 and SY9000 is stronger than that used with Series SY3000 and SY5000. Use this exclusive DIN rail with Series SY7000 and SY9000. Furthermore, if using a DIN rail other than that supplied by SMC, refer to the manifold mounting section below, and mount using the same method as prescribed for side facing and rear facing, regardless of the mounting orientation.

## Manifold Mounting

### ⚠ Caution

For Type 23, 43, 45, 45□ and 60 DIN rail mounting, when attaching a manifold to a mounting surface, etc., with bolts, if the entire bottom surface of the DIN rail contacts the mounting surface in a horizontal mounting, it can be used by simply securing both ends of the DIN rail. However, for any other mounting method or for side facing and rear facing, etc., secure the DIN rail with bolts at uniform intervals using the following as a guide: 2 to 5 stations at 2 locations, 6 to 10 stations at 3 locations, 11 to 15 stations at 4 locations, and 16 to 20 stations at 5 locations. In addition, even in the case of a horizontal mounting, if the mounting surface is subject to vibration, etc., take the same measures indicated above. If secured at fewer than the specified number of locations, warping or twisting may occur in the DIN rail and manifold, causing trouble such as air leakage.

Also, when using mounting screws for the DIN rail on the bottom side (L3 dimension in the dimension table) of the manifold valve body, the height of the screw head has to be as follows.

Type 23, 43 (SY9000): 8 mm or less

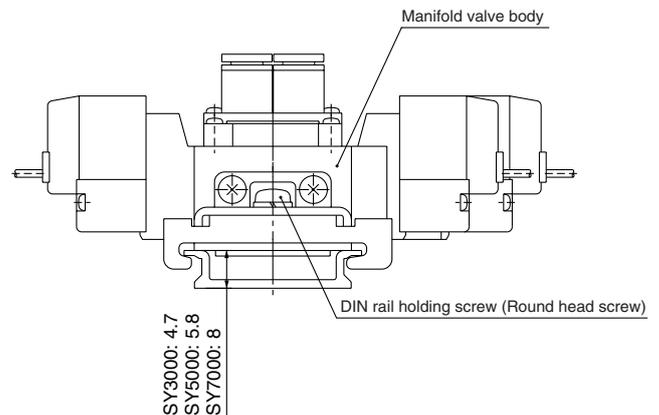
Type 45 (SY3000, 5000): 5.8 mm or less

For type 60:

SY3000: 4.7 mm or less

SY5000: 5.8 mm or less

SY7000: 8 mm or less



[This is the case for type 60.]



# Series SY Specific Product Precautions 7

Be sure to read before handling.

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

## One-touch Fittings

### ⚠ Caution

The pitch determined for each of the series SY piping ports (P, A, B, etc.) is based on the assumption that series KJ one-touch fittings will be used. For this reason, other pipe fittings may interfere with each other depending on their type and size. Dimensions should be confirmed in a pipe fitting catalog before they are used.

#### • Tubing attachment/detachment for One-touch fittings

##### 1) Attaching of tubing

1. Take a tubing having no flaws on its periphery and cut it off at a right angle. When cutting the tubing, use tubing cutters TK-1, 2 or 3. Do not use pinchers, nippers or scissors, etc. If cutting is done with tools other than tubing cutters, the tubing may be cut diagonally or become flattened, etc., making a secure installation impossible, and causing problems such as the tubing pulling out after installation or air leakage. Allow some extra length in the tubing.
2. Grasp the tubing and push it in slowly, inserting it securely all the way into the fitting.
3. After inserting the tubing, pull on it lightly to confirm that it will not come out. If it is not installed securely all the way into the fitting, this can cause problems such as air leakage or the tubing pulling out.

##### 2) Detaching of tubing

1. Push in the release button sufficiently, pushing its collar equally around the circumference.
2. Pull out the tubing while holding down the release button so that it does not come out. If the release button is not pressed down sufficiently, there will be increased bite on the tubing and it will become more difficult to pull it out.
3. When the removed tubing is to be used again, cut off the portion which has been chewed before reusing it. If the chewed portion of the tubing is used as is, this can cause trouble such as air leakage or difficulty in removing the tubing.

- The pitch determined for each of the series SY piping ports (A, B, etc.) is based on the assumption that series KJ one-touch fittings will be used. For this reason, other pipe fittings may interfere with each other depending on their type and size. Dimensions should be confirmed in a pipe fitting catalog before they are used.

## Other Tubing Brands

### ⚠ Caution

#### 1. When using other than SMC brand tubing, confirm that the following specifications are satisfied with respect to the outside diameter tolerance of the tubing.

- |                        |                                         |
|------------------------|-----------------------------------------|
| 1) Nylon tubing        | within $\pm 0.1$ mm                     |
| 2) Soft nylon tubing   | within $\pm 0.1$ mm                     |
| 3) Polyurethane tubing | within $+0.15$ mm,<br>within $-0.2$ mm. |

Do not use tubing which do not meet these outside diameter tolerances. It may not be possible to connect them, or they may cause other trouble, such as air leakage or the tubing pulling out after connection.

## M8 Connector

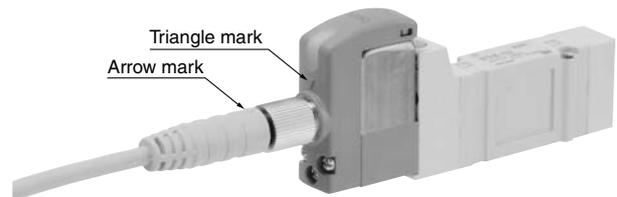
### ⚠ Caution

1. M8 connector types have an IP65 (enclosure) rating, offering protection from dust and water. However please note: these products are not intended for use in water. Select a SMC connector cable (V100-49-1-□) or a FA sensor type connector, with M8 threaded 3 pin specifications conforming to Nippon Electric Control Equipment Association Standard, NECA4202 (IEC60947-5-2). Make sure the connector O.D. is 10.5mm or less when used with the Series SY3000 manifold. If more than 10.5mm, it cannot be mounted due to the size.
2. Do not use a tool to mount the connector, as this may cause damage. Only tighten by hand. (0.4 to 0.6 N·m)
3. The excessive stress on the cable connector will not be able to satisfy the IP65 rating. Please use caution and do not apply a stress of 30 N or greater.

### ⚠ Caution

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

#### Connector cable mounting



Note) Connector cable should be mounted in the correct direction.

Make sure that the arrow symbol on the connector is facing the triangle symbol on the valve when using SMC connector cable (V100-49-1-□).

Be careful not to squeeze it in the wrong direction, as problems such as pin damage may occur.

SJ

SY

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

VQZ

SQ

VFS

VFR

VQ7



# Series SY Specific Product Precautions 8

Be sure to read before handling.

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

## M8 Connector

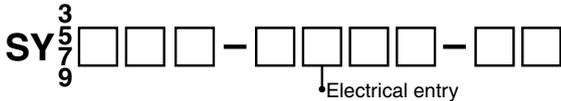
### ⚠ Caution

#### ■ Connector cable

- Connector cable for M8 can be ordered as follows:

#### How to Order

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

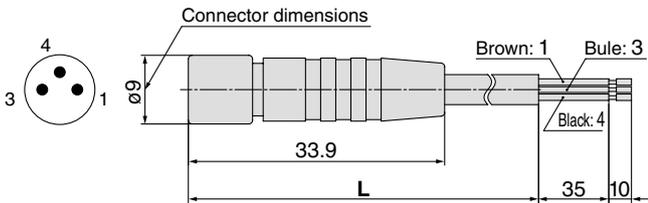


- W1, WA1:** Cable length 300 mm
- W2, WA2:** Cable length 500 mm
- W3, WA3:** Cable length 1000 mm
- W4, WA4:** Cable length 2000 mm
- W7, WA7:** Cable length 5000 mm

Ex. 1) Cable length: 300mm  
**SY312-5W1ZE-C4**

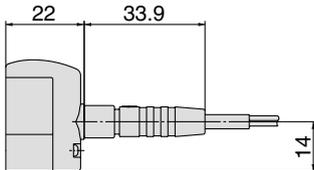
Symbol for electrical entry

- To order connector cable only



| Cable length (L) | Part no.    |
|------------------|-------------|
| 300 mm           | V100-49-1-1 |
| 500 mm           | V100-49-1-2 |
| 1000 mm          | V100-49-1-3 |
| 2000 mm          | V100-49-1-4 |
| 5000 mm          | V100-49-1-7 |

### [Dimensions when installed]



## Solenoid Valve Mounting

### ⚠ Caution

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

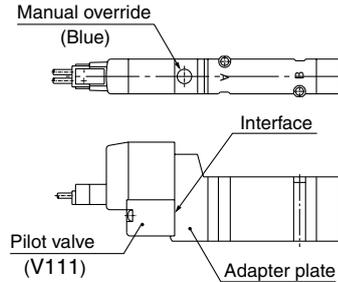
| Model         | Thread size | Tightening torque |
|---------------|-------------|-------------------|
| <b>SY3000</b> | M2          | 0.16 N·m          |
| <b>SY5000</b> | M3          | 0.8 N·m           |
| <b>SY7000</b> | M4          | 1.4 N·m           |
| <b>SY9000</b> | M3          | 0.8 N·m           |

## Replacement of Pilot Valve

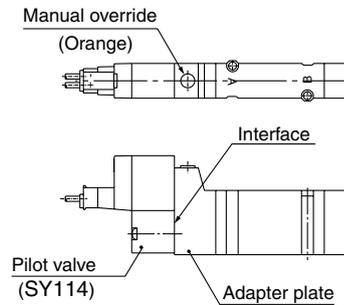
### ⚠ Caution

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

#### New type



#### Conventional type





# Series SY Specific Product Precautions 9

Be sure to read before handling.

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

## Interface Regulator

### Caution

#### Specifications

| Interface regulator model                       | ARBY3000-□-P-2      | ARBY3000-□-A <sup>1</sup> <sub>B1</sub> -2 | ARBY5000-□-P-2       | ARBY5000-□-A <sup>1</sup> <sub>B1</sub> -2 | ARBY7000-□-P-2       | ARBY7000-□-A <sup>1</sup> <sub>B1</sub> -2 |
|-------------------------------------------------|---------------------|--------------------------------------------|----------------------|--------------------------------------------|----------------------|--------------------------------------------|
| Applicable solenoid valve model                 | SY3□40(R)           |                                            | SY5□40(R)            |                                            | SY7□40(R)            |                                            |
| Regulated port                                  | P                   | A B                                        | P                    | A B                                        | P                    | A B                                        |
| Set pressure range                              | 0.1 to 0.7 MPa      |                                            |                      |                                            |                      |                                            |
| Maximum operating pressure                      | 0.7 MPa             |                                            |                      |                                            |                      |                                            |
| Fluid                                           | Air                 |                                            |                      |                                            |                      |                                            |
| Ambient and fluid temperature                   | Max. 50°C           |                                            |                      |                                            |                      |                                            |
| Connection port of pressure gauge               | M5 x 0.8            |                                            |                      |                                            |                      |                                            |
| Mass W (g)                                      | With pressure gauge | 46 g (05), 50 g (06)                       |                      | 66.8 g                                     | 110.8 g              |                                            |
|                                                 | With plug           | 20 g                                       |                      | 60.4 g                                     | 103.2 g              |                                            |
| Supply side effective area <sup>(Note 3)</sup>  | P→A,B               |                                            | —                    | 7.61 mm <sup>2</sup>                       | —                    | 13.54 mm <sup>2</sup>                      |
| Exhaust side effective area <sup>(Note 3)</sup> | A,B→EA,EB           |                                            | 4.05 mm <sup>2</sup> | 3.91 mm <sup>2</sup>                       | 11.1 mm <sup>2</sup> | 10.1 mm <sup>2</sup>                       |

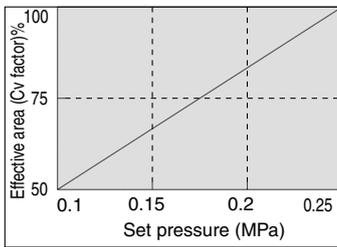
Note 1) Pressurize the interface regulator from P port on the base.

Note 2) With closed center and pressure center valves, the pressure can be regulated through P port only.

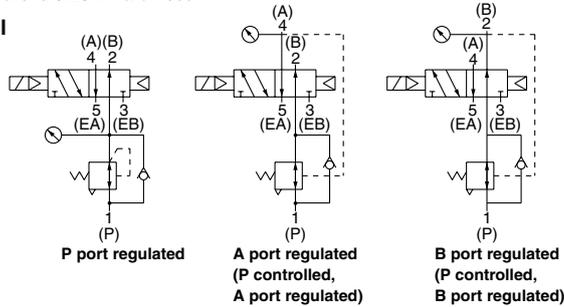
Note 3) Effective area, excluding the regulated port, when a primary pressure of 0.5 MPa is supplied with regulators mounted on the solenoid valves (2 positions) and sub-plate. Refer to "Flow Characteristics" regarding the regulated port.

Note 4) Valves for weight include gasket and mounting screws.

Note 5) With A, B ports regulated (P port controlled A, B ports regulated), the effective area (Cv factor) for the regulated port and unregulated passage (P to B or P to A) decreases as shown in the graph below when the set pressure is 0.25 MPa or less.



#### JIS Symbol



#### How to Order Interface Regulator

### ARBY3000 - 05 - P - 2



- Regulated port
 

|    |                                         |
|----|-----------------------------------------|
| P  | P port                                  |
| A1 | A port (P controlled, A port regulated) |
| B1 | B port (P controlled, B port regulated) |
- Pressure gauge connection port
 

|    |                                                       |
|----|-------------------------------------------------------|
| 05 | Pressure gauge (G15-10-01) [for odd number stations]  |
| 06 | Pressure gauge (G15-10-01) [for even number stations] |
| M1 | Plug (M-5P)                                           |

Note) For series ARBY3000 with pressure gauge, note that the part numbers for odd number and even number stations differ to prevent interference between the pressure gauges when installing on the manifold.

### ARBY5000 - 00 - P - 2



- Regulated port
 

|    |                                         |
|----|-----------------------------------------|
| P  | P port                                  |
| A1 | A port (P controlled, A port regulated) |
| B1 | B port (P controlled, B port regulated) |
- Pressure gauge connection port
 

|    |                            |
|----|----------------------------|
| 00 | Pressure gauge (G15-10-01) |
| M1 | Plug (M-5P)                |

### ARBY7000 - 00 - P - 2



- Regulated port
 

|    |                                         |
|----|-----------------------------------------|
| P  | P port                                  |
| A1 | A port (P controlled, A port regulated) |
| B1 | B port (P controlled, B port regulated) |
- Pressure gauge connection port
 

|    |                            |
|----|----------------------------|
| 00 | Pressure gauge (G15-10-01) |
| M1 | Plug (M-5P)                |

SJ  
SY  
SV  
SYJ  
SZ  
VP4  
S0700  
VQ  
VQ4  
VQ5  
VQC  
VQZ  
SQ  
VFS  
VFR  
VQ7



# Series SY Specific Product Precautions 10

Be sure to read before handling.

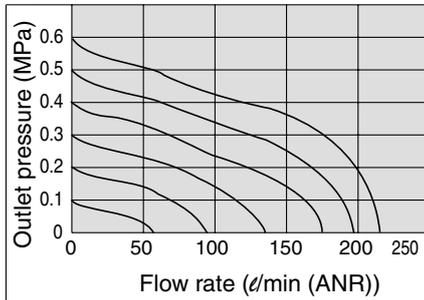
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

## Flow Characteristics

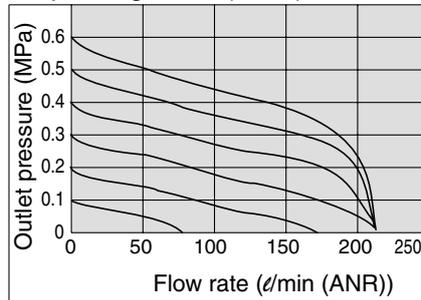
(Conditions: Inlet pressure 0.7 MPa when 2 position solenoid valve is mounted.)

### ARBY3000

P port regulated (P→A, B)

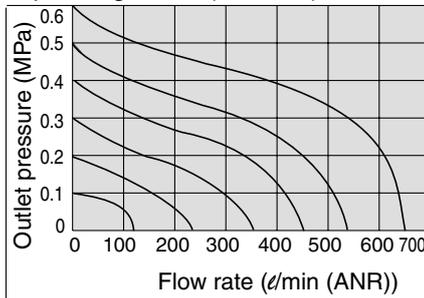


A1 port regulated (P→A),  
B1 port regulated (P→B)

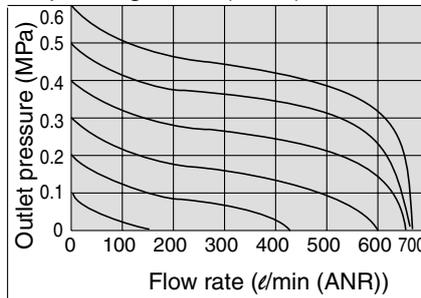


### ARBY5000

P port regulated (P→A, B)

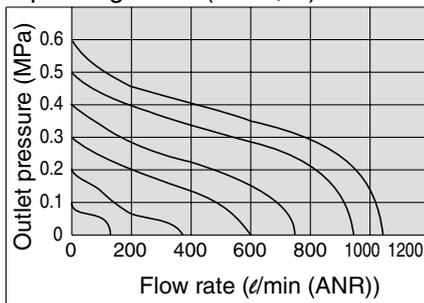


A1 port regulated (P→A),  
B1 port regulated (P→B)



### ARBY7000

P port regulated (P→A, B)



A1 port regulated (P→A),  
B1 port regulated (P→B)

