

# 5 Port Solenoid Valve

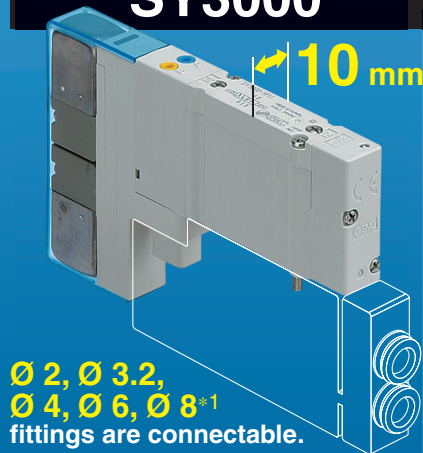


**Plug-in Type**

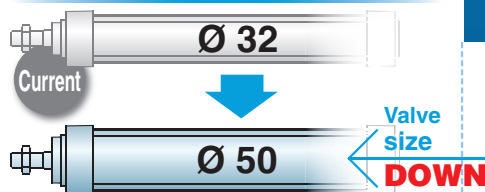
**Thanks to the flow increase, valve size can be reduced!**

**Saves energy and space.**

**SY3000**



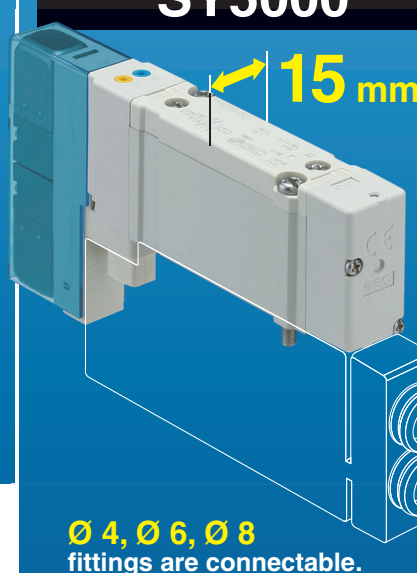
**At 300 mm/s**



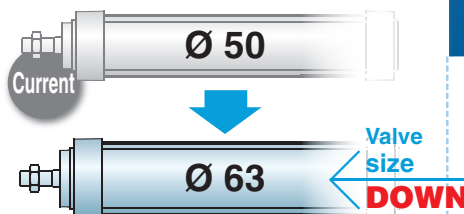
**Possible to drive cylinders**

**Up to Ø 50**\*2  
(Ø 80 at 100 mm/s)

**SY5000**



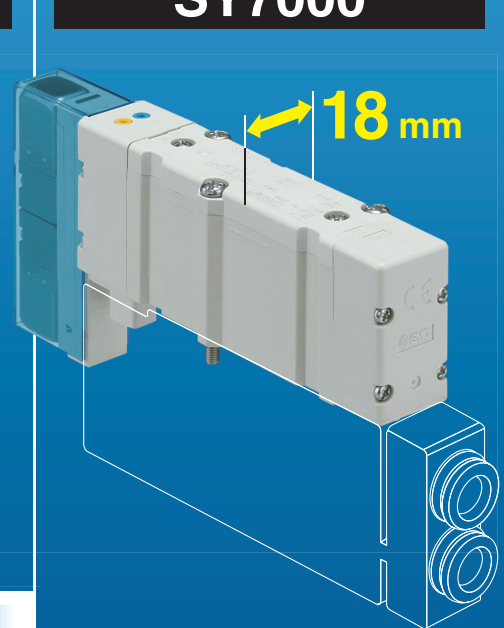
**At 300 mm/s**



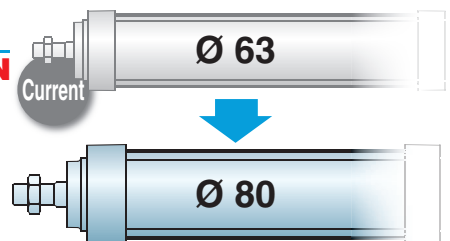
**Possible to drive cylinders**

**Up to Ø 63**\*2  
(Ø 125 at 100 mm/s)

**SY7000**



**At 300 mm/s**

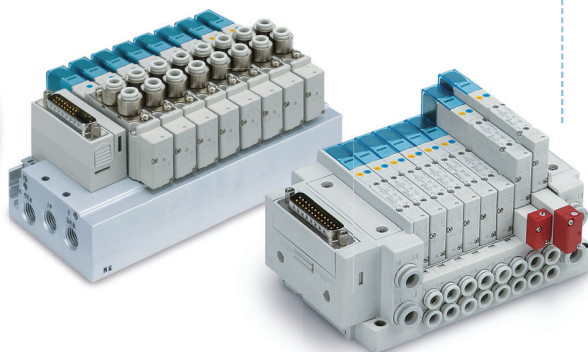
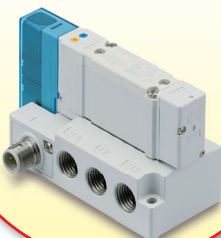


**Possible to drive cylinders**

**Up to Ø 80**\*2  
(Ø 160 at 100 mm/s)

**Page 32**

**Plug-in Sub-plate**  
**SY3000/5000/7000**



- Vacuum Release Valve with Restrictor
- Dual port EX600 EtherNet/IP™ product
- EX500 Gateway Decentralised System 2
- SUP Stop Valve Spacer (With Residual Pressure Release Valve)
- With Residual Pressure Release Valve (SY7000)

\*2: Values based on comparison with the current SMC model. For details, refer to page 11.

## Power consumption

\*: Refer to page 2.

**0.1 w** (With power saving circuit)

**0.35 w** (Standard)

**Rubber seal** (Service life: 70 million cycles)

**Metal seal** (Service life: 200 million cycles)

\*: According to SMC life test conditions

**Series SY3000/5000/7000**

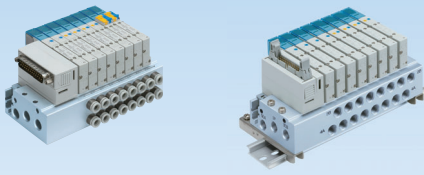


CAT.EUS11-103Dd-UK

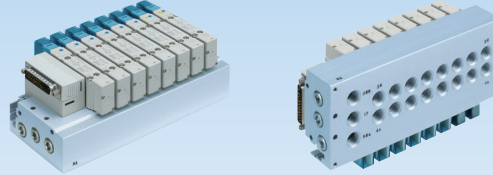
# 5 Port Solenoid Valve

## Plug-in Metal Base [IP40]

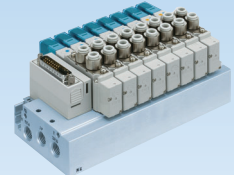
Side ported [From page 45](#)



Bottom ported [From page 45](#)



Top ported [From page 65](#)



## Plug-in Connector Connecting Base [IP67\*1]

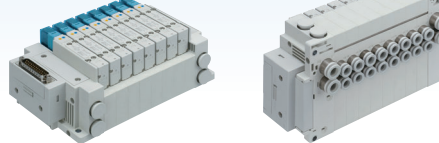
\*1: Refer to page 93 for details on IP67.

### Manifold

Side ported [From page 97](#)



Bottom ported [From page 97](#)



Top ported [From page 109](#)

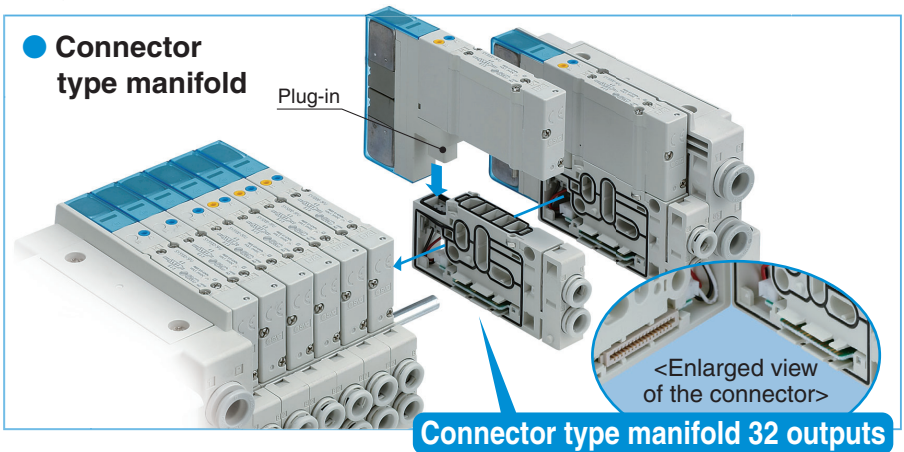


### Plug-in Compatible sub-plate type



- IP67 enclosure in standard specifications
- M12 waterproof connector type ensuring easy attaching/detaching and wiring
- Applicable to the side, top and bottom ported. (4A, 2B port)

### Connector type manifold



## Wiring

**D-sub Connector** **Flat Ribbon Cable** **PC Wiring** **Terminal Block Box**

**Lead Wire** **Circular Connector** **Serial Transmission**

### Serial Transmission Variations

| Series                                  | Gateway-type serial transmission system |       | Integrated-type (for input/output) serial transmission system (Fieldbus system) |       | Integrated-type (for input/output) serial transmission system |       | Integrated-type (for output) serial transmission system |  |
|-----------------------------------------|-----------------------------------------|-------|---------------------------------------------------------------------------------|-------|---------------------------------------------------------------|-------|---------------------------------------------------------|--|
|                                         | EX510                                   | EX500 | EX600                                                                           | EX250 | EX260                                                         | EX126 | EX120                                                   |  |
| Applicable protocol                     |                                         |       |                                                                                 |       |                                                               |       |                                                         |  |
| DeviceNet™                              | ●                                       | ●     | ●                                                                               | ●     | ●                                                             | ●     | ●                                                       |  |
| PROFIBUS DP                             | ●                                       | ●     | ●                                                                               | ●     | ●                                                             | ●     | ●                                                       |  |
| CC-Link                                 | ●                                       | ●     | ●                                                                               | ●     | ●                                                             | ●     | ●                                                       |  |
| EtherNet/IP™                            | ●                                       | ●     | ●                                                                               | ●     | ●                                                             | ●     | ●                                                       |  |
| EtherCAT®                               | ●                                       | ●     | ●                                                                               | ●     | ●                                                             | ●     | ●                                                       |  |
| PROFINET                                | ●                                       | ●     | ●                                                                               | ●     | ●                                                             | ●     | ●                                                       |  |
| CANopen                                 | ●                                       | ●     | ●                                                                               | ●     | ●                                                             | ●     | ●                                                       |  |
| AS-Interface                            | ●                                       | ●     | ●                                                                               | ●     | ●                                                             | ●     | ●                                                       |  |
| OMRON CompoBus/S                        | ●                                       | ●     | ●                                                                               | ●     | ●                                                             | ●     | ●                                                       |  |
| CompoNet™                               | ●                                       | ●     | ●                                                                               | ●     | ●                                                             | ●     | ●                                                       |  |
| EtherNet POWERLINK                      | ●                                       | ●     | ●                                                                               | ●     | ●                                                             | ●     | ●                                                       |  |
| EtherNet/IP™ Compatible wireless master | ●                                       | ●     | ●                                                                               | ●     | ●                                                             | ●     | ●                                                       |  |
| PROFINET Compatible wireless master     | ●                                       | ●     | ●                                                                               | ●     | ●                                                             | ●     | ●                                                       |  |



# Power Saving

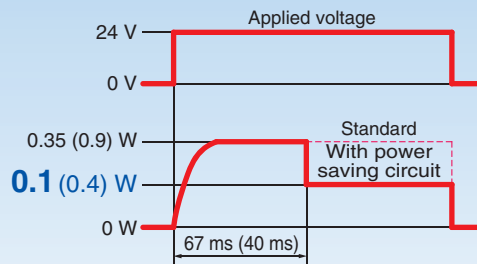
## Power Consumption

**0.1 w** **0.35 w**

With power saving circuit

Standard

[Electrical power waveform with power saving circuit]



**Power consumption is reduced by power saving circuit.**

Power consumption is decreased by approx. 1/3 by reducing the wattage required to hold the valve in an energised state. (Effective energizing time is over 67 ms at 24 V DC.) Refer to the electrical power waveform as shown on the left.

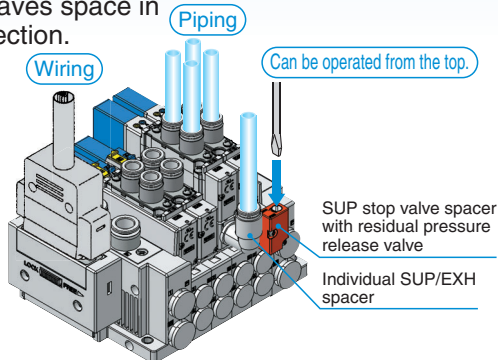
The value in ( ) are for the quick response and high pressure types.

# Space Saving / Improved Operability

**Wiring, piping and operation are integrated on one side.**

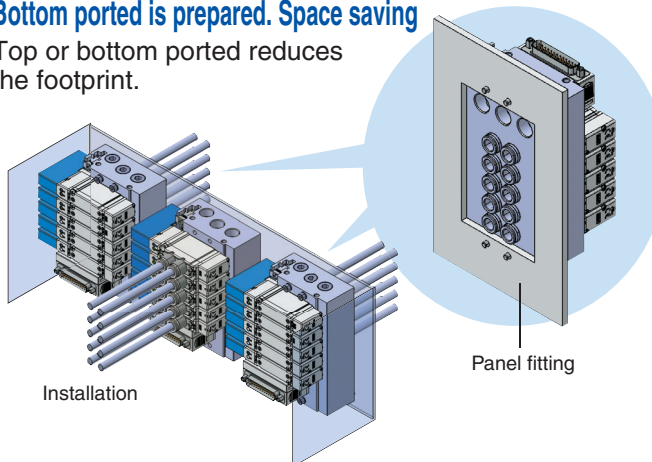
Multiple layer type is available as an option. This saves space in the lateral direction.

From page 250



**Bottom ported is prepared. Space saving**

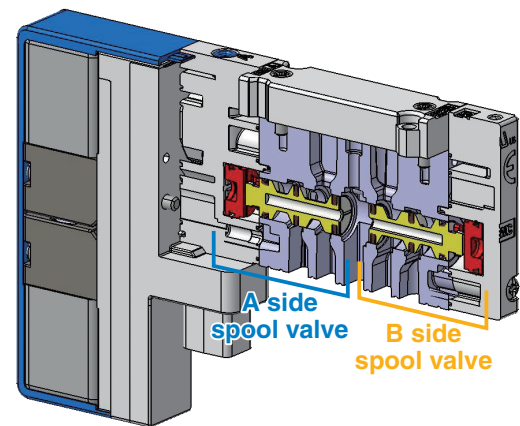
Top or bottom ported reduces the footprint.



**4-position dual 3-port valve available**

(Only rubber seal type)

• **Two 3-port valves built into one body**



- 3-port valves on the A and B sides can operate independently.
- When used as a 3-port valve, only half the number of stations is required.
- Can also be used as a 4-position, 5-port valve.
- 4-position dual 3-port valve with back pressure check valve is available.
- Combination examples

| Series              | A side     | B side     |
|---------------------|------------|------------|
| SY□A <sub>3</sub> 0 | N.C. valve | N.C. valve |
| SY□B <sub>3</sub> 0 | N.O. valve | N.O. valve |
| SY□C <sub>3</sub> 0 | N.C. valve | N.O. valve |

**Different sizes (SY3000/5000 or SY5000/7000) can be mixed!**

From page 213

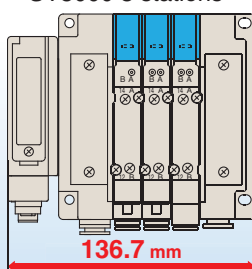
Possible to reduce installation space, the number of serial units and wirings.

Manifold overall length  
**Approx. 29 % reduction**

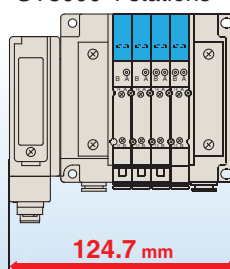
For serial transmission  
EX260

Installation  
space

**SY5000 manifold**  
SY5000 3 stations

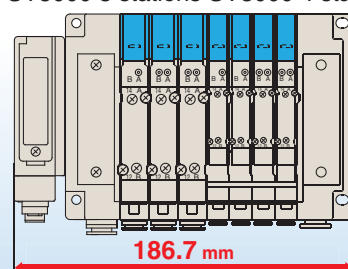


**SY3000 manifold**  
SY3000 4 stations



**Mixed manifold**

SY5000 3 stations SY3000 4 stations



Number of  
serial units

2 sets

1 set

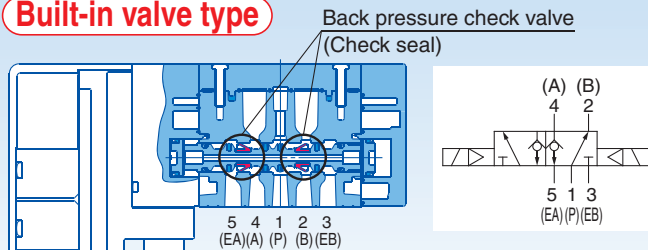
# 5 Port Solenoid Valve

## Improved Safety

### Back Pressure Check Valve

This prevents actuator and air operated valve malfunctions caused by the exhaust from other valves.\*<sup>1</sup>

#### Built-in valve type

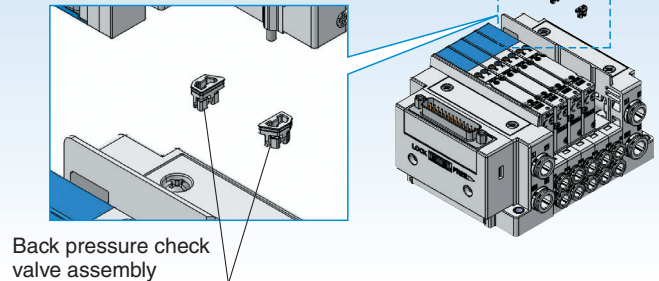


\*1: For back pressure check valve precautions, refer to the Specific Product Precautions on page 267.

#### Retrofit or pre-installed type

If the product is affected by back pressure after installation, the back pressure check valve assembly can be added.

Page 256



Back pressure check valve assembly

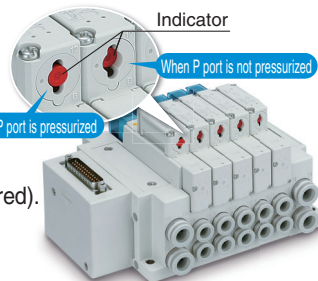
### With residual pressure release valve (SY5000/7000)

Page 23

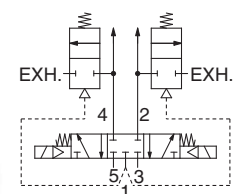
IP67 compliant

#### For residual pressure release of the 3-position closed centre valve

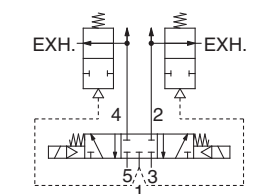
- The pressure of the 4 (A) and 2 (B) ports is also exhausted automatically at the same time when the pressure of the 1 (P) port is exhausted.
- The pressure can be visualised using the indicator (red).
- Since this valve is not a spacer type, the flow rate is equivalent to that of the normal closed centre valve.



[When 1(P) port is pressurized]



[When 1(P) port is not pressurized]

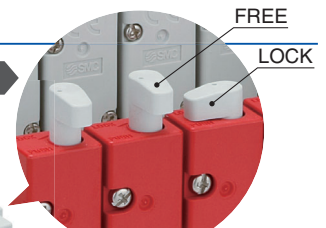
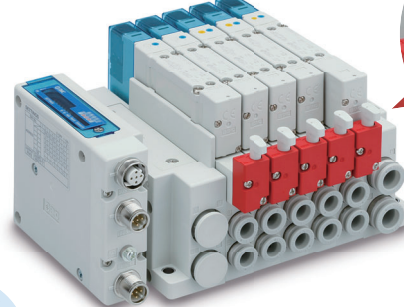
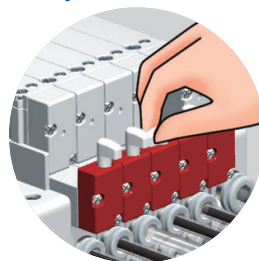


### Lever Type SUP Stop Valve Spacer (With residual pressure release valve)

Page 251

Lever type is added to manual override button!

Solenoid valves can be replaced individually without shutting off the main pressure!\*



Easy to visually check

2 action

Push

STEP 1



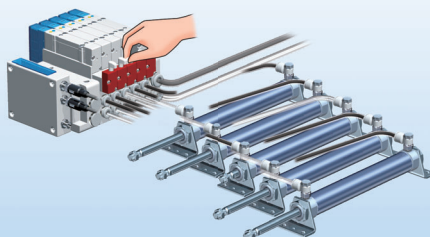
STEP 2

Turn

Locked

#### Air for solenoid valves can be shut off individually!

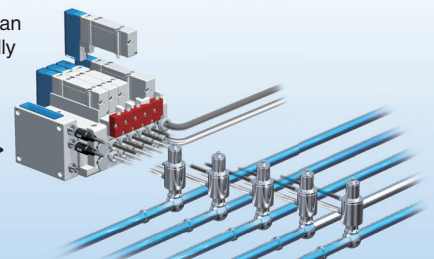
The operation of an actuator can be checked by shutting off the air for the solenoid valves on the base individually, while the main air is being supplied during a trial operation.



#### Solenoid valves can be replaced individually!

The solenoid valves can be replaced individually without stopping the equipment during maintenance.

<Application example>  
Air operated valves, such as sanitary valve and automatic valve control



\*1: This product is only for internal pilot specifications, as the external pilot air cannot be shut off.

# Improved Safety

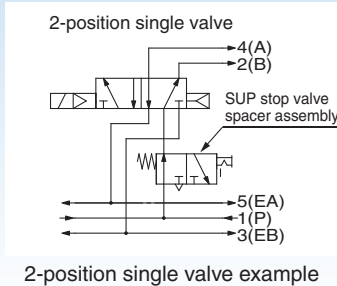
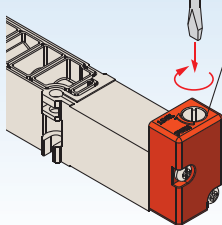
## Slotted Type

### SUP Stop Valve Spacer (With residual pressure release valve) **Page 251**

Air supply to each valve can be stopped individually. The valve and cylinder can be replaced without stopping other devices and equipment.

Button for manual release of residual pressure

To exhaust residual pressure on cylinder side.



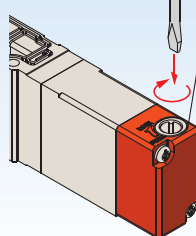
## Slotted Type

### Double Check Spacer (With residual pressure release valve) **Page 251**

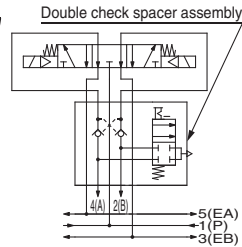
Long time of intermediate stop and position holding are possible.

Button for manual release of residual pressure

To exhaust residual pressure on cylinder side.

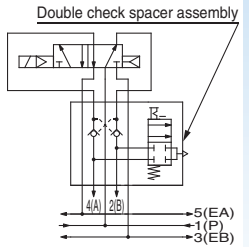


#### [Intermediate stop]



Exhaust centre

#### [Drop prevention]



2-position single/double

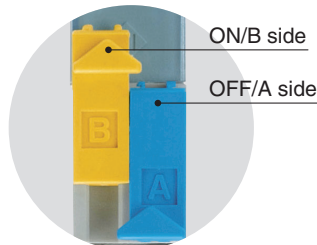
## With slide locking manual override

ON/OFF operation and locking can be performed with the manual slide.

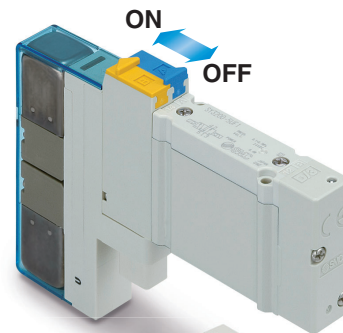


Yellow  
B side

Blue  
A side



ON/OFF state can be checked at a glance.



## With safety slide locking manual override SY3000/5000/7000-X13

**Page 31**

Double action manual override prevents incorrect operation!

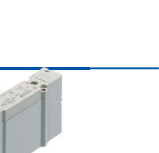
SY7000-X13



SY5000-X13



SY3000-X13



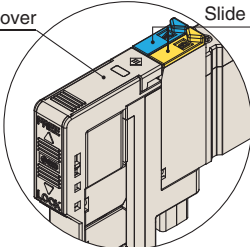
### ● Double action operation

Before operation

The slide manual overrides cannot be turned ON with the safety slide cover. (OFF status: Locked)

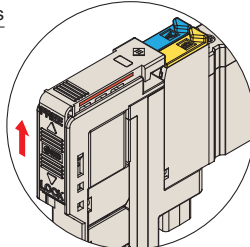
Safety slide cover

Slide manual overrides



Operation 1

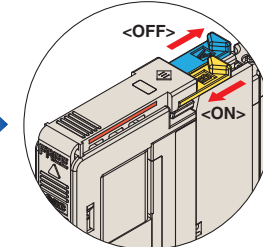
Operates the safety slide cover upward. (Unlocked)



<Vertical sliding>

Operation 2

The slide manual overrides can be operated.

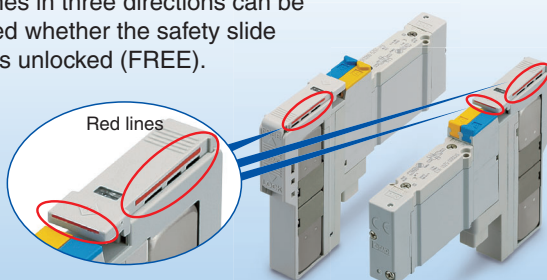


<Horizontal sliding>

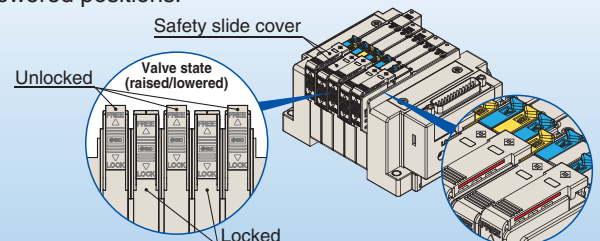
※: The safety slide cover cannot be locked when the slide manual override is turned ON.

### ● Visual check

Red lines in three directions can be checked whether the safety slide cover is unlocked (FREE).



Safety slide covers can be checked from their raised and lowered positions.

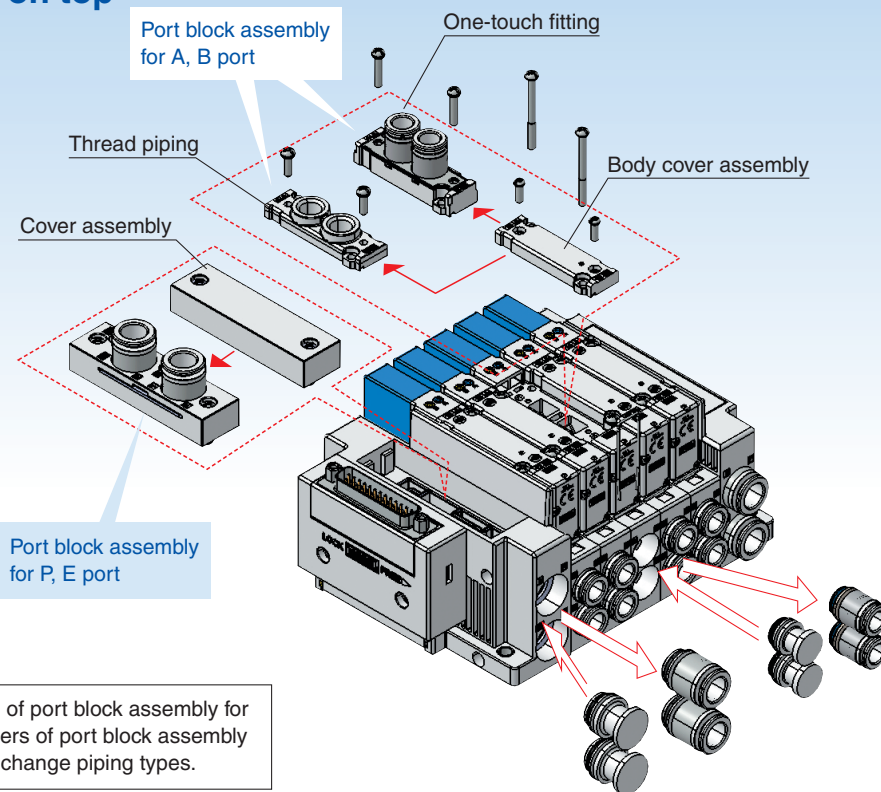




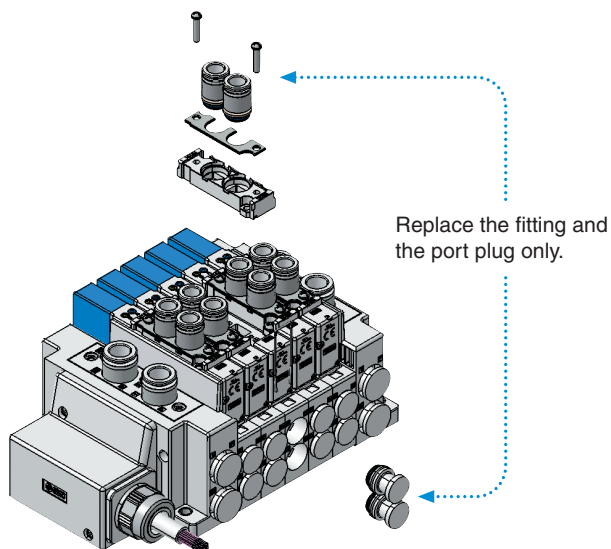
# 5 Port Solenoid Valve

## Piping Options

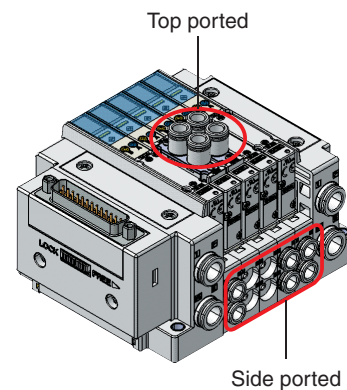
### To mount the piping on top



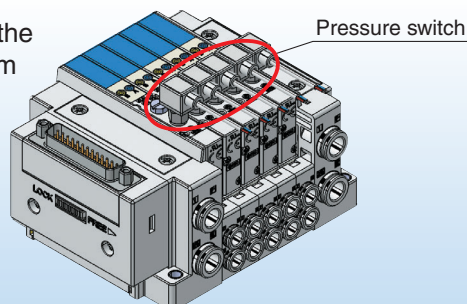
### To mount the piping on the side



### Mixed mounting of top ported and side ported is possible.



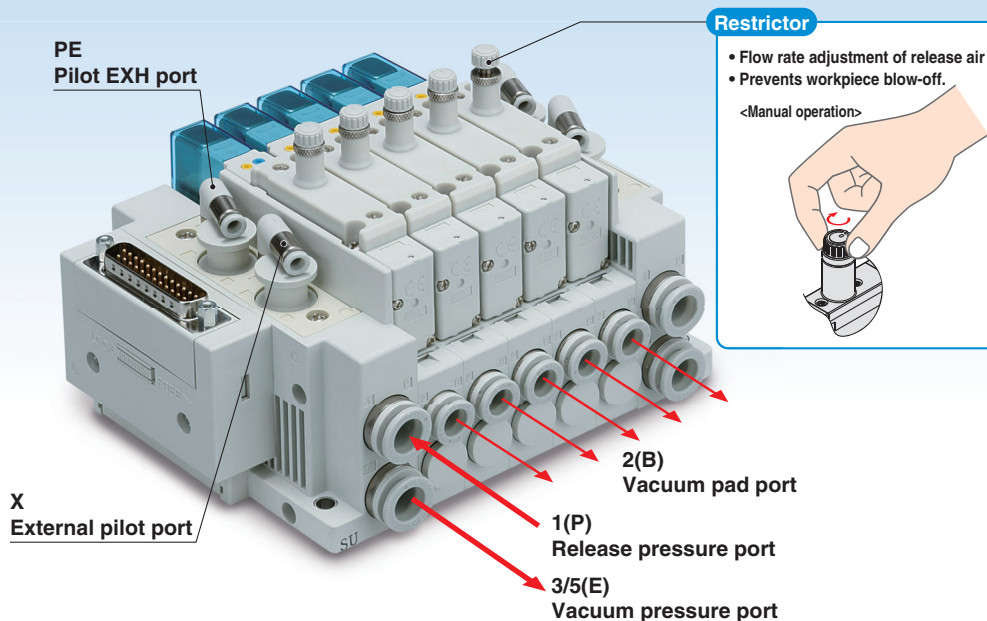
It is possible to detect the output of 4(A) and 2(B) port with a pressure switch by mounting the top ported valve onto the side ported or bottom ported manifold. (Pressure switch etc., needs to be ordered separately.)



# Variation

**New** Only for External Pilot Vacuum Release Valve with Restrictor Series SY<sup>3</sup><sub>5</sub>A□R Page 25

Vacuum suction and release can be controlled with a single valve!



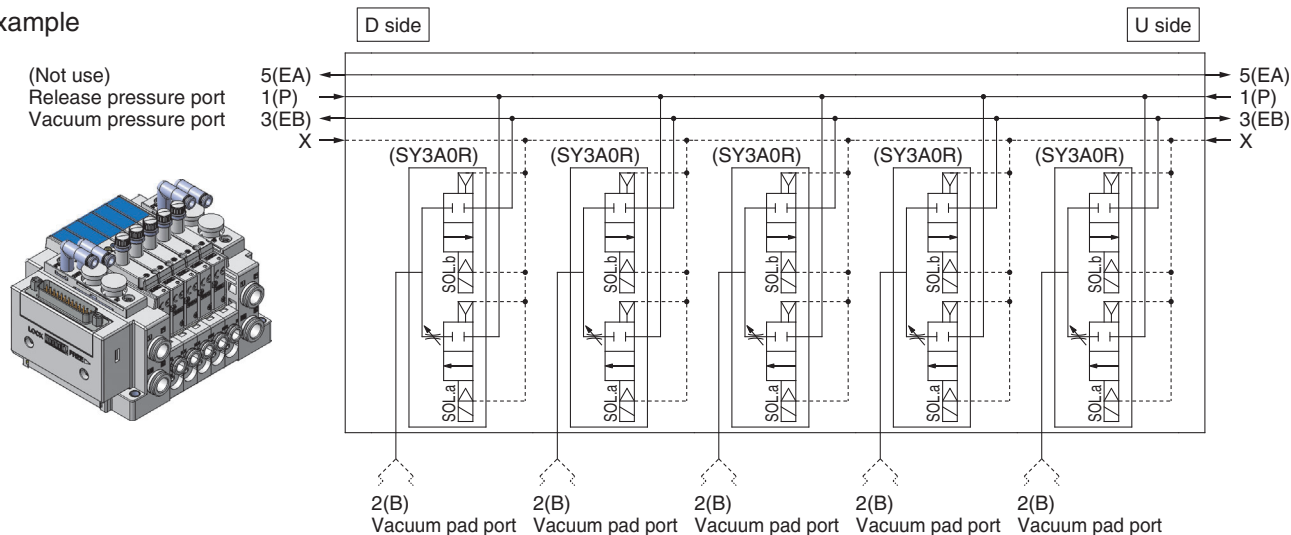
■ Can be mounted on the same manifold with the standard valve.

※: When the individual EXH spacer is used.

■ Mountable manifolds

Connector connecting base SS5Y<sup>3</sup><sub>5</sub>-10/11/12 type manifold  
Metal base SS5Y<sup>3</sup><sub>5</sub>-50/52 type manifold

■ Example



# 5 Port Solenoid Valve

## Variations

| Variations |  |  | Valve Series | Wiring          |                   |           |                    |           |                    |               |                     |                    |                   |       |       |                      |                 | A, B |     |     |     |  |  |                 |       |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------|--|--|--------------|-----------------|-------------------|-----------|--------------------|-----------|--------------------|---------------|---------------------|--------------------|-------------------|-------|-------|----------------------|-----------------|------|-----|-----|-----|--|--|-----------------|-------|-------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
|            |  |  |              | Connection      |                   |           |                    |           |                    |               |                     |                    |                   |       |       | Common specification |                 | M5   | 1/8 | 1/4 | 3/8 |  |  |                 |       |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|            |  |  |              | D-sub connector | Flat ribbon cable | PC wiring | Terminal block box | Lead wire | Circular connector | M12 connector | Serial transmission |                    |                   |       |       |                      | Positive common |      |     |     |     |  |  | Negative common |       |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|            |  |  |              |                 |                   |           |                    |           |                    |               | EX510               | EX500 (128 points) | EX500 (64 points) | EX600 | EX250 | EX260                |                 |      |     |     |     |  |  |                 | EX126 | EX120 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 ports    |  |  |              |                 |                   |           |                    |           |                    |               |                     |                    |                   |       |       |                      |                 |      |     |     |     |  |  |                 |       |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

● Standard ○ Option ▲ Made-to-Order (Refer to page 31.)



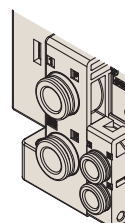
[illegible]

\*2: Refer to Manifold Specifications on page 93 for details on IP67.

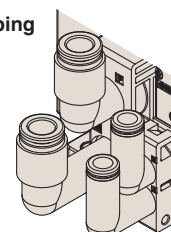
\*3: Only SY5000/7000

\*4: Only SY3000/5000

● **One-touch fittings**      Straight piping



**Elbow piping**  
(Upward)

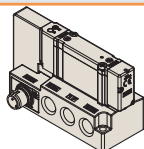


# INDEX

|                                                    |                |                                            |                |
|----------------------------------------------------|----------------|--------------------------------------------|----------------|
| Manifold Variations .....                          | <b>Page 7</b>  | Valve Replacement Parts .....              | <b>Page 21</b> |
| Optimum Actuation Size Chart of Air Cylinder ..... | <b>Page 11</b> | With Residual Pressure Release Valve ..... | <b>Page 23</b> |
| Valve Specifications .....                         | <b>Page 13</b> | Vacuum Release Valve with Restrictor ..... | <b>Page 25</b> |
| (Specifications, Response Time, Weight)            |                | Made-to-Order for Valve .....              | <b>Page 31</b> |
| Valve Construction .....                           | <b>Page 17</b> |                                            |                |

## Sub-plate

**Plug-in Sub-plate Page 32**



M12 connector

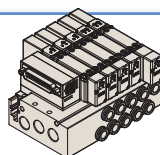


**Plug-in Sub-plate Specifications (M12 Connector)..... Page 33**

Sub-plate Parts No. .... **Page 35**

## Manifold

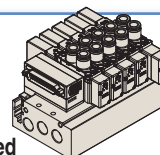
**Plug-in Metal Base Page 42**



Type 50/  
Side ported



Type 51/  
Bottom ported

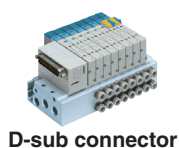


Type 52/  
Top ported

## Type 50/Side Ported, Type 51/Bottom Ported, Type 52/Top Ported

**Plug-in Metal Base ..... Page 43**

D-sub Connector, Flat Ribbon Cable, PC Wiring System [IP40]



D-sub connector



Flat ribbon cable



PC wiring



EX510

Type 50/Side Ported ..... **Page 45**

Type 51/Bottom Ported ..... **Page 45**

Type 52/Top Ported ..... **Page 65**

Wiring Specifications..... **Page 70**

EX510 Gateway-type Serial Transmission System [IP20]

Type 50/Side Ported ..... **Page 73**

Type 51/Bottom Ported ..... **Page 73**

Type 52/Top Ported ..... **Page 83**

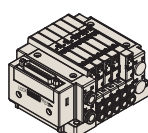
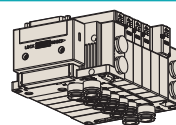
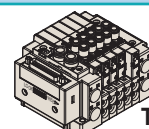
Manifold Exploded View [Exploded View, Manifold Parts No.] ..... **Page 89**

Manifold

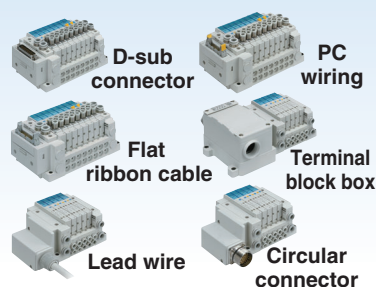
Plug-in

Connector  
Connecting  
Base

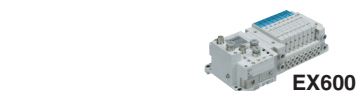
Page 92

Type 10/  
Side portedType 11/  
Bottom portedType 12/  
Top ported

## Type 10/Side Ported, Type 11/Bottom Ported, Type 12/Top Ported



EX500



EX600



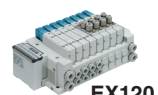
EX250



EX126



EX260



EX120

Mixed  
mounting

**Plug-in** Connector Connecting Base ..... Page 93

D-sub Connector, Flat Ribbon Cable, PC Wiring System [IP40/67] ..... Page 97

Terminal Block Box [IP67] ..... Page 115

Lead Wire [IP67] ..... Page 125

Circular Connector [IP67] ..... Page 135

EX500 Gateway Decentralised System 2 (128 Points) [IP67] ..... Page 145

EX500 Gateway Decentralised System (64 Points) [IP67] ..... Page 151

EX600 Integrated-type (For Input/Output) Serial Transmission System (Fieldbus System) [IP67] .... Page 161

EX250 Integrated-type (For Input/Output) Serial Transmission System [IP67] .... Page 173

EX260 Integrated type (For Output) Serial Transmission System [IP67] ..... Page 181

EX126 Integrated-type (For Output) Serial Transmission System [IP67] ..... Page 189

EX120 Integrated-type (For Output) Serial Transmission System [IP20] ..... Page 197

Type 10/Side ported Common Dimensions  
(External Pilot, Silencer, Elbow Fittings, Slide Locking Manual Override) ..... Page 205

Type 11/Bottom Ported Common Dimensions ..... Page 208

Type 12/Top Ported Common Dimensions ..... Page 210

**Plug-in** Manifold Mixed Mounting Type ..... Page 213

Manifold Exploded View [Exploded View, Manifold Parts No.] ..... Page 229

How to Increase Connector Type Manifold ..... Page 243

One-touch Fittings, Plug Assembly/Part No. .... Page 248

Manifold Options [ **Plug-in** Metal Base, **Plug-in** Connector Connecting Base] ..... Page 249

Specific Product Precautions ..... Page 266



# Optimum Actuation Size Chart of Air Cylinder

| Applicable cylinder speed | Main valve seal type | Series | Applicable cylinder |      |      |      |      |  |
|---------------------------|----------------------|--------|---------------------|------|------|------|------|--|
|                           |                      |        | Ø 6                 | Ø 10 | Ø 16 | Ø 20 | Ø 25 |  |
| 100 mm/s or less          | Rubber seal          | SY3000 |                     |      |      |      |      |  |
|                           |                      | SY5000 |                     |      |      |      |      |  |
|                           |                      | SY7000 |                     |      |      |      |      |  |
|                           | Metal seal           | SY3000 |                     |      |      |      |      |  |
|                           |                      | SY5000 |                     |      |      |      |      |  |
|                           |                      | SY7000 |                     |      |      |      |      |  |
| 300 mm/s or less          | Rubber seal          | SY3000 |                     |      |      |      |      |  |
|                           |                      | SY5000 |                     |      |      |      |      |  |
|                           |                      | SY7000 |                     |      |      |      |      |  |
|                           | Metal seal           | SY3000 |                     |      |      |      |      |  |
|                           |                      | SY5000 |                     |      |      |      |      |  |
|                           |                      | SY7000 |                     |      |      |      |      |  |
| 500 mm/s or less          | Rubber seal          | SY3000 |                     |      |      |      |      |  |
|                           |                      | SY5000 |                     |      |      |      |      |  |
|                           |                      | SY7000 |                     |      |      |      |      |  |
|                           | Metal seal           | SY3000 |                     |      |      |      |      |  |
|                           |                      | SY5000 |                     |      |      |      |      |  |
|                           |                      | SY7000 |                     |      |      |      |      |  |

[Common conditions]

- Pressure: 0.5 MPa
- Piping length: 1 m
- Load ratio: 50 %
- Stroke: 200 mm

Connector type manifold (for side and bottom ported type)

※: Use as a guide for selection.

Please check the actual conditions with SMC Model Selection Software.

|    | Applicable cylinder |      |      |      |      |       |       |       |       |
|----|---------------------|------|------|------|------|-------|-------|-------|-------|
|    | Ø 32                | Ø 40 | Ø 50 | Ø 63 | Ø 80 | Ø 100 | Ø 125 | Ø 140 | Ø 160 |
| 1  |                     |      |      |      |      |       |       |       |       |
| 2  |                     |      |      |      |      |       |       |       |       |
| 3  |                     |      |      |      |      |       |       |       |       |
| 4  |                     |      |      |      |      |       |       |       |       |
| 5  |                     |      |      |      |      |       |       |       |       |
| 6  |                     |      |      |      |      |       |       |       |       |
| 7  |                     |      |      |      |      |       |       |       |       |
| 8  |                     |      |      |      |      |       |       |       |       |
| 9  |                     |      |      |      |      |       |       |       |       |
| 10 |                     |      |      |      |      |       |       |       |       |
| 11 |                     |      |      |      |      |       |       |       |       |
| 12 |                     |      |      |      |      |       |       |       |       |
| 13 |                     |      |      |      |      |       |       |       |       |
| 14 |                     |      |      |      |      |       |       |       |       |
| 15 |                     |      |      |      |      |       |       |       |       |
| 16 |                     |      |      |      |      |       |       |       |       |
| 17 |                     |      |      |      |      |       |       |       |       |
| 18 |                     |      |      |      |      |       |       |       |       |
| 19 |                     |      |      |      |      |       |       |       |       |
| 20 |                     |      |      |      |      |       |       |       |       |
| 21 |                     |      |      |      |      |       |       |       |       |
| 22 |                     |      |      |      |      |       |       |       |       |
| 23 |                     |      |      |      |      |       |       |       |       |
| 24 |                     |      |      |      |      |       |       |       |       |
| 25 |                     |      |      |      |      |       |       |       |       |
| 26 |                     |      |      |      |      |       |       |       |       |
| 27 |                     |      |      |      |      |       |       |       |       |
| 28 |                     |      |      |      |      |       |       |       |       |
| 29 |                     |      |      |      |      |       |       |       |       |
| 30 |                     |      |      |      |      |       |       |       |       |
| 31 |                     |      |      |      |      |       |       |       |       |
| 32 |                     |      |      |      |      |       |       |       |       |
| 33 |                     |      |      |      |      |       |       |       |       |
| 34 |                     |      |      |      |      |       |       |       |       |
| 35 |                     |      |      |      |      |       |       |       |       |
| 36 |                     |      |      |      |      |       |       |       |       |
| 37 |                     |      |      |      |      |       |       |       |       |
| 38 |                     |      |      |      |      |       |       |       |       |
| 39 |                     |      |      |      |      |       |       |       |       |
| 40 |                     |      |      |      |      |       |       |       |       |
| 41 |                     |      |      |      |      |       |       |       |       |
| 42 |                     |      |      |      |      |       |       |       |       |
| 43 |                     |      |      |      |      |       |       |       |       |
| 44 |                     |      |      |      |      |       |       |       |       |
| 45 |                     |      |      |      |      |       |       |       |       |
| 46 |                     |      |      |      |      |       |       |       |       |
| 47 |                     |      |      |      |      |       |       |       |       |
| 48 |                     |      |      |      |      |       |       |       |       |
| 49 |                     |      |      |      |      |       |       |       |       |
| 50 |                     |      |      |      |      |       |       |       |       |
| 51 |                     |      |      |      |      |       |       |       |       |
| 52 |                     |      |      |      |      |       |       |       |       |
| 53 |                     |      |      |      |      |       |       |       |       |
| 54 |                     |      |      |      |      |       |       |       |       |
| 55 |                     |      |      |      |      |       |       |       |       |
| 56 |                     |      |      |      |      |       |       |       |       |
| 57 |                     |      |      |      |      |       |       |       |       |
| 58 |                     |      |      |      |      |       |       |       |       |
| 59 |                     |      |      |      |      |       |       |       |       |
| 60 |                     |      |      |      |      |       |       |       |       |
| 61 |                     |      |      |      |      |       |       |       |       |
| 62 |                     |      |      |      |      |       |       |       |       |
| 63 |                     |      |      |      |      |       |       |       |       |
| 64 |                     |      |      |      |      |       |       |       |       |
| 65 |                     |      |      |      |      |       |       |       |       |
| 66 |                     |      |      |      |      |       |       |       |       |

## Valve

### Plug-in Sub-plate

## Plug-in Metal Base

**Type 50, 51, 52  
Manifold Exploded View**

### Plug-in Connector Connecting Base

**Type 10, 11, 12  
Manifold Exploded View**

**One-touch Fittings/  
Plug Assembly Part No.**

## Manifold Options

# Series SY3000/5000/7000

## Valve Specifications

### Valve Specifications

| Valve type                                    |                                         |                              | Rubber seal                                                                                                                                                | Metal seal                                                           |
|-----------------------------------------------|-----------------------------------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Fluid                                         |                                         |                              | Air                                                                                                                                                        |                                                                      |
| Internal pilot operating pressure range [MPa] | 2-position single                       |                              | 0.15 to 0.7                                                                                                                                                | 0.1 to 0.7 (High pressure type: 0.1 to 1)                            |
|                                               | 2-position double                       |                              | 0.1 to 0.7                                                                                                                                                 |                                                                      |
|                                               | 3-position                              |                              | 0.2 to 0.7                                                                                                                                                 |                                                                      |
|                                               | 4-position dual 3-port valve            |                              | 0.15 to 0.7                                                                                                                                                | —                                                                    |
| External pilot operating pressure range [MPa] | Operating pressure range                |                              | -100 kPa to 0.7 (4-position: -100 kPa to 0.6)                                                                                                              | -100 kPa to 0.7 (High pressure type: -100 kPa to 1)                  |
|                                               | Pilot pressure range                    | 2-position single            | 0.25 to 0.7                                                                                                                                                | 0.1 to 0.7 (High pressure type: 0.1 to 1)                            |
|                                               |                                         | 2-position double            |                                                                                                                                                            |                                                                      |
|                                               |                                         | 3-position                   |                                                                                                                                                            |                                                                      |
|                                               | 4-position dual 3-port valve            |                              | Operating pressure + 0.1 or more (Min. 0.25) to 0.7                                                                                                        | —                                                                    |
| Ambient and fluid temperature [°C]            |                                         |                              | -10 to 50 (No freezing)                                                                                                                                    |                                                                      |
| Max. operating frequency [Hz]                 | SY3000<br>SY5000                        | 2-position single/double     | 5                                                                                                                                                          | 20*1                                                                 |
|                                               |                                         | 4-position dual 3-port valve |                                                                                                                                                            |                                                                      |
|                                               |                                         | 3-position                   |                                                                                                                                                            |                                                                      |
|                                               | SY7000                                  | 2-position single/double     | 5                                                                                                                                                          | 10*1                                                                 |
|                                               |                                         | 4-position dual 3-port valve | 3                                                                                                                                                          | —                                                                    |
|                                               |                                         | 3-position                   | 3                                                                                                                                                          | 10*1                                                                 |
| Manual override                               |                                         |                              | Non-locking push type                                                                                                                                      |                                                                      |
|                                               |                                         |                              | Push-turn locking slotted type                                                                                                                             |                                                                      |
|                                               |                                         |                              | Push-turn locking lever type                                                                                                                               |                                                                      |
|                                               |                                         |                              | Slide locking type                                                                                                                                         |                                                                      |
| Pilot exhaust type                            | Internal pilot                          |                              | Main/Pilot valve common exhaust                                                                                                                            | Main/Pilot valve individual exhaust                                  |
|                                               | External pilot                          |                              | Pilot valve individual exhaust                                                                                                                             |                                                                      |
| Lubrication                                   |                                         |                              | Not required                                                                                                                                               |                                                                      |
| Mounting orientation*2                        |                                         |                              | Unrestricted                                                                                                                                               | Single: Unrestricted<br>Double/3-position: Main valve is horizontal. |
| Impact/Vibration resistance*2 [m/s²]          |                                         |                              | 150/30                                                                                                                                                     |                                                                      |
| Enclosure                                     |                                         |                              | IP67 (Based on IEC60529)*3                                                                                                                                 |                                                                      |
| Coil rated voltage [DC]                       |                                         |                              | 24, 12 V                                                                                                                                                   |                                                                      |
| Allowable voltage fluctuation [V]             |                                         |                              | ±10 % of rated voltage*4                                                                                                                                   |                                                                      |
| Power consumption [W]                         | Standard                                |                              | 0.35 (With indicator light: 0.4)                                                                                                                           |                                                                      |
|                                               | High pressure type, Quick response type |                              | 0.9 (With indicator light: 0.95)                                                                                                                           |                                                                      |
|                                               | With power saving circuit               |                              | Standard: 0.1*5 (With indicator light only) [Inrush 0.35, Holding 0.1],<br>High pressure type: 0.4*5 (With indicator light only) [Inrush 0.9, Holding 0.4] |                                                                      |
| Surge voltage suppressor                      |                                         |                              | Diode (Varistor for non-polar type)                                                                                                                        |                                                                      |
| Indicator light                               |                                         |                              | LED                                                                                                                                                        |                                                                      |

\*1: Use below 5 Hz for with the power saving circuit.

\*2: Impact resistance: No malfunction occurred when it is tested in the axial direction and at the right angles to the main valve and armature in both energised and de-energised 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 energised and de-energised states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

Refer to page 271 for the fixation of DIN rail mounting type manifold.

\*3: In the case of a metal seal, there are restrictions in the operating environment. Refer to the Specific Product Precautions (page 266).

\*4: Due to voltage drops by the internal circuit in S/Z type and T type (with power saving circuit), use within the allowable voltage fluctuation as follows.

S/Z type { 24 V DC: -7 % to +10 %  
12 V DC: -4 % to +10 % } T type { 24 V DC: -8 % to +10 %  
12 V DC: -6 % to +10 % }

\*5: For details, refer to page 268.



## Response Time

| Series | Seal type   | Model      | Type of actuation            | Response time [ms] (at 0.5 MPa) <sup>Note)</sup> |                                        |                     |                                               |                                        |            |
|--------|-------------|------------|------------------------------|--------------------------------------------------|----------------------------------------|---------------------|-----------------------------------------------|----------------------------------------|------------|
|        |             |            |                              | Standard                                         |                                        | Quick response type |                                               |                                        |            |
|        |             |            |                              | Without light/<br>surge voltage<br>suppressor    | With light/surge<br>voltage suppressor |                     | Without light/<br>surge voltage<br>suppressor | With light/surge<br>voltage suppressor |            |
|        |             |            |                              |                                                  | S/Z type                               | R/U type            |                                               | S/Z type                               | R/U type   |
| SY3000 | Rubber seal | SY31□0     | 2-position single            | 15 or less                                       | 20 or less                             | 15 or less          | 12 or less                                    | 15 or less                             | 12 or less |
|        | Metal seal  | SY31□1     |                              | 15 or less                                       | 20 or less                             | 15 or less          | 12 or less                                    | 15 or less                             | 12 or less |
|        | Rubber seal | SY32□0     | 2-position double            | 12 or less                                       | 15 or less                             | 12 or less          | 10 or less                                    | 13 or less                             | 10 or less |
|        | Metal seal  | SY32□1     |                              | 12 or less                                       | 15 or less                             | 12 or less          | 10 or less                                    | 13 or less                             | 10 or less |
|        | Rubber seal | SY33/4/5□0 | 3-position                   | 18 or less                                       | 22 or less                             | 18 or less          | 14 or less                                    | 18 or less                             | 14 or less |
|        | Metal seal  | SY33/4/5□1 |                              | 18 or less                                       | 22 or less                             | 18 or less          | 14 or less                                    | 18 or less                             | 14 or less |
|        | Rubber seal | SY3A/B/C□0 | 4-position dual 3-port valve | 18 or less                                       | 22 or less                             | 18 or less          | 15 or less                                    | 19 or less                             | 15 or less |
| SY5000 | Rubber seal | SY51□0     | 2-position single            | 24 or less                                       | 31 or less                             | 24 or less          | 18 or less                                    | 25 or less                             | 18 or less |
|        | Metal seal  | SY51□1     |                              | 24 or less                                       | 31 or less                             | 24 or less          | 18 or less                                    | 25 or less                             | 18 or less |
|        | Rubber seal | SY52□0     | 2-position double            | 12 or less                                       | 15 or less                             | 12 or less          | 10 or less                                    | 13 or less                             | 10 or less |
|        | Metal seal  | SY52□1     |                              | 12 or less                                       | 15 or less                             | 12 or less          | 10 or less                                    | 13 or less                             | 10 or less |
|        | Rubber seal | SY53/4/5□0 | 3-position                   | 30 or less                                       | 34 or less                             | 30 or less          | 24 or less                                    | 28 or less                             | 24 or less |
|        | Metal seal  | SY53/4/5□1 |                              | 28 or less                                       | 30 or less                             | 28 or less          | 23 or less                                    | 25 or less                             | 23 or less |
|        | Rubber seal | SY5A/B/C□0 | 4-position dual 3-port valve | 35 or less                                       | 42 or less                             | 35 or less          | 28 or less                                    | 35 or less                             | 28 or less |
| SY7000 | Rubber seal | SY71□0     | 2-position single            | 47 or less                                       | 58 or less                             | 53 or less          | 42 or less                                    | 52 or less                             | 44 or less |
|        | Metal seal  | SY71□1     |                              | 39 or less                                       | 48 or less                             | 39 or less          | 34 or less                                    | 43 or less                             | 34 or less |
|        | Rubber seal | SY72□0     | 2-position double            | 18 or less                                       | 19 or less                             | 19 or less          | 18 or less                                    | 17 or less                             | 17 or less |
|        | Metal seal  | SY72□1     |                              | 17 or less                                       | 17 or less                             | 16 or less          | 16 or less                                    | 16 or less                             | 16 or less |
|        | Rubber seal | SY73/4/5□0 | 3-position                   | 52 or less                                       | 54 or less                             | 47 or less          | 42 or less                                    | 46 or less                             | 40 or less |
|        | Metal seal  | SY73/4/5□1 |                              | 38 or less                                       | 45 or less                             | 39 or less          | 33 or less                                    | 38 or less                             | 34 or less |
|        | Rubber seal | SY7A/B/C□0 | 4-position dual 3-port valve | 52 or less                                       | 60 or less                             | 54 or less          | 49 or less                                    | 53 or less                             | 48 or less |

Note) Based on dynamic performance test, JIS B 8419-2010. (Coil temperature: 20 °C, at rated voltage.

Since the response time of the external pilot type of the 4-position dual 3-port valve differs from the above table, please contact SMC.

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

# Series SY3000/5000/7000

## Valve Weight

### Series SY3000

| Valve model | Seal type   | Type of actuation |                   | Weight [g] |
|-------------|-------------|-------------------|-------------------|------------|
| SY3□00      | Rubber seal | 2-position        | Single            | 74         |
|             |             |                   | Double            | 83         |
|             |             | 3-position        | Closed centre     | 87         |
|             |             |                   | Exhaust centre    |            |
|             |             |                   | Pressure centre   |            |
|             |             | 4-position        | Dual 3-port valve | 83         |

| Valve model | Seal type  | Type of actuation |                 | Weight [g] |
|-------------|------------|-------------------|-----------------|------------|
| SY3□01      | Metal seal | 2-position        | Single          | 76         |
|             |            |                   | Double          | 86         |
|             |            | 3-position        | Closed centre   | 90         |
|             |            |                   | Exhaust centre  |            |
|             |            |                   | Pressure centre |            |

| Valve model | Seal type         | Type of actuation |                             | Port size<br>4, 2 (A, B)      | Weight<br>[g] |
|-------------|-------------------|-------------------|-----------------------------|-------------------------------|---------------|
| SY3□30-M5   | Rubber seal       | 2-position        | Single                      | M5 x 0.8                      | 74            |
|             |                   |                   | Double                      |                               | 83            |
|             |                   | 3-position        | Closed centre               |                               | 87            |
|             |                   |                   | Exhaust centre              |                               |               |
|             |                   |                   | Pressure centre             |                               |               |
| 4-position  |                   | Dual 3-port valve | 83                          |                               |               |
| SY3□30-C2   |                   | 2-position        | Single                      | C2<br>Ø 2 One-touch fitting   | 82            |
|             |                   |                   | Double                      |                               | 91            |
|             |                   | 3-position        | Closed centre               |                               | 95            |
|             |                   |                   | Exhaust centre              |                               |               |
|             |                   |                   | Pressure centre             |                               |               |
| 4-position  |                   | Dual 3-port valve | 91                          |                               |               |
| SY3□30-C3   |                   | 2-position        | Single                      | C3<br>Ø 3.2 One-touch fitting | 85            |
|             |                   |                   | Double                      |                               | 94            |
|             |                   | 3-position        | Closed centre               |                               | 98            |
|             |                   |                   | Exhaust centre              |                               |               |
|             |                   |                   | Pressure centre             |                               |               |
| 4-position  |                   | Dual 3-port valve | 94                          |                               |               |
| SY3□30-C4   |                   | 2-position        | Single                      | C4<br>Ø 4 One-touch fitting   | 77            |
|             |                   |                   | Double                      |                               | 86            |
|             |                   | 3-position        | Closed centre               |                               | 90            |
|             |                   |                   | Exhaust centre              |                               |               |
|             |                   |                   | Pressure centre             |                               |               |
| 4-position  |                   | Dual 3-port valve | 86                          |                               |               |
| SY3□30-C6   | 2-position        | Single            | C6<br>Ø 6 One-touch fitting | 80                            |               |
|             |                   | Double            |                             | 89                            |               |
|             | 3-position        | Closed centre     |                             | 93                            |               |
|             |                   | Exhaust centre    |                             |                               |               |
|             |                   | Pressure centre   |                             |                               |               |
| 4-position  | Dual 3-port valve | 89                |                             |                               |               |

| Valve model | Seal type  | Type of actuation |                             | Port size<br>4, 2 (A, B)      | Weight<br>[g] |
|-------------|------------|-------------------|-----------------------------|-------------------------------|---------------|
| SY3□31-M5   | Metal seal | 2-position        | Single                      | M5 x 0.8                      | 76            |
|             |            |                   | Double                      |                               | 86            |
|             |            | 3-position        | Closed centre               |                               | 90            |
|             |            |                   | Exhaust centre              |                               |               |
|             |            |                   | Pressure centre             |                               |               |
| SY3□31-C2   |            | 2-position        | Single                      | C2<br>Ø 2 One-touch fitting   | 84            |
|             |            |                   | Double                      |                               | 94            |
|             |            | 3-position        | Closed centre               |                               | 98            |
|             |            |                   | Exhaust centre              |                               |               |
|             |            |                   | Pressure centre             |                               |               |
| SY3□31-C3   |            | 2-position        | Single                      | C3<br>Ø 3.2 One-touch fitting | 87            |
|             |            |                   | Double                      |                               | 97            |
|             |            | 3-position        | Closed centre               |                               | 101           |
|             |            |                   | Exhaust centre              |                               |               |
|             |            |                   | Pressure centre             |                               |               |
| SY3□31-C4   |            | 2-position        | Single                      | C4<br>Ø 4 One-touch fitting   | 79            |
|             |            |                   | Double                      |                               | 89            |
|             |            | 3-position        | Closed centre               |                               | 93            |
|             |            |                   | Exhaust centre              |                               |               |
|             |            |                   | Pressure centre             |                               |               |
| SY3□31-C6   | 2-position | Single            | C6<br>Ø 6 One-touch fitting | 82                            |               |
|             |            | Double            |                             | 92                            |               |
|             | 3-position | Closed centre     |                             | 96                            |               |
|             |            | Exhaust centre    |                             |                               |               |
|             |            | Pressure centre   |                             |                               |               |

### Series SY5000

| Valve model | Seal type   | Type of actuation |                   | Weight [g] |
|-------------|-------------|-------------------|-------------------|------------|
| SY5□00      | Rubber seal | 2-position        | Single            | 82         |
|             |             |                   | Double            | 90         |
|             |             | 3-position        | Closed centre     | 100        |
|             |             |                   | Exhaust centre    |            |
|             |             |                   | Pressure centre   |            |
|             |             | 4-position        | Dual 3-port valve | 90         |

| Valve model | Seal type  | Type of actuation |                 | Weight [g] |
|-------------|------------|-------------------|-----------------|------------|
| SY5□01      | Metal seal | 2-position        | Single          | 91         |
|             |            |                   | Double          | 101        |
|             |            | 3-position        | Closed centre   | 111        |
|             |            |                   | Exhaust centre  |            |
|             |            |                   | Pressure centre |            |

| Valve model | Seal type   | Type of actuation |                 | Port size<br>4, 2 (A, B)    | Weight<br>[g] |
|-------------|-------------|-------------------|-----------------|-----------------------------|---------------|
| SY5□30-01   | Rubber seal | 2-position        | Single          | 1/8                         | 102           |
|             |             |                   | Double          |                             | 110           |
|             |             | 3-position        | Closed centre   |                             | 120           |
|             |             |                   | Exhaust centre  |                             |               |
|             |             |                   | Pressure centre |                             |               |
| 4-position  |             | Dual 3-port valve | 110             |                             |               |
| SY5□30-C4   |             | 2-position        | Single          | C4<br>Ø 4 One-touch fitting | 115           |
|             |             |                   | Double          |                             | 123           |
|             |             | 3-position        | Closed centre   |                             | 133           |
|             |             |                   | Exhaust centre  |                             |               |
|             |             |                   | Pressure centre |                             |               |
| 4-position  |             | Dual 3-port valve | 123             |                             |               |
| SY5□30-C6   |             | 2-position        | Single          | C6<br>Ø 6 One-touch fitting | 110           |
|             |             |                   | Double          |                             | 118           |
|             |             | 3-position        | Closed centre   |                             | 128           |
|             |             |                   | Exhaust centre  |                             |               |
|             |             |                   | Pressure centre |                             |               |
| 4-position  |             | Dual 3-port valve | 118             |                             |               |
| SY5□30-C8   |             | 2-position        | Single          | C8<br>Ø 8 One-touch fitting | 99            |
|             |             |                   | Double          |                             | 107           |
|             |             | 3-position        | Closed centre   |                             | 117           |
|             |             |                   | Exhaust centre  |                             |               |
|             |             |                   | Pressure centre |                             |               |
| 4-position  |             | Dual 3-port valve | 107             |                             |               |

| Valve model | Seal<br>type    | Type of actuation |                                | Port size                      | Weight |
|-------------|-----------------|-------------------|--------------------------------|--------------------------------|--------|
|             |                 |                   |                                | 4, 2 (A, B)                    | [g]    |
| SY5□31-01   | Metal<br>seal   | 2-position        | Single                         | 1/8                            | 111    |
|             |                 |                   | Double                         |                                | 121    |
|             |                 | 3-position        | Closed centre                  |                                | 131    |
|             |                 |                   | Exhaust centre                 |                                |        |
|             |                 |                   | Pressure centre                |                                |        |
| SY5□31-C4   |                 | 2-position        | Single                         | C4<br>Ø 4 One-touch<br>fitting | 124    |
|             |                 |                   | Double                         |                                | 134    |
|             |                 | 3-position        | Closed centre                  |                                | 144    |
|             |                 |                   | Exhaust centre                 |                                |        |
|             |                 |                   | Pressure centre                |                                |        |
| SY5□31-C6   |                 | 2-position        | Single                         | C6<br>Ø 6 One-touch<br>fitting | 120    |
|             |                 |                   | Double                         |                                | 130    |
|             |                 | 3-position        | Closed centre                  |                                | 140    |
|             |                 |                   | Exhaust centre                 |                                |        |
|             | Pressure centre |                   |                                |                                |        |
| SY5□31-C8   | 2-position      | Single            | C8<br>Ø 8 One-touch<br>fitting | 108                            |        |
|             |                 | Double            |                                | 118                            |        |
|             | 3-position      | Closed centre     |                                | 128                            |        |
|             |                 | Exhaust centre    |                                |                                |        |
|             |                 | Pressure centre   |                                |                                |        |

## Valve Weight

### Series SY7000

| Valve model | Seal type   | Type of actuation | Weight [g]        |
|-------------|-------------|-------------------|-------------------|
| SY7□00      | Rubber seal | 2-position        | Single            |
|             |             |                   | Double            |
|             |             | 3-position        | Closed centre     |
|             |             |                   | Exhaust centre    |
|             |             |                   | Pressure centre   |
|             |             | 4-position        | Dual 3-port valve |
|             |             |                   | 110               |
|             |             |                   | 118               |
|             |             |                   | 133               |
|             |             |                   | 114               |

| Valve model | Seal type         | Type of actuation |                               | Port size<br>4, 2 (A, B)      | Weight<br>[g]                 |     |
|-------------|-------------------|-------------------|-------------------------------|-------------------------------|-------------------------------|-----|
| SY7□30-02   | Rubber seal       | 2-position        | Single                        | 1/4                           | 125                           |     |
|             |                   |                   | Double                        |                               | 133                           |     |
|             |                   | 3-position        | Closed centre                 |                               | 1/4                           | 147 |
|             |                   |                   | Exhaust centre                |                               |                               |     |
|             |                   |                   | Pressure centre               |                               |                               |     |
|             |                   |                   |                               |                               |                               |     |
| 4-position  |                   | Dual 3-port valve |                               | 129                           |                               |     |
| SY7□30-C6   |                   | 2-position        | Single                        | C6<br>Ø 6 One-touch fitting   | 163                           |     |
|             |                   |                   | Double                        |                               | 171                           |     |
|             |                   | 3-position        | Closed centre                 |                               | C6<br>Ø 6 One-touch fitting   | 186 |
|             |                   |                   | Exhaust centre                |                               |                               |     |
|             |                   |                   | Pressure centre               |                               |                               |     |
|             |                   |                   |                               |                               |                               |     |
| 4-position  |                   | Dual 3-port valve |                               | 167                           |                               |     |
| SY7□30-C8   |                   | 2-position        | Single                        | C8<br>Ø 8 One-touch fitting   | 151                           |     |
|             |                   |                   | Double                        |                               | 159                           |     |
|             |                   | 3-position        | Closed centre                 |                               | C8<br>Ø 8 One-touch fitting   | 174 |
|             |                   |                   | Exhaust centre                |                               |                               |     |
|             |                   |                   | Pressure centre               |                               |                               |     |
|             |                   |                   |                               |                               |                               |     |
| 4-position  |                   | Dual 3-port valve |                               | 155                           |                               |     |
| SY7□30-C10  |                   | 2-position        | Single                        | C10<br>Ø 10 One-touch fitting | 136                           |     |
|             |                   |                   | Double                        |                               | 144                           |     |
|             |                   | 3-position        | Closed centre                 |                               | C10<br>Ø 10 One-touch fitting | 159 |
|             | Exhaust centre    |                   |                               |                               |                               |     |
|             | Pressure centre   |                   |                               |                               |                               |     |
|             |                   |                   |                               |                               |                               |     |
| 4-position  | Dual 3-port valve |                   | 140                           |                               |                               |     |
| SY7□30-C12  | 2-position        | Single            | C12<br>Ø 12 One-touch fitting | 146                           |                               |     |
|             |                   | Double            |                               | 154                           |                               |     |
|             | 3-position        | Closed centre     |                               | C12<br>Ø 12 One-touch fitting | 169                           |     |
|             |                   | Exhaust centre    |                               |                               |                               |     |
|             |                   | Pressure centre   |                               |                               |                               |     |
|             |                   |                   |                               |                               |                               |     |
| 4-position  | Dual 3-port valve |                   | 150                           |                               |                               |     |

| Valve model | Seal type  | Type of actuation | Weight [g]      |
|-------------|------------|-------------------|-----------------|
| SY7□01      | Metal seal | 2-position        | Single          |
|             |            |                   | Double          |
|             |            | 3-position        | Closed centre   |
|             |            |                   | Exhaust centre  |
|             |            |                   | Pressure centre |
|             |            |                   | 122             |
|             |            |                   | 133             |
|             |            |                   | 150             |

| Valve model     | Seal type  | Type of actuation |                | Port size<br>4, 2 (A, B) | Weight<br>[g] |
|-----------------|------------|-------------------|----------------|--------------------------|---------------|
| SY7□31-02       | Metal seal | 2-position        | Single         | 1/4                      | 136           |
|                 |            |                   | Double         |                          | 148           |
|                 |            | 3-position        | Closed centre  |                          | 164           |
|                 |            |                   | Exhaust centre |                          |               |
| Pressure centre |            |                   |                |                          |               |
| SY7□31-C6       |            | 2-position        | Single         | Ø 6 One-touch fitting    | 174           |
|                 |            |                   | Double         |                          | 186           |
|                 |            | 3-position        | Closed centre  |                          | 202           |
|                 |            |                   | Exhaust centre |                          |               |
| Pressure centre |            |                   |                |                          |               |
| SY7□31-C8       |            | 2-position        | Single         | Ø 8 One-touch fitting    | 162           |
|                 |            |                   | Double         |                          | 174           |
|                 |            | 3-position        | Closed centre  |                          | 190           |
|                 |            |                   | Exhaust centre |                          |               |
| Pressure centre |            |                   |                |                          |               |
| SY7□31-C10      |            | 2-position        | Single         | Ø 10 One-touch fitting   | 148           |
|                 |            |                   | Double         |                          | 159           |
|                 |            | 3-position        | Closed centre  |                          | 176           |
|                 |            |                   | Exhaust centre |                          |               |
| Pressure centre |            |                   |                |                          |               |
| SY7□31-C12      |            | 2-position        | Single         | Ø 12 One-touch fitting   | 157           |
|                 |            |                   | Double         |                          | 169           |
|                 |            | 3-position        | Closed centre  |                          | 185           |
|                 |            |                   | Exhaust centre |                          |               |
| Pressure centre |            |                   |                |                          |               |

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

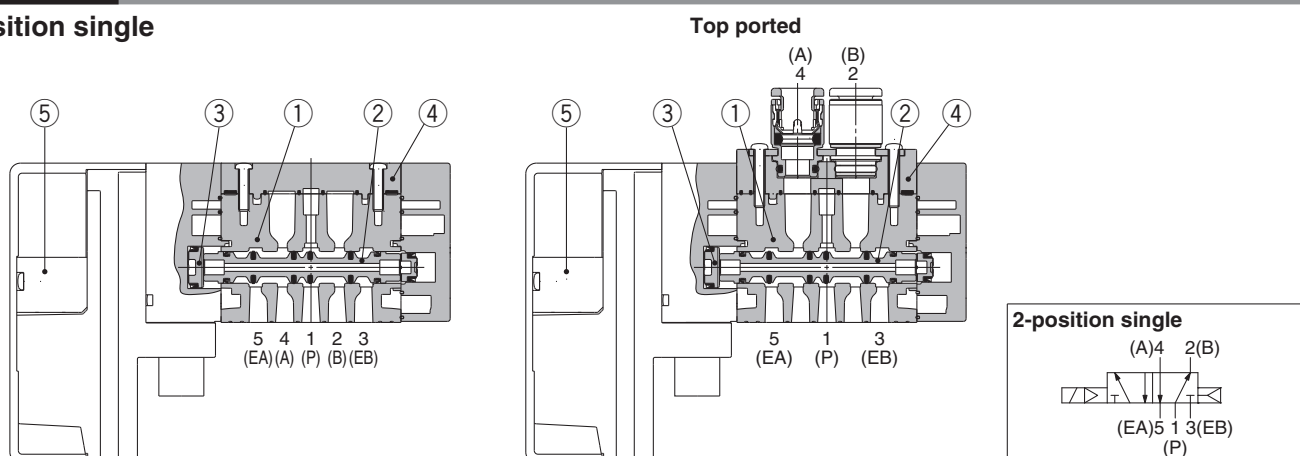
Manifold Options

# Series SY3000/5000/7000

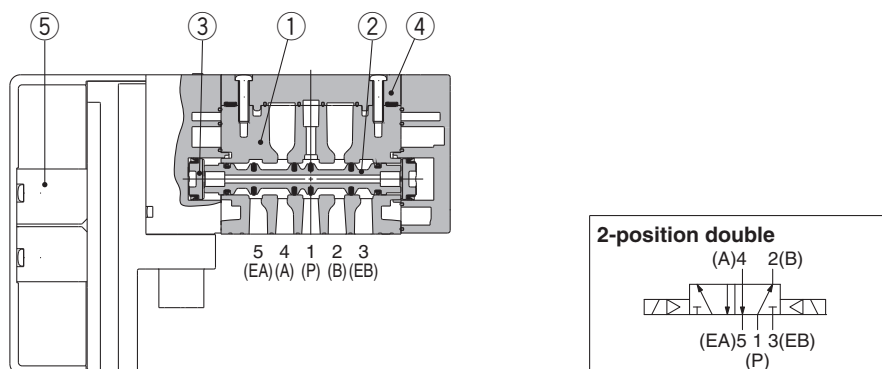
## Valve Construction

### Rubber Seal

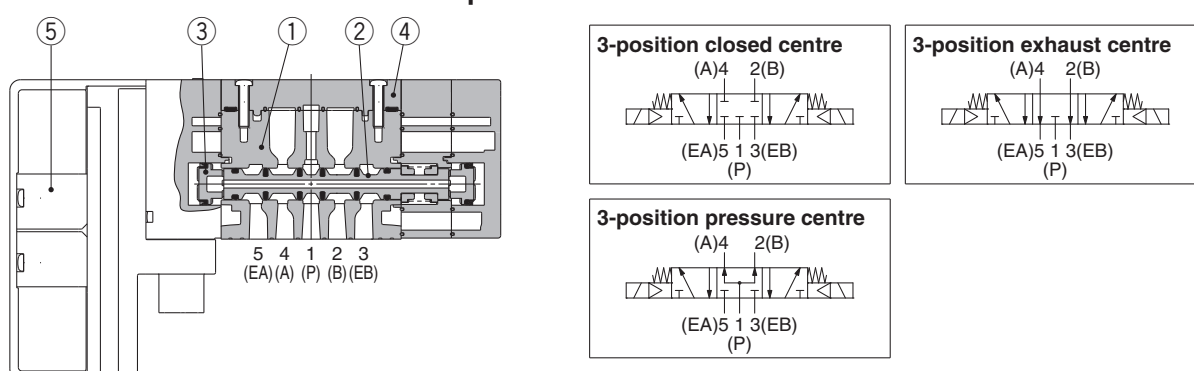
#### 2-position single



#### 2-position double



#### 3-position closed centre/exhaust centre/pressure centre

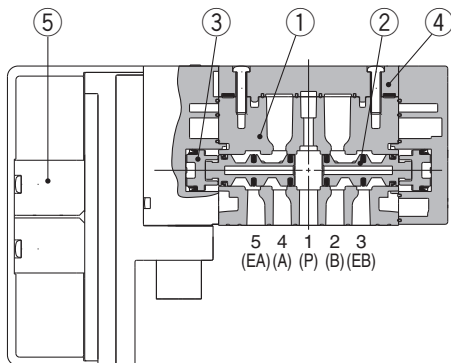


### Component Parts

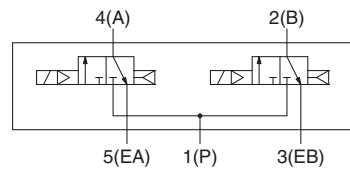
| No. | Description          | Material                                                                 | Note                   |
|-----|----------------------|--------------------------------------------------------------------------|------------------------|
| 1   | Body                 | SY3000: Zinc die-casted<br>SY5000/SY7000: Aluminium die-casted           |                        |
| 2   | Spool valve          | Special resin/HNBR<br>(3-position valve:<br>Aluminium/HNBR)              |                        |
| 3   | Piston               | Resin                                                                    |                        |
|     | Body cover assembly  | Resin                                                                    | For side/bottom ported |
| 4   | Port block assembly  | SY3000: Resin<br>SY5000: Zinc die-casted<br>SY7000: Aluminium die-casted | For top ported         |
| 5   | Pilot valve assembly | —                                                                        | Refer to page 22.      |

## Rubber Seal

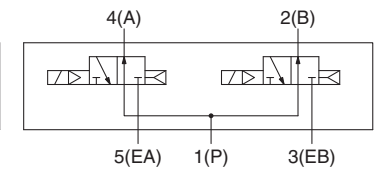
### 4-position dual 3-port valve



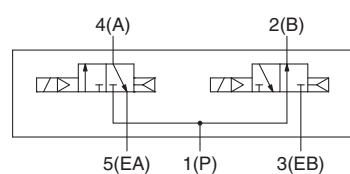
#### 4-position dual 3-port valve N.C. valve x 2 pcs.



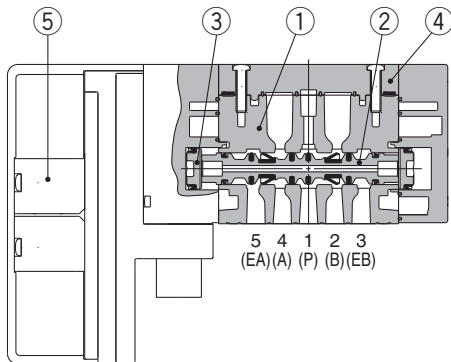
#### N.O. valve x 2 pcs.



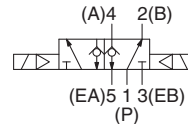
#### N.C. valve, N.O. valve 1 pc. of each



### 2-position double with back pressure check valve (Built-in valve type)

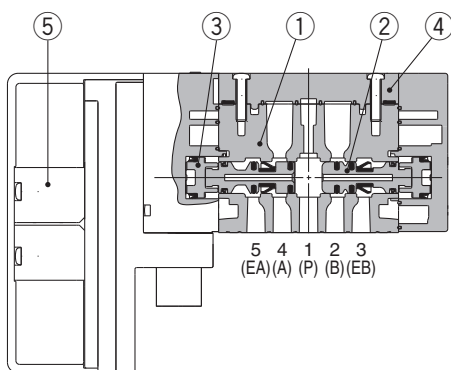


#### 2-position double with back pressure check valve

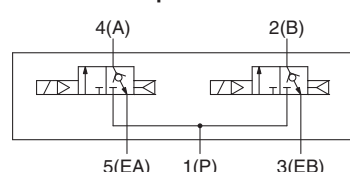


\*: The built-in valve type back pressure check valve is not available for the SY7000.

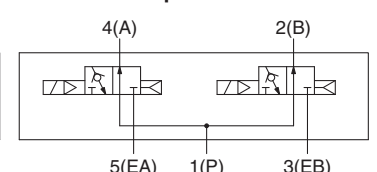
### 4-position dual 3-port valve with back pressure check valve (Built-in valve type)



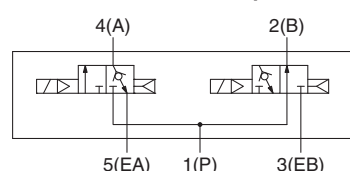
#### 4-position dual 3-port valve with back pressure check valve N.C. valve x 2 pcs.



#### N.O. valve x 2 pcs.



#### N.C. valve, N.O. valve 1 pc. of each



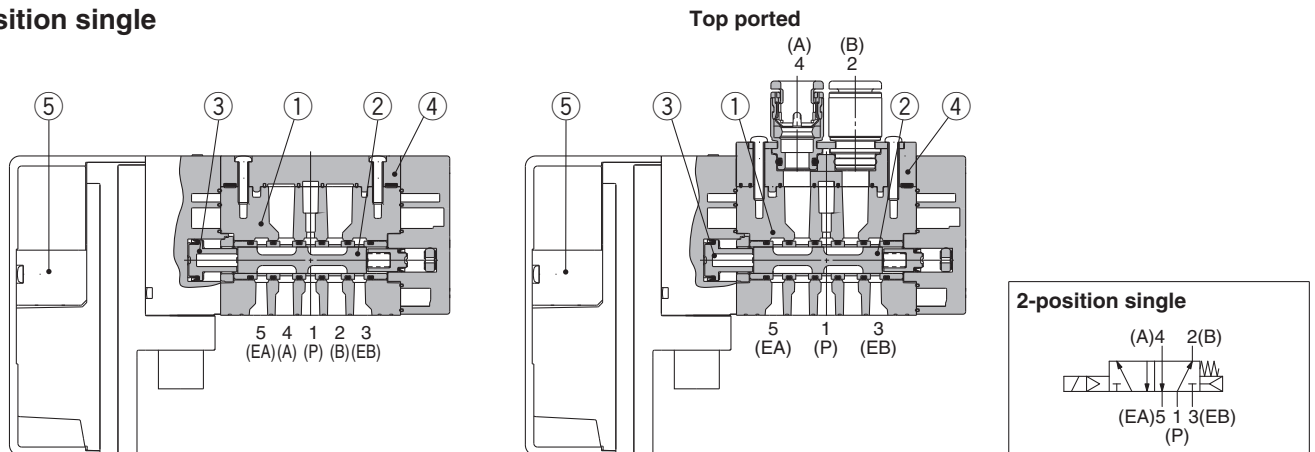
\*: The built-in valve type back pressure check valve is not available for the SY7000.



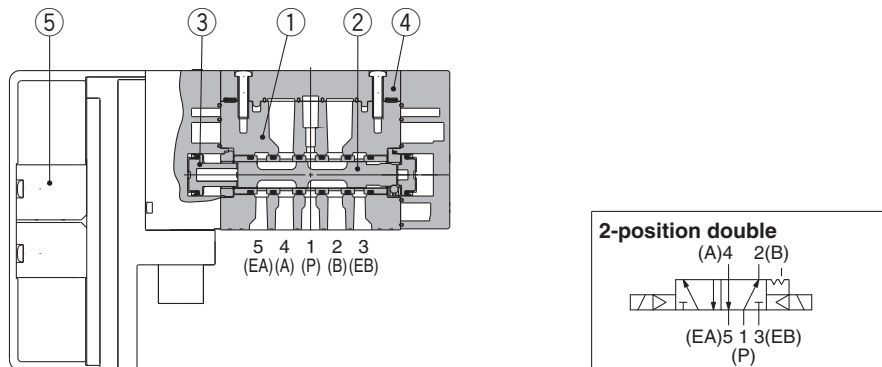
# Series SY3000/5000/7000

## Metal Seal

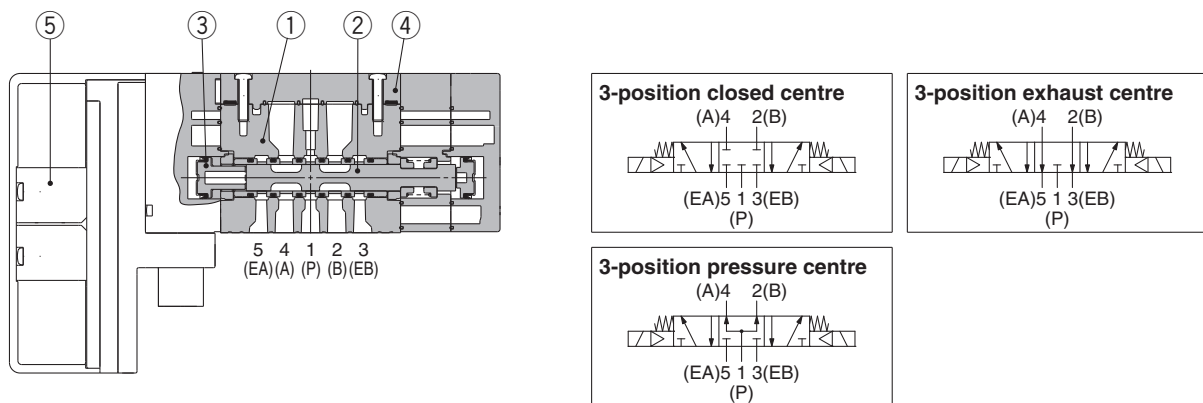
### 2-position single



### 2-position double



### 3-position closed centre/exhaust centre/pressure centre



## Component Parts

| No. | Description          | Material                                                                 | Note                   |
|-----|----------------------|--------------------------------------------------------------------------|------------------------|
| 1   | Body                 | SY3000: Zinc die-casted<br>SY5000/SY7000: Aluminium die-casted           |                        |
| 2   | Spool, Sleeve        | Stainless steel/HNBR                                                     |                        |
| 3   | Piston               | Resin                                                                    |                        |
|     | Body cover assembly  | Resin                                                                    | For side/bottom ported |
| 4   | Port block assembly  | SY3000: Resin<br>SY5000: Zinc die-casted<br>SY7000: Aluminium die-casted | For top ported         |
| 5   | Pilot valve assembly | —                                                                        | Refer to page 22.      |

Manifold Options

One-touch Fittings/  
Plug Assembly Part No.

Type 10, 11, 12  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Metal Base

Plug-in Sub-plate

Valve

# Series SY3000/5000/7000

## Valve Replacement Parts

### How to Order Port Block Assembly

SY   0V-6A   -   -    

#### Series

|   |      |
|---|------|
| 3 | 3000 |
| 5 | 5000 |
| 7 | 7000 |

#### Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

#### Option for mounting

|   |                                                                   |
|---|-------------------------------------------------------------------|
| — | Standard (Valve mounting screw "not" falling-out-prevention type) |
| 1 | Valve mounting screw falling-out-prevention type                  |

#### Thread type

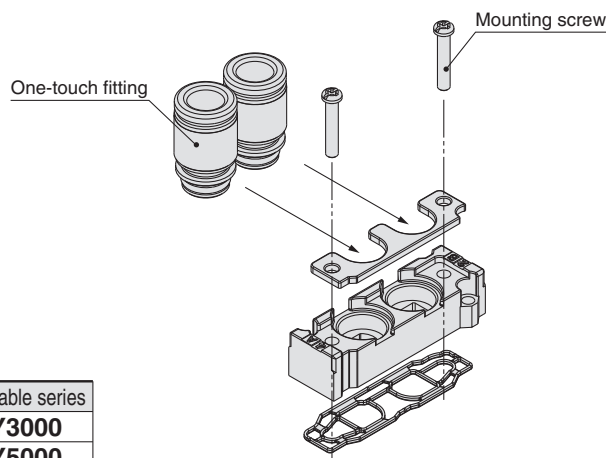
|   |      |
|---|------|
| — | Rc   |
| F | G    |
| N | NPT  |
| T | NPTF |

※: Except 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            |



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

| Symbol | Port size | Applicable series |        |        |
|--------|-----------|-------------------|--------|--------|
|        |           | SY3000            | SY5000 | SY7000 |
| C2     | Ø 2       | ●                 | —      | —      |
| C3     | Ø 3.2     | ●                 | —      | —      |
| C4     | Ø 4       | ●                 | ●      | —      |
| C6     | Ø 6       | ●                 | ●      | ●      |
| C8     | Ø 8       | —                 | ●      | ●      |
| C10    | Ø 10      | —                 | —      | ●      |
| C12    | Ø 12      | —                 | —      | ●      |

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

| Symbol | Port size | Applicable series |        |        |
|--------|-----------|-------------------|--------|--------|
|        |           | SY3000            | SY5000 | SY7000 |
| N1     | Ø 1/8"    | ●                 | —      | —      |
| N3     | Ø 5/32"   | ●                 | ●      | —      |
| N7     | Ø 1/4"    | ●                 | ●      | ●      |
| N9     | Ø 5/16"   | —                 | ●      | ●      |
| N11    | Ø 3/8"    | —                 | —      | ●      |

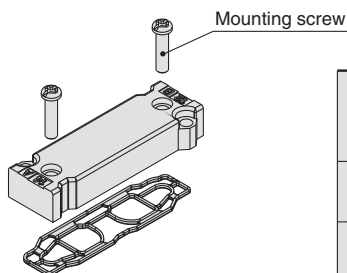
#### ● Possible to replace only the One-touch fitting.

| Port size   |         | SY3000         | SY5000         | SY7000          |
|-------------|---------|----------------|----------------|-----------------|
| Metric size | Ø 2     | VVQ1000-50A-C2 | —              | —               |
|             | Ø 3.2   | VVQ1000-50A-C3 | —              | —               |
|             | Ø 4     | VVQ1000-50A-C4 | VVQ1000-51A-C4 | —               |
|             | Ø 6     | VVQ1000-50A-C6 | VVQ1000-51A-C6 | VVQ2000-51A-C6  |
|             | Ø 8     | —              | VVQ1000-51A-C8 | VVQ2000-51A-C8  |
|             | Ø 10    | —              | —              | VVQ2000-51A-C10 |
|             | Ø 12    | —              | —              | KQ2H12-17-X899  |
| Inch size   | Ø 1/8"  | VVQ1000-50A-N1 | —              | —               |
|             | Ø 5/32" | VVQ1000-50A-N3 | VVQ1000-51A-N3 | —               |
|             | Ø 1/4"  | VVQ1000-50A-N7 | VVQ1000-51A-N7 | VVQ2000-51A-N7  |
|             | Ø 5/16" | —              | VVQ1000-51A-N9 | VVQ2000-51A-N9  |
|             | Ø 3/8"  | —              | —              | VVQ2000-51A-N11 |

Refer to pages 271 and 272 for how to replace the port block assembly, One-touch fitting and body cover assembly.

## Body Cover Assembly

\*: Used when the top ported is changed to the side or bottom ported.



| Series |                | Part no.                                                          |                                                  |
|--------|----------------|-------------------------------------------------------------------|--------------------------------------------------|
|        |                | Standard (Valve mounting screw "not" falling-out-prevention type) | Valve mounting screw falling-out-prevention type |
| SY3000 | Internal pilot | SY30V-16A                                                         | SY30V-16A-1                                      |
|        | External pilot | SY30V-16AR                                                        | SY30V-16AR-1                                     |
| SY5000 | Internal pilot | SY50V-16A                                                         | SY50V-16A-1                                      |
|        | External pilot | SY50V-16AR                                                        | SY50V-16AR-1                                     |
| SY7000 | Internal pilot | SY70V-16A                                                         | SY70V-16A-1                                      |
|        | External pilot | SY70V-16AR                                                        | SY70V-16AR-1                                     |

\*: The part number is not indicated on the product.

## How to Order Pilot Valve Assembly (With a gasket and two mounting screws)

V112       -    A

### Pilot valve option

|   |                                |
|---|--------------------------------|
| — | Standard (0.7 MPa)             |
| B | Quick response type (0.7 MPa)  |
| K | High pressure type (1.0 MPa)*1 |

\*1: Only metal seal type is available for the high pressure type. (1.0 MPa)

### Coil type

|   |                           |
|---|---------------------------|
| — | Standard                  |
| T | With power saving circuit |

### Rated voltage

|   |         |
|---|---------|
| 5 | 24 V DC |
| 6 | 12 V DC |

## Caution

1. The coil specification and voltage (including light/surge voltage suppressor) cannot be changed by changing the pilot valve assembly.
2. When selecting the coil type with power saving circuit, it is not possible to change to high pressure/power saving circuit type.

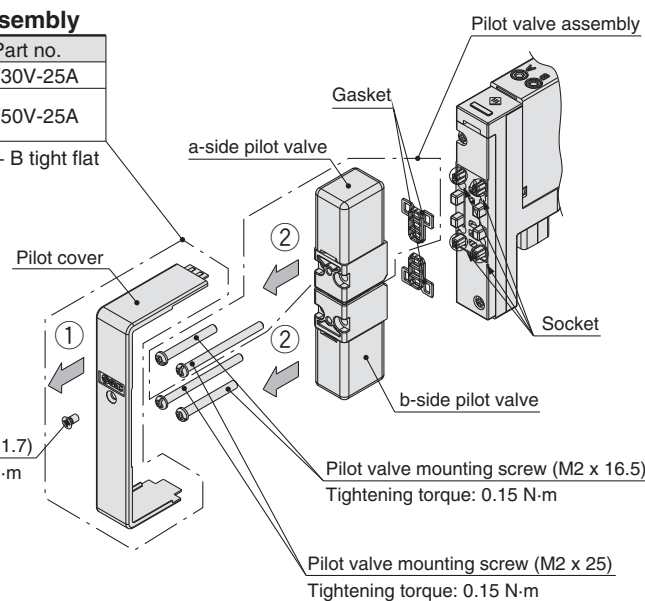
## How to replace pilot valves

### Pilot cover assembly

| Series | Part no.  |
|--------|-----------|
| SY3000 | SY30V-25A |
| SY5000 | SY50V-25A |
| SY7000 | SY50V-25A |

\*: Pilot cover x 1 + B tight flat head screw x 1

B tight flat head screw (M1.7)  
Tightening torque: 0.12 N·m



- Loosen B tight flat head screw to remove the pilot cover in the direction indicated by the arrow ①.
- Remove the pilot valve mounting screws.
- Remove the pilot valve in the direction indicated by the arrow ②.

\*: Assemble by following the removal procedure in reverse.

\*: Ensure the gasket is mounted, and take care not to bend the socket.

\*: Be noted for mounting that there are two types of lengths for the pilot valve mounting screws.

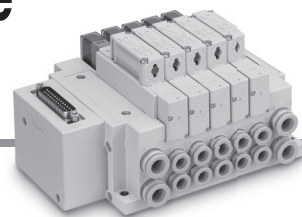
# Series SY5000/7000

## With Residual Pressure Release Valve



Mountable manifold  
SS5Y5/7-50/51 type manifold  
SS5Y5/7-(M)10/11 type manifold  
Sub-plate single unit (Except top ported type)

### How to Order (With mounting screw)



SY 5 3 0 0 0 0 - 5 U D 1 - E

| Series |        |
|--------|--------|
| 5      | SY5000 |
| 7      | SY7000 |

#### Type of actuation

|   |                                 |
|---|---------------------------------|
| 3 | 3-position closed $\chi$ type*1 |
|---|---------------------------------|

\*1: Only closed centre type is available.

#### Base mounted

(Top ported is not available.)

#### With residual pressure release valve

|   |                                        |
|---|----------------------------------------|
| E | With residual pressure release valve*1 |
|---|----------------------------------------|

\*1: Mounting screw types, hexagon socket head cap screw B and screw falling-out-prevention type K, H are not available.



### 1 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 2 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 3 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 4 Rated voltage

|   |         |
|---|---------|
| 5 | 24 V DC |
| 6 | 12 V DC |

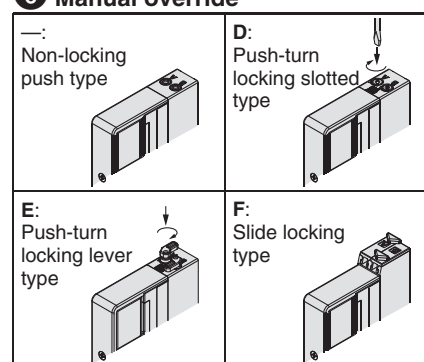
\*: The applicable rated voltage varies depending on the manifold wiring type. Refer to the "How to Order Manifold" pages.

### 5 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| —      | —          | —                        | Non-polar            |
| R      | —          | —                        |                      |
| U      | ●          | —                        | Positive common      |
| S      | —          | ●                        |                      |
| Z      | ●          | —                        | Negative common      |
| NS     | —          | —                        |                      |
| NZ     | ●          | —                        |                      |

\*: Only "Z" and "NZ" types are available for with the power saving circuit.

### 6 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service. Refer to page 89 or 244 for part numbers of the base gasket and mounting screw.

## Valve Specifications

| Valve construction                        |        | Rubber seal                                                          | Metal seal                           |
|-------------------------------------------|--------|----------------------------------------------------------------------|--------------------------------------|
|                                           |        | 3-position closed centre valve with residual pressure release valve* |                                      |
| Fluid                                     |        | Air                                                                  |                                      |
| Operating pressure range MPa <sup>2</sup> |        | 0.3 to 0.7                                                           | 0.3 to 0.7 (High pressure: 0.3 to 1) |
| Weight [g]                                | SY5000 | 117                                                                  | 128                                  |
|                                           | SY7000 | 156                                                                  | 177                                  |

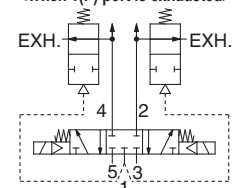
\*1: Rubber seal is used for the residual pressure release valve.

\*2: Internal pilot type only

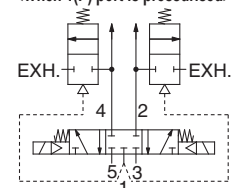
\*: Other specifications are common to the valve specifications on page 13.

### Symbol

<When 1(P) port is exhausted>



<When 1(P) port is pressurised>

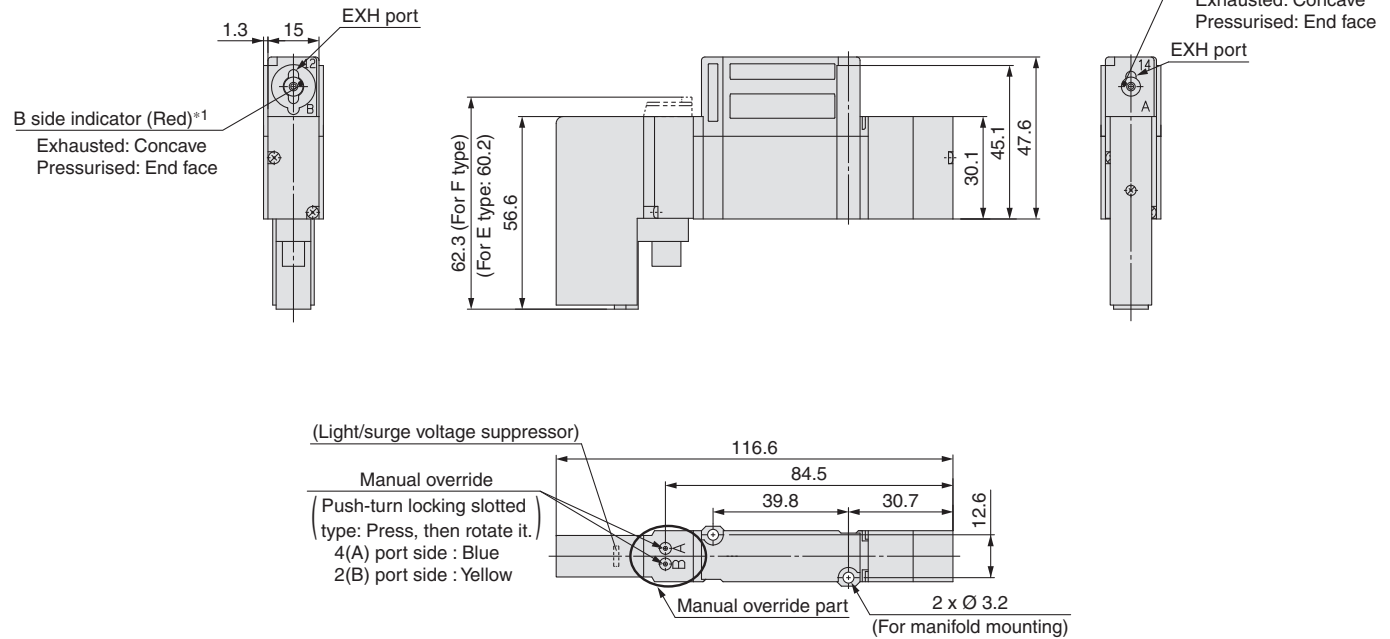


A mechanism is used that exhausts the pressure of the cylinder port when the P port supply pressure of the 3 position closed centre valve is exhausted.

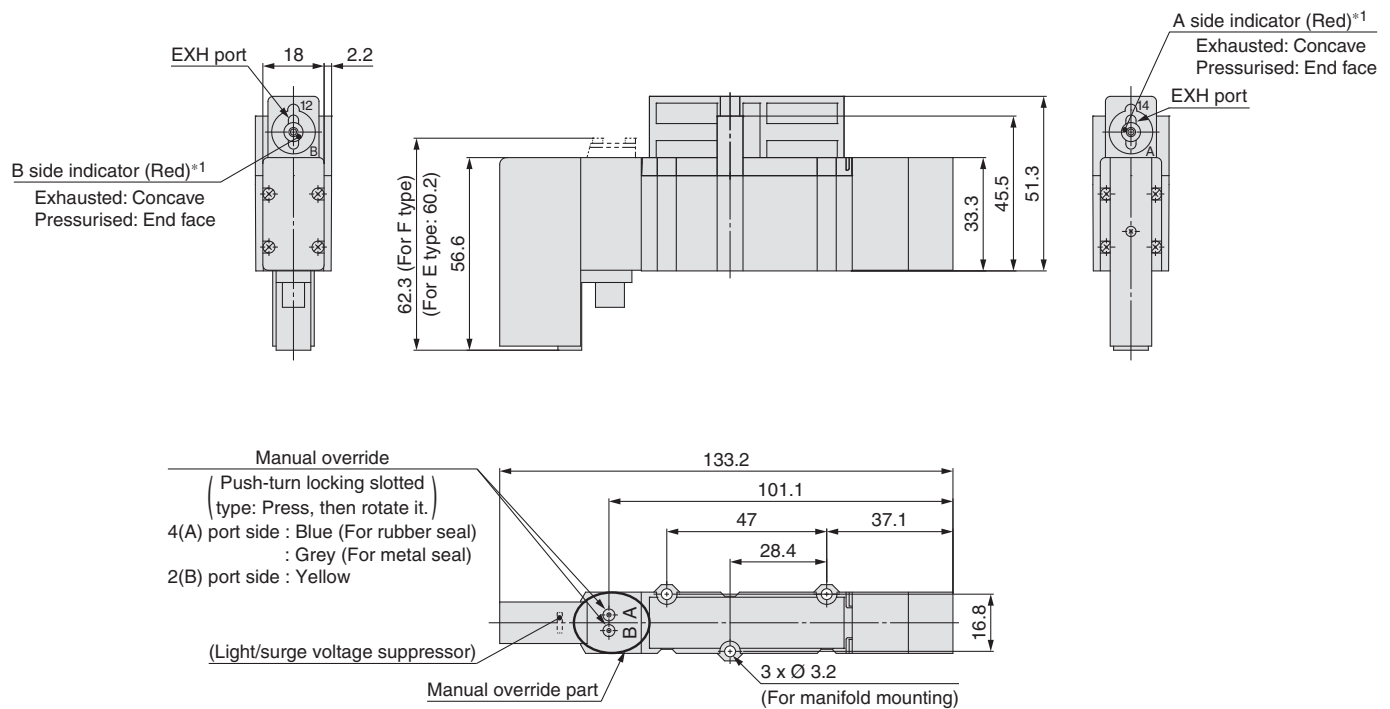


## Dimensions

### SY5000



### SY7000



\*1: The indicator shows the pressurisation status.  
Do not push it.

Only for External Pilot

# Vacuum Release Valve with Restrictor C €

## Series SY3000/5000

Mountable manifolds  
[External pilot]

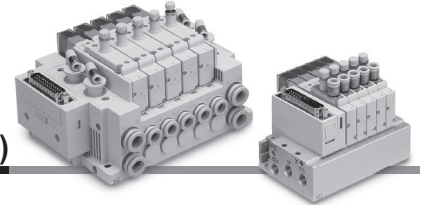
Metal base

|             |           |           |
|-------------|-----------|-----------|
|             | Type 50   | Type 52   |
| SY3000/5000 | From P.45 | From P.65 |

Connector connecting base

|             |            |            |
|-------------|------------|------------|
|             | Type 10/11 | Type 12    |
| SY3000/5000 | From P.97  | From P.109 |

How to Order (With mounting screw)



Side ported/Bottom ported

SY 3 A 0 R □ - 5 □ □ 1 - □

Top ported

SY 3 A 3 R □ - 5 □ □ 1 - C6 - □

1

2

3

4

5

6

7

8

### 1 Series

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

### 2 Pilot type

|   |                |
|---|----------------|
| R | External pilot |
|---|----------------|

### 4 Rated voltage

|   |         |
|---|---------|
| 5 | 24 V DC |
| 6 | 12 V DC |

### 3 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select "with power saving circuit" when the solenoid valve will be energised continuously for long period.

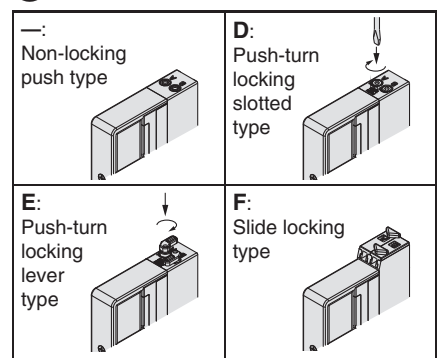
\*: Note the specified energising time when power saving circuit is selected.

### 5 Light/surge voltage suppressor and common specification

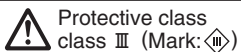
| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| —      | —          | —                        | Non-polar            |
| R      | —          | —                        |                      |
| U      | ●          | ●                        | Positive common      |
| S      | —          |                          |                      |
| Z      | ●          |                          |                      |
| NS     | —          | —                        | Negative common      |
| NZ     | ●          |                          |                      |

\*: Only "Z" and "NZ" types are available for the product with power saving circuit.

### 6 Manual override



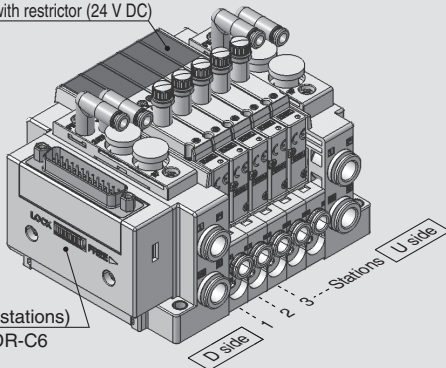
\*: Refer to page 31 for with the safety slide locking manual override.



## How to Order Manifold Assembly

### Example (SS5Y3-10F1-□□R)

3-position 3-port valve with restrictor (24 V DC)  
SY3A0R-5U1



Manifold base (5 stations)  
SS5Y3-10F1-05DR-C6

SS5Y3-10F1-05DR-C6...1 set (Type 10 5-station manifold base part no.)  
\*SY3A0R-5U1 (3-position 3-port with restrictor part no.)...5 sets

\*The asterisk denotes the symbol for assembly.

\*Prefix it to the part numbers of the valve etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

### 7 B port size

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

| Symbol | B port                | SY3000 | SY5000 |
|--------|-----------------------|--------|--------|
| C4     | Ø 4 One-touch fitting | ●      | ●      |
| C6     | Ø 6 One-touch fitting | ●      | ●      |
| C8     | Ø 8 One-touch fitting | —      | ●      |

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

| Symbol | B port                    | SY3000 | SY5000 |
|--------|---------------------------|--------|--------|
| N3     | Ø 5/32" One-touch fitting | ●      | ●      |
| N7     | Ø 1/4" One-touch fitting  | ●      | ●      |
| N9     | Ø 5/16" One-touch fitting | —      | ●      |

\*: When selecting the port size for each station, specify on a manifold specification sheet separately.

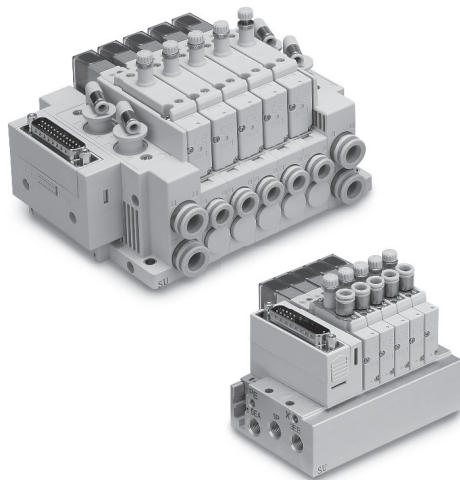
\*: When mounting on the manifold base or sub-plate, the A port is plugged. When a manifold base or sub-plate is ordered separately, mount a plug on the A port.

### 8 Type of mounting screw

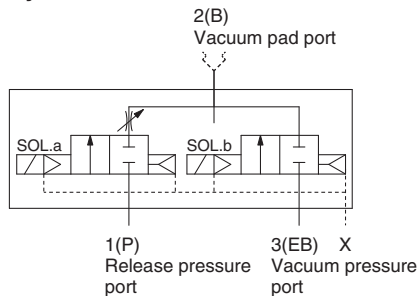
|   |                               |
|---|-------------------------------|
| — | Round head combination screw  |
| B | Hexagon socket head cap screw |

\*: When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.



## Symbol



## Valve Specifications

|                                |                                    |                                                   |
|--------------------------------|------------------------------------|---------------------------------------------------|
| Valve construction             |                                    | 3-position 3-port valve with restrictor           |
| Seal                           |                                    | Rubber seal                                       |
| Fluid                          |                                    | Air                                               |
| Type of actuation              |                                    | Normally closed                                   |
| Operating pressure range [MPa] | Release pressure port 1(P)         | 0 to 0.6                                          |
|                                | Vacuum pressure port 3(EB), 3/5(E) | -100 kPa to 0.7*1                                 |
|                                | Pilot X port                       | Release pressure + 0.1 or more (Min. 0.25) to 0.7 |
| Restrictor operation           |                                    | Manual                                            |

\*1: Can be used with positive pressure to suit the application.

\*: Other specifications are common to the valve specifications on page 13.

\*: Quick response type is not available.

## Weight

| Valve model   | Weight [g] |  |
|---------------|------------|--|
| <b>SY3A0R</b> | 90         |  |

| Valve model   | Port size | Weight [g] |
|---------------|-----------|------------|
|               | 2(B) port |            |
| <b>SY3A3R</b> | C4        | 91         |
|               | C6        | 93         |

| Valve model   | Weight [g] |  |
|---------------|------------|--|
| <b>SY5A0R</b> | 94         |  |

| Valve model   | Port size | Weight [g] |
|---------------|-----------|------------|
|               | 2(B) port |            |
| <b>SY5A3R</b> | C4        | 118        |
|               | C6        | 115        |
|               | C8        | 121        |

## Response Time

| Valve model   | Without light/surge voltage suppressor | With light/surge voltage suppressor |          |
|---------------|----------------------------------------|-------------------------------------|----------|
|               |                                        | S/Z type                            | R/U type |
| <b>SY3A□R</b> | 18                                     | 26                                  | 18       |
| <b>SY5A□R</b> | 27                                     | 32                                  | 27       |

\*: P = 0.1 MPa X = 0.5 MPa

## Manifold Flow Rate Characteristics\*1

## Flow Rate Characteristics (When restrictor is fully open)

## ① Plug-in Metal Base

| Manifold type                  | Port size       |          | Valve flow rate characteristics |      |                   |                              |      |                   |
|--------------------------------|-----------------|----------|---------------------------------|------|-------------------|------------------------------|------|-------------------|
|                                | 1, 3<br>(P, EB) | 2<br>(B) | 1→2 (P→B)                       |      |                   | 2→3 (B→EB)                   |      |                   |
|                                |                 |          | C [dm <sup>3</sup> /(s·bar)]    | b    | Q [l/min (ANR)]*2 | C [dm <sup>3</sup> /(s·bar)] | b    | Q [l/min (ANR)]*2 |
| <b>SS5Y3-50R (Side ported)</b> | 1/8             | C6       | 0.7                             | 0.24 | 172               | 1.0                          | 0.16 | 234               |
| <b>SS5Y3-52R (Top ported)</b>  | 1/8             | C6       | 1.0                             | 0.25 | 247               | 1.1                          | 0.25 | 271               |
| <b>SS5Y5-50R (Side ported)</b> | 1/4             | C8       | 1.0                             | 0.30 | 254               | 2.3                          | 0.10 | 522               |
| <b>SS5Y5-52R (Top ported)</b>  | 1/4             | C8       | 1.4                             | 0.16 | 328               | 2.4                          | 0.14 | 556               |

## ② Plug-in Connector Connecting Base

| Manifold type                    | Port size       |          | Valve flow rate characteristics |      |                   |                              |      |                   |
|----------------------------------|-----------------|----------|---------------------------------|------|-------------------|------------------------------|------|-------------------|
|                                  | 1, 3<br>(P, EB) | 2<br>(B) | 1→2 (P→B)                       |      |                   | 2→3 (B→EB)                   |      |                   |
|                                  |                 |          | C [dm <sup>3</sup> /(s·bar)]    | b    | Q [l/min (ANR)]*2 | C [dm <sup>3</sup> /(s·bar)] | b    | Q [l/min (ANR)]*2 |
| <b>SS5Y3-10R (Side ported)</b>   | C8              | C6       | 0.7                             | 0.36 | 185               | 1.2                          | 0.22 | 291               |
| <b>SS5Y3-12R (Top ported)</b>    | C8              | C6       | 1.0                             | 0.26 | 248               | 1.2                          | 0.20 | 287               |
| <b>SS5Y5-10R (Side ported)</b>   | C10             | C8       | 1.0                             | 0.20 | 240               | 2.9                          | 0.17 | 683               |
| <b>SS5Y5-11R (Bottom ported)</b> | C10             | C8       | 1.0                             | 0.30 | 354               | 3.3                          | 0.24 | 809               |
| <b>SS5Y5-12R (Top ported)</b>    | C10             | C8       | 1.4                             | 0.15 | 326               | 2.6                          | 0.24 | 637               |

\*1: The value is for manifold base with 5 stations.

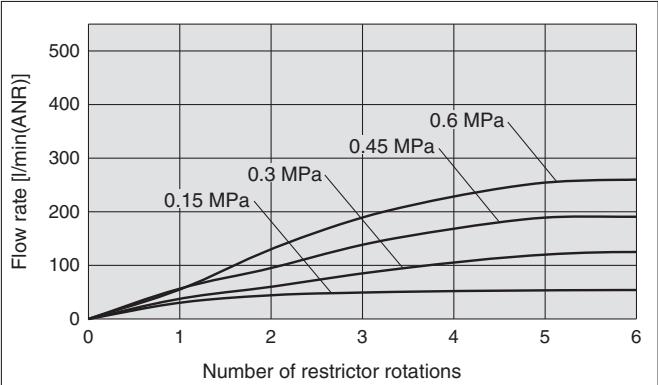
\*: Calculation of effective area S and sonic conductance C: S = 5.0 x C

\*2: These values have been calculated according to ISO 6358 and indicate the flow rate under standard conditions with an inlet pressure of 0.6 MPa (relative pressure) and a pressure drop of 0.1 MPa.

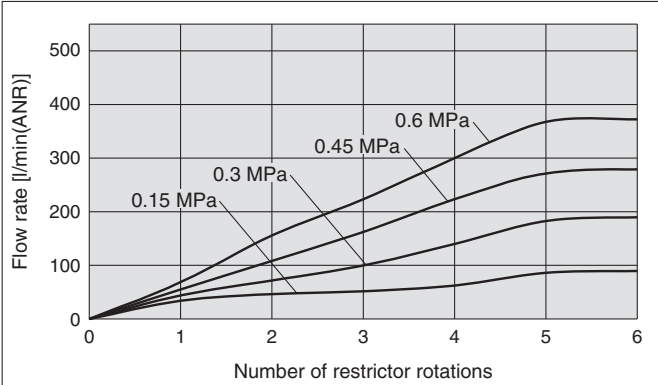
# Series SY3000/5000

## Restrictor Flow Rate Characteristics [Fluid passage: 1(P)→2(B)]

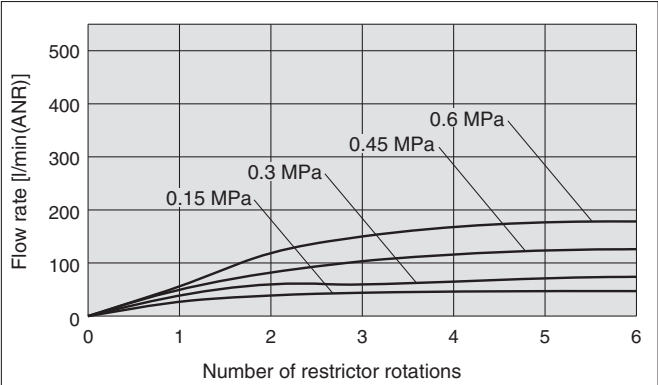
SY3A0R



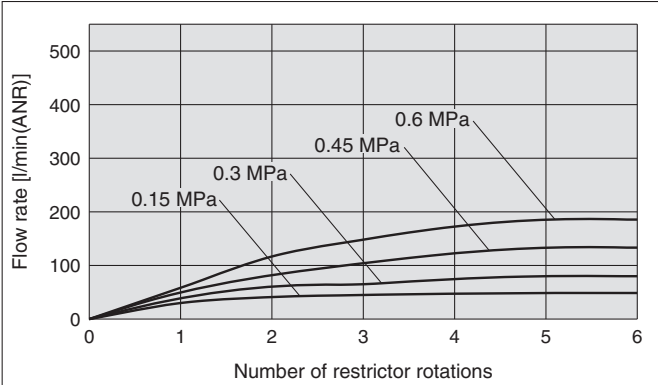
SY5A0R



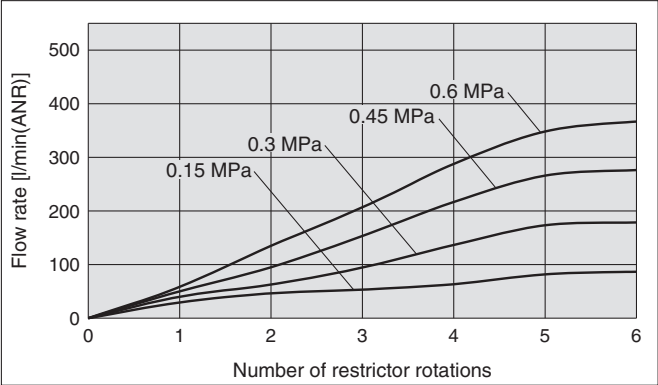
SY3A3R-C4



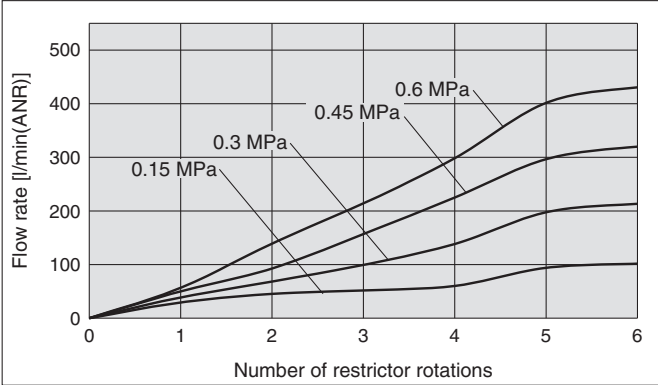
SY5A3R-C4



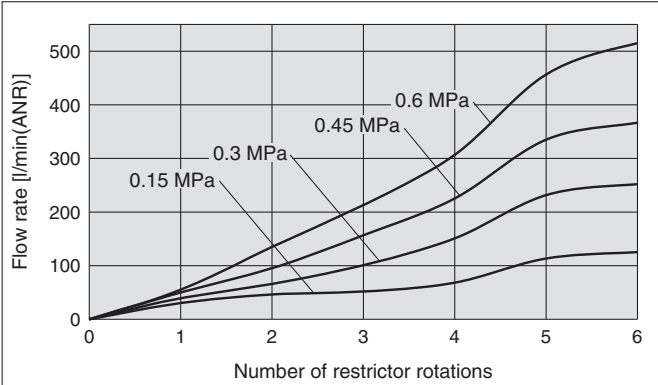
SY3A3R-C6



SY5A3R-C6



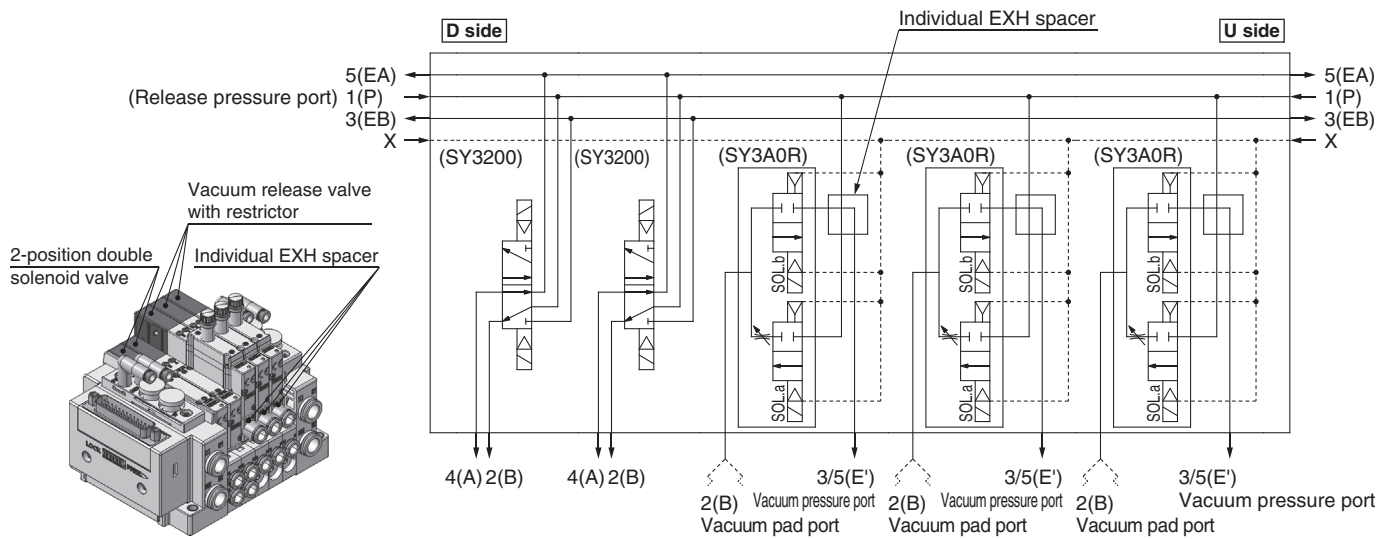
SY5A3R-C8



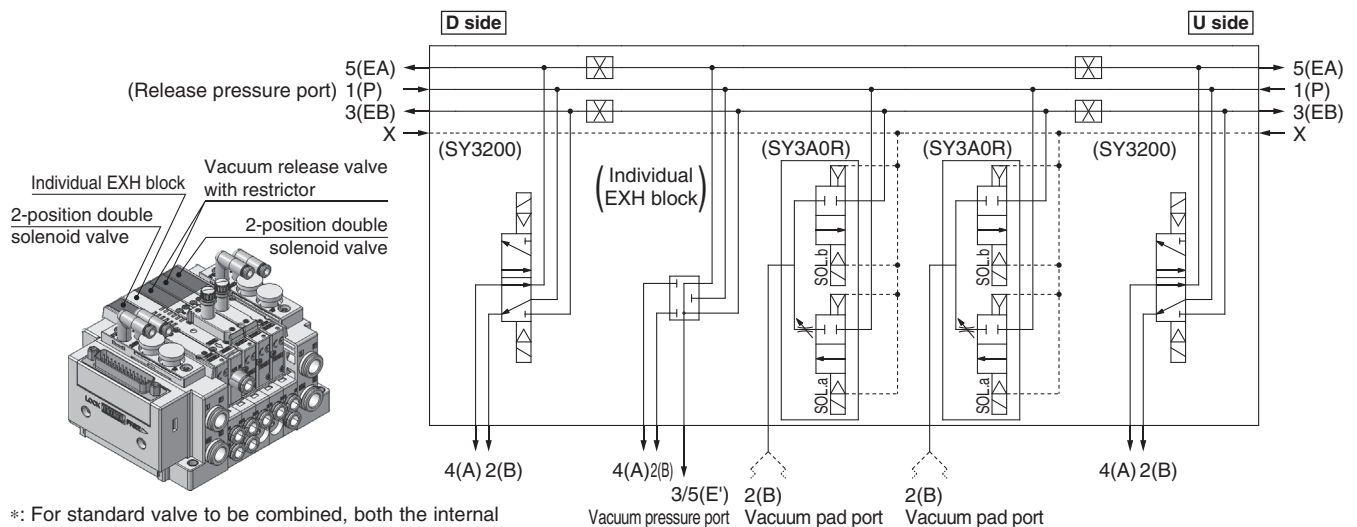


## Circuit Example

<Example 1: When the 2-position double solenoid valve is combined with the individual EXH spacer.>



<Example 2: When the 2-position double solenoid valve is combined with the individual EXH block and blocking disk.>

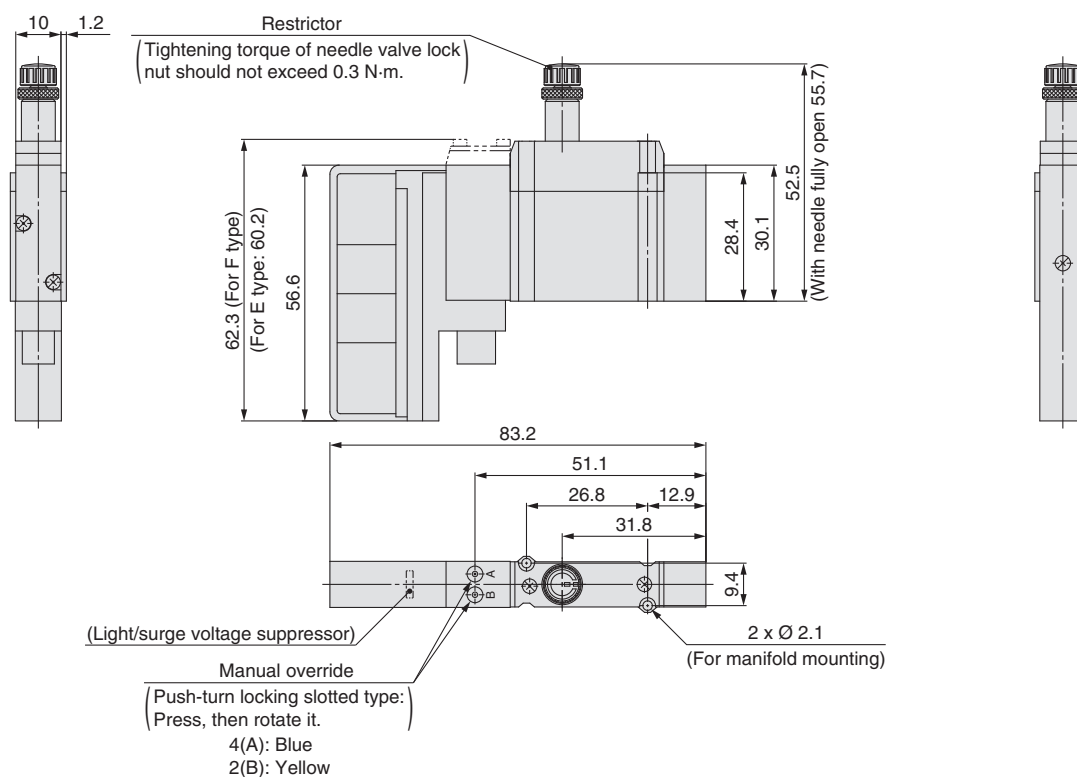


※: For standard valve to be combined, both the internal pilot and external pilot can be selected. If the pressure drop may occur when the 1(P) port releases the vacuum, use the external pilot type.

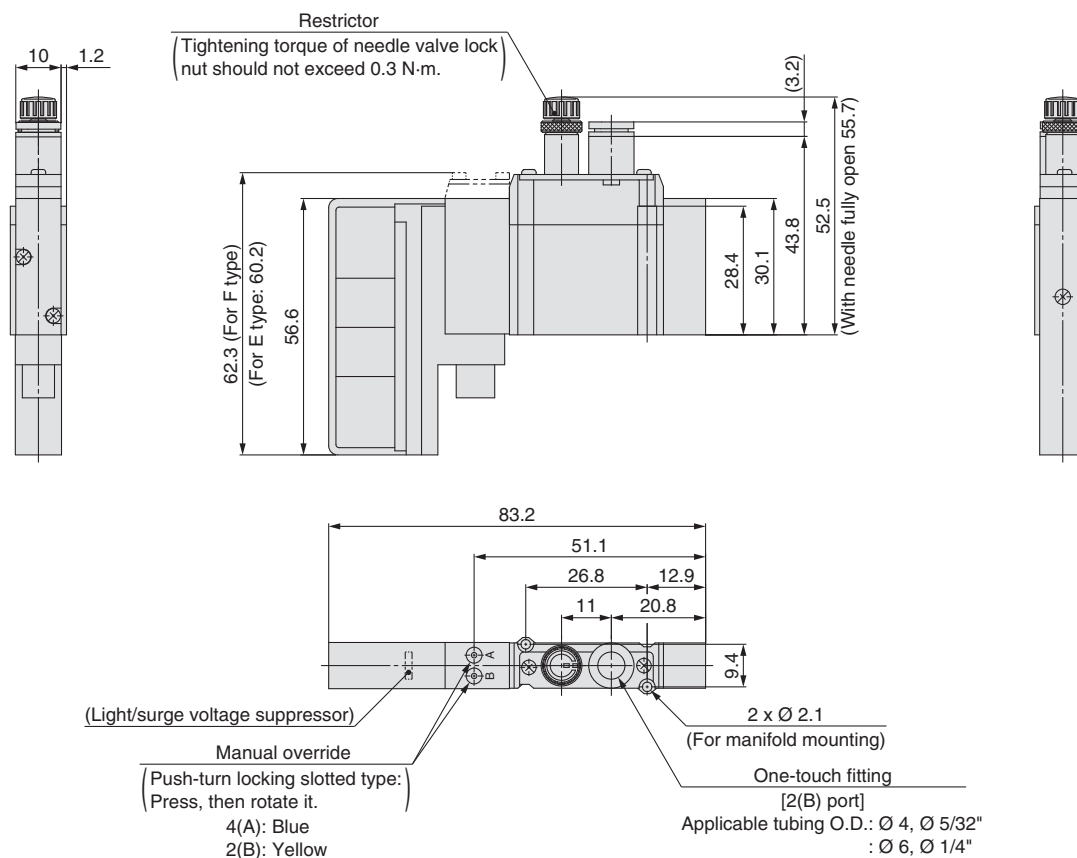
# Series SY3000/5000

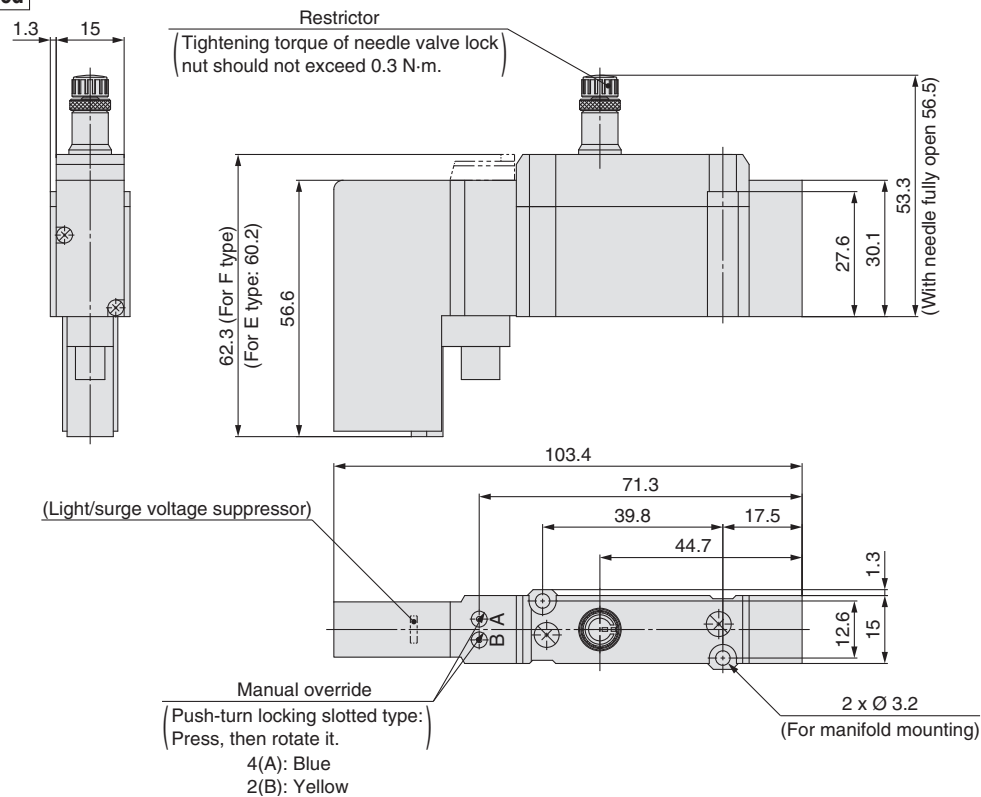
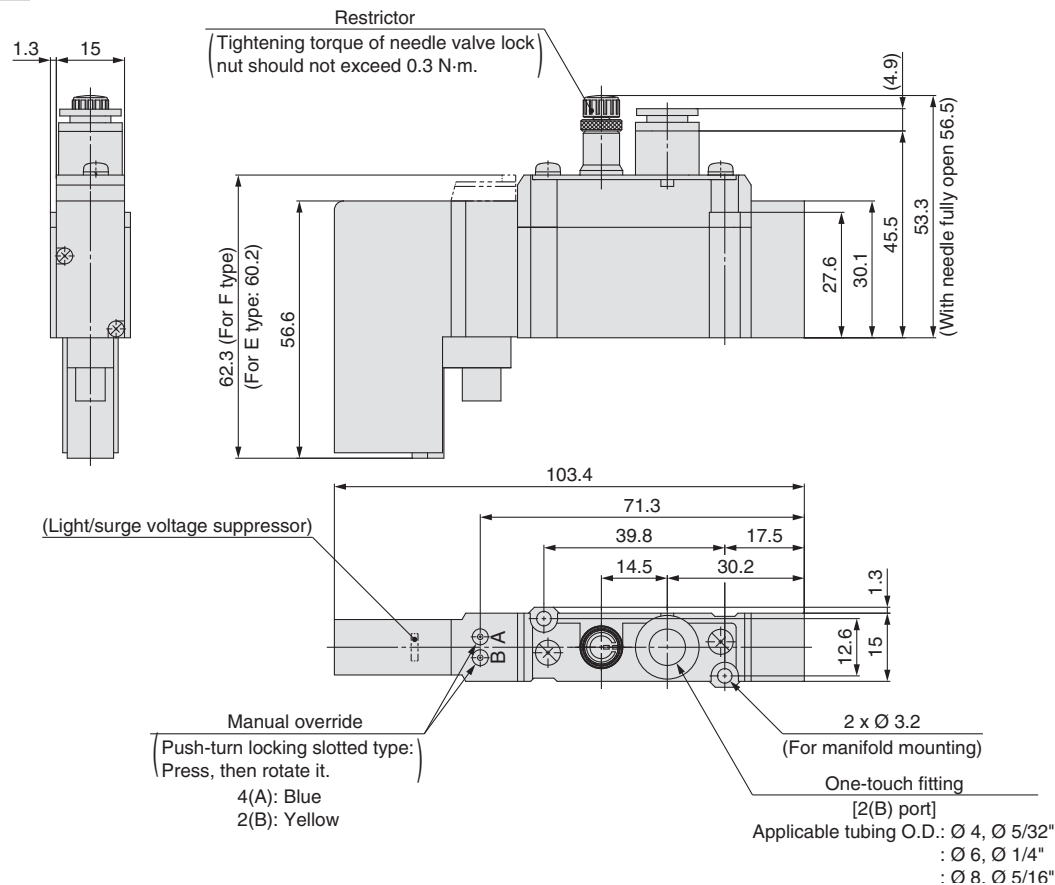
## Dimensions: SY3000

### Side ported SY3A0R



### Top ported SY3A3R



**Dimensions: SY5000****Side ported****Bottom ported****SY5A0R****Top ported SY5A3R**

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded ViewOne-touch Fittings/  
Plug Assembly Part No.

Manifold Options

## 1 Main Valve Fluororubber Specification

Symbol

-X90

Fluororubber is used for rubber parts of the main valve to allow use in applications such as the following.

- When using a lubricant other than the recommended turbine oil, and there is a possibility of malfunction due to swelling of the spool valve seals.

Applicable valves series SY3□<sup>0</sup><sub>3</sub>0, SY5□<sup>0</sup><sub>3</sub>0, SY7□<sup>0</sup><sub>3</sub>0 (Only rubber seal type)

SY<sup>3</sup><sub>5</sub><sup>7</sup>□<sup>0</sup><sub>3</sub>0 □ □ □ □ - □ □ □ 1 - □ □ - □ -X90

- Entry is the same as standard products.  
Specifications and performance are the same as standard products.

## 2 With Safety Slide Locking Manual Override

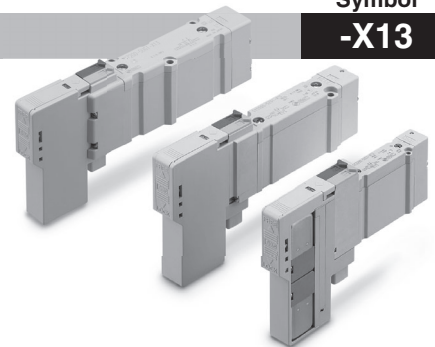
Symbol

-X13

A safety lock is added to the slide locking manual override.  
(Refer to page 4.)

SY<sup>3</sup><sub>5</sub><sup>7</sup>□<sup>00</sup><sub>31</sub> □ □ □ □ - □ □ G1 - □ -X13

- Entry is the same as standard products.  
Specifications and performance are the same as standard products.



## 3 Metal Seal Valve, Main/Pilot Valve Common Exhaust

Symbol

-X16

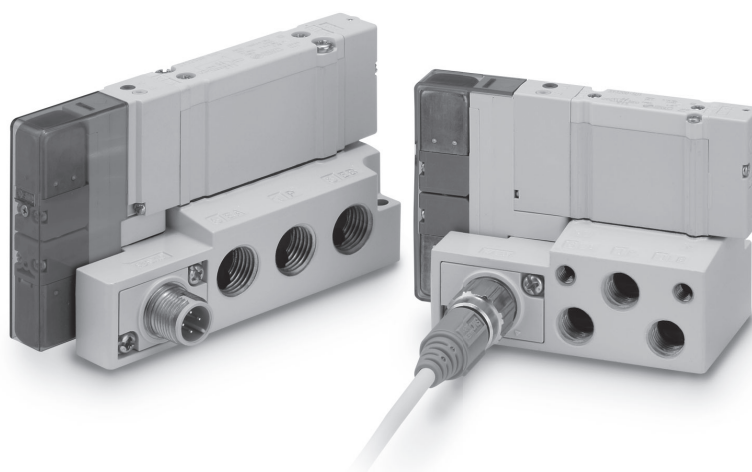
This is the type where the exhaust method of the pilot valve is integrated into the exhaust port of the main valve.

SY<sup>3</sup><sub>5</sub><sup>7</sup>□<sup>0</sup><sub>3</sub> 1 □ □ □ □ - □ □ □ 1 - □ □ -X16

- Entry is the same as standard products.  
\*: Note that the response time of the valve becomes slower than standard products.  
Please contact SMC for details.



# Plug-in Sub-plate Type [IP67 Compliant]



Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

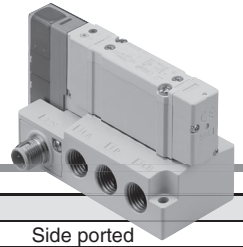
# Series SY3000/5000/7000

## Plug-in Single Unit/Sub-plate Type [IP67 Compliant]

(Side ported, Bottom ported, Top ported)



RoHS



### Plug-in Sub-plate Specifications

| Manifold type                 | Plug-in sub-plate                                 |                                        |                             |     |
|-------------------------------|---------------------------------------------------|----------------------------------------|-----------------------------|-----|
| Piping direction              | Side ported                                       | 1(P), 5(EA)/3(EB) port, 4(A)/2(B) port | Side ported                 |     |
|                               | Bottom ported                                     | 1(P), 5(EA)/3(EB) port, 4(A)/2(B) port | Bottom ported               |     |
|                               | Top ported                                        | 1(P), 5(EA)/3(EB) port                 | Side ported                 |     |
|                               |                                                   | 4(A)/2(B) port                         | Top ported                  |     |
| SUP/EXH port type             | SUP/EXH individual port [5(EA), 3(EB) individual] |                                        |                             |     |
| Applicable connector          | M12 waterproof connector                          |                                        |                             |     |
| Internal wiring               | Positive common, Negative common                  |                                        |                             |     |
| Port size                     | Side ported                                       | 1(P), 5(EA)/3(EB) port, 4(A)/2(B) port | SY3000                      | 1/8 |
|                               |                                                   |                                        | SY5000                      | 1/4 |
|                               |                                                   |                                        | SY7000                      | 3/8 |
|                               | Bottom ported                                     | 1(P), 5(EA)/3(EB) port, 4(A)/2(B) port | SY3000                      | 1/8 |
|                               |                                                   |                                        | SY5000                      | 1/4 |
|                               |                                                   |                                        | SY7000                      | 3/8 |
|                               | Top ported                                        | 1(P), 5(EA)/3(EB) port                 | SY3000                      | 1/8 |
|                               |                                                   |                                        | SY5000                      | 1/4 |
|                               |                                                   |                                        | SY7000                      | 3/8 |
| 4(A)/2(B) port                |                                                   |                                        | Compliant with the valve.*1 |     |
| Enclosure (Based on IEC60529) | IP67                                              |                                        |                             |     |
| Weight: W [g]*2               | SY3000                                            | Side ported                            | 99                          |     |
|                               |                                                   | Bottom ported                          | 109                         |     |
|                               |                                                   | Top ported                             | 104                         |     |
|                               | SY5000                                            | Side ported                            | 145                         |     |
|                               |                                                   | Bottom ported                          | 172                         |     |
|                               |                                                   | Top ported                             | 159                         |     |
|                               | SY7000                                            | Side ported                            | 205                         |     |
|                               |                                                   | Bottom ported                          | 232                         |     |
|                               |                                                   | Top ported                             | 227                         |     |

\*1: Refer to page 13 for valve specifications.

\*2: The valve and cable weights are not included. To obtain the weight with valves attached, add the valve weights given on page 15, and to include the cable weight, add the connector cable weight on page 35.

### Plug-in Sub-plate Flow-rate Characteristics

#### Rubber Seal

| Series | Sub-plate piping location | Fitting port size |       | 1 → 4/2 |      |                  | 4/2 → 5/3 |      |                  |
|--------|---------------------------|-------------------|-------|---------|------|------------------|-----------|------|------------------|
|        |                           | (P,E)             | (A,B) | C       | b    | Q [l/min(ANR)]*2 | C         | b    | Q [l/min(ANR)]*2 |
| SY3000 | Side ported               | 1/8               | 1/8   | 1.8     | 0.27 | 449              | 1.7       | 0.26 | 422              |
|        | Bottom ported             | 1/8               | 1/8   | 1.7     | 0.23 | 414              | 1.4       | 0.27 | 349              |
|        | Top ported                | 1/8               | C6    | 1.3     | 0.34 | 339              | 1.5       | 0.27 | 374              |
| SY5000 | Side ported               | 1/4               | 1/4   | 4.2     | 0.21 | 1012             | 4.0       | 0.26 | 992              |
|        | Bottom ported             | 1/4               | 1/4   | 4.0     | 0.19 | 953              | 4.0       | 0.23 | 975              |
|        | Top ported                | 1/4               | C8    | 2.9     | 0.29 | 733              | 4.1       | 0.33 | 1063             |
| SY7000 | Side ported               | 3/8               | 3/8   | 6.5     | 0.24 | 1593             | 6.3       | 0.23 | 1535             |
|        | Bottom ported             | 3/8               | 3/8   | 6.4     | 0.22 | 1591             | 6.3       | 0.22 | 1526             |
|        | Top ported                | 3/8               | C12   | 5.4     | 0.30 | 1373             | 6.0       | 0.27 | 1497             |

#### Metal Seal

| Series | Sub-plate piping location | Fitting port size |       | 1 → 4/2 |      |                  | 4/2 → 5/3 |      |                  |
|--------|---------------------------|-------------------|-------|---------|------|------------------|-----------|------|------------------|
|        |                           | (P,E)             | (A,B) | C       | b    | Q [l/min(ANR)]*2 | C         | b    | Q [l/min(ANR)]*2 |
| SY3000 | Side ported               | 1/8               | 1/8   | 1.4     | 0.14 | 325              | 1.3       | 0.26 | 322              |
|        | Bottom ported             | 1/8               | 1/8   | 1.3     | 0.13 | 300              | 1.3       | 0.22 | 315              |
|        | Top ported                | 1/8               | C6    | 1.2     | 0.22 | 291              | 1.4       | 0.29 | 354              |
| SY5000 | Side ported               | 1/4               | 1/4   | 3.2     | 0.13 | 738              | 3.5       | 0.16 | 820              |
|        | Bottom ported             | 1/4               | 1/4   | 3.0     | 0.12 | 688              | 3.2       | 0.17 | 754              |
|        | Top ported                | 1/4               | C8    | 2.6     | 0.23 | 634              | 3.2       | 0.19 | 762              |
| SY7000 | Side ported               | 3/8               | 3/8   | 4.6     | 0.10 | 1044             | 4.9       | 0.16 | 1148             |
|        | Bottom ported             | 3/8               | 3/8   | 4.6     | 0.10 | 1044             | 4.9       | 0.17 | 1154             |
|        | Top ported                | 3/8               | C12   | 4.0     | 0.18 | 947              | 4.7       | 0.16 | 1101             |

\* Calculation of effective area S and sonic conductance C:  $S = 5.0 \times C$

\*1: The value is for individually operated 2-position type.

\*2: The values have been calculated according to ISO 6358 and indicate the flow rate under standard conditions with an inlet pressure of 0.6 MPa (relative pressure) and a pressure drop of 0.1 MPa.

## How to Order

In the case of (Valve) + (Sub-plate) (Built-in valve type part no.)

**SY** **3** **1** **0** **0** **5** **U** **D** **1** **C** **6** **W** **1** **0** **1**

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

### 1 Series

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

### 2 Type of actuation

|     |             |                 |
|-----|-------------|-----------------|
| 1   | 2-position  | Single          |
| 2   | 2-position  | Double          |
| 3   | 3-position  | Closed centre   |
| 4   | 3-position  | Exhaust centre  |
| 5   | 3-position  | Pressure centre |
| A*1 | 4-position  | N.C./N.C.       |
| B*1 | dual 3-port | N.O./N.O.       |
| C*1 | dual 3-port | N.C./N.O.       |

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Valve piping type

|   |                                            |
|---|--------------------------------------------|
| 0 | Base mounted (Port location: Side, Bottom) |
| 3 | Top ported (4A, 2B port location: Top)     |

### 4 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 5 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 6 Back pressure check valve (Built-in valve type)

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type  
\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 7 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 8 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.  
\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 9 Rated voltage

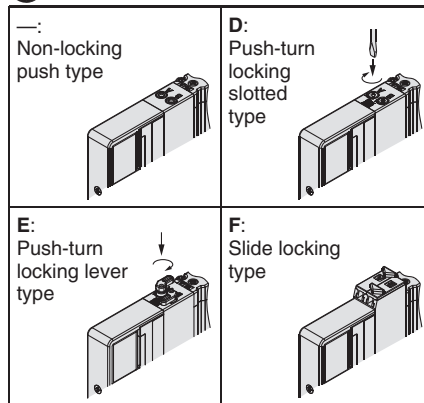
|   |         |
|---|---------|
| 5 | 24 V DC |
| 6 | 12 V DC |

### 10 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| —      | —          | —                        | Non-polar            |
| R      | —          | —                        | Non-polar            |
| U      | ●          | ●                        | Positive common      |
| S      | —          | —                        | Positive common      |
| Z      | ●          | —                        | Positive common      |
| NS     | —          | —                        | Negative common      |
| NZ     | ●          | —                        | Negative common      |

\*: Only "Z" and "NZ" types are available for with the power saving circuit.

### 11 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 12 A, B port size (\*: Top ported valve only)

#### Thread piping

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

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

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| C2     | Ø 2       | ●      | —      | —      |
| C3     | Ø 3.2     | ●      | —      | —      |
| C4     | Ø 4       | ●      | ●      | —      |
| C6     | Ø 6       | ●      | ●      | ●      |
| C8     | Ø 8       | —      | ●      | ●      |
| C10    | Ø 10      | —      | —      | ●      |
| C12    | Ø 12      | —      | —      | ●      |

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

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| N1     | Ø 1/8"    | ●      | —      | —      |
| N3     | Ø 5/32"   | ●      | ●      | —      |
| N7     | Ø 1/4"    | ●      | ●      | ●      |
| N9     | Ø 5/16"   | —      | ●      | ●      |
| N11    | Ø 3/8"    | —      | —      | ●      |

### 13 A, B port thread type (Top ported valve only)

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

\*: Only — is available for M5.

### 14 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.  
\*: Refer to page 35 when the base gaskets and mounting screws are required for maintenance.  
\*: When using an optional spacer assembly, "B" and "H" cannot be selected.

### 15 Wiring specifications

|    |                                    |
|----|------------------------------------|
| WO | Without M12 connector cable        |
| W1 | With M12 connector cable (300 mm)  |
| W2 | With M12 connector cable (500 mm)  |
| W3 | With M12 connector cable (1000 mm) |
| W4 | With M12 connector cable (2000 mm) |
| W7 | With M12 connector cable (5000 mm) |

\*: When ordering a product with M12 connector cable, the connector cable is included.

### 16 Port location (Sub-plate)

|     |                                             |
|-----|---------------------------------------------|
| —   | Side ported                                 |
| B   | Bottom ported                               |
| V*1 | Top ported (1P, 5EA, 3EB port: Side ported) |

\*1: Only available for the valve piping type "3" top ported.

### 17 Port size (Sub-plate)

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

### 18 Sub-plate thread type

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

\*: When mounting a special order (including Made-to-Order specification) valve or manifold option (spacer etc.) on the sub-plate, add the valve part number or spacer part number under the sub-plate part number to place an order. For details, refer to the ordering example on page 35.

# Series SY3000/5000/7000

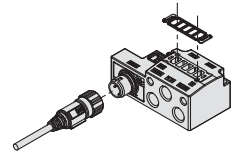
## How to Order

In the case of **(Sub-plate)** (Sub-plate single unit part no.)

※: Without valve

SY **3** OM-27-1-**W1**-**01**

① ② ③ ④ ⑤



※: Base gasket is included.  
※: Valve mounting screws are not included.

### ① Series

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

### ② Wiring specifications

|    |                                    |
|----|------------------------------------|
| WO | Without M12 connector cable        |
| W1 | With M12 connector cable (300 mm)  |
| W2 | With M12 connector cable (500 mm)  |
| W3 | With M12 connector cable (1000 mm) |
| W4 | With M12 connector cable (2000 mm) |
| W7 | With M12 connector cable (5000 mm) |

※: Refer to the table below for connector cable part numbers.  
※: When ordering a product with M12 connector cable, the connector cable is included.

### ③ Port location (Sub-plate)

|   |                                                   |
|---|---------------------------------------------------|
| — | Side ported                                       |
| B | Bottom ported                                     |
| V | Top ported [1(P), 5(EA), 3(EB) port: Side ported] |

### ④ Port size

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

### ⑤ Sub-plate thread type

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

**How to Order when mounting a special order (including Made-to-Order specification) valve on the sub-plate (Ordering example: X90)**

SY30M-27-1-W1-01 ..... 1 set (Sub-plate single unit part no.)

\*SY3200-5U1-X90 ..... 1 set (2-position double part no./Main valve fluororubber specification)

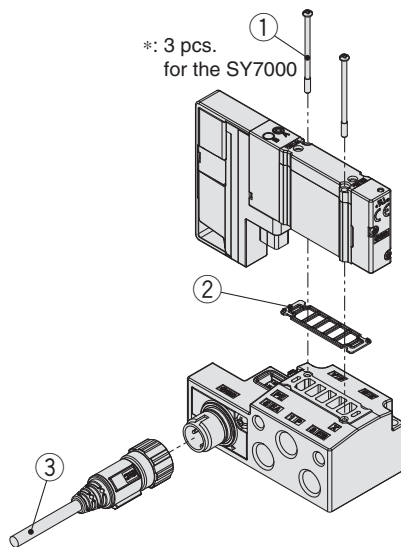
**Ordering example when mounting a manifold option (spacer etc.)**

SY30M-27-1-W1-01 ..... 1 set (Sub-plate single unit part no.)

\*SY3400-5U1 ..... 1 set (3-position exhaust centre part no.)

\*SY30M-60-1A ..... 1 set (Part no. for double check spacer with residual pressure release valve)

## Sub-plate Parts No.



| No. | Description                    | Part no.                   |                              |                              | Note                                                                                    |
|-----|--------------------------------|----------------------------|------------------------------|------------------------------|-----------------------------------------------------------------------------------------|
|     |                                | SY3000                     | SY5000                       | SY7000                       |                                                                                         |
| ①   | Valve mounting screw           | SY3000-23-24A<br>(M2 x 32) | SY5000-221-1A<br>(M3 x 32.5) | SY7000-221-1A<br>(M3 x 36.5) | Part numbers shown on the left are for 10 valves (20 pcs.).<br>(30 pcs. for the SY7000) |
|     |                                | SY3000-222-1A<br>(M2 x 32) | SY5000-222-1A<br>(M3 x 32.5) | SY7000-222-1A<br>(M3 x 36.5) |                                                                                         |
| ②   | Base gasket (for sub-plate)    | SY30M-11-1A                | SY50M-11-1A                  | SY70M-11-1A                  | Part numbers shown on the left are for 10 valves (10 pcs.).                             |
| ③   | M12 waterproof connector cable | ZS-37-L                    |                              |                              | Cable length: 300 mm<br>Cable weight: Approx. 18 g                                      |
|     |                                | ZS-37-M                    |                              |                              | Cable length: 500 mm<br>Cable weight: Approx. 23 g                                      |
|     |                                | ZS-37-N                    |                              |                              | Cable length: 1000 mm<br>Cable weight: Approx. 36 g                                     |
|     |                                | ZS-37-P                    |                              |                              | Cable length: 2000 mm<br>Cable weight: Approx. 62 g                                     |
|     |                                | ZS-37-C                    |                              |                              | Cable length: 5000 mm<br>Cable weight: Approx. 140 g                                    |

## ⚠ Caution

**Tightening torque**

M2: 0.16 N·m (SY3000)

M3: 0.8 N·m (SY5000/7000)

## Dimensions: Series SY3000

**Plug-in  
Single Unit/Sub-plate**

**Side Ported  
Top Ported**

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

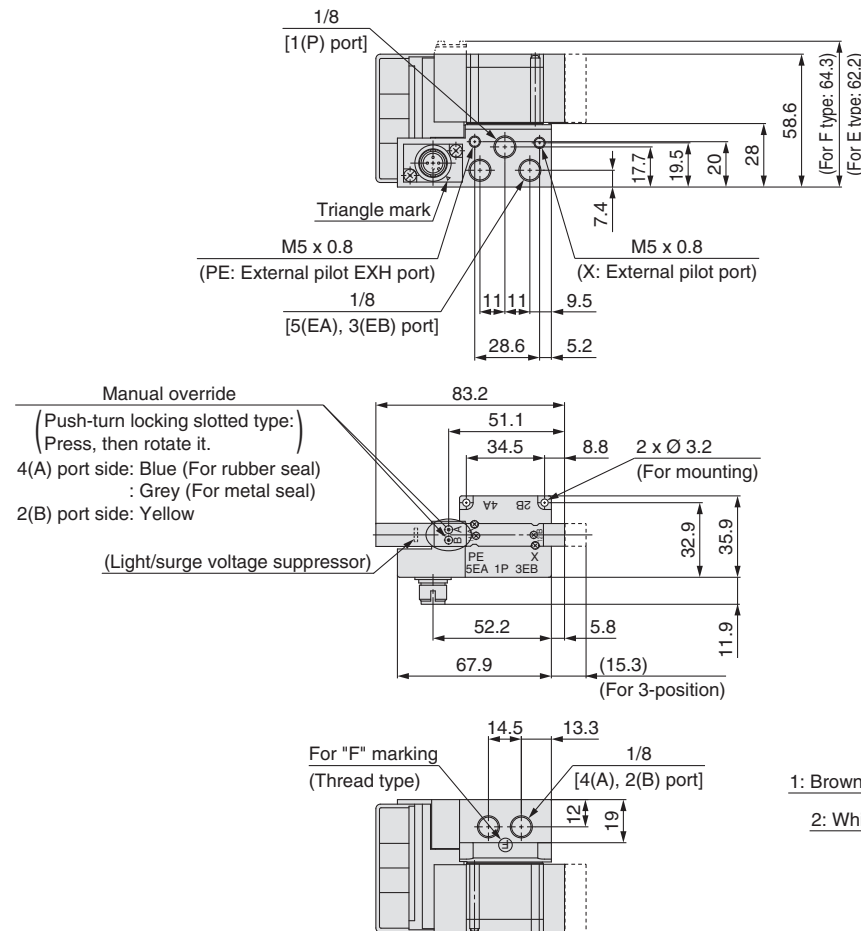
Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

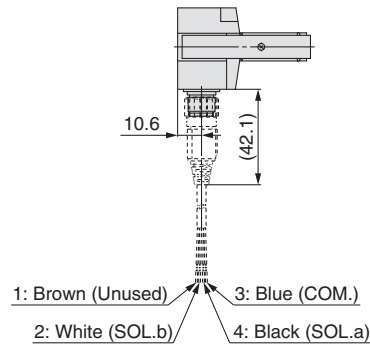
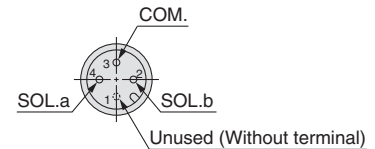
One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

**SY3□0□□□□-□□□1-W□-01□ (Side ported)**

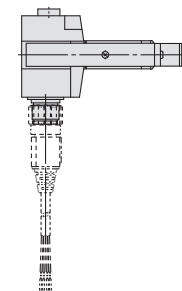
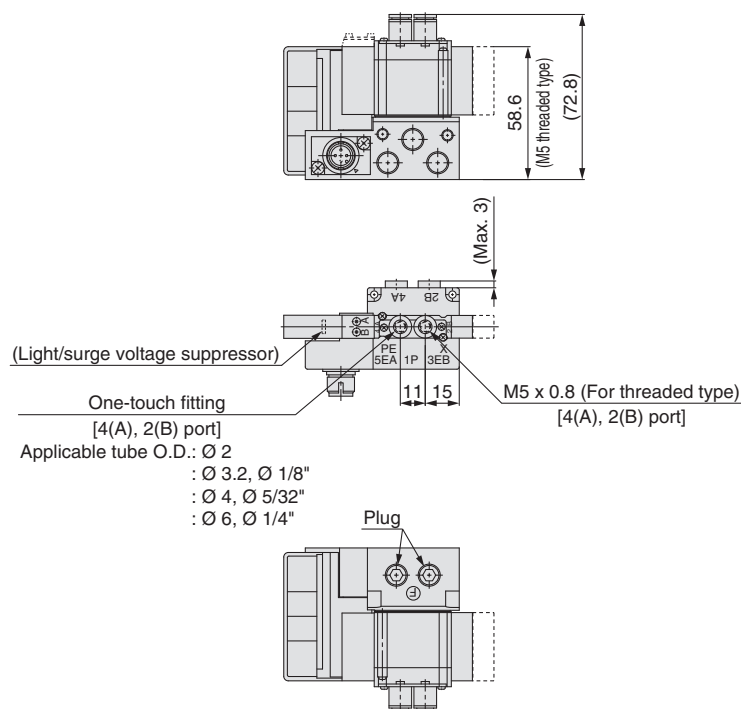


**Sub-plate side pin arrangement**  
(No numeric indication)



\*: These figures show the "SY3200-5Z1-WO-01F".

**SY3□3□□□□-□□□1-□□-W□-V01□ (Top ported)**



\*: These figures show the "SY3230-5Z1-C6-WO-V01F".

\*: 1(P), 5(EA), 3(EB), X and PE ports are side ported.



# Series SY3000/5000/7000

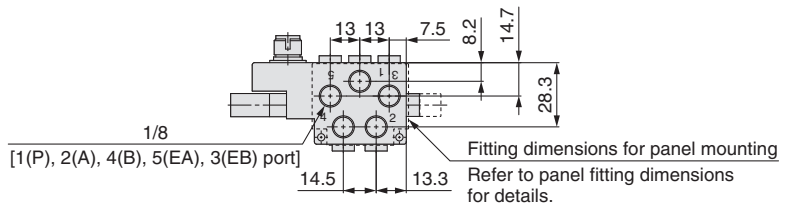
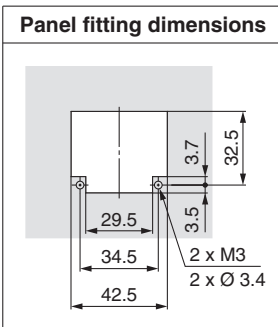
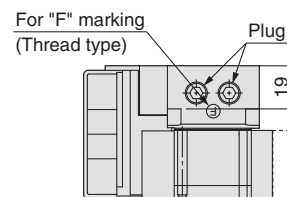
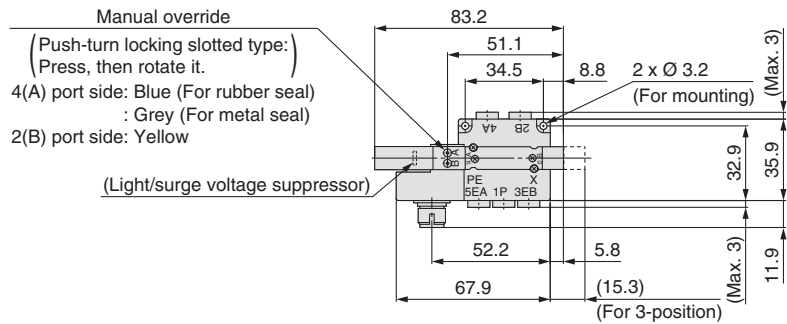
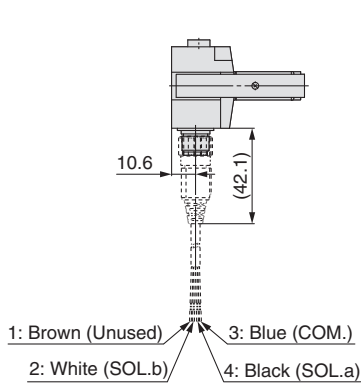
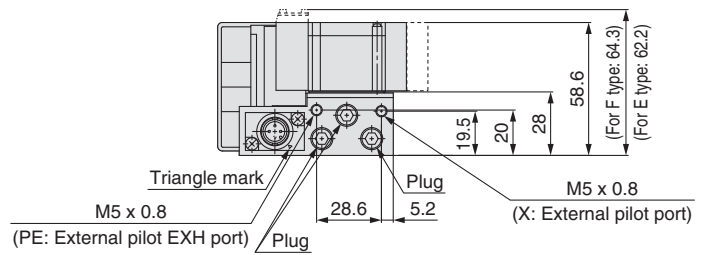
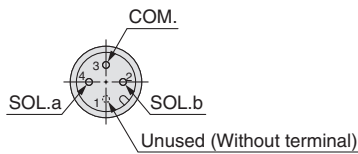
## Dimensions: Series SY3000

### Plug-in Single Unit/Sub-plate Bottom Ported

SY3000-1-W-B01 (Bottom ported)

#### Sub-plate side pin arrangement

(No numeric indication)



\*: These figures show the "SY3200-5Z1-WO-B01F".

## Dimensions: Series SY5000

**Plug-in  
Single Unit/Sub-plate**

**Side Ported  
Top Ported**

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

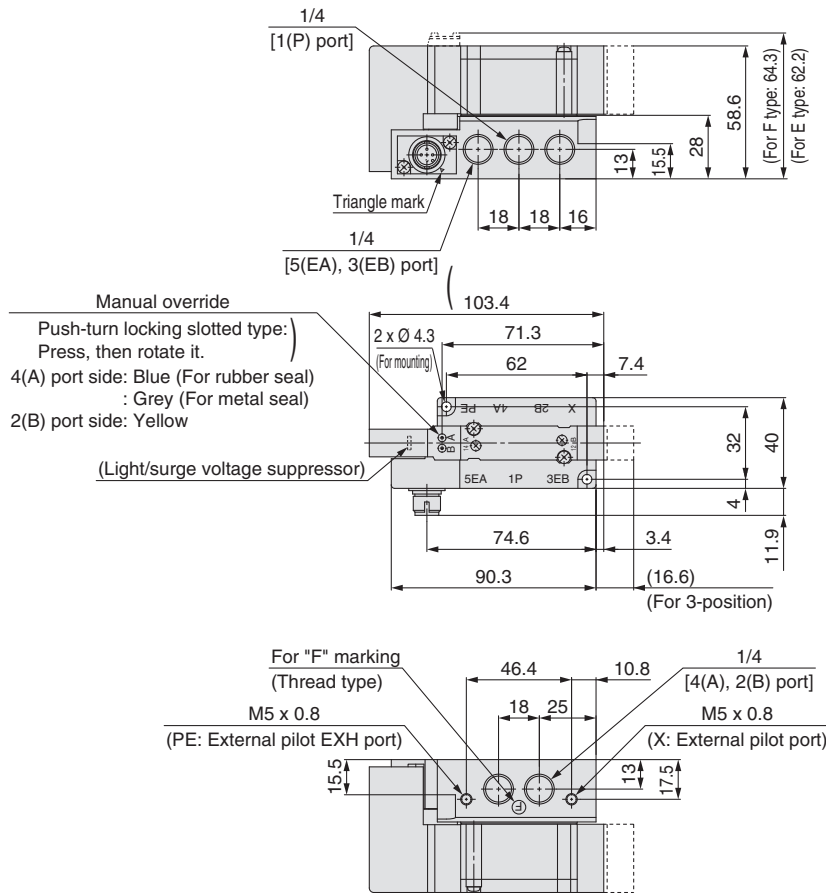
Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

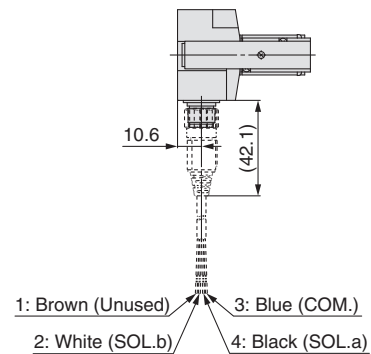
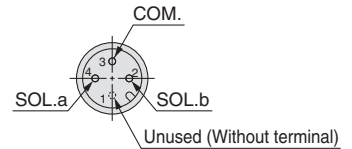
Manifold Options

SY5□0□□□□-□□□1-W□-02□ (Side ported)



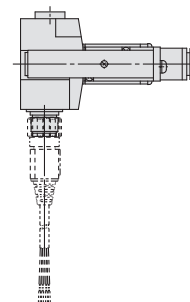
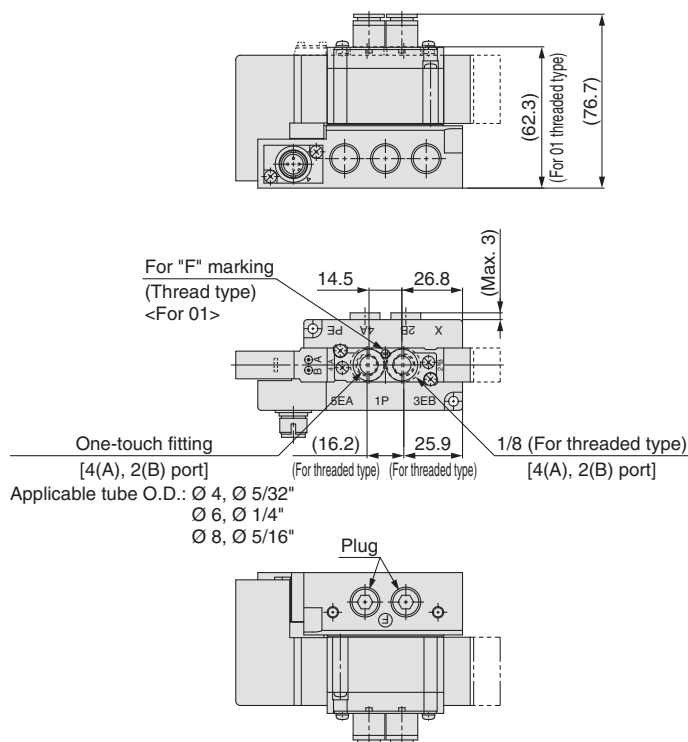
### Sub-plate side pin arrangement

(No numeric indication)



\*: These figures show the "SY5200-5Z1-WO-02F".

SY5□3□□□□-□□□1-□□-W□-V02□ (Top ported)



\*: These figures show the "SY5230-5Z1-C8-WO-V02F".

\*: 1(P), 5(EA), 3(EB), X and PE ports are side ported.

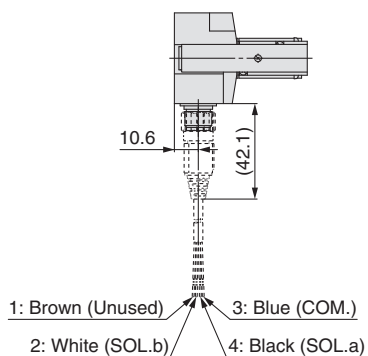
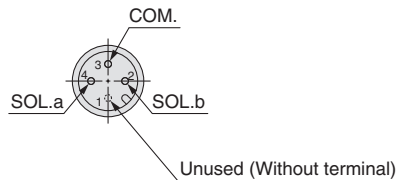
## Dimensions: Series SY5000

Plug-in  
Single Unit/Sub-plate

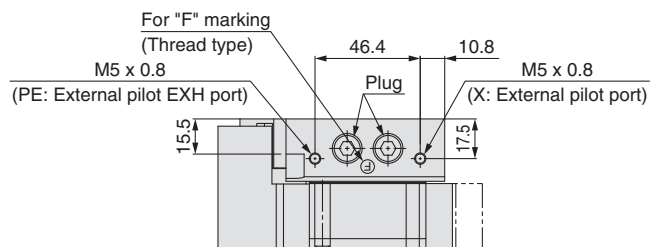
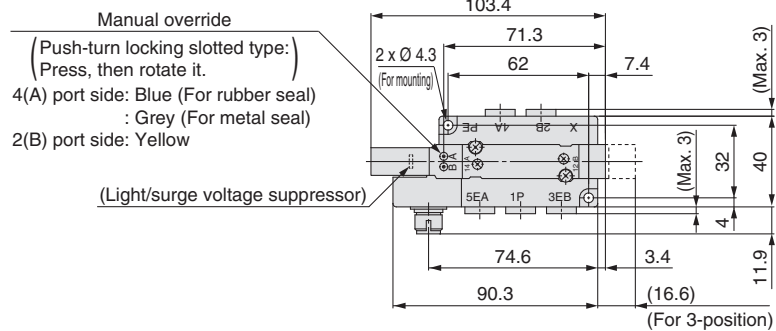
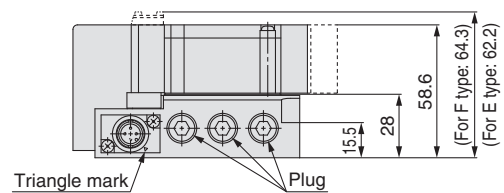
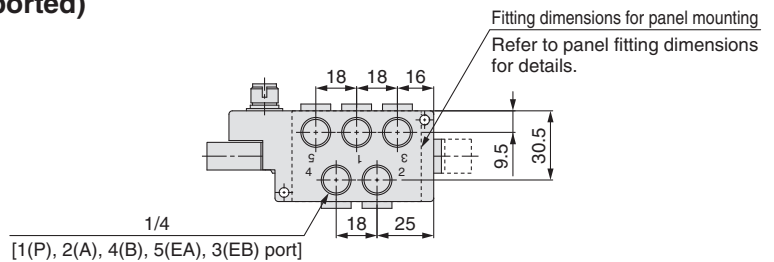
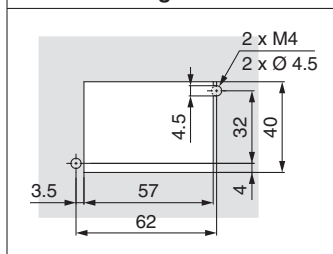
Bottom Ported

SY5□0□□□□-□□□1-W□-B02□ (Bottom ported)

### Sub-plate side pin arrangement (No numeric indication)



### Panel fitting dimensions



\*: These figures show the "SY5200-5Z1-WO-B02F".

**Dimensions: Series SY7000**

**Plug-in  
Single Unit/Sub-plate**

**Side Ported  
Top Ported**

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

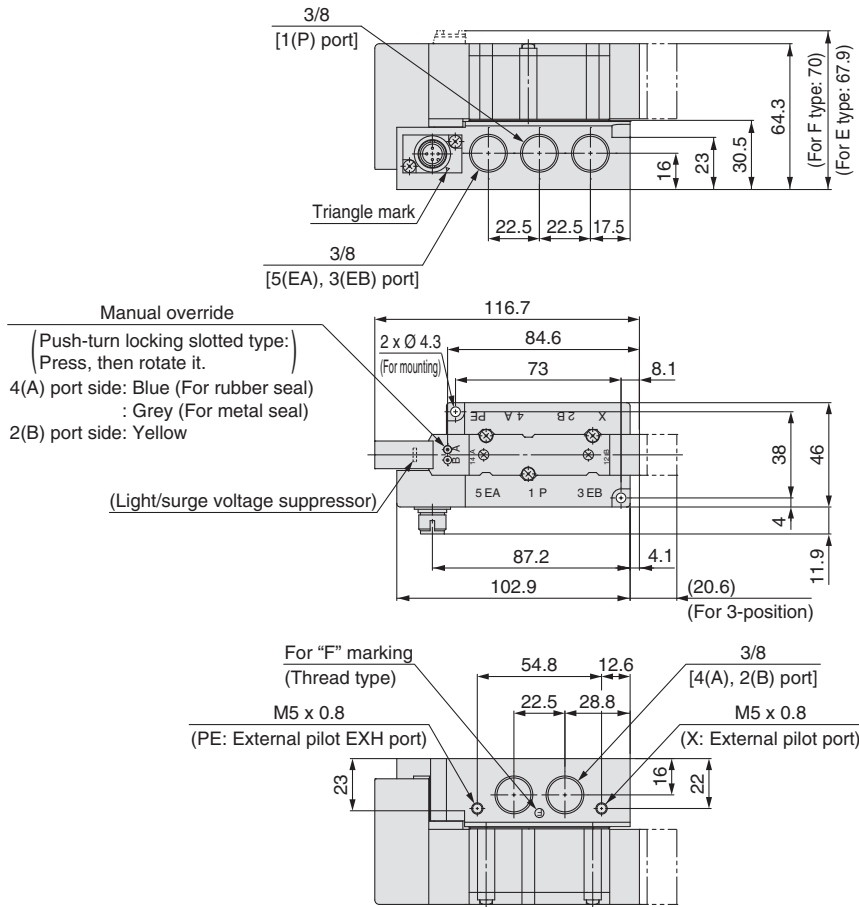
Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

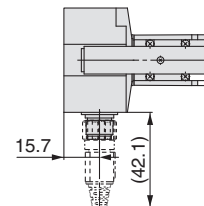
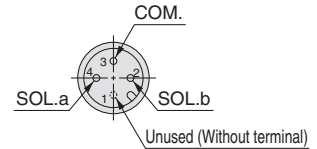
Manifold Options

**SY7□0□□□□-□□□1-W□-03□ (Side ported)**



**Sub-plate side pin arrangement**

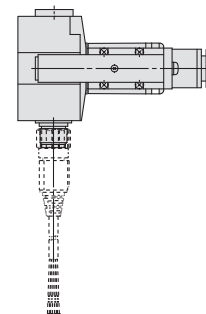
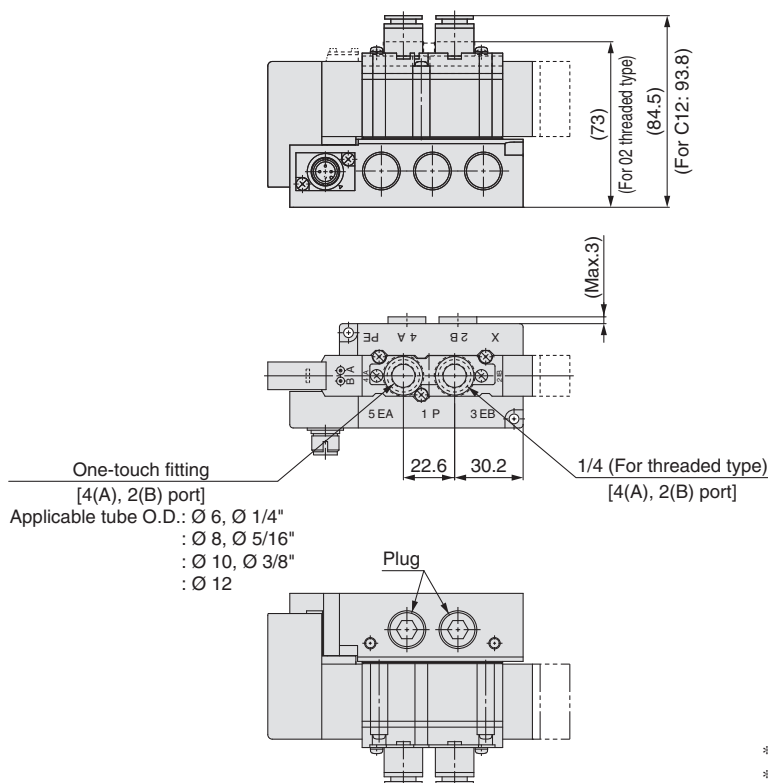
(No numeric indication)



- 1: Brown (Unused)
- 2: White (SOL.b)
- 3: Blue (COM.)
- 4: Black (SOL.a)

\*: These figures show the "SY7200-5Z1-WO-03F".

**SY7□3□□□□-□□□1-□□-W□-V03□ (Top ported)**



\*: These figures show the "SY7230-5Z1-C10-WO-V03F".  
\*: 1(P), 5(EA), 3(EB), X and PE ports are side ported.

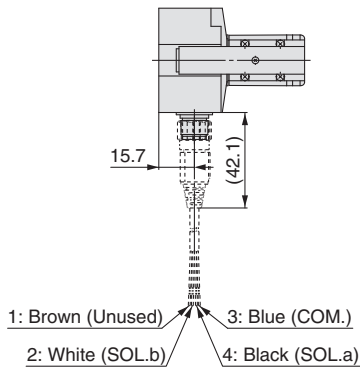
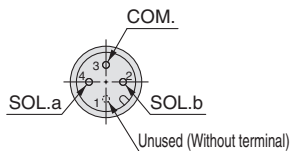
# Series SY3000/5000/7000

## Dimensions: Series SY7000

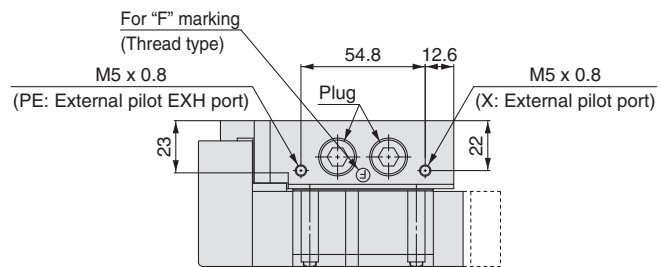
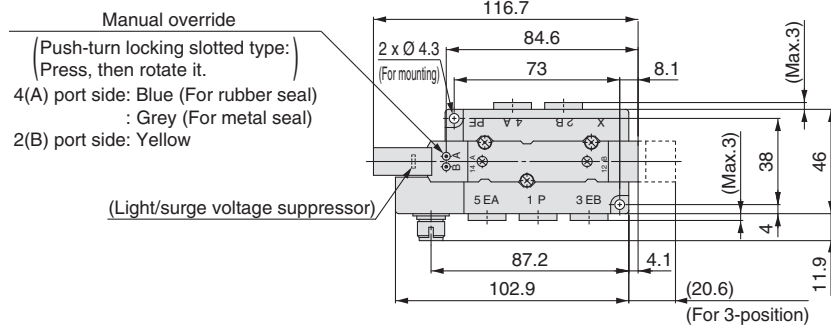
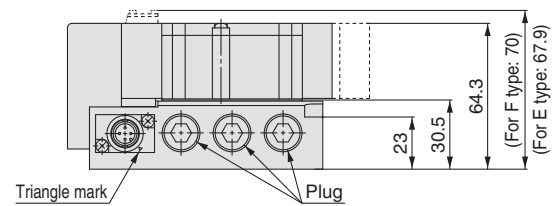
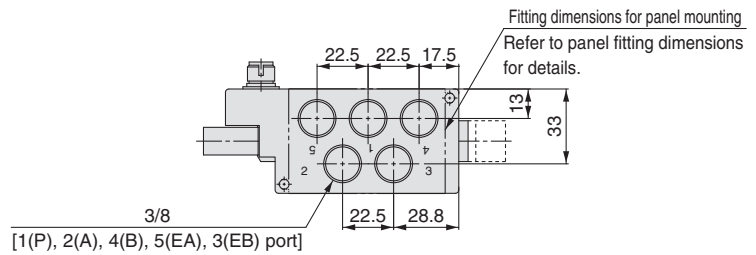
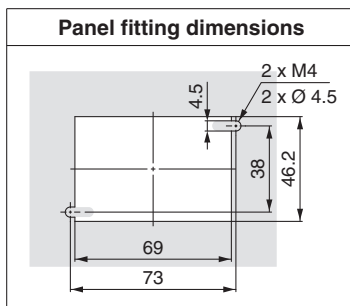
### Plug-in Single Unit/Sub-plate

### Bottom Ported

#### Sub-plate side pin arrangement (No numeric indication)



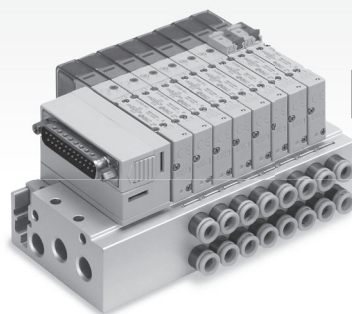
#### Panel fitting dimensions



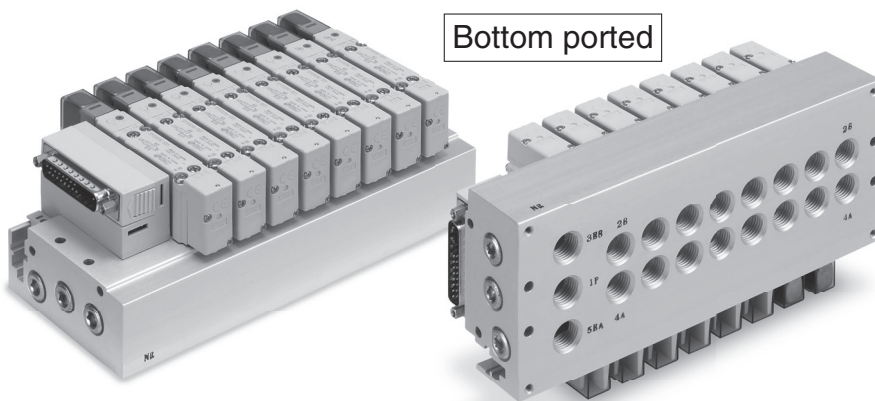
\*: These figures show the "SY7200-5Z1-WO-B03F".



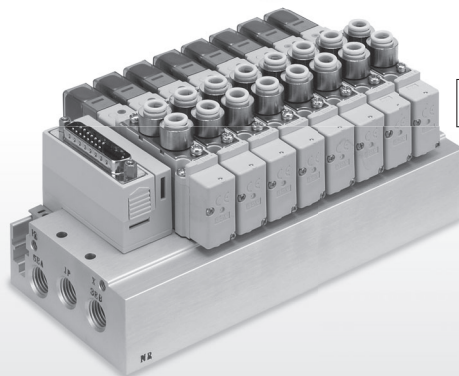
# Plug-in Metal Base



Side ported

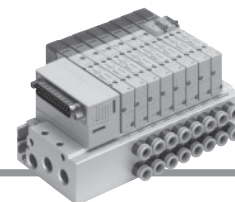


Bottom ported



Top ported

# Plug-in Metal Base



## Manifold Specifications

| Model                         |                   |        | D-sub connector                                                                                                                                                                                | Flat ribbon cable                                                              |                                              |                             | Serial wiring      |
|-------------------------------|-------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|----------------------------------------------|-----------------------------|--------------------|
|                               |                   |        | F type                                                                                                                                                                                         | P type                                                                         | PG type<br>J type                            | PH type                     | S5 type<br>(EX510) |
| Manifold type                 |                   |        | Plug-in metal base                                                                                                                                                                             |                                                                                |                                              |                             |                    |
| SUP/EXH port type             |                   |        | Common SUP/EXH                                                                                                                                                                                 |                                                                                |                                              |                             |                    |
| Valve stations                | All double wiring |        | 2 to 12 stations                                                                                                                                                                               |                                                                                | 2 to 9 stations<br>(J type: 2 to 8 stations) | 2 to 4 stations             | 2 to 8 stations    |
|                               | All single wiring |        |                                                                                                                                                                                                |                                                                                | 2 to 12 stations                             | 2 to 8 stations             | 2 to 12 stations   |
| Applicable connector          |                   |        | D-sub connector<br>Conforming to<br>MIL-C-24308<br>JIS-X-5101                                                                                                                                  | Flat ribbon cable connector<br>with strain relief<br>Conforming to MIL-C-83503 |                                              |                             | —                  |
|                               |                   |        |                                                                                                                                                                                                | Socket: 26 pins<br>MIL type                                                    | Socket: 20 pins<br>MIL type                  | Socket: 10 pins<br>MIL type |                    |
| Internal wiring               |                   |        | Positive common, Negative common                                                                                                                                                               |                                                                                |                                              |                             |                    |
| Port size                     | 1(P), 3/5(E) port | SY3000 | 1/8                                                                                                                                                                                            |                                                                                |                                              |                             |                    |
|                               |                   | SY5000 | 1/4                                                                                                                                                                                            |                                                                                |                                              |                             |                    |
|                               |                   | SY7000 | 3/8                                                                                                                                                                                            |                                                                                |                                              |                             |                    |
|                               | 4(A), 2(B) port   | SY3000 | M5 x 0.8, 1/8<br>Ø 2 One-touch fitting, Ø 3.2 One-touch fitting, Ø 4 One-touch fitting, Ø 6 One-touch fitting<br>Ø 1/8" One-touch fitting, Ø 5/32" One-touch fitting, Ø 1/4" One-touch fitting |                                                                                |                                              |                             |                    |
|                               |                   | SY5000 | 1/8, 1/4<br>Ø 4 One-touch fitting, Ø 6 One-touch fitting, Ø 8 One-touch fitting<br>Ø 5/32" One-touch fitting, Ø 1/4" One-touch fitting, Ø 5/16" One-touch fitting                              |                                                                                |                                              |                             |                    |
|                               |                   | SY7000 | 1/4<br>Ø 6 One-touch fitting, Ø 8 One-touch fitting, Ø 10 One-touch fitting, Ø 12 One-touch fitting<br>Ø 1/4" One-touch fitting, Ø 5/16" One-touch fitting, Ø 3/8" One-touch fitting           |                                                                                |                                              |                             |                    |
| Enclosure (Based on IEC60529) |                   |        | IP40                                                                                                                                                                                           |                                                                                |                                              |                             | IP20               |

## Manifold Flow-rate Characteristics <sup>\*1)</sup>/Manifold Weight

### Valve Seal Type: Rubber Seal

| Model                    | Port size              |                | Valve flow-rate characteristics |      |                                       |                                 |      |                                       | Weight: W [g] <sup>Note 2)</sup><br>(n: stations) |                  |
|--------------------------|------------------------|----------------|---------------------------------|------|---------------------------------------|---------------------------------|------|---------------------------------------|---------------------------------------------------|------------------|
|                          | 1, 5, 3<br>(P, EA, EB) | 4, 2<br>(A, B) | 1→4/2 (P→A/B)                   |      |                                       | 4/2→5/3 (A/B→E)                 |      |                                       | Fixed: C□                                         | Replaceable: KC□ |
|                          |                        |                | C<br>[dm <sup>3</sup> /(s·bar)] | b    | Q [L/min]<br>(ANR) <sup>Note 3)</sup> | C<br>[dm <sup>3</sup> /(s·bar)] | b    | Q [L/min]<br>(ANR) <sup>Note 3)</sup> |                                                   |                  |
| SS5Y3-50 (Side ported)   | 1/8                    | C6             | 1.1                             | 0.19 | 262                                   | 1.1                             | 0.15 | 256                                   | 39n + 247                                         | 43.5n + 247      |
| SS5Y3-51 (Bottom ported) | 1/8                    | C6             | 1.2                             | 0.31 | 307                                   | 1.2                             | 0.14 | 278                                   | 41.5n + 251                                       | 48.5n + 251      |
| SS5Y3-52 (Top ported)    | 1/8                    | C6             | 1.1                             | 0.29 | 278                                   | 1.2                             | 0.20 | 287                                   | 44n + 247                                         |                  |
| SS5Y5-50 (Side ported)   | 1/4                    | C8             | 2.6                             | 0.28 | 653                                   | 2.6                             | 0.14 | 603                                   | 93n + 379                                         | 110n + 379       |
| SS5Y5-51 (Bottom ported) | 1/4                    | C8             | 2.7                             | 0.35 | 709                                   | 2.8                             | 0.20 | 671                                   | 93n + 413                                         | 113n + 413       |
| SS5Y5-52 (Top ported)    | 1/4                    | C8             | 2.6                             | 0.26 | 645                                   | 3.1                             | 0.13 | 715                                   | 103n + 379                                        |                  |
| SS5Y7-50 (Side ported)   | 3/8                    | C10            | 3.8                             | 0.27 | 948                                   | 4.0                             | 0.20 | 958                                   | 144n + 510                                        | 158n + 510       |
| SS5Y7-51 (Bottom ported) | 3/8                    | C10            | 4.1                             | 0.34 | 1070                                  | 4.8                             | 0.20 | 1150                                  | 150n + 549                                        | 172n + 549       |
| SS5Y7-52 (Top ported)    | 3/8                    | C10            | 4.5                             | 0.27 | 1123                                  | 4.9                             | 0.24 | 1201                                  | 164n + 510                                        |                  |

### Valve Seal Type: Metal Seal

| Model                    | Port size              |                | Valve flow-rate characteristics |      |                                       |                                 |      |                                       | Weight: W [g] <sup>Note 2)</sup><br>(n: stations) |                  |
|--------------------------|------------------------|----------------|---------------------------------|------|---------------------------------------|---------------------------------|------|---------------------------------------|---------------------------------------------------|------------------|
|                          | 1, 5, 3<br>(P, EA, EB) | 4, 2<br>(A, B) | 1→4/2 (P→A/B)                   |      |                                       | 4/2→5/3 (A/B→E)                 |      |                                       | Fixed: C□                                         | Replaceable: KC□ |
|                          |                        |                | C<br>[dm <sup>3</sup> /(s·bar)] | b    | Q [L/min]<br>(ANR) <sup>Note 3)</sup> | C<br>[dm <sup>3</sup> /(s·bar)] | b    | Q [L/min]<br>(ANR) <sup>Note 3)</sup> |                                                   |                  |
| SS5Y3-50 (Side ported)   | 1/8                    | C6             | 0.9                             | 0.14 | 209                                   | 1.0                             | 0.12 | 229                                   | 39n + 247                                         | 43.5n + 247      |
| SS5Y3-51 (Bottom ported) | 1/8                    | C6             | 1.0                             | 0.21 | 241                                   | 1.1                             | 0.10 | 250                                   | 41.5n + 251                                       | 48.5n + 251      |
| SS5Y3-52 (Top ported)    | 1/8                    | C6             | 1.1                             | 0.15 | 256                                   | 1.1                             | 0.14 | 255                                   | 44n + 247                                         |                  |
| SS5Y5-50 (Side ported)   | 1/4                    | C8             | 2.2                             | 0.20 | 527                                   | 2.3                             | 0.13 | 530                                   | 93n + 379                                         | 110n + 379       |
| SS5Y5-51 (Bottom ported) | 1/4                    | C8             | 2.4                             | 0.26 | 595                                   | 2.5                             | 0.16 | 586                                   | 93n + 413                                         | 113n + 413       |
| SS5Y5-52 (Top ported)    | 1/4                    | C8             | 2.4                             | 0.18 | 568                                   | 2.6                             | 0.12 | 596                                   | 103n + 379                                        |                  |
| SS5Y7-50 (Side ported)   | 3/8                    | C10            | 3.2                             | 0.23 | 780                                   | 3.5                             | 0.18 | 829                                   | 144n + 510                                        | 158n + 510       |
| SS5Y7-51 (Bottom ported) | 3/8                    | C10            | 3.5                             | 0.25 | 863                                   | 4.0                             | 0.16 | 937                                   | 150n + 549                                        | 172n + 549       |
| SS5Y7-52 (Top ported)    | 3/8                    | C10            | 3.5                             | 0.21 | 843                                   | 3.8                             | 0.18 | 900                                   | 164n + 510                                        |                  |

\* Calculation of effective area S and sonic conductance C:  $S = 5.0 \times C$

\* 1) The value is for manifold base with 5 stations and individually operated 2-position type.

\* 2) 'Weight: W' is the value for the D-sub connector manifold.

To obtain the weight with valves attached, add the valve weights given on page 15 for the appropriate number of stations.

\* 3) These values have been calculated according to ISO6358 and indicate the flow rate under standard conditions with an inlet pressure of 0.6 MPa (relative pressure) and a pressure drop of 0.1 MPa.

Type 50  
Side Ported

Type 51  
Bottom Ported

## Plug-in Metal Base

D-sub Connector

Flat Ribbon Cable

PC Wiring

# Series SY3000/5000/7000



### How to Order Manifold

SS5Y **3** - **50** **F** **1** - **05** **D** - **C6**

1 2 3 4 5 6 7 8 9 10

#### 1 Series

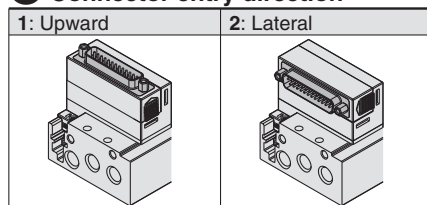
|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |
| 7 | SY7000 |

#### 2 Type

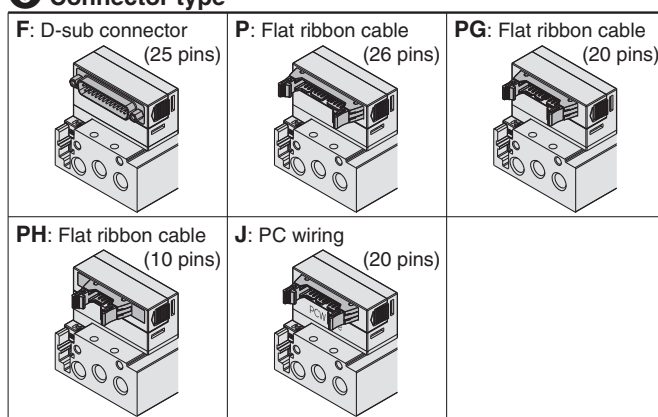
|     |                             |
|-----|-----------------------------|
| 50  | Side ported                 |
| 51  | Bottom ported               |
| 50R | Side ported, External pilot |

\*: External pilot is not available for the bottom ported type.

#### 4 Connector entry direction



#### 3 Connector type



#### 5 Wiring type

|   |                     |
|---|---------------------|
| — | All double wiring*1 |
| S | All single wiring*2 |

\*1: All double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

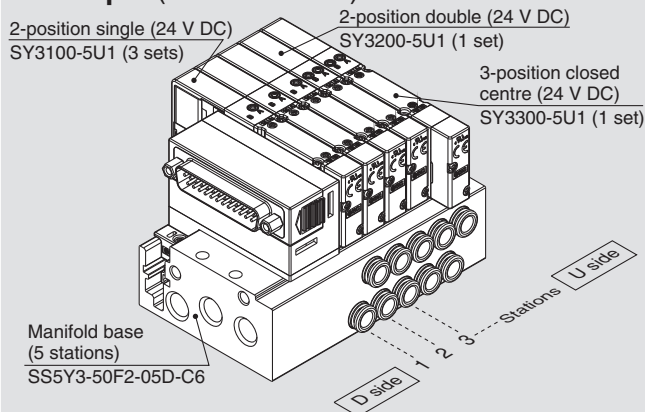
\*2: All single wiring: Available only for the manifold which has 2-position single for all stations.

Note that 2-position double, 3- or 4-position valves cannot be used.

\*: If a mix of single and double wiring is required, it is supplied as a special order.

### How to Order Manifold Assembly

#### Example (SS5Y3-50F2-□)



SS5Y3-50F2-05D-C6 ... 1 set (Type 50 5-station manifold base part no.)  
 \*SY3100-5U1 ..... 3 sets (2-position single part no.)  
 \*SY3200-5U1 ..... 1 set (2-position double part no.)  
 \*SY3300-5U1 ..... 1 set (3-position closed centre part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

#### 6 Valve stations

| F: D-sub connector (25 pins)    |             |               | P: Flat ribbon cable (26 pins) |             |               | PG: Flat ribbon cable (20 pins) |             |               |
|---------------------------------|-------------|---------------|--------------------------------|-------------|---------------|---------------------------------|-------------|---------------|
| Symbol                          | Stations    | Note          | Symbol                         | Stations    | Note          | Symbol                          | Stations    | Note          |
| 02                              | 2 stations  | All           | 02                             | 2 stations  | All           | 02                              | 2 stations  | All           |
| ⋮                               | ⋮           | double wiring | ⋮                              | ⋮           | double wiring | ⋮                               | ⋮           | double wiring |
| 12                              | 12 stations |               | 12                             | 12 stations |               | 09                              | 9 stations  |               |
| 02                              | 2 stations  | All           | 02                             | 2 stations  | All           | 02                              | 2 stations  | All           |
| ⋮                               | ⋮           | single wiring | ⋮                              | ⋮           | single wiring | ⋮                               | ⋮           | single wiring |
| 12                              | 12 stations |               | 12                             | 12 stations |               | 12                              | 12 stations |               |
| PH: Flat ribbon cable (10 pins) |             |               | J: PC wiring (20 pins)         |             |               |                                 |             |               |
| Symbol                          | Stations    | Note          | Symbol                         | Stations    | Note          |                                 |             |               |
| 02                              | 2 stations  | All           | 02                             | 2 stations  | All           |                                 |             |               |
| ⋮                               | ⋮           | double wiring | ⋮                              | ⋮           | double wiring |                                 |             |               |
| 04                              | 4 stations  |               | 08                             | 8 stations  |               |                                 |             |               |
| 02                              | 2 stations  | All           | 02                             | 2 stations  | All           |                                 |             |               |
| ⋮                               | ⋮           | single wiring | ⋮                              | ⋮           | single wiring |                                 |             |               |
| 08                              | 8 stations  |               | 12                             | 12 stations |               |                                 |             |               |

\*: This also includes the number of blanking plate assembly.

\*: When mixing top ported configurations, select from page 66.

In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

## 7 P, E port entry

|          |            |
|----------|------------|
| <b>U</b> | U side*1   |
| <b>D</b> | D side*1*2 |
| <b>B</b> | Both sides |

\*1: Plugs are mounted on the opposite side of the selected ports.

\*2: Only D side is available for Type 51 (Bottom ported).

## 9 Thread type

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

## 10 Mounting

|            |                                      |
|------------|--------------------------------------|
| <b>—</b>   | Direct mounting                      |
| <b>D</b>   | DIN rail mounting (With DIN rail)    |
| <b>D0</b>  | DIN rail mounting (Without DIN rail) |
| <b>D3</b>  | For 3 stations                       |
| <b>⋮</b>   | ⋮                                    |
| <b>D12</b> | For 12 stations                      |

\*: Only direct mounting is available for Type 51 (Bottom ported).

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

## 8 A, B port size

### Thread piping

| Symbol    | A, B port | SY3000 | SY5000 | SY7000 |
|-----------|-----------|--------|--------|--------|
| <b>M5</b> | M5 x 0.8  | ●      | —      | —      |
| <b>01</b> | 1/8       | ●      | ●      | —      |
| <b>02</b> | 1/4       | —      | ●      | ●      |

### One-touch fitting (Metric)

| Symbol                         | A, B port   | SY3000 | SY5000 | SY7000 |
|--------------------------------|-------------|--------|--------|--------|
| <b>Fixed</b>                   | <b>C2</b>   | ●      | —      | —      |
|                                | <b>C3</b>   | ●      | —      | —      |
|                                | <b>C4</b>   | ●      | ●      | —      |
|                                | <b>C6</b>   | ●      | ●      | —      |
|                                | <b>C8</b>   | —      | ●      | ●      |
|                                | <b>C10</b>  | —      | —      | ●      |
| <b>Replaceable</b>             | <b>KC2</b>  | ●      | —      | —      |
|                                | <b>KC3</b>  | ●      | —      | —      |
|                                | <b>KC4</b>  | ●      | ●      | —      |
|                                | <b>KC6</b>  | ●      | ●      | ●      |
|                                | <b>KC8</b>  | —      | ●      | ●      |
|                                | <b>KC10</b> | —      | —      | ●      |
|                                | <b>KC12</b> | —      | —      | ●      |
|                                | <b>M*1</b>  | ●      | ●      | ●      |
| P, E port size (Thread piping) |             | 1/8    | 1/4    | 3/8    |

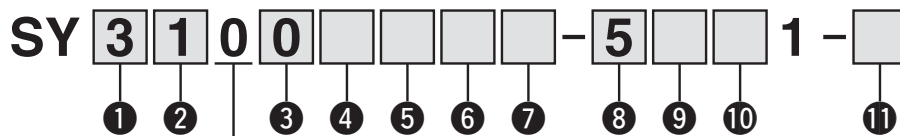
### One-touch fitting (Inch)

| Symbol                         | A, B port   | SY3000 | SY5000 | SY7000 |
|--------------------------------|-------------|--------|--------|--------|
| <b>Fixed</b>                   | <b>N1</b>   | ●      | —      | —      |
|                                | <b>N3</b>   | ●      | ●      | —      |
|                                | <b>N7</b>   | ●      | ●      | —      |
|                                | <b>N9</b>   | —      | ●      | ●      |
|                                | <b>N11</b>  | —      | —      | ●      |
| <b>Replaceable</b>             | <b>KN1</b>  | ●      | —      | —      |
|                                | <b>KN3</b>  | ●      | ●      | —      |
|                                | <b>KN7</b>  | ●      | ●      | ●      |
|                                | <b>KN9</b>  | —      | ●      | ●      |
|                                | <b>KN11</b> | —      | —      | ●      |
|                                | <b>M*1</b>  | ●      | ●      | ●      |
| P, E port size (Thread piping) |             | 1/8    | 1/4    | 3/8    |

\*1: When ports are mixed sizes, indicate the piping specifications on the manifold specification sheet.

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



• Base mounted

### 1 Series

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

### 2 Type of actuation

|     |             |                 |
|-----|-------------|-----------------|
| 1   | 2-position  | Single          |
| 2   |             | Double          |
| 3   | 3-position  | Closed centre   |
| 4   |             | Exhaust centre  |
| 5   |             | Pressure centre |
| A*1 | 4-position  | N.C./N.C.       |
| B*1 | dual 3-port | N.O./N.O.       |
| C*1 |             | N.C./N.O.       |

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 5 Back pressure check valve (Built-in valve type)

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type

\*: Back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

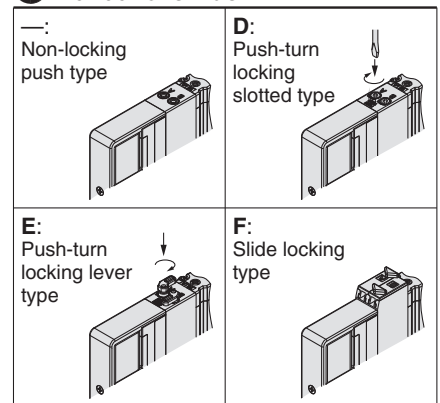
|   |         |
|---|---------|
| 5 | 24 V DC |
| 6 | 12 V DC |

### 9 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| —      | —          | —                        | Non-polar            |
| R      | —          | ●                        |                      |
| U      | ●          |                          |                      |
| S      | —          |                          |                      |
| Z      | ●          |                          | Positive common      |
| NS     | —          |                          | Negative common      |
| NZ     | ●          |                          |                      |

\*: Only "Z" and "NZ" types are available for with the power saving circuit.

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 89 for part numbers of the base gasket and mounting screw.

\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.



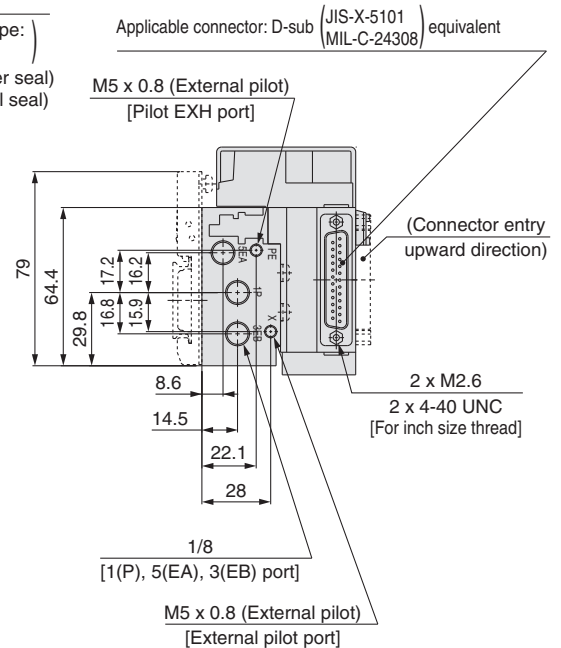
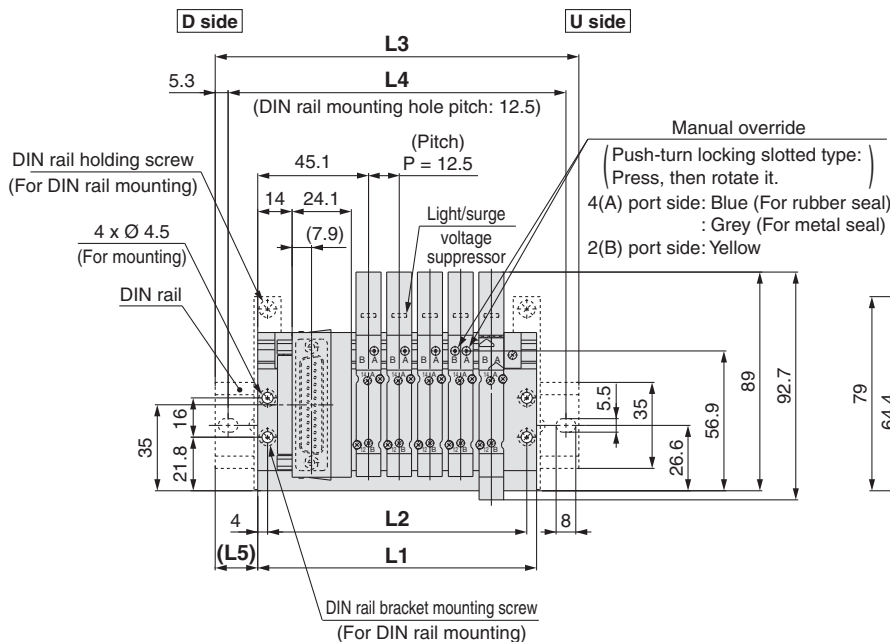
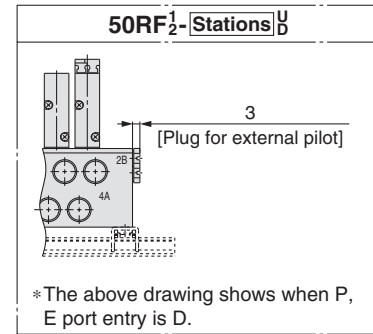
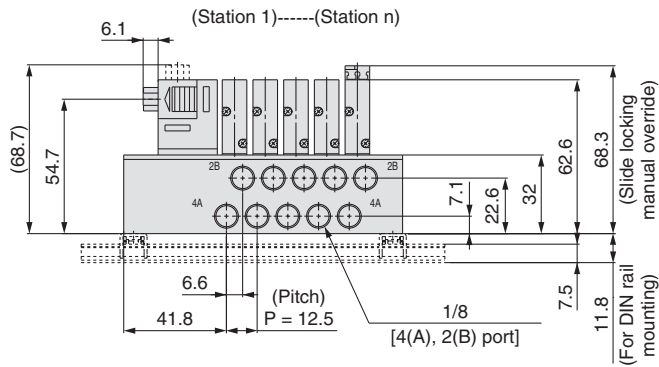


# Series SY3000/5000/7000

## Dimensions: Series SY3000

SS5Y3-50(R)F<sub>2</sub><sup>1</sup>-Stations<sub>D</sub><sup>U</sup>-01□(D)

|                       |                     |
|-----------------------|---------------------|
| Plug-in<br>Metal Base | Type 50/Side Ported |
|                       | D-sub Connector     |



\*: These figures show the "SS5Y3-50F2-05B-01".

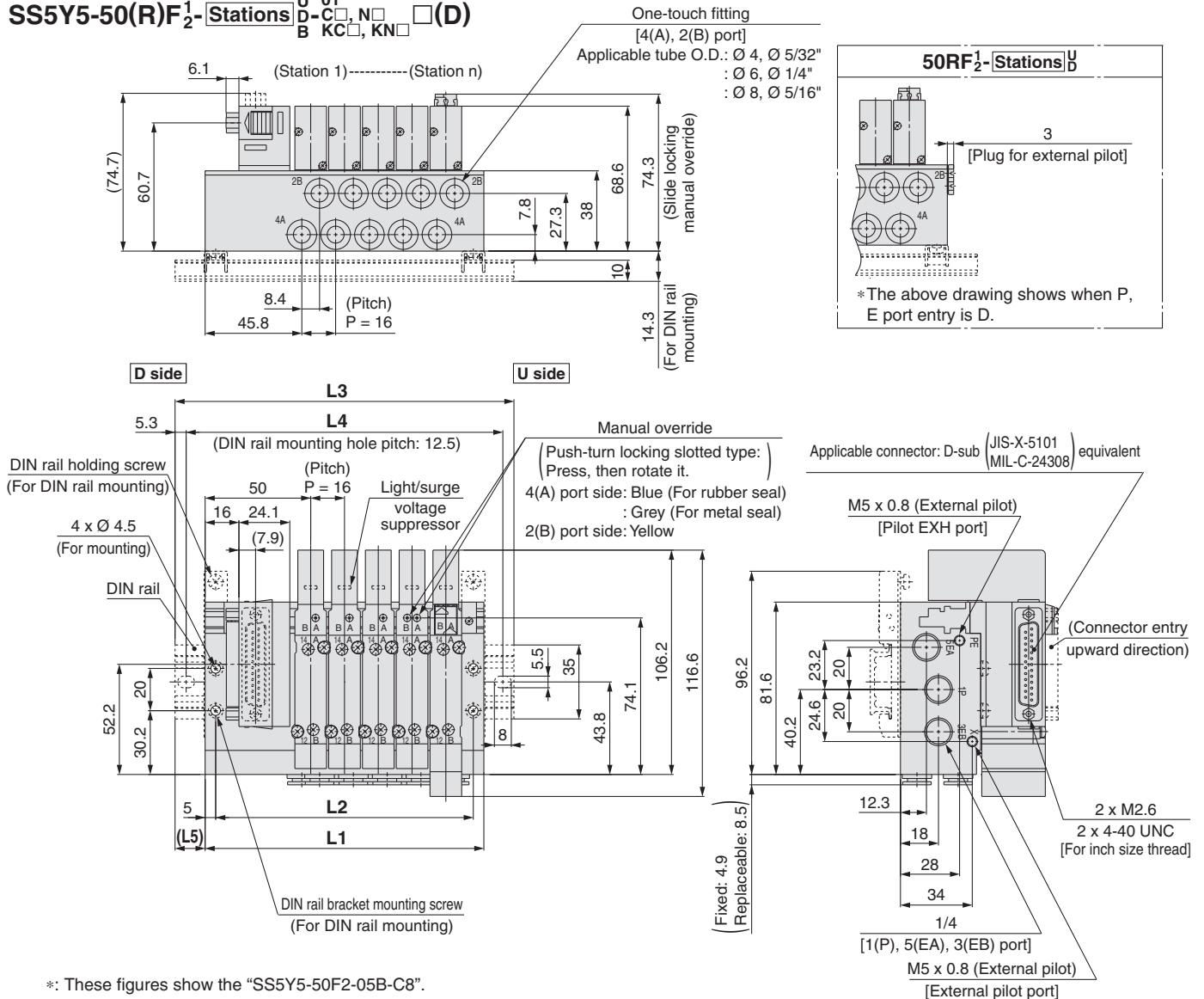
| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 76    | 88.5  | 101   | 113.5 | 126   | 138.5 | 151   | 163.5 | 176   | 188.5 | 201   |
| L2          | 68    | 80.5  | 93    | 105.5 | 118   | 130.5 | 143   | 155.5 | 168   | 180.5 | 193   |
| L3          | 110.5 | 123   | 135.5 | 148   | 160.5 | 173   | 185.5 | 198   | 210.5 | 223   | 235.5 |
| L4          | 100   | 112.5 | 125   | 137.5 | 150   | 162.5 | 175   | 187.5 | 200   | 212.5 | 225   |
| L5          | 17.5  | 17.5  | 17.5  | 17.5  | 17.5  | 17.5  | 17.5  | 17.5  | 17.5  | 17.5  | 17.5  |

## Dimensions: Series SY5000

Plug-in  
Metal Base

Type 50/Side Ported  
D-sub Connector

SS5Y5-50(R)F<sub>2</sub>- Stations  $\begin{matrix} \text{U} & \text{01} \\ \text{D} & \text{C} \square, \text{N} \square \\ \text{B} & \text{KC} \square, \text{KN} \square \end{matrix}$  (D)



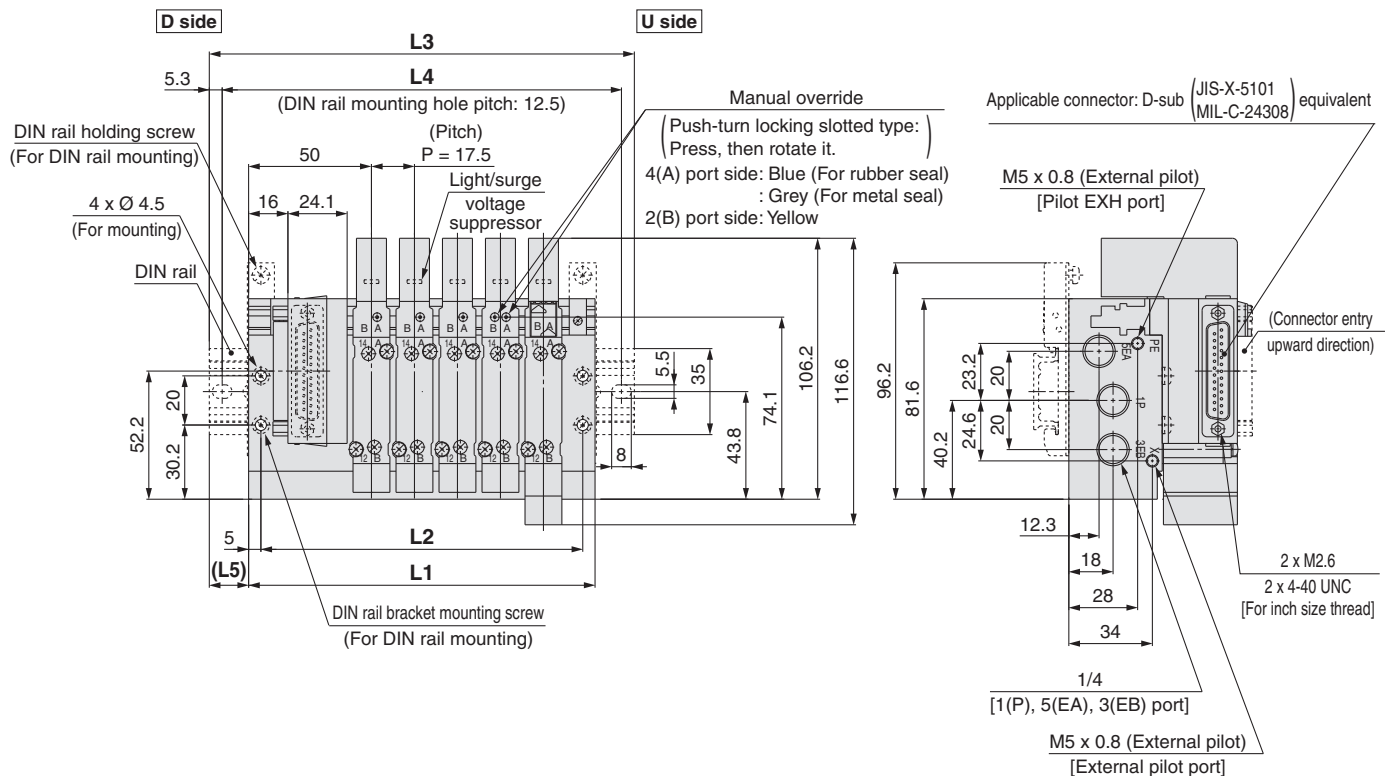
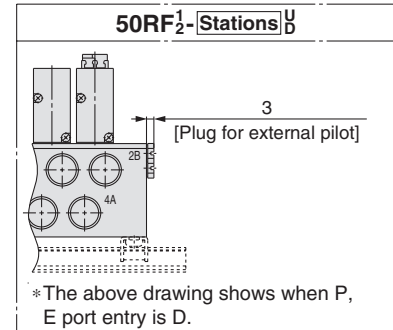
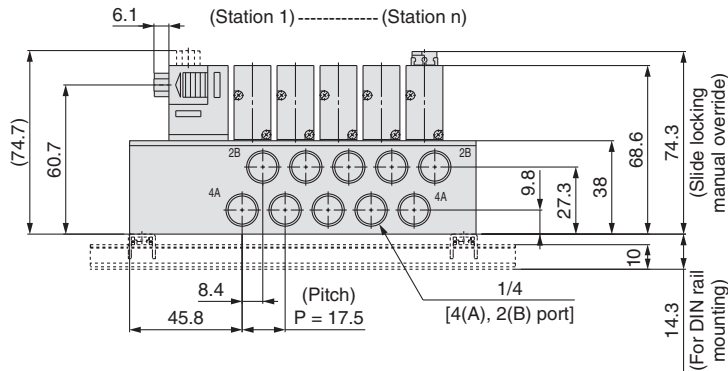
| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 84    | 100   | 116   | 132   | 148   | 164   | 180   | 196   | 212   | 228   | 244   |
| L2          | 74    | 90    | 106   | 122   | 138   | 154   | 170   | 186   | 202   | 218   | 234   |
| L3          | 110.5 | 135.5 | 148   | 160.5 | 173   | 198   | 210.5 | 223   | 248   | 260.5 | 273   |
| L4          | 100   | 125   | 137.5 | 150   | 162.5 | 187.5 | 200   | 212.5 | 237.5 | 250   | 262.5 |
| L5          | 13.5  | 18    | 16    | 14.5  | 12.5  | 17    | 15.5  | 13.5  | 18    | 16.5  | 14.5  |

# Series SY3000/5000/7000

## Dimensions: Series SY5000

SS5Y5-50(R)F<sub>2</sub><sup>1</sup>-Stations<sub>D</sub><sup>U</sup>-02□(D)

**Plug-in  
Metal Base** **Type 50/Side Ported**  
**D-sub Connector**

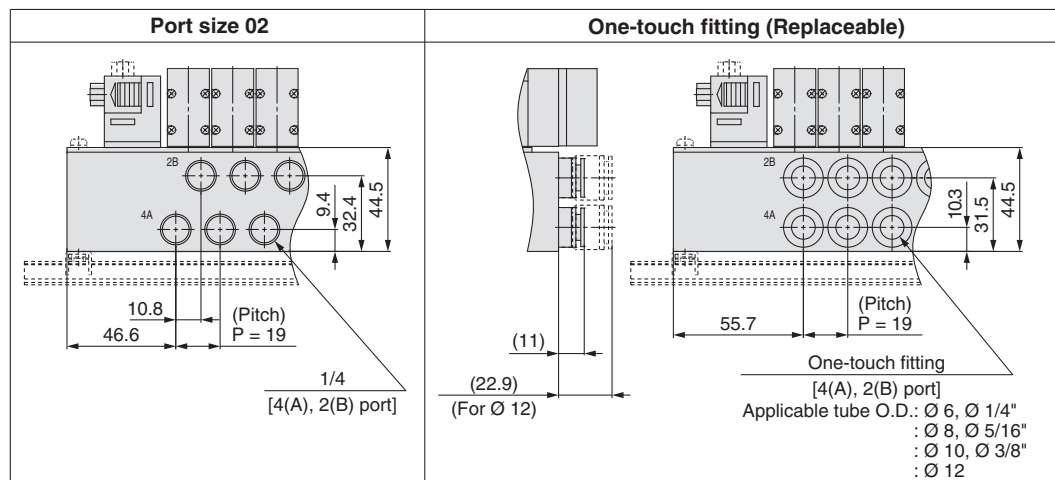
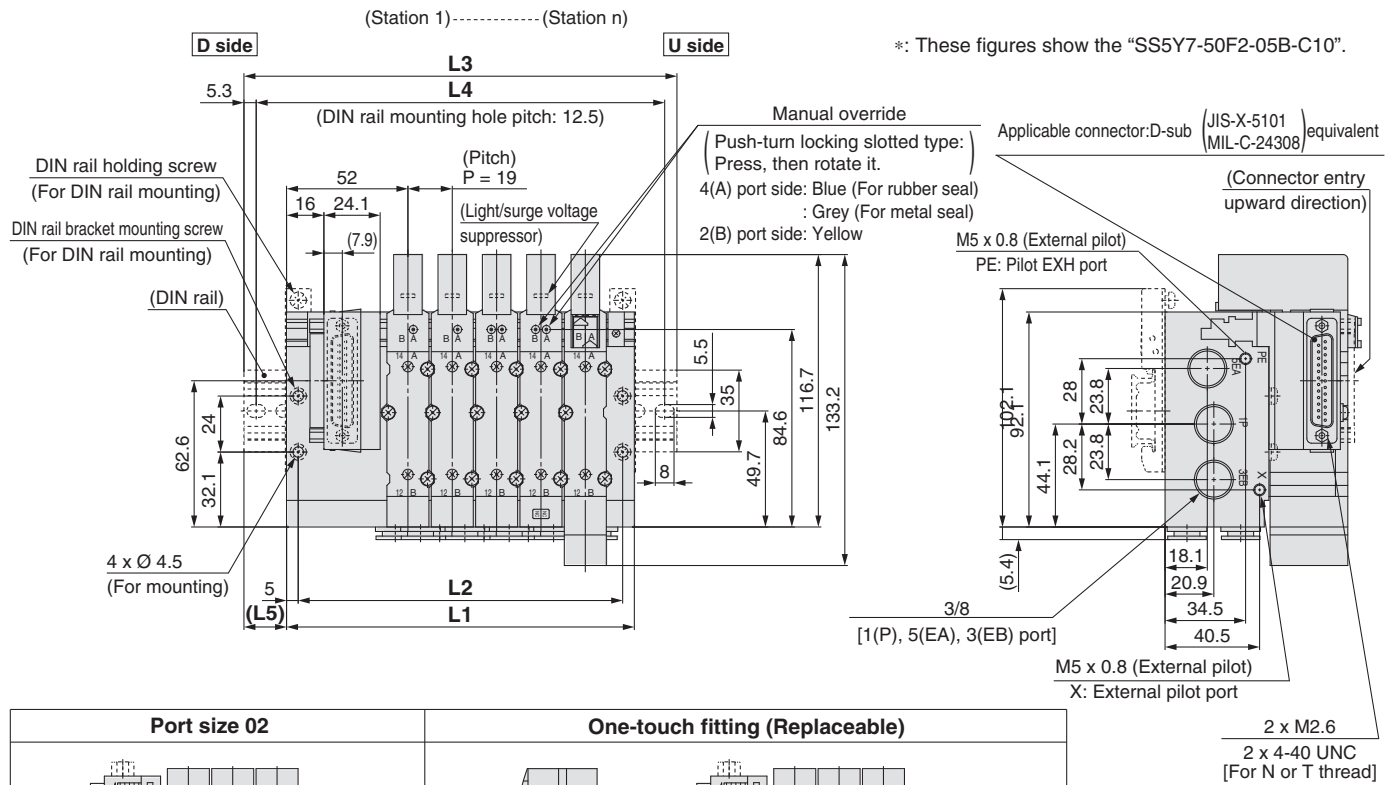
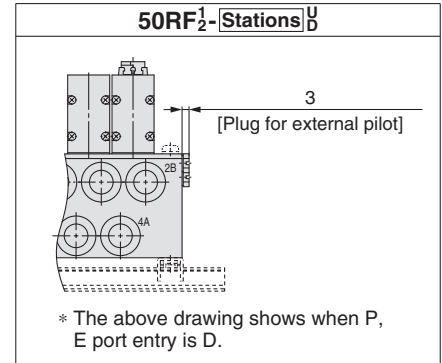
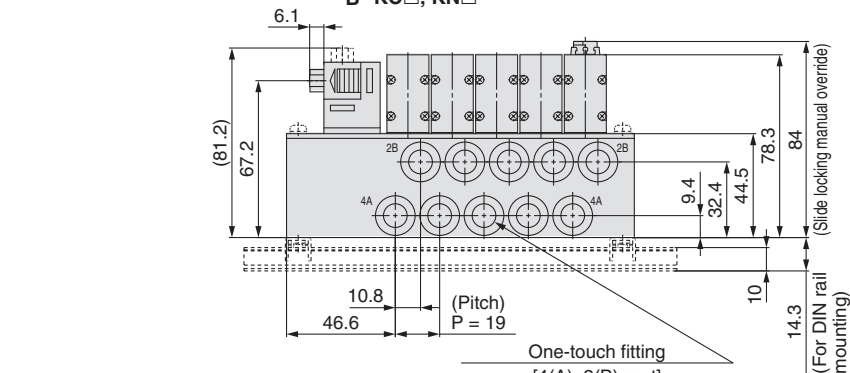


\*: These figures show the "SS5Y5-50F2-05B-02".

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 88.5  | 106   | 123.5 | 141   | 158.5 | 176   | 193.5 | 211   | 228.5 | 246   | 263.5 |
| L2          | 78.5  | 96    | 113.5 | 131   | 148.5 | 166   | 183.5 | 201   | 218.5 | 236   | 253.5 |
| L3          | 123   | 135.5 | 148   | 173   | 185.5 | 210.5 | 223   | 235.5 | 260.5 | 273   | 298   |
| L4          | 112.5 | 125   | 137.5 | 162.5 | 175   | 200   | 212.5 | 225   | 250   | 262.5 | 287.5 |
| L5          | 17.5  | 15    | 12.5  | 16    | 13.5  | 17.5  | 15    | 12.5  | 16    | 13.5  | 17.5  |

# Dimensions: Series SY7000

SS5Y7-50(R)F<sub>2</sub>- Stations  $\begin{matrix} \text{U} \\ \text{D} \end{matrix} \begin{matrix} \text{C} \\ \text{B} \end{matrix} \begin{matrix} \square \\ \square \end{matrix} \begin{matrix} \text{N} \\ \text{K} \end{matrix} \begin{matrix} \square \\ \square \end{matrix} \begin{matrix} \text{D} \\ \text{C} \end{matrix} \begin{matrix} \square \\ \square \end{matrix} \begin{matrix} \text{N} \\ \text{K} \end{matrix} \begin{matrix} \square \\ \square \end{matrix} \begin{matrix} \text{D} \\ \text{C} \end{matrix}$



| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 92    | 111   | 130   | 149   | 168   | 187   | 206   | 225   | 244   | 263   | 282   |
| L2          | 82    | 101   | 120   | 139   | 158   | 177   | 196   | 215   | 234   | 253   | 272   |
| L3          | 123   | 148   | 160.5 | 185.5 | 198   | 223   | 235.5 | 260.5 | 273   | 298   | 310.5 |
| L4          | 112.5 | 137.5 | 150   | 175   | 187.5 | 212.5 | 225   | 250   | 262.5 | 287.5 | 300   |
| L5          | 15.5  | 18.5  | 15.5  | 18.5  | 15    | 18    | 15    | 18    | 14.5  | 17.5  | 14.5  |

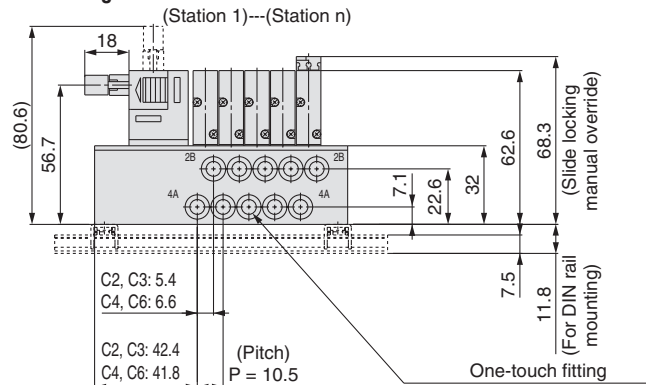
# Series SY3000/5000/7000

## Dimensions: Series SY3000

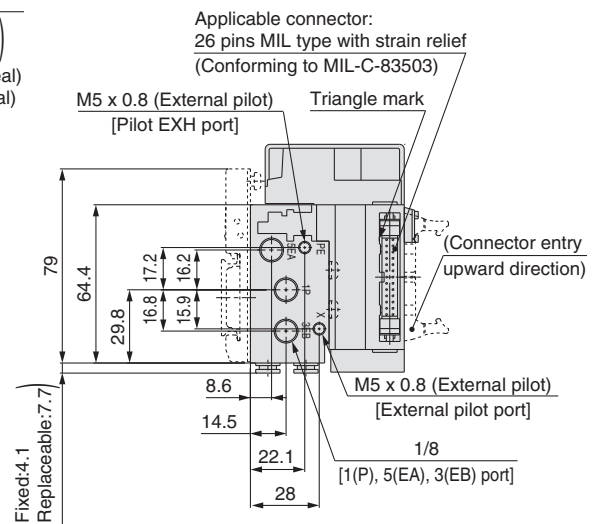
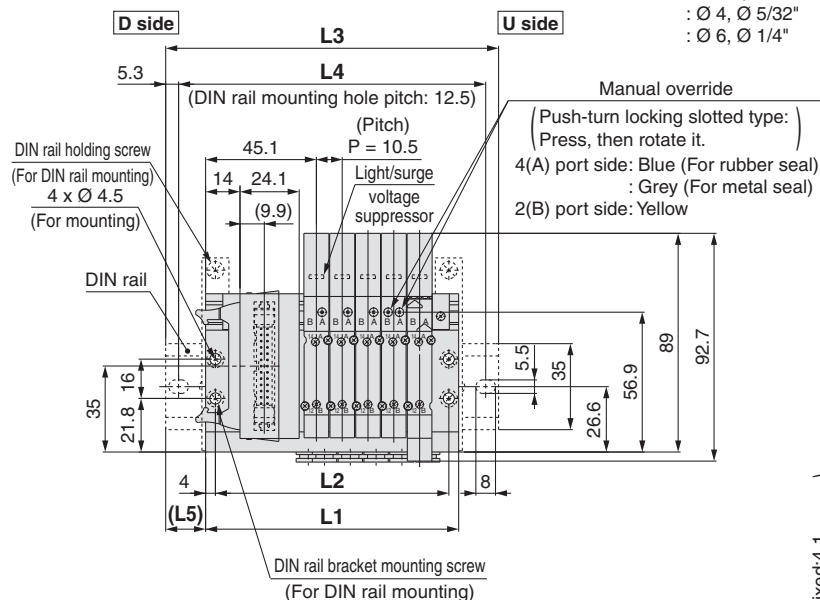
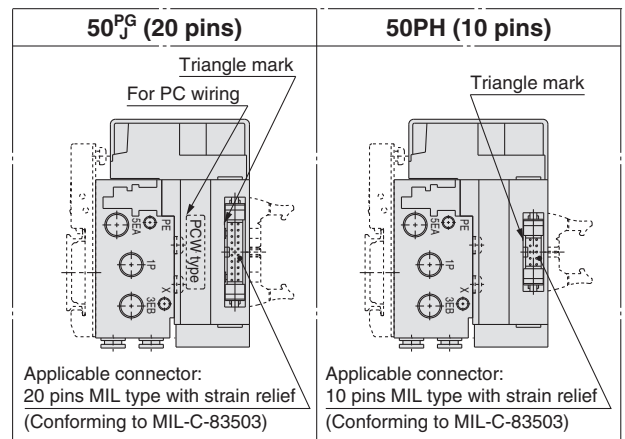
Plug-in  
Metal Base

Type 50/Side Ported  
Flat Ribbon Cable

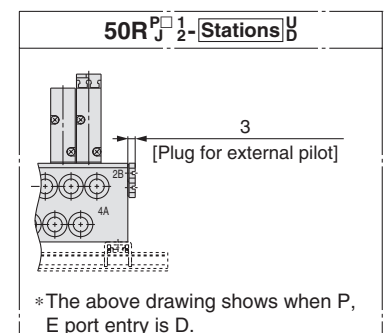
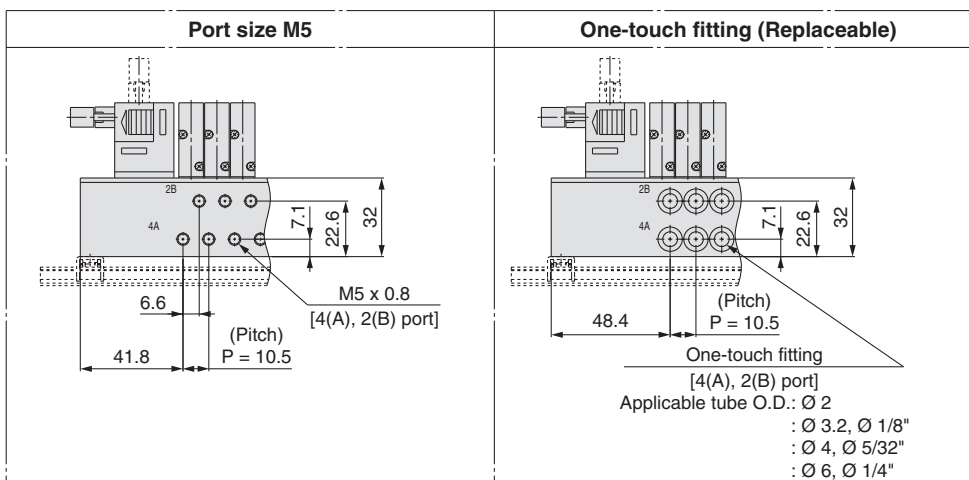
SS5Y3-50(R)  $\begin{matrix} P \\ PG \\ PH \end{matrix} \begin{matrix} 1 \\ 2 \end{matrix}$  - Stations  $\begin{matrix} U \\ D \end{matrix} \begin{matrix} M5 \\ C \square, N \square \\ KC \square, KN \square \end{matrix} \begin{matrix} \square \\ (D) \end{matrix}$



[4(A), 2(B) port]  
Applicable tube O.D.:  $\varnothing 2$   
:  $\varnothing 3.2, \varnothing 1/8$ "  
:  $\varnothing 4, \varnothing 5/32$ "  
:  $\varnothing 6, \varnothing 1/4$ "



\*: These figures show the "SS5Y3-50P2-05B-C6".  
\*: Only connectors are different for 50PG, 50PH and 50J.  
L1 to L5 dimensions are the same as 50P type.

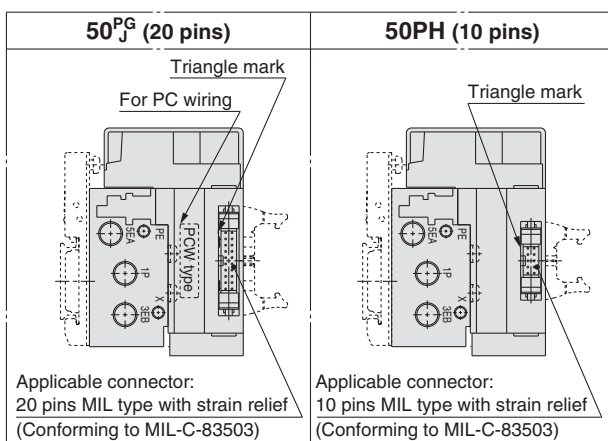
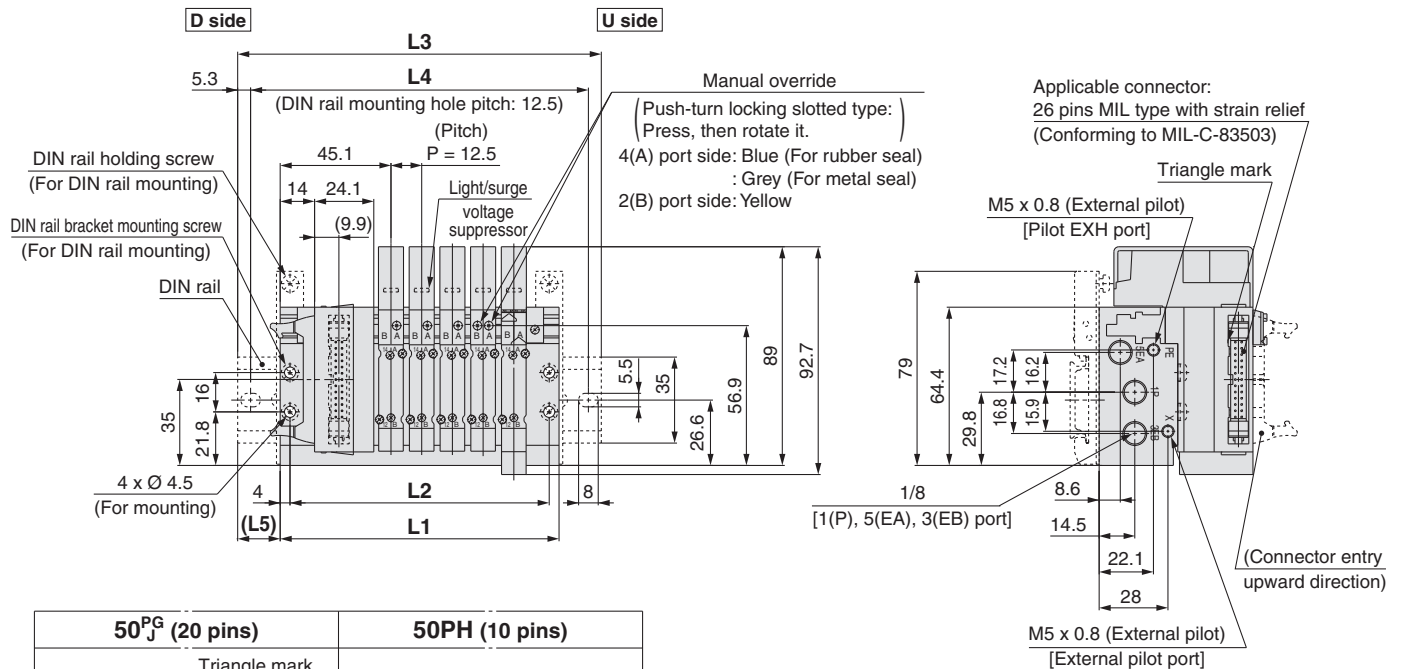
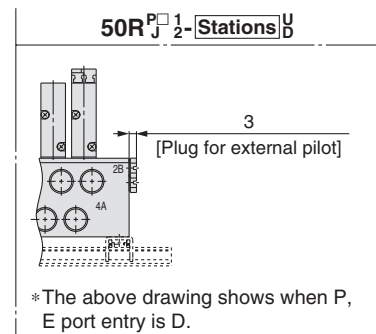
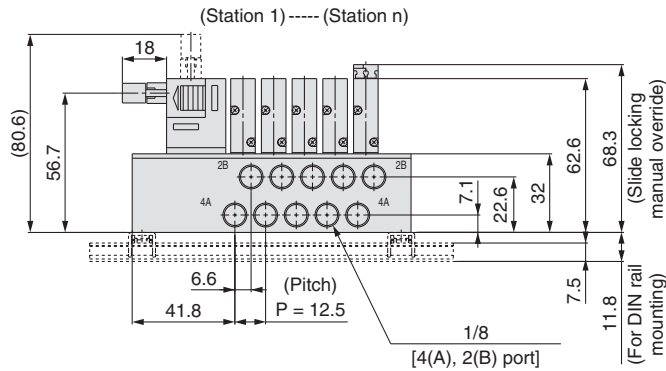


| n: Stations | 2    | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    |
|-------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 71.5 | 82    | 92.5  | 103   | 113.5 | 124   | 134.5 | 145   | 155.5 | 166   | 176.5 |
| L2          | 63.5 | 74    | 84.5  | 95    | 105.5 | 116   | 126.5 | 137   | 147.5 | 158   | 168.5 |
| L3          | 98   | 110.5 | 123   | 135.5 | 148   | 160.5 | 160.5 | 173   | 185.5 | 198   | 210.5 |
| L4          | 87.5 | 100   | 112.5 | 125   | 137.5 | 150   | 150   | 162.5 | 175   | 187.5 | 200   |
| L5          | 13.5 | 14.5  | 15.5  | 16.5  | 17.5  | 18.5  | 13    | 14    | 15    | 16    | 17    |



## Dimensions: Series SY3000

**SS5Y3-50(R)**<sup>P</sup><sub>PG</sub><sub>PH</sub><sub>J</sub><sup>1</sup><sub>2</sub>-**Stations**<sup>U</sup><sub>D</sub><sub>B</sub>-01□(D)



\*: These figures show the “SS5Y3-50P2-05B-01”.  
\*: Only connectors are different for 50PG, 50PH and 50J.  
L1 to L5 dimensions are the same as 50P type.

[illegible]

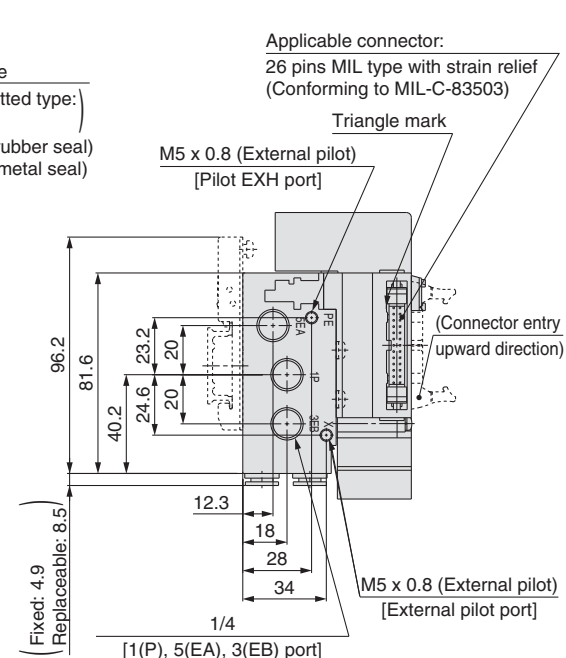
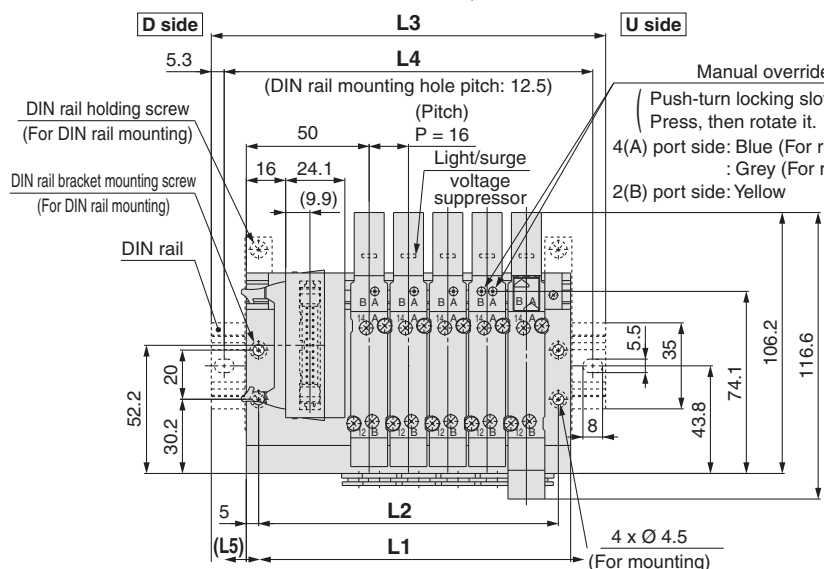
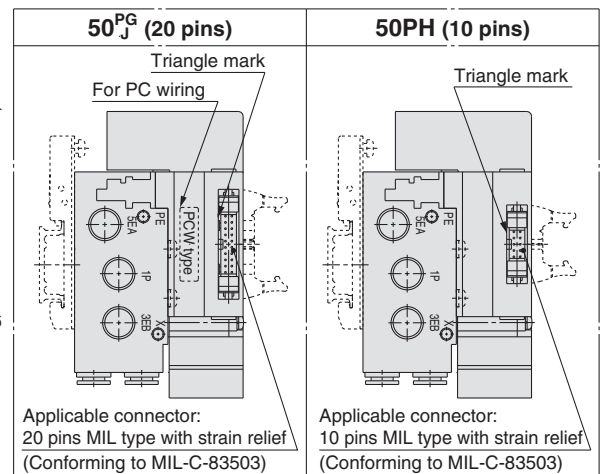
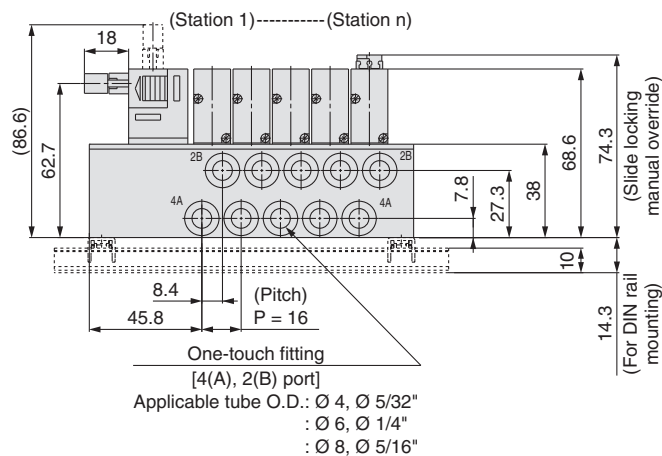
# Series SY3000/5000/7000

## Dimensions: Series SY5000

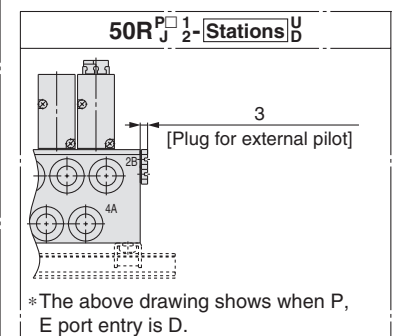
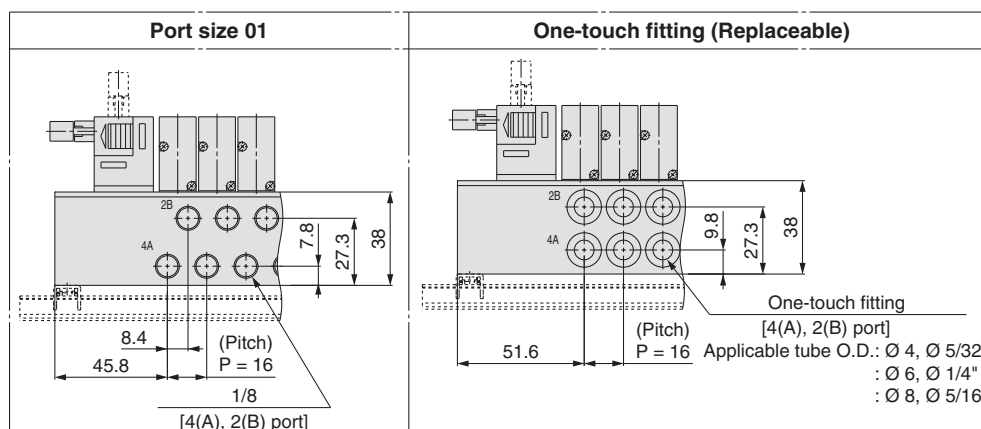
Plug-in  
Metal Base

Type 50/Side Ported  
Flat Ribbon Cable

SS5Y5-50(R)  $\begin{matrix} P \\ PG \\ PH \end{matrix} \begin{matrix} 1 \\ 2 \end{matrix}$  - Stations  $\begin{matrix} U \\ D \end{matrix} \begin{matrix} 01 \\ C \end{matrix} \begin{matrix} \square \\ \square \end{matrix} \begin{matrix} N \\ KC \end{matrix} \begin{matrix} \square \\ \square \end{matrix} \begin{matrix} \square \\ KN \end{matrix} \begin{matrix} \square \\ \square \end{matrix} (D)$



\*: These figures show the "SS5Y5-50P2-05B-C8".  
\*: Only connectors are different for 50PG, 50PH and 50J.  
L1 to L5 dimensions are the same as 50P type.

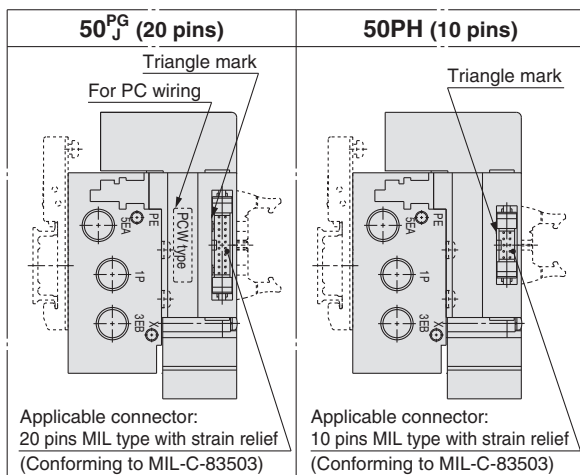
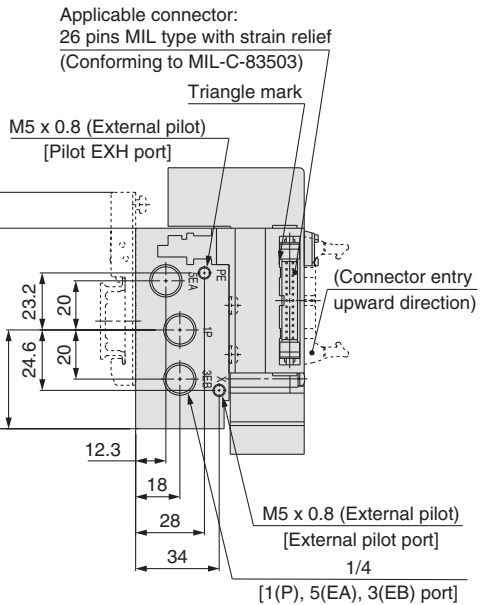
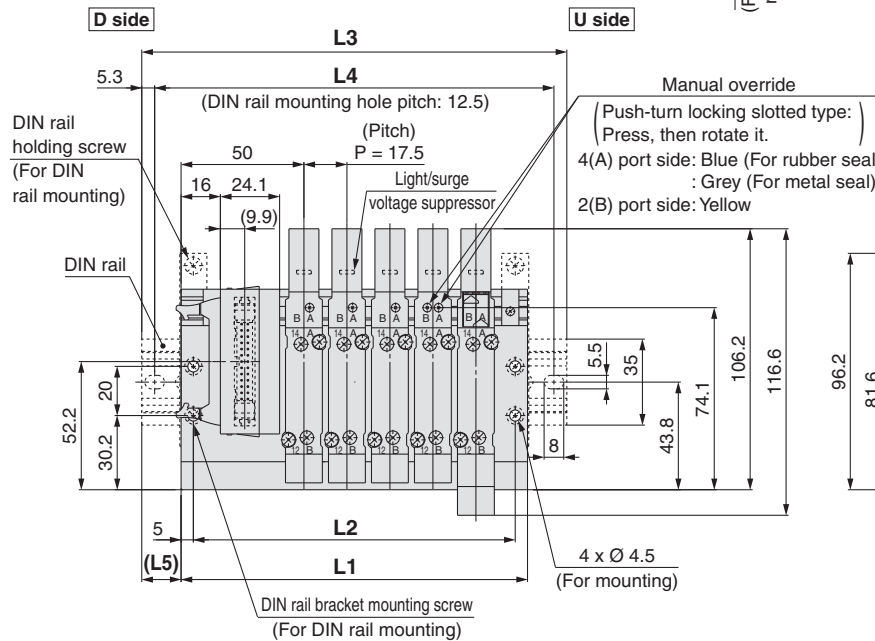
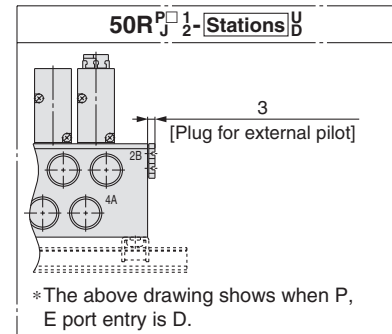
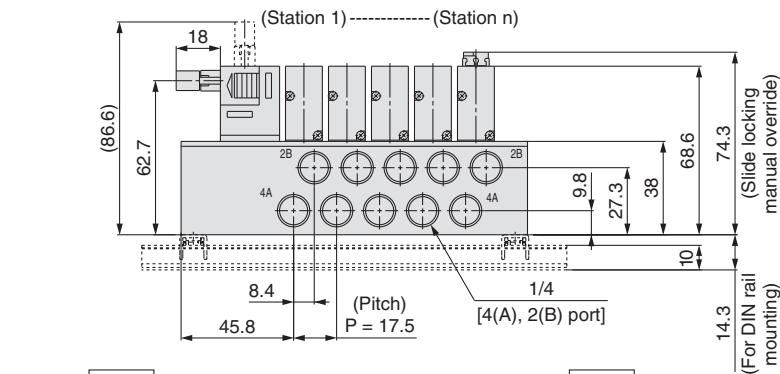


| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 84    | 100   | 116   | 132   | 148   | 164   | 180   | 196   | 212   | 228   | 244   |
| L2          | 74    | 90    | 106   | 122   | 138   | 154   | 170   | 186   | 202   | 218   | 234   |
| L3          | 110.5 | 135.5 | 148   | 160.5 | 173   | 198   | 210.5 | 223   | 248   | 260.5 | 273   |
| L4          | 100   | 125   | 137.5 | 150   | 162.5 | 187.5 | 200   | 212.5 | 237.5 | 250   | 262.5 |
| L5          | 13.5  | 18    | 16    | 14.5  | 12.5  | 17    | 15.5  | 13.5  | 18    | 16.5  | 14.5  |

## Dimensions: Series SY5000

**Plug-in Metal Base** Type 50/Side Ported  
Flat Ribbon Cable

SS5Y5-50(R)  $\frac{P}{PH} \frac{1}{2}$  - Stations  $\frac{U}{B}$  - 02 (D)



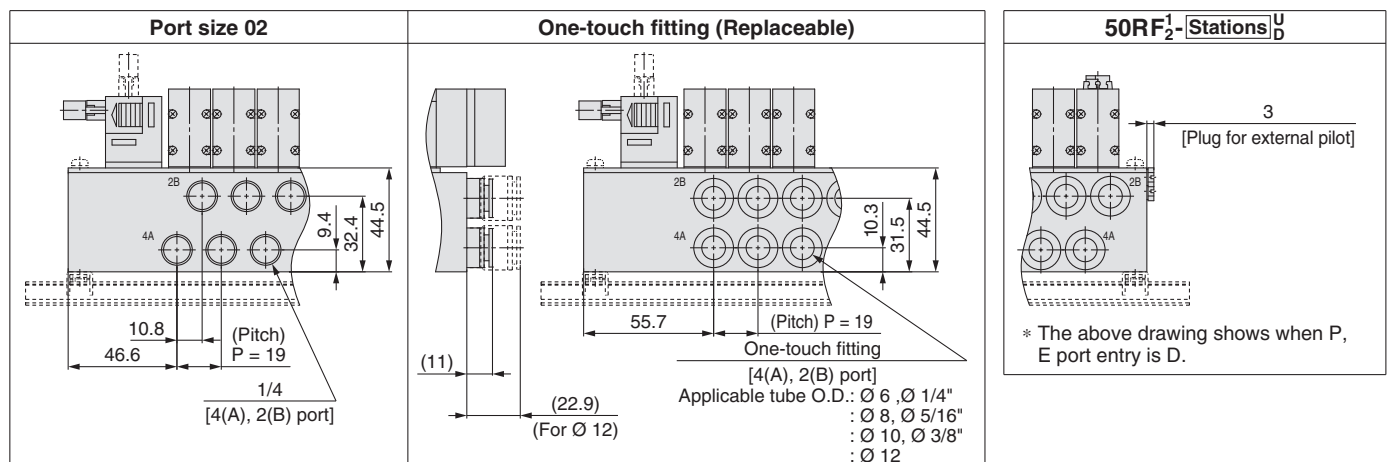
\*: These figures show the "SS5Y5-50P2-05B-02".  
\*: Only connectors are different for 50PG, 50PH and 50J.  
L1 to L5 dimensions are the same as 50P type.

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 88.5  | 106   | 123.5 | 141   | 158.5 | 176   | 193.5 | 211   | 228.5 | 246   | 263.5 |
| L2          | 78.5  | 96    | 113.5 | 131   | 148.5 | 166   | 183.5 | 201   | 218.5 | 236   | 253.5 |
| L3          | 123   | 135.5 | 148   | 173   | 185.5 | 210.5 | 223   | 235.5 | 260.5 | 273   | 298   |
| L4          | 112.5 | 125   | 137.5 | 162.5 | 175   | 200   | 212.5 | 225   | 250   | 262.5 | 287.5 |
| L5          | 17.5  | 15    | 12.5  | 16    | 13.5  | 17.5  | 15    | 12.5  | 16    | 13.5  | 17.5  |

## Dimensions: Series SY7000

**Type 50/Side Ported**  
**Flat Ribbon Cable**

\*: These figures show the “SS5Y7-50P2-05B-C10”.



| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 92    | 111   | 130   | 149   | 168   | 187   | 206   | 225   | 244   | 263   | 282   |
| L2          | 82    | 101   | 120   | 139   | 158   | 177   | 196   | 215   | 234   | 253   | 272   |
| L3          | 123   | 148   | 160.5 | 185.5 | 198   | 223   | 235.5 | 260.5 | 273   | 298   | 310.5 |
| L4          | 112.5 | 137.5 | 150   | 175   | 187.5 | 212.5 | 225   | 250   | 262.5 | 287.5 | 300   |
| L5          | 15.5  | 18.5  | 15.5  | 18.5  | 15    | 18    | 15    | 18    | 14.5  | 17.5  | 14.5  |

# Dimensions: Series SY3000

Plug-in  
Metal Base

Type 51/Bottom Ported  
D-sub Connector

Valve

Plug-in Sub-plate

Plug-in Metal Base

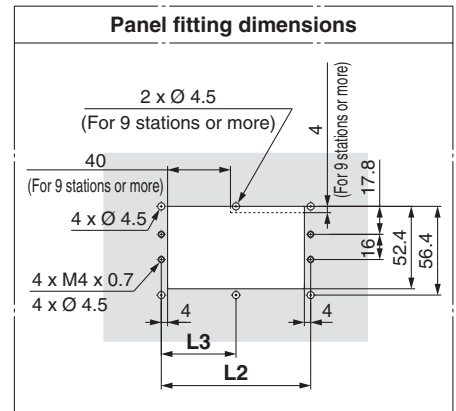
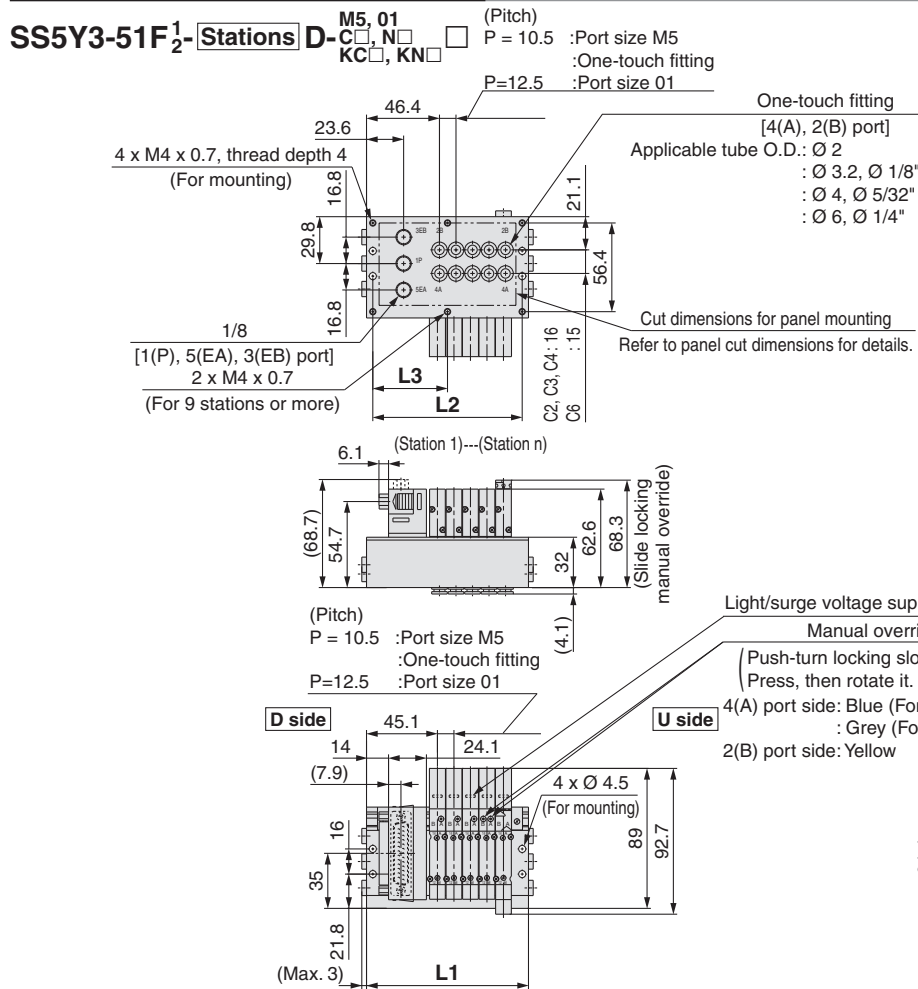
Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options



| Port size M5 | Port size 01 | One-touch fitting (Replaceable) |
|--------------|--------------|---------------------------------|
|              |              |                                 |

\*: These figures show the "SS5Y3-51F2-05D-C6".

## Port Size M5, C, N, KC, KN

| n: Stations | 2    | 3  | 4    | 5   | 6     | 7   | 8     | 9    | 10    | 11  | 12    |
|-------------|------|----|------|-----|-------|-----|-------|------|-------|-----|-------|
| L1          | 71.5 | 82 | 92.5 | 103 | 113.5 | 124 | 134.5 | 145  | 155.5 | 166 | 176.5 |
| L2          | 63.5 | 74 | 84.5 | 95  | 105.5 | 116 | 126.5 | 137  | 147.5 | 158 | 168.5 |
| L3          | —    | —  | —    | —   | —     | —   | —     | 68.5 | 73.8  | 79  | 84.3  |

## Port Size 01

| n: Stations | 2  | 3    | 4   | 5     | 6   | 7     | 8   | 9     | 10  | 11    | 12   |
|-------------|----|------|-----|-------|-----|-------|-----|-------|-----|-------|------|
| L1          | 76 | 88.5 | 101 | 113.5 | 126 | 138.5 | 151 | 163.5 | 176 | 188.5 | 201  |
| L2          | 68 | 80.5 | 93  | 105.5 | 118 | 130.5 | 143 | 155.5 | 168 | 180.5 | 193  |
| L3          | —  | —    | —   | —     | —   | —     | —   | 77.8  | 84  | 90.3  | 96.5 |

# Series SY3000/5000/7000

## Dimensions: Series SY5000

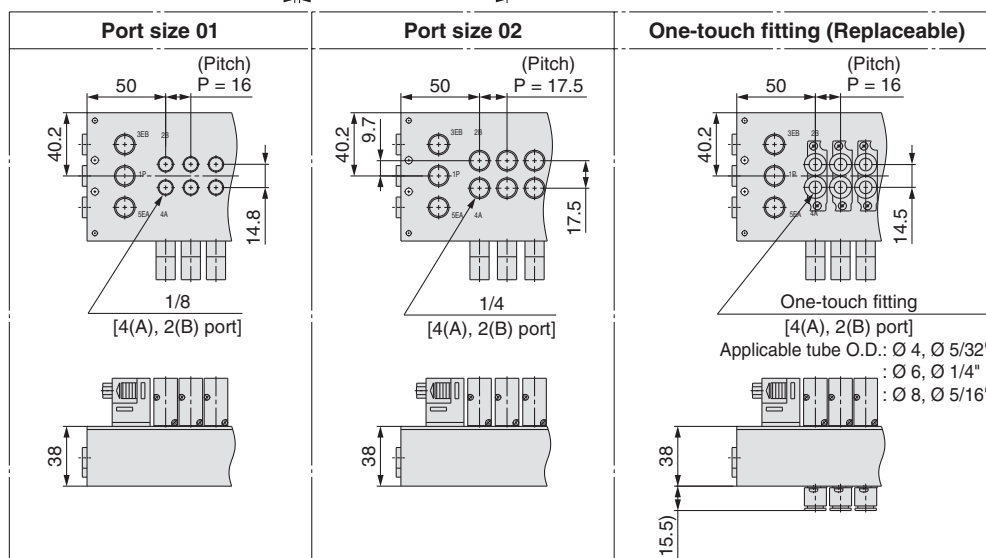
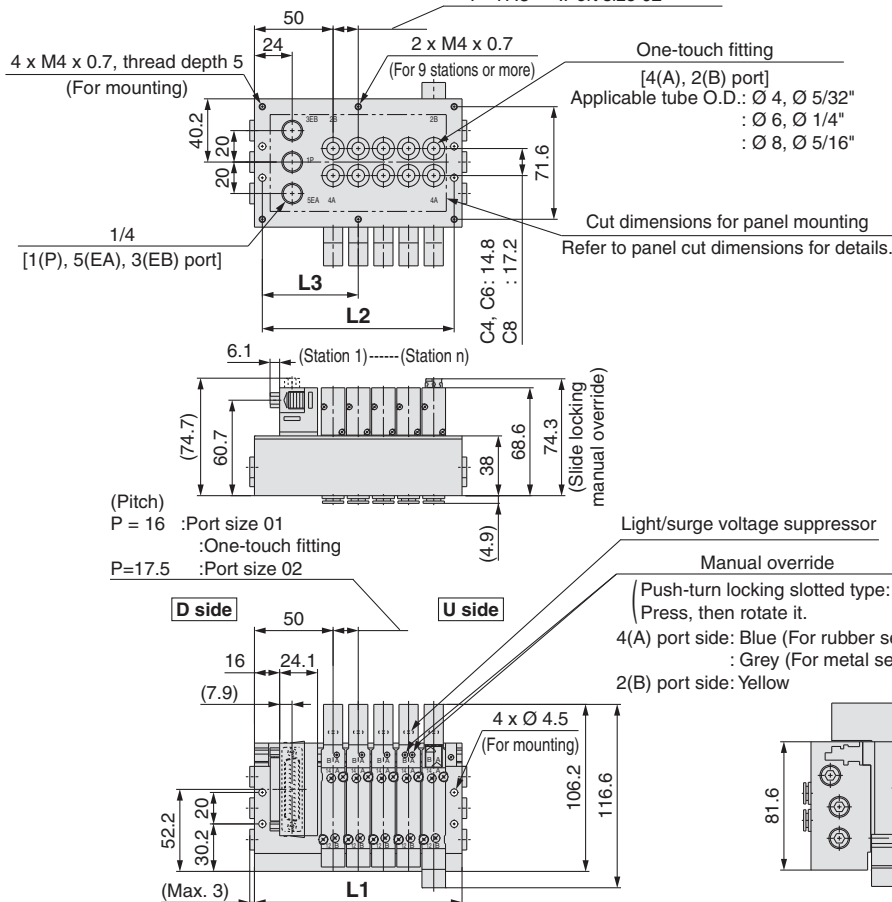
**Plug-in  
Metal Base**

**Type 51/Bottom Ported**

**D-sub Connector**

SS5Y5-51F<sub>2</sub>- Stations D- ☐ 01, ☐ 02  
C ☐ ☐ N ☐ ☐  
KC ☐ ☐ KN ☐ ☐

(Pitch)  
P = 16 :Port size 01  
:One-touch fitting  
P=17.5 :Port size 02



\*: These figures show the "SS5Y5-51F2-05D-C8".

**Port Size 01, C ☐, N ☐, KC ☐, KN ☐**

| n: Stations | 2  | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  |
|-------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| L1          | 84 | 100 | 116 | 132 | 148 | 164 | 180 | 196 | 212 | 228 | 244 |
| L2          | 74 | 90  | 106 | 122 | 138 | 154 | 170 | 186 | 202 | 218 | 234 |
| L3          | —  | —   | —   | —   | —   | —   | —   | 93  | 101 | 109 | 117 |

**Port Size 02**

| n: Stations | 2    | 3   | 4     | 5   | 6     | 7   | 8     | 9     | 10    | 11  | 12    |
|-------------|------|-----|-------|-----|-------|-----|-------|-------|-------|-----|-------|
| L1          | 88.5 | 106 | 123.5 | 141 | 158.5 | 176 | 193.5 | 211   | 228.5 | 246 | 263.5 |
| L2          | 78.5 | 96  | 113.5 | 131 | 148.5 | 166 | 183.5 | 201   | 218.5 | 236 | 253.5 |
| L3          | —    | —   | —     | —   | —     | —   | —     | 100.5 | 109.3 | 118 | 126.8 |



## Dimensions: Series SY7000

SS5Y7-51F<sub>2</sub><sup>1</sup>-Stations D-C<sup>02</sup><sub>□, N□</sub> □(D)  
KC<sub>□, KN□</sub>

## Plug-in Metal Base

**Type 51/Bottom Ported**  
**D-sub Connector**

## Valve

## Plug-in Sub-plate

## Plug-in Metal Base

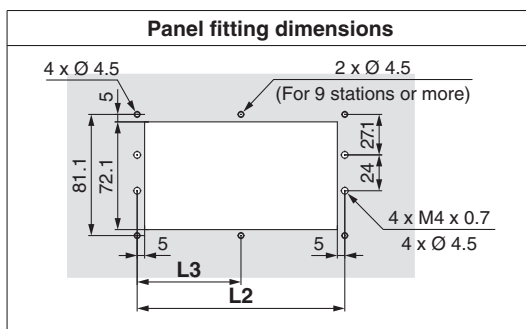
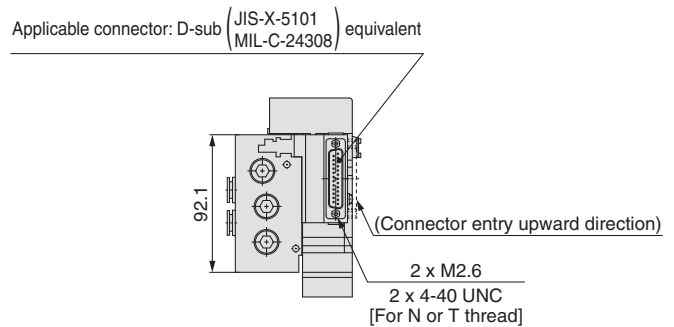
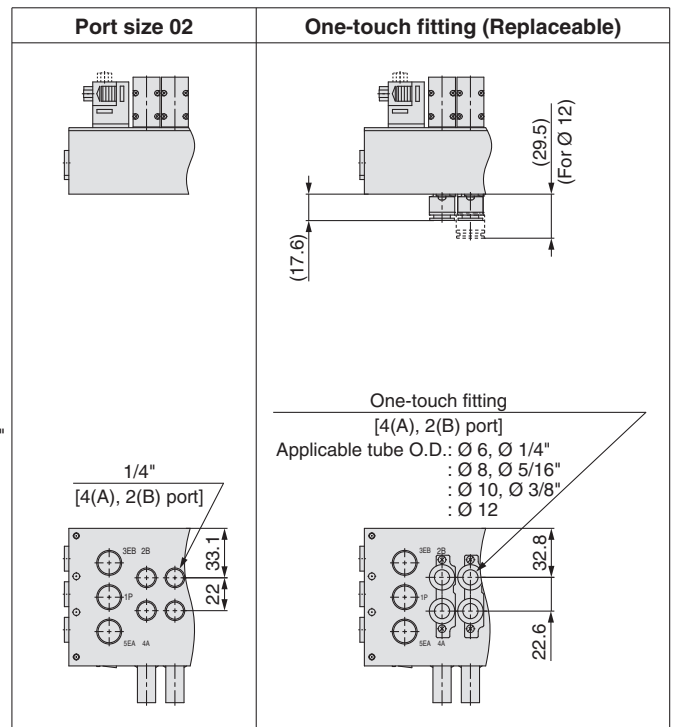
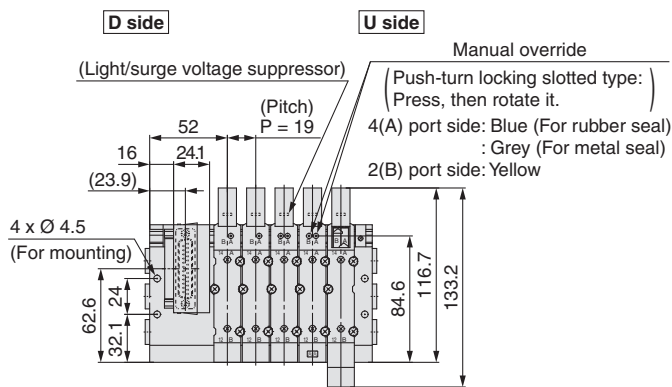
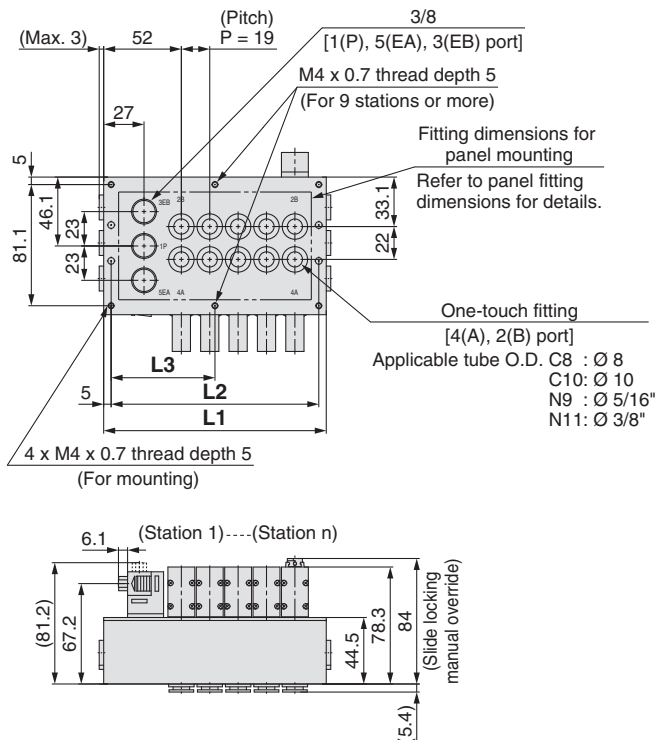
Type 50, 51, 52  
Manifold Exploded View

## Plug-in Connector Connecting Base

### Type 10, 11, 12 Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

## Manifold Options



\*: These figures show the "SS5Y7-51F2-05D-C10".

| n: Stations | 2  | 3   | 4   | 5   | 6   | 7   | 8   | 9     | 10  | 11    | 12  |
|-------------|----|-----|-----|-----|-----|-----|-----|-------|-----|-------|-----|
| <b>L1</b>   | 92 | 111 | 130 | 149 | 168 | 187 | 206 | 225   | 244 | 263   | 282 |
| <b>L2</b>   | 82 | 101 | 120 | 139 | 158 | 177 | 196 | 215   | 234 | 253   | 272 |
| <b>L3</b>   | —  | —   | —   | —   | —   | —   | —   | 107.5 | 117 | 126.5 | 136 |

## Dimensions: Series SY3000

## Type 51/Bottom Ported

### Flat Ribbon Cable



## Dimensions: Series SY5000

Plug-in  
Metal Base

Type 51/Bottom Ported  
Flat Ribbon Cable

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

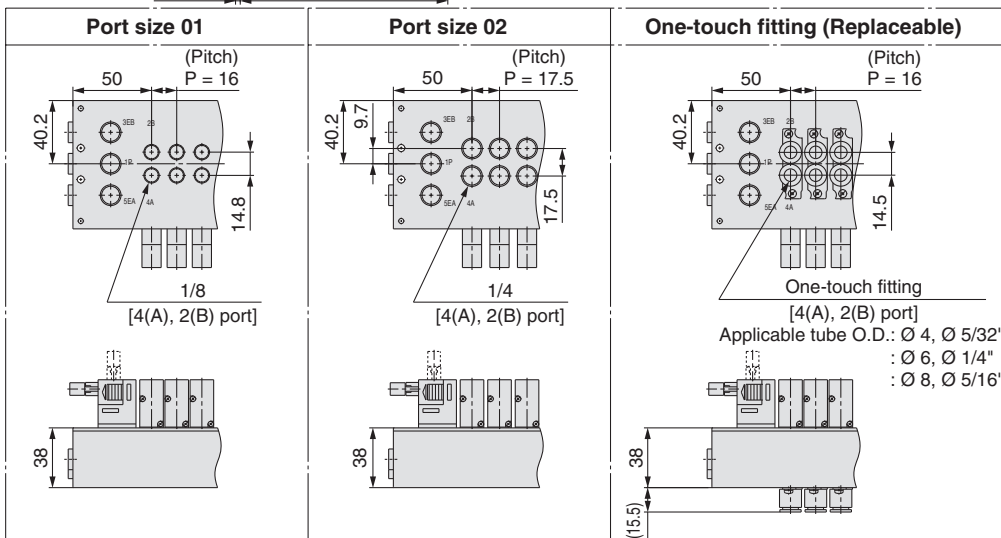
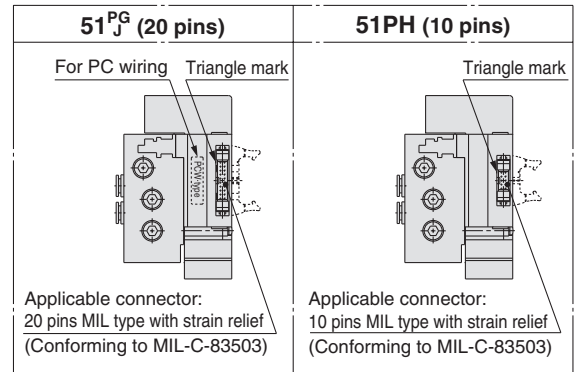
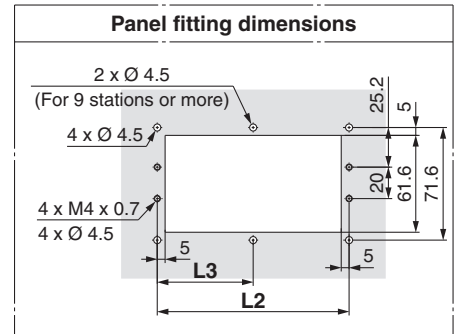
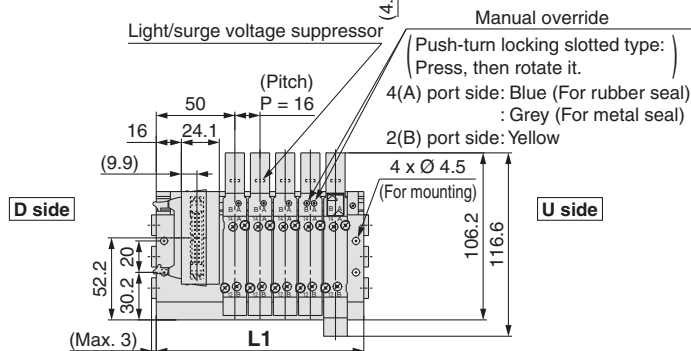
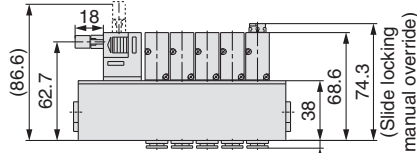
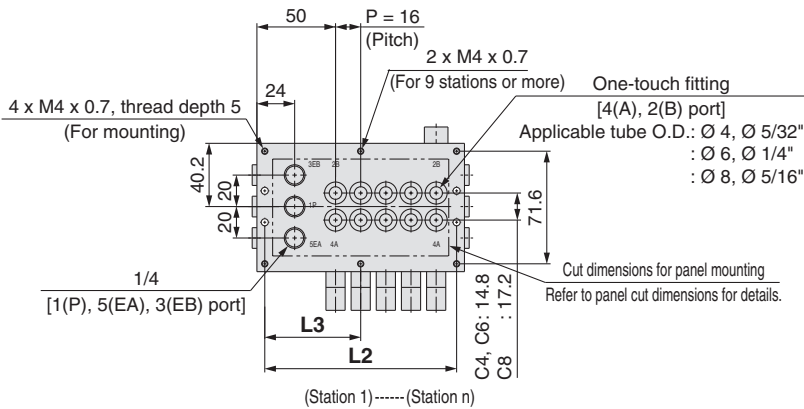
Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

SS5Y5-51<sup>P</sup><sub>PG</sub> 1<sup>2</sup> - Stations D-<sup>01, 02</sup><sub>C□, N□, KC□, KN□</sub>



\*: These figures show the "SS5Y5-51P2-05D-C8".

Port Size 01, C□, N□, KC□, KN□

| n: Stations | 2  | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  |
|-------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| L1          | 84 | 100 | 116 | 132 | 148 | 164 | 180 | 196 | 212 | 228 | 244 |
| L2          | 74 | 90  | 106 | 122 | 138 | 154 | 170 | 186 | 202 | 218 | 234 |
| L3          | —  | —   | —   | —   | —   | —   | —   | 93  | 101 | 109 | 117 |

Port Size 02

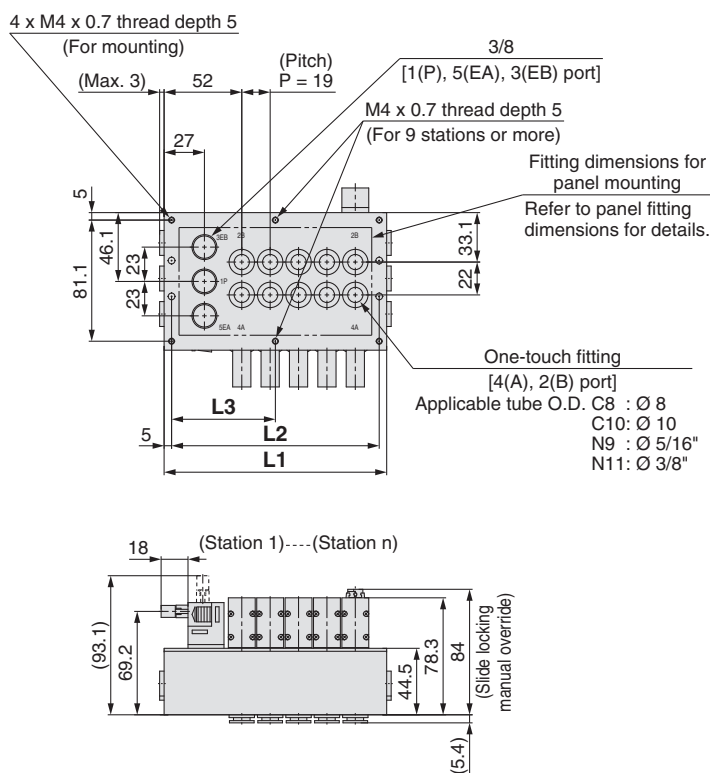
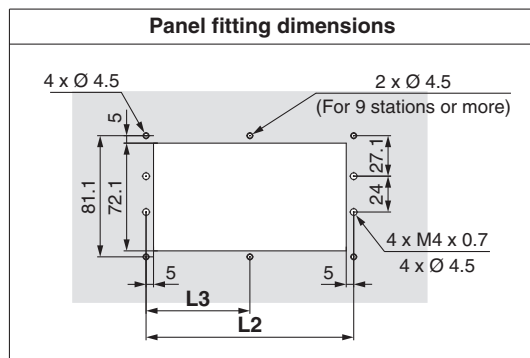
| n: Stations | 2    | 3   | 4     | 5   | 6     | 7   | 8     | 9     | 10    | 11  | 12    |
|-------------|------|-----|-------|-----|-------|-----|-------|-------|-------|-----|-------|
| L1          | 88.5 | 106 | 123.5 | 141 | 158.5 | 176 | 193.5 | 211   | 228.5 | 246 | 263.5 |
| L2          | 78.5 | 96  | 113.5 | 131 | 148.5 | 166 | 183.5 | 201   | 218.5 | 236 | 253.5 |
| L3          | —    | —   | —     | —   | —     | —   | —     | 100.5 | 109.3 | 118 | 126.8 |

## Dimensions: Series SY7000

Plug-in  
Metal Base

Type 51/Bottom Ported  
Flat Ribbon Cable

SS5Y7-51<sup>P</sup><sub>PG</sub> 1<sup>PH</sup> 2<sup>J</sup> - Stations D-<sup>02</sup><sub>C</sub>□, N□□(D)  
KC□, KN□



D side

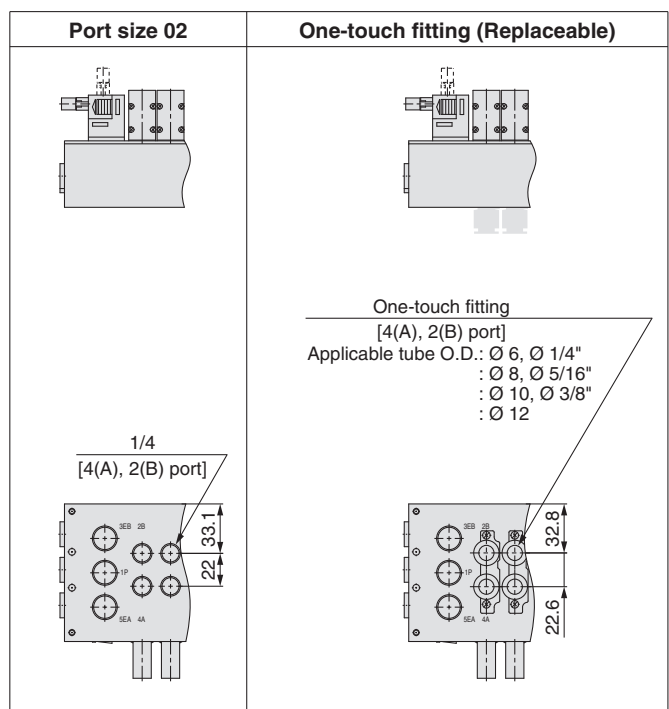
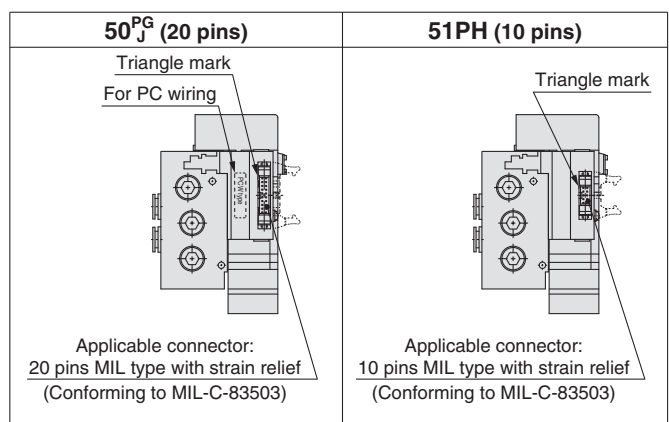
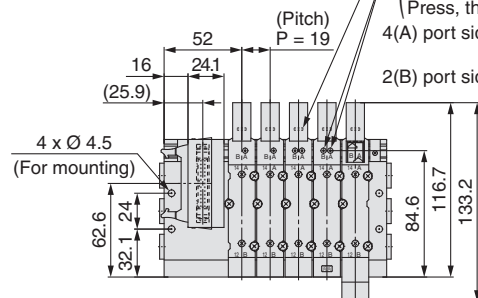
U side

Manual override

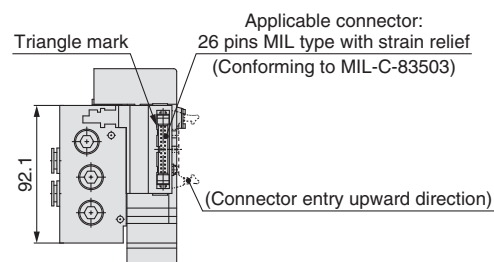
(Light/surge voltage suppressor)

(Push-turn locking slotted type: Press, then rotate it.)

4(A) port side: Blue (For rubber seal)  
: Grey (For metal seal)  
2(B) port side: Yellow



\*: These figures show the "SS5Y7-51P2-05D-C10".



| n: Stations | 2  | 3   | 4   | 5   | 6   | 7   | 8   | 9     | 10  | 11    | 12  |
|-------------|----|-----|-----|-----|-----|-----|-----|-------|-----|-------|-----|
| L1          | 92 | 111 | 130 | 149 | 168 | 187 | 206 | 225   | 244 | 263   | 282 |
| L2          | 82 | 101 | 120 | 139 | 158 | 177 | 196 | 215   | 234 | 253   | 272 |
| L3          | —  | —   | —   | —   | —   | —   | —   | 107.5 | 117 | 126.5 | 136 |

Manifold Options

One-touch Fittings/  
Plug Assembly Part No.

Type 10, 11, 12  
Manifold Exploded View

Plug-in  
Connector Connecting Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in  
Metal Base

Plug-in  
Sub-plate

Valve

# Plug-in Metal Base

D-sub Connector

Flat Ribbon Cable

PC Wiring

Type 52  
Top Ported

# Series SY3000/5000/7000



## How to Order Manifold

SS5Y **3** - **52** **F** **1** - **05** **D** - **05** **D**

1 2 3 4 5 6 7 8 9

### 1 Series

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

### 2 Type

|     |                            |
|-----|----------------------------|
| 52  | Top ported                 |
| 52R | Top ported, External pilot |

### 3 Connector type

|                                            |                                           |                                            |
|--------------------------------------------|-------------------------------------------|--------------------------------------------|
| <b>F:</b> D-sub connector (25 pins)<br>    | <b>P:</b> Flat ribbon cable (26 pins)<br> | <b>PG:</b> Flat ribbon cable (20 pins)<br> |
| <b>PH:</b> Flat ribbon cable (10 pins)<br> | <b>J:</b> PC wiring (20 pins)<br>         |                                            |

### 4 Connector entry direction

|                      |                       |
|----------------------|-----------------------|
| <b>1: Upward</b><br> | <b>2: Lateral</b><br> |
|----------------------|-----------------------|

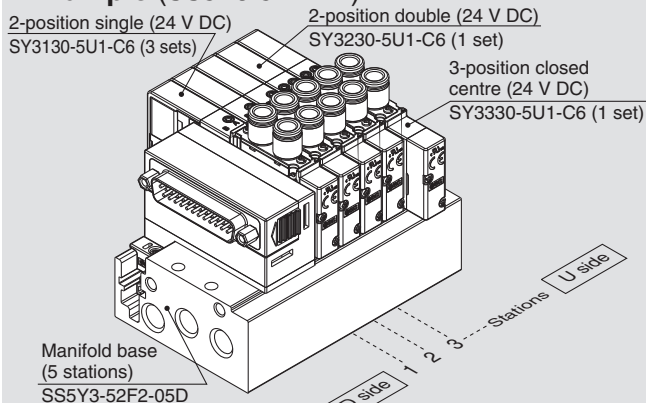
### 5 Wiring type

|   |                     |
|---|---------------------|
| — | All double wiring*1 |
| S | All single wiring*2 |

- \*1: All double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.  
 \*2: All single wiring: Available only for the manifold which has 2-position single for all stations.  
 Note that 2-position double, 3- or 4-position valves cannot be used.  
 \*: If a mix of single and double wiring is required, it is supplied as a special order.

## How to Order Manifold Assembly

### Example (SS5Y3-52F2-□)



SS5Y3-52F2-05D ..... 1 set (Type 52 5-station manifold base part no.)  
 \*SY3130-5U1-C6 ..... 3 sets (2-position single part no.)  
 \*SY3230-5U1-C6 ..... 1 set (2-position double part no.)  
 \*SY3330-5U1-C6 ..... 1 set (3-position closed centre part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

### 6 Valve stations

| F: D-sub connector (25 pins) |             |                   | P: Flat ribbon cable (26 pins) |             |                   | PG: Flat ribbon cable (20 pins) |             |                   |
|------------------------------|-------------|-------------------|--------------------------------|-------------|-------------------|---------------------------------|-------------|-------------------|
| Symbol                       | Stations    | Note              | Symbol                         | Stations    | Note              | Symbol                          | Stations    | Note              |
| 02                           | 2 stations  | All double wiring | 02                             | 2 stations  | All double wiring | 02                              | 2 stations  | All double wiring |
| 12                           | 12 stations | All double wiring | 12                             | 12 stations | All double wiring | 09                              | 9 stations  | All double wiring |
| 02                           | 2 stations  | All single wiring | 02                             | 2 stations  | All single wiring | 02                              | 2 stations  | All single wiring |
| 12                           | 12 stations | All single wiring | 12                             | 12 stations | All single wiring | 12                              | 12 stations | All single wiring |

\*: This also includes the number of blanking plate assembly.

### 7 P, E port entry

|   |            |
|---|------------|
| U | U side*1   |
| D | D side*1   |
| B | Both sides |

\*1: Plugs are mounted on the opposite side of the selected ports.

### 8 Thread type

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

### 9 Mounting

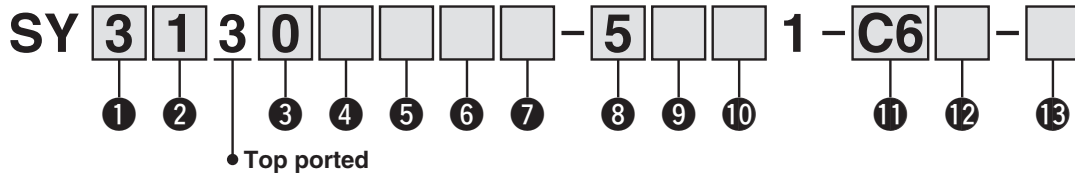
|     |                                      |
|-----|--------------------------------------|
| —   | Direct mounting                      |
| D   | DIN rail mounting (With DIN rail)    |
| D0  | DIN rail mounting (Without DIN rail) |
| D3  | For 3 stations                       |
| ⋮   | ⋮                                    |
| D12 | For 12 stations                      |

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.



## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



### 1 Series

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

### 2 Type of actuation

|     |                 |                 |
|-----|-----------------|-----------------|
| 1   | 2-position      | Single          |
| 2   |                 | Double          |
| 3   | 3-position      | Closed centre   |
| 4   |                 | Exhaust centre  |
| 5   |                 | Pressure centre |
| A*1 | 4-position dual | N.C./N.C.       |
| B*1 |                 | N.O./N.O.       |
| C*1 | 3-port          | N.C./N.O.       |

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 5 Back pressure check valve (Built-in valve type)

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type  
\*: Back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when a valve is continuously energised for long periods of time.  
\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

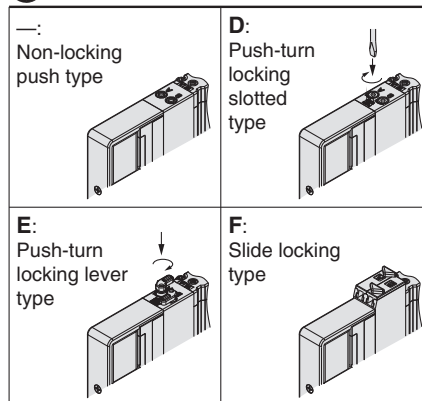
|   |         |
|---|---------|
| 5 | 24 V DC |
| 6 | 12 V DC |

### 9 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| —      | —          | —                        |                      |
| R      | —          | —                        | Non-polar            |
| U      | ●          | —                        |                      |
| S      | —          | ●                        | Positive common      |
| Z      | ●          | —                        |                      |
| NS     | —          | —                        | Negative common      |
| NZ     | ●          | —                        |                      |

\*: Only "Z" and "NZ" types are available for with the power saving circuit.

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 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)

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| C2     | Ø 2       | ●      | —      | —      |
| C3     | Ø 3.2     | ●      | —      | —      |
| C4     | Ø 4       | ●      | ●      | —      |
| C6     | Ø 6       | ●      | ●      | ●      |
| C8     | Ø 8       | —      | ●      | ●      |
| C10    | Ø 10      | —      | —      | ●      |
| C12    | Ø 12      | —      | —      | ●      |

#### One-touch fitting (Inch)

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| N1     | Ø 1/8"    | ●      | —      | —      |
| N3     | Ø 5/32"   | ●      | ●      | —      |
| N7     | Ø 1/4"    | ●      | ●      | ●      |
| N9     | Ø 5/16"   | —      | ●      | ●      |
| N11    | Ø 3/8"    | —      | —      | ●      |

### 12 Thread type

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

\*: Only — is available for M5.

### 13 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.  
\*: **When ordering a valve individually, the base gasket is not included.**  
Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.  
Refer to page 89 for part numbers of the base gasket and mounting screw.  
\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.

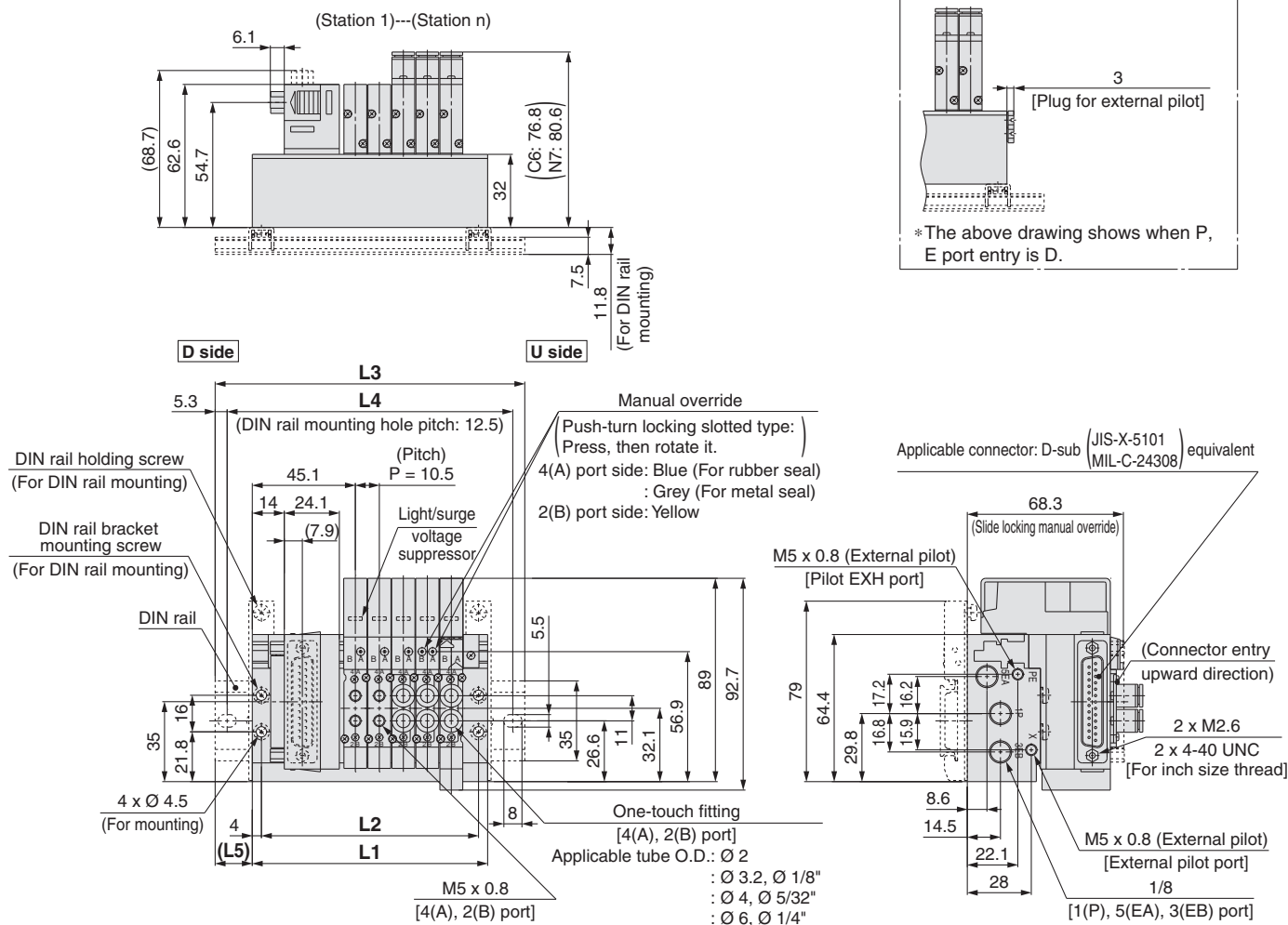
# Series SY3000/5000/7000

## Dimensions: Series SY3000

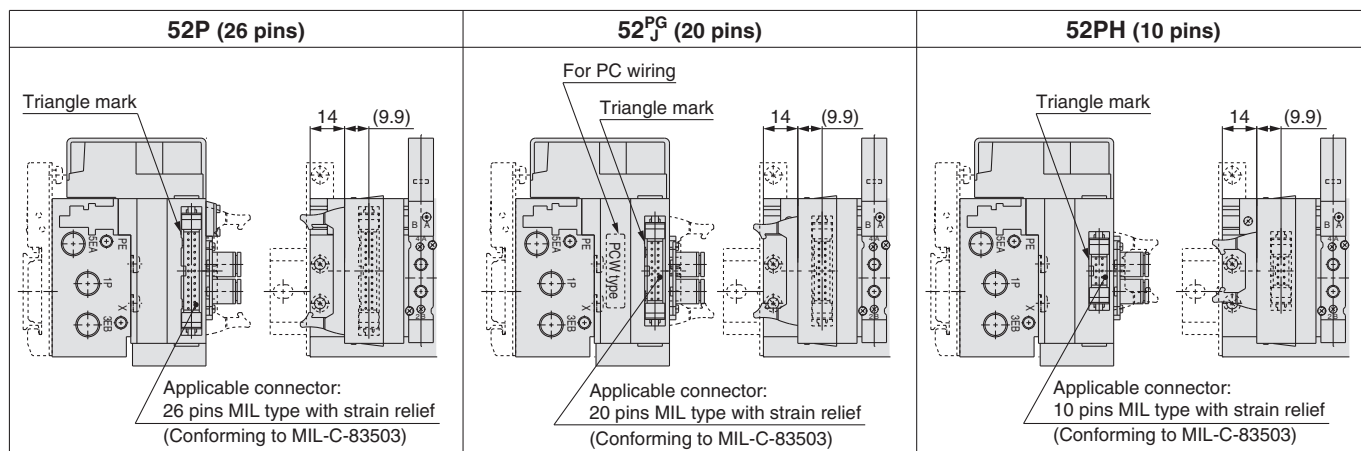
Plug-in  
Metal Base

Type 52/Top Ported  
D-sub Connector, Flat Ribbon Cable

SS5Y3-52(R)  
F  
P  
PG  
PH  
J  
1  
2  
- Stations  
U  
D  
B  
- (D)



\*: These figures show the "SS5Y3-52F2-05B".



| n: Stations | 2    | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    |
|-------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 71.5 | 82    | 92.5  | 103   | 113.5 | 124   | 134.5 | 145   | 155.5 | 166   | 176.5 |
| L2          | 63.5 | 74    | 84.5  | 95    | 105.5 | 116   | 126.5 | 137   | 147.5 | 158   | 168.5 |
| L3          | 98   | 110.5 | 123   | 135.5 | 148   | 160.5 | 160.5 | 173   | 185.5 | 198   | 210.5 |
| L4          | 87.5 | 100   | 112.5 | 125   | 137.5 | 150   | 150   | 162.5 | 175   | 187.5 | 200   |
| L5          | 13.5 | 14.5  | 15.5  | 16.5  | 17.5  | 18.5  | 13    | 14    | 15    | 16    | 17    |

## Dimensions: Series SY5000

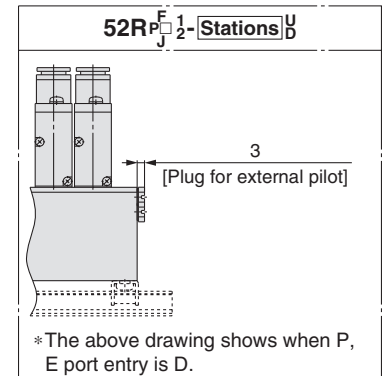
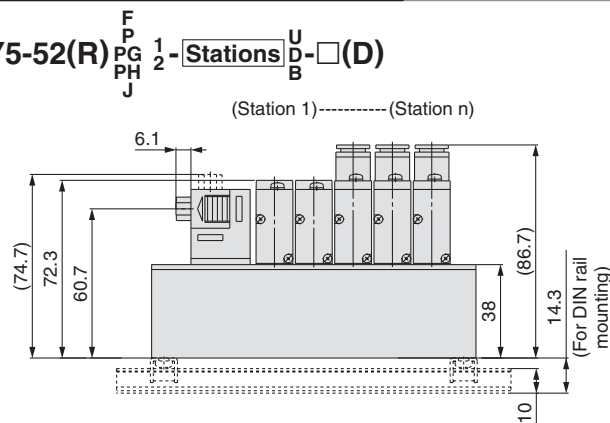
## Plug-in Metal Base

## Type 52/Top Ported

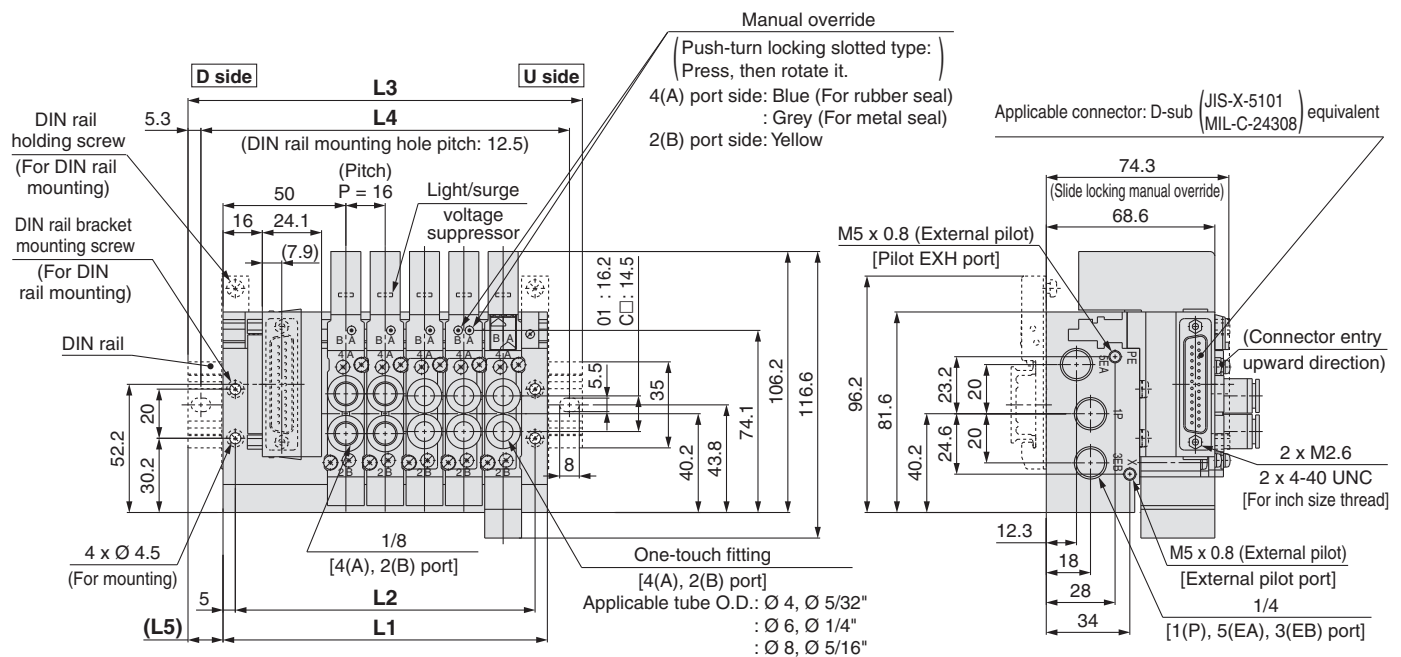
## D-sub Connector, Flat Ribbon Cable

Valve

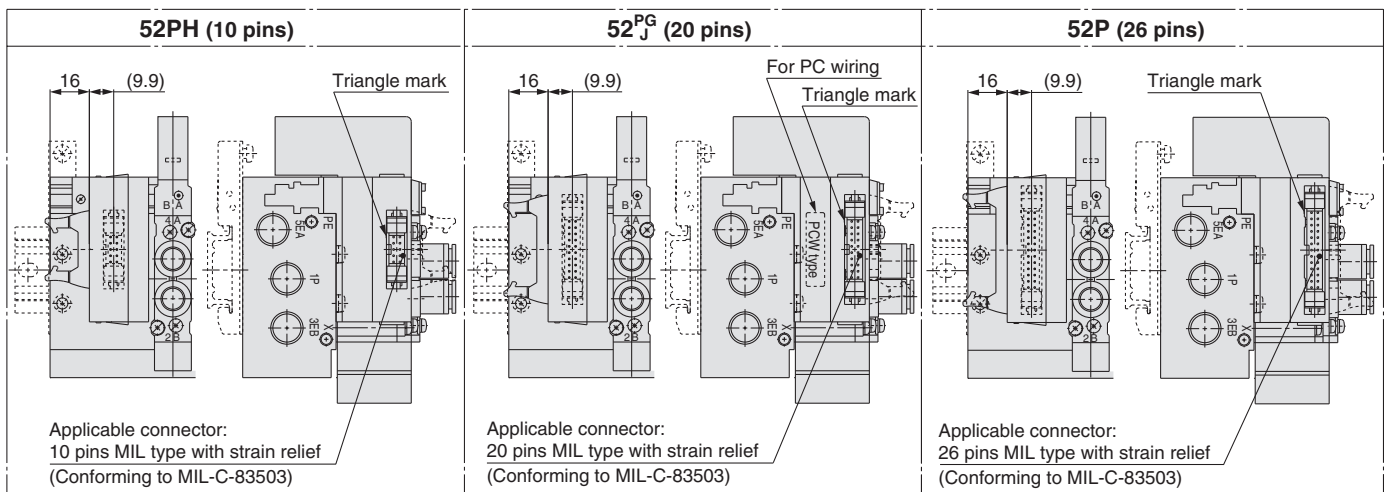
SS5Y5-52(R)  $\begin{matrix} \text{F} \\ \text{P} \\ \text{PG} \\ \text{PH} \\ \text{J} \end{matrix}$   $\frac{1}{2}$  - Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix}$  -  $\square$  (D)



\*The above drawing shows when P, E port entry is D.



\*: These figures show the "SS5Y5-52F2-05B".



| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 84    | 100   | 116   | 132   | 148   | 164   | 180   | 196   | 212   | 228   | 244   |
| L2          | 74    | 90    | 106   | 122   | 138   | 154   | 170   | 186   | 202   | 218   | 234   |
| L3          | 110.5 | 135.5 | 148   | 160.5 | 173   | 198   | 210.5 | 223   | 248   | 260.5 | 273   |
| L4          | 100   | 125   | 137.5 | 150   | 162.5 | 187.5 | 200   | 212.5 | 237.5 | 250   | 262.5 |
| L5          | 13.5  | 18    | 16    | 14.5  | 12.5  | 17    | 15.5  | 13.5  | 18    | 16.5  | 14.5  |

## Plug-in Sub-plate

## Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

### Plug-in Connector Connecting Base

### Type 10, 11, 12 Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

## Manifold Options

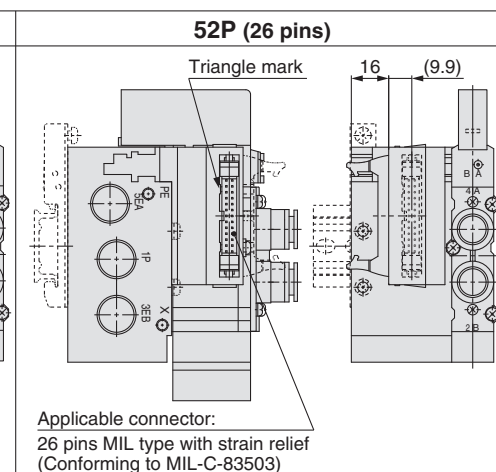
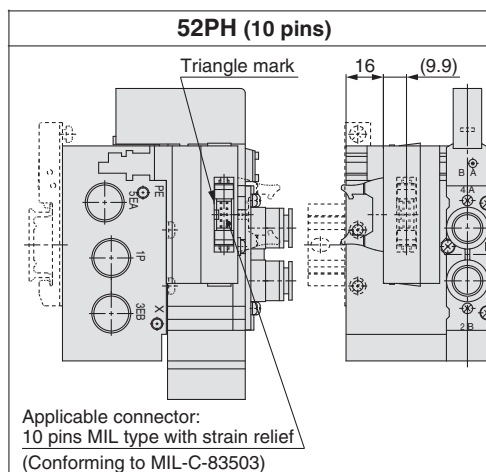
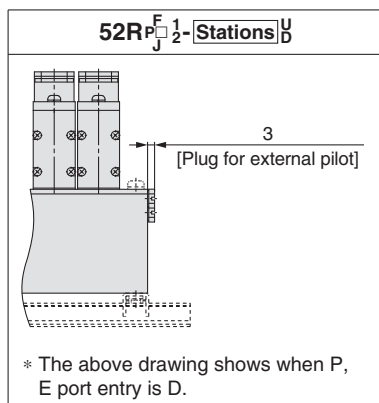
# Series SY3000/5000/7000

## Dimensions: Series SY7000

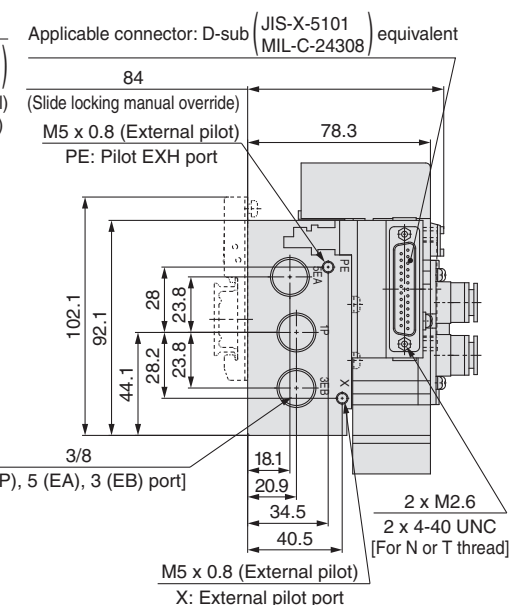
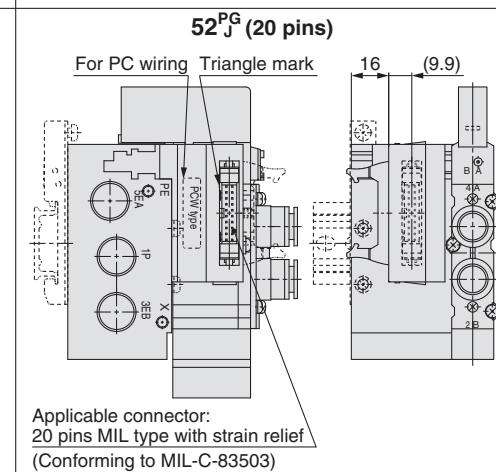
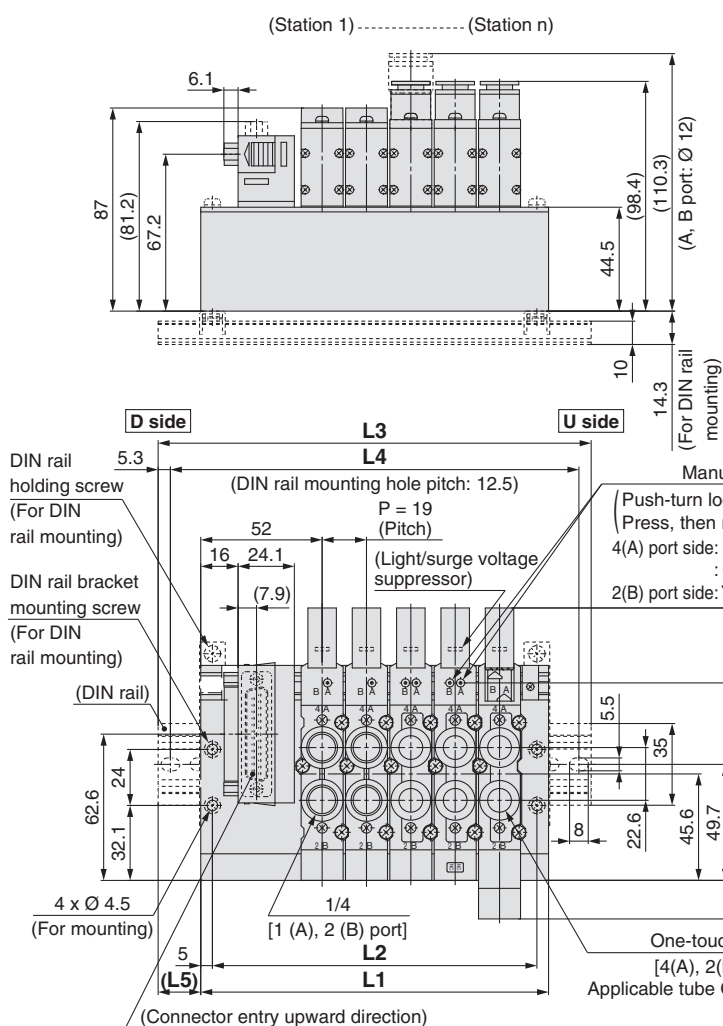
Plug-in  
Metal Base

Type 52/Top Ported  
D-sub Connector, Flat Ribbon Cable

SS5Y7-52(R)  $\frac{F}{P} \frac{1}{2}$  - Stations  $\frac{U}{D}$  - (D)



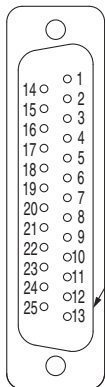
\*: These figures show the "SS5Y7-52F2-05B".



| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 92    | 111   | 130   | 149   | 168   | 187   | 206   | 225   | 244   | 263   | 282   |
| L2          | 82    | 101   | 120   | 139   | 158   | 177   | 196   | 215   | 234   | 253   | 272   |
| L3          | 123   | 148   | 160.5 | 185.5 | 198   | 223   | 235.5 | 260.5 | 273   | 298   | 310.5 |
| L4          | 112.5 | 137.5 | 150   | 175   | 187.5 | 212.5 | 225   | 250   | 262.5 | 287.5 | 300   |
| L5          | 15.5  | 18.5  | 15.5  | 18.5  | 15    | 18    | 15    | 18    | 14.5  | 17.5  | 14.5  |

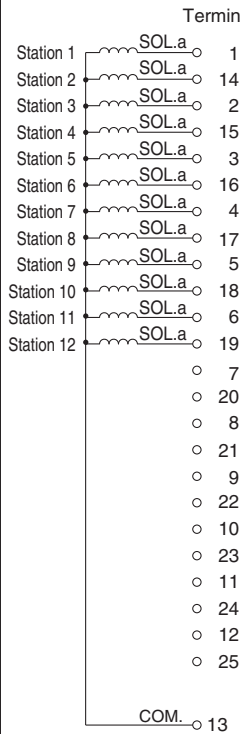
## Electrical Wiring Specifications

### D-sub connector

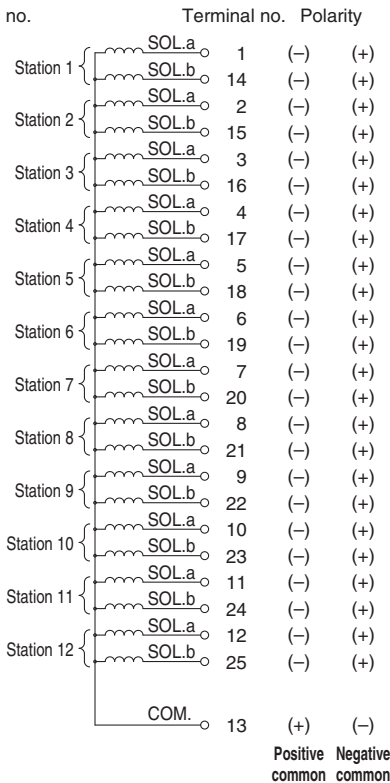


Connector terminal no.

#### <All single wiring>



#### <All double wiring>

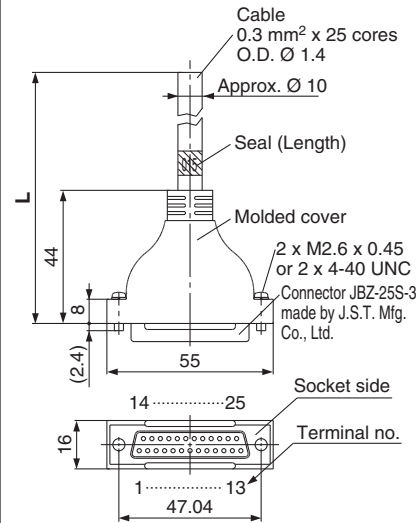


\*: When using a valve with no polarity, either positive common or negative common can be used.

## Cable Assembly

015  
AXT100-DS25-030 (N) [IP40 compliant]  
050

—: Metric size  
N: Inch size



### Lead wire colour for D-sub connector cable assembly by terminal number

| Terminal no. | Lead wire colour | 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            | Grey             | 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           | Grey             | None        |
| 19           | Orange           | Black       |
| 20           | Red              | White       |
| 21           | Brown            | White       |
| 22           | Pink             | Red         |
| 23           | Grey             | Red         |
| 24           | Black            | White       |
| 25           | White            | None        |

### D-sub connector cable assembly

| Cable length (L) | Assembly part no. | Note                                 |
|------------------|-------------------|--------------------------------------|
| 1.5 m            | AXT100-DS25-015   | Cable 0.3 mm <sup>2</sup> x 25 cores |
| 3 m              | AXT100-DS25-030   |                                      |
| 5 m              | AXT100-DS25-050   |                                      |

\*: When using a standard commercial connector, use a 25-pin type female connector conforming to MIL-C-24308.

\*: Cannot be used for movable wiring.

\*: Lengths other than the above are also available. Please contact SMC for details.

### Electrical characteristics

| Item                                  | Property   |
|---------------------------------------|------------|
| Conductor resistance<br>Ω/km, 20 °C   | 65 or less |
| Voltage limit<br>V, 1 minute, AC      | 1000       |
| Insulation resistance<br>MΩ/km, 20 °C | 5 or more  |

\*: The minimum bending radius of the D-sub connector cable is 20 mm.

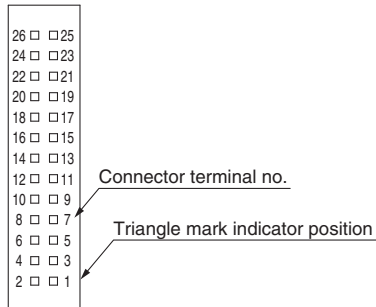
### Connector Manufacturers' Example

- Fujitsu Limited
- Japan Aviation Electronics Industry, Limited
- J.S.T. Mfg. Co., Ltd.
- HIROSE ELECTRIC CO., LTD.

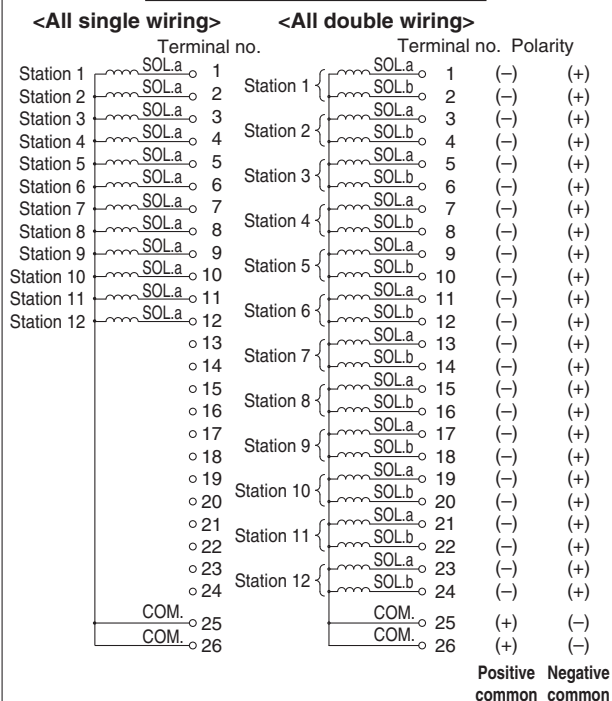


## Electrical Wiring Specifications

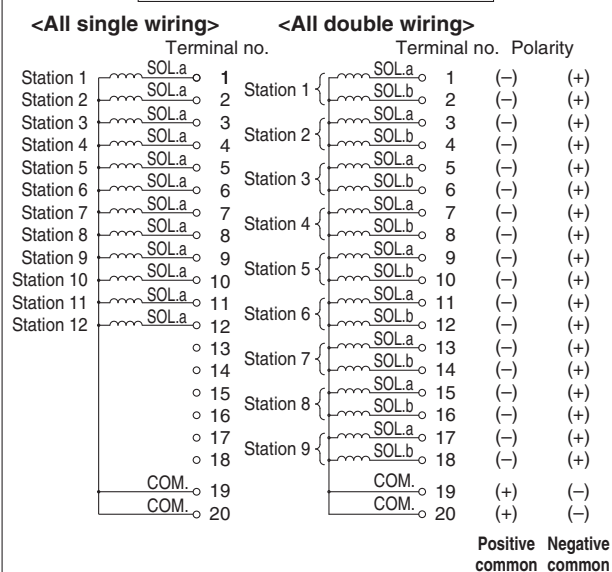
### Flat ribbon cable connector



### P: Flat ribbon cable (26 pins)

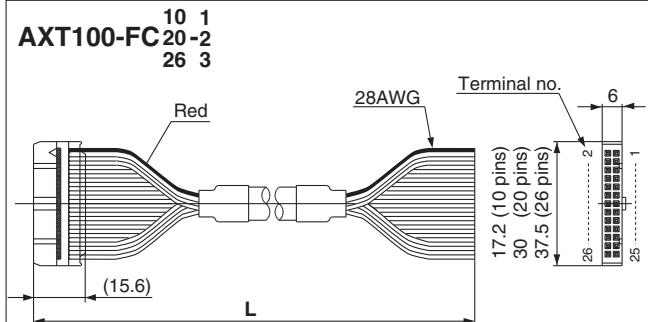


### PG: Flat ribbon cable (20 pins)



\*: When using a valve with no polarity, either positive common or negative common can be used.

## Cable Assembly



### Flat ribbon cable connector assembly

| Cable length (L) | Assembly part no. |               |               |
|------------------|-------------------|---------------|---------------|
|                  | 26 pins           | 20 pins       | 10 pins       |
| 1.5 m            | AXT100-FC26-1     | AXT100-FC20-1 | AXT100-FC10-1 |
| 3 m              | AXT100-FC26-2     | AXT100-FC20-2 | AXT100-FC10-2 |
| 5 m              | AXT100-FC26-3     | AXT100-FC20-3 | AXT100-FC10-3 |

\*: When using a standard commercial connector, use a 26-pin, 20-pin or 10-pin type connector conforming to MIL-C-83503 with strain relief.

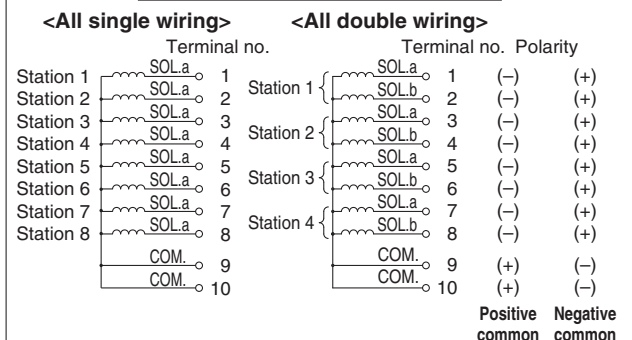
\*: Cannot be used for movable wiring.

\*: Lengths other than the above are also available. Please contact SMC for details.

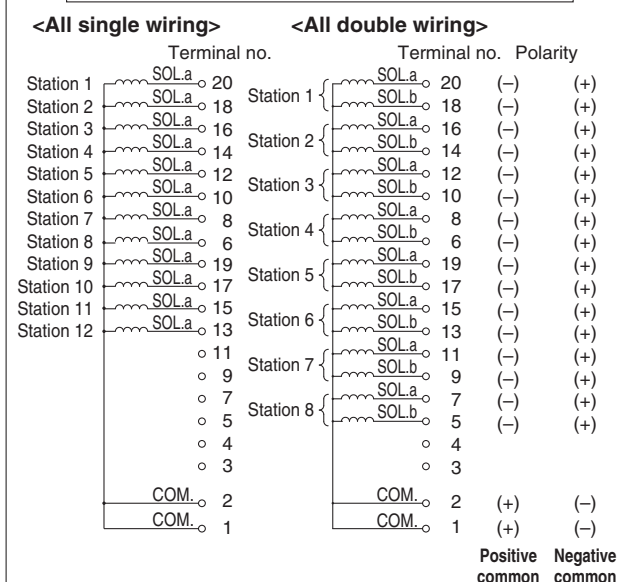
### Connector Manufacturers' Example

- HIROSE ELECTRIC CO., LTD.
- Japan Aviation Electronics Industry, Limited
- 3M Japan Limited
- J.S.T. Mfg. Co., Ltd.
- Fujitsu Limited
- Oki Electric Cable Co., Ltd.

### PH: Flat ribbon cable (10 pins)



### J: Flat ribbon cable (20 pins) PC wiring





Manifold Options

One-touch Fittings/  
Plug Assembly Part No.

Type 10, 11, 12  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Metal Base

Plug-in Sub-plate

Valve

Type 50  
Side Ported

Type 51  
Bottom Ported

Plug-in Metal Base EX510

# Series SY3000/5000/7000



## How to Order Manifold

SS5Y **3** - **50** S5 **05** **D** - **C6**

1 2 3 4 5 6 7 8 9

### 1 Series

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

### 3 SI Unit output polarity

|   |                 |
|---|-----------------|
| — | Positive common |
| N | Negative common |

### 4 Wiring type

|   |                     |
|---|---------------------|
| — | All double wiring*1 |
| S | All single wiring*2 |

\*1: All double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

\*2: All single wiring: Available only for the manifold which has 2-position single for all stations.

Note that 2-position double, 3- or 4-position valves cannot be used.

\*: If a mix of single and double wiring is required, it is supplied as a special order.

### 2 Type

|     |                             |
|-----|-----------------------------|
| 50  | Side ported                 |
| 51  | Bottom ported               |
| 50R | Side ported, External pilot |

\*: External pilot is not available for the bottom ported type.

### 5 Valve stations

| Symbol | Stations   | Note              | Symbol | Stations    | Note              |
|--------|------------|-------------------|--------|-------------|-------------------|
| 02     | 2 stations | All double wiring | 02     | 2 stations  | All single wiring |
| ⋮      | ⋮          |                   | ⋮      | ⋮           |                   |
| 08     | 8 stations |                   | 12     | 12 stations |                   |

\*: This also includes the number of blanking plate assembly.

### 6 P, E port entry

|   |            |
|---|------------|
| U | U side*1   |
| D | D side*1*2 |
| B | Both sides |

\*1: Plugs are mounted on the opposite side of the selected ports.

\*2: Only D side is available for Type 51 (Bottom ported).

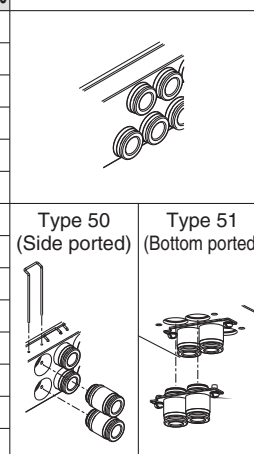
### 7 A, B port size

#### Thread piping

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| M5     | M5 x 0.8  | ●      | —      | —      |
| 01     | 1/8       | ●      | ●      | —      |
| 02     | 1/4       | —      | ●      | ●      |

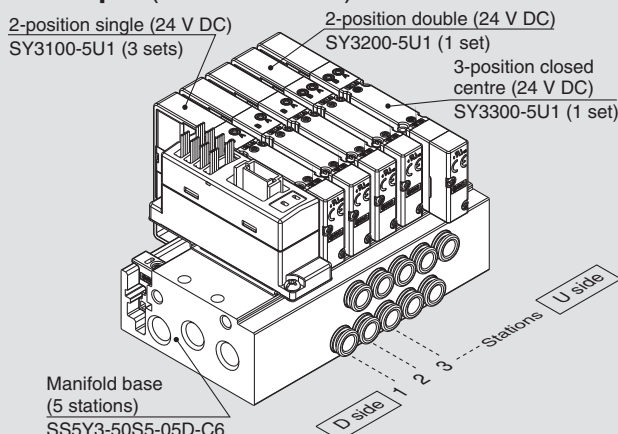
#### One-touch fitting (Metric)

| Symbol                         | A, B port | SY3000      | SY5000 | SY7000 |
|--------------------------------|-----------|-------------|--------|--------|
| Fixed                          | C2        | Ø 2         | ●      | —      |
|                                | C3        | Ø 3.2       | ●      | —      |
|                                | C4        | Ø 4         | ●      | ●      |
|                                | C6        | Ø 6         | ●      | ●      |
|                                | C8        | Ø 8         | —      | ●      |
|                                | C10       | Ø 10        | —      | ●      |
| Replaceable                    | KC2       | Ø 2         | ●      | —      |
|                                | KC3       | Ø 3.2       | ●      | —      |
|                                | KC4       | Ø 4         | ●      | ●      |
|                                | KC6       | Ø 6         | ●      | ●      |
|                                | KC8       | Ø 8         | —      | ●      |
|                                | KC10      | Ø 10        | —      | ●      |
|                                | KC12      | Ø 12        | —      | ●      |
| P, E port size (Thread piping) | M*1       | Mixed sizes | ●      | ●      |
|                                |           |             | 1/8    | 1/4    |



## How to Order Manifold Assembly

### Example (SS5Y3-50S5-□)



SS5Y3-50S5-05D-C6 ... 1 set (Type 50 5-station manifold base part no.)  
 \*SY3100-5U1 ..... 3 sets (2-position single part no.)  
 \*SY3200-5U1 ..... 1 set (2-position double part no.)  
 \*SY3300-5U1 ..... 1 set (3-position closed centre part no.)

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

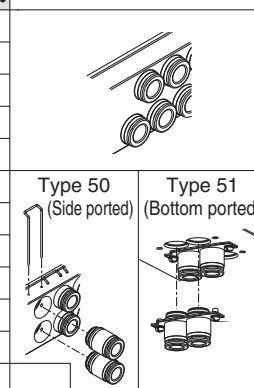
- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

\*: When mixing top ported configurations, select from page 84.

In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

#### One-touch fitting (Inch)

| Symbol      | A, B port | SY3000      | SY5000 | SY7000 |
|-------------|-----------|-------------|--------|--------|
| Fixed       | N1        | Ø 1/8"      | ●      | —      |
|             | N3        | Ø 5/32"     | ●      | ●      |
|             | N7        | Ø 1/4"      | ●      | ●      |
|             | N9        | Ø 5/16"     | —      | ●      |
|             | N11       | Ø 3/8"      | —      | ●      |
|             |           |             | 1/8    | 1/4    |
| Replaceable | KN1       | Ø 1/8"      | ●      | —      |
|             | KN3       | Ø 5/32"     | ●      | ●      |
|             | KN7       | Ø 1/4"      | ●      | ●      |
|             | KN9       | Ø 5/16"     | —      | ●      |
|             | KN11      | Ø 3/8"      | —      | ●      |
|             | M*1       | Mixed sizes | ●      | ●      |
|             |           |             | 1/8    | 1/4    |



\*1: When ports are mixed sizes, indicate the piping specifications on the manifold specification sheet.

## 8 Thread type

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

## 9 Mounting

|     |                                      |
|-----|--------------------------------------|
| —   | Direct mounting                      |
| D   | DIN rail mounting (With DIN rail)    |
| D0  | DIN rail mounting (Without DIN rail) |
| D3  | For 3 stations                       |
| ⋮   | ⋮                                    |
| D12 | For 12 stations                      |

Specify a longer rail than the standard length.

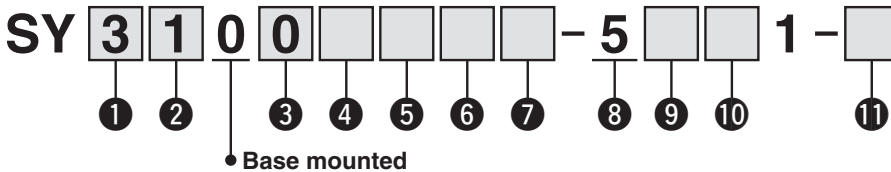
\*: Only direct mounting is available for Type 51 (Bottom ported).

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

For details about the EX510 Gateway-type Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. Please download the Operation Manual via SMC website, <http://www.smc.eu>

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



## 1 Series

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

## 2 Type of actuation

|     |                        |                 |
|-----|------------------------|-----------------|
| 1   | 2-position             | Single          |
| 2   |                        | Double          |
| 3   | 3-position             | Closed centre   |
| 4   |                        | Exhaust centre  |
| 5   |                        | Pressure centre |
| A*1 | 4-position dual 3-port | N.C./N.C.       |
| B*1 |                        | N.O./N.O.       |
| C*1 |                        | N.C./N.O.       |

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

## 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

## 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

## 5 Back pressure check valve (Built-in valve type)

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type

\*: Back pressure check valve is not available for the 3-position type and the SY7000.

## 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

## 7 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

## 8 Rated voltage

|   |         |
|---|---------|
| 5 | 24 V DC |
|---|---------|

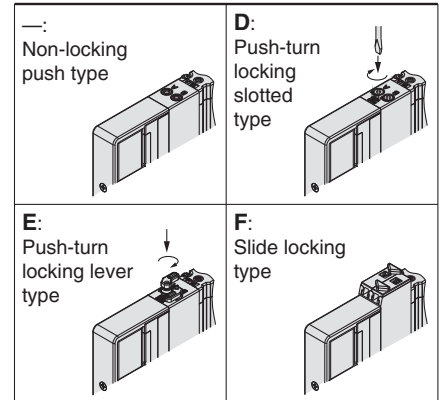
## 9 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| R      | —          | —                        | Non-polar            |
| U      | ●          | —                        | Non-polar            |
| S      | —          | —                        | Positive common      |
| Z      | ●          | ●                        | Positive common      |
| NS     | —          | —                        | Negative common      |
| NZ     | ●          | ●                        | Negative common      |

\*: Only "Z" and "NZ" types are available for with the power saving circuit. Select a valve from R, U, S or Z when the SI Unit output polarity is — (positive common).

Select a valve from R, U, NS or NZ when the SI Unit output polarity is N (negative common).

## 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

## 11 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |


\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 89 for part numbers of the base gasket and mounting screw.

\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

Protective class class III (Mark: )

# Series SY3000/5000/7000

## Dimensions: Series SY3000

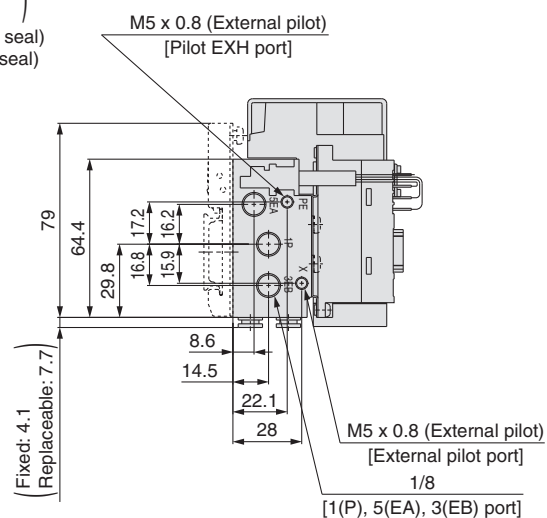
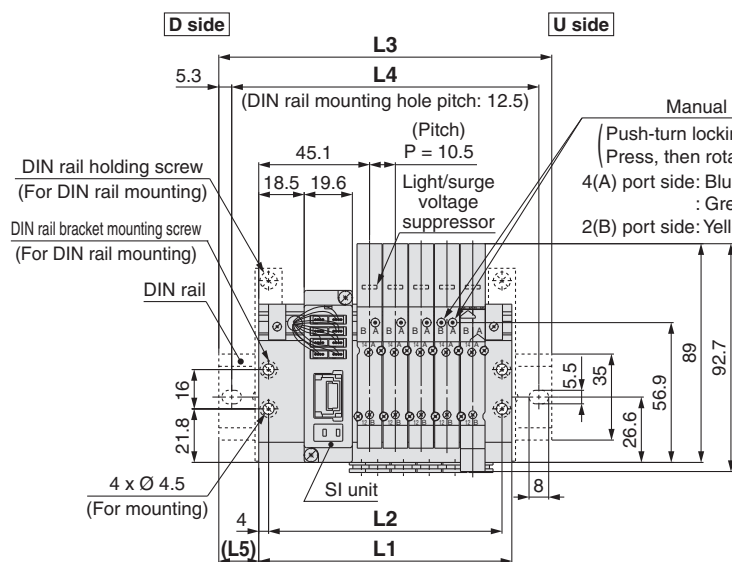
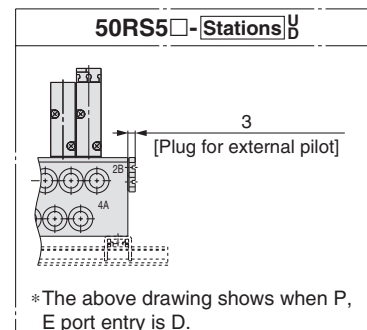
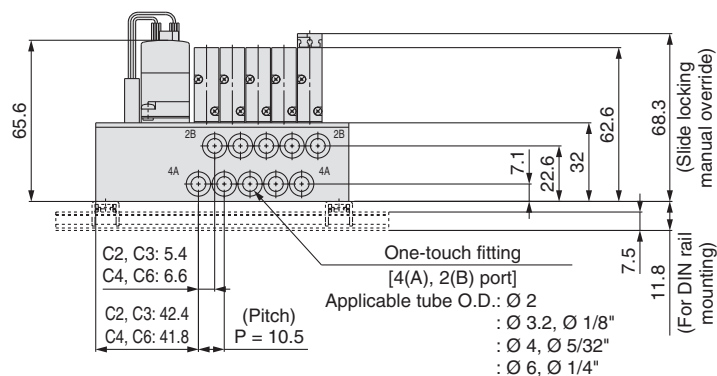
Plug-in  
Metal Base

Type 50/Side Ported

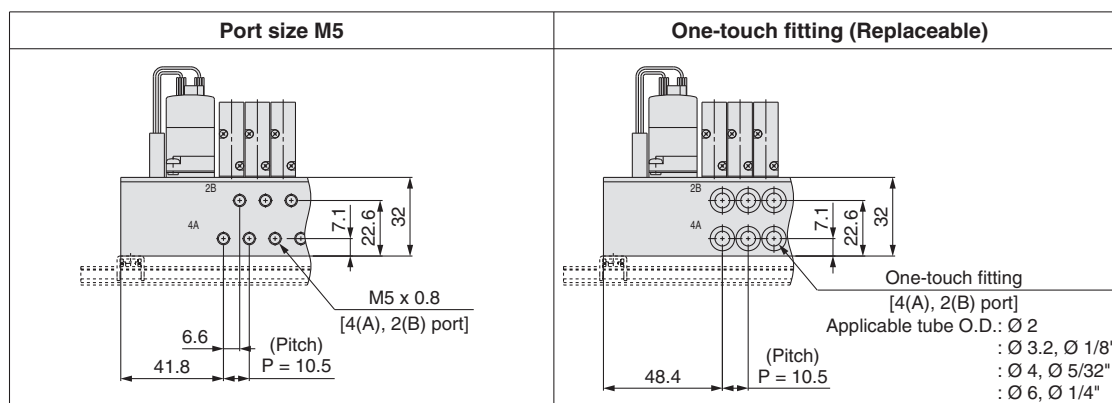
EX510

SS5Y3-50(R)S5□-Stations  $\begin{matrix} \text{U} & \text{M5} \\ \text{D} & \text{C}\square, \text{N}\square \\ \text{B} & \text{KC}\square, \text{KN}\square \end{matrix}$  □(D)

(Station 1)---(Station n)



\*: These figures show the "SS5Y3-50S5-05B-C6".



| n: Stations | 2    | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    |
|-------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 71.5 | 82    | 92.5  | 103   | 113.5 | 124   | 134.5 | 145   | 155.5 | 166   | 176.5 |
| L2          | 63.5 | 74    | 84.5  | 95    | 105.5 | 116   | 126.5 | 137   | 147.5 | 158   | 168.5 |
| L3          | 98   | 110.5 | 123   | 135.5 | 148   | 160.5 | 160.5 | 173   | 185.5 | 198   | 210.5 |
| L4          | 87.5 | 100   | 112.5 | 125   | 137.5 | 150   | 150   | 162.5 | 175   | 187.5 | 200   |
| L5          | 13.5 | 14.5  | 15.5  | 16.5  | 17.5  | 18.5  | 13    | 14    | 15    | 16    | 17    |

## Dimensions: Series SY3000

SS5Y3-50(R)S5□-Stations<sup>U</sup><sub>D</sub>-01□(D)

Plug-in  
Metal Base

Type 50/Side Ported  
EX510

Valve

Plug-in Sub-plate

Plug-in Metal Base

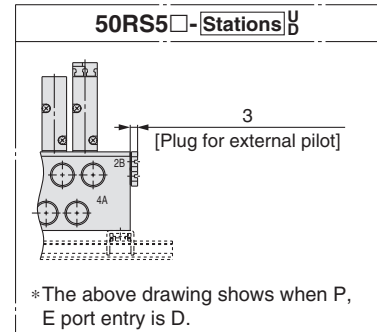
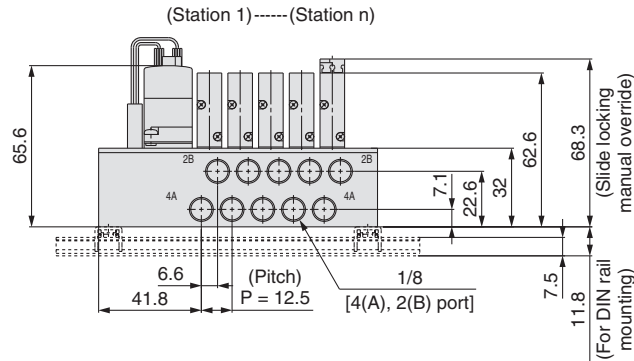
Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

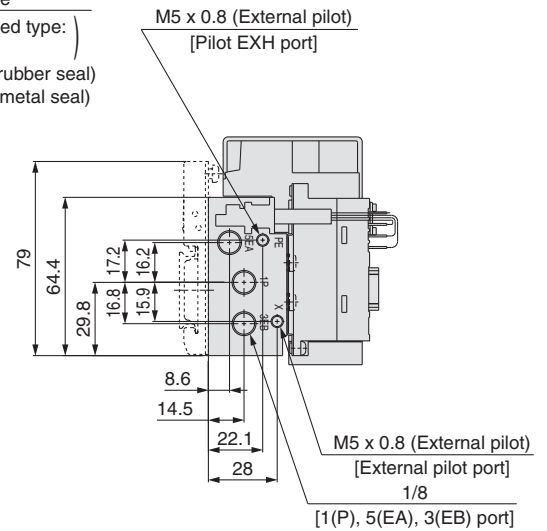
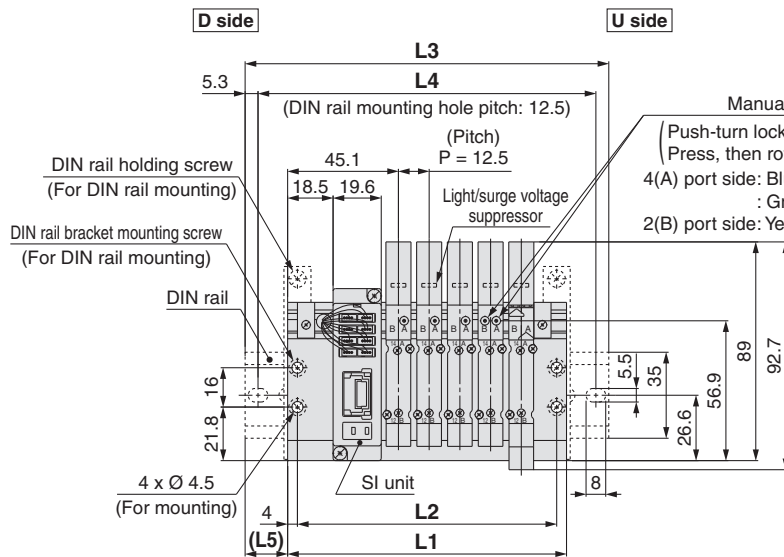
Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options



\*The above drawing shows when P, E port entry is D.



\*: These figures show the "SS5Y3-50S5-05B-01".

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 76    | 88.5  | 101   | 113.5 | 126   | 138.5 | 151   | 163.5 | 176   | 188.5 | 201   |
| L2          | 68    | 80.5  | 93    | 105.5 | 118   | 130.5 | 143   | 155.5 | 168   | 180.5 | 193   |
| L3          | 110.5 | 123   | 135.5 | 148   | 160.5 | 173   | 185.5 | 198   | 210.5 | 223   | 235.5 |
| L4          | 100   | 112.5 | 125   | 137.5 | 150   | 162.5 | 175   | 187.5 | 200   | 212.5 | 225   |
| L5          | 17.5  | 17.5  | 17.5  | 17.5  | 17.5  | 17.5  | 17.5  | 17.5  | 17.5  | 17.5  | 17.5  |

# Series SY3000/5000/7000

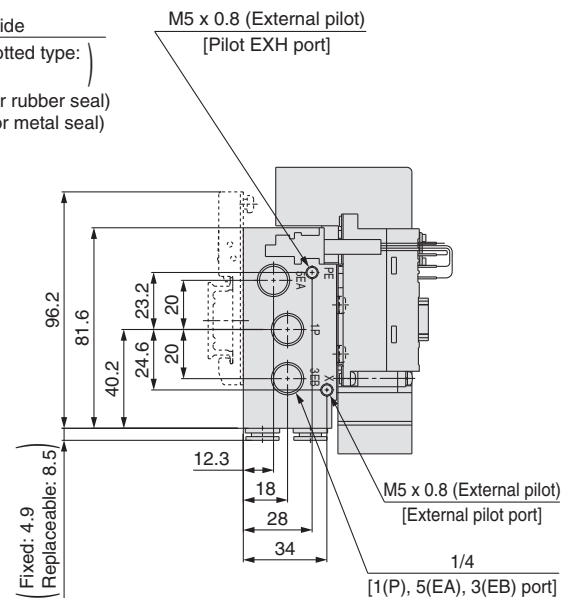
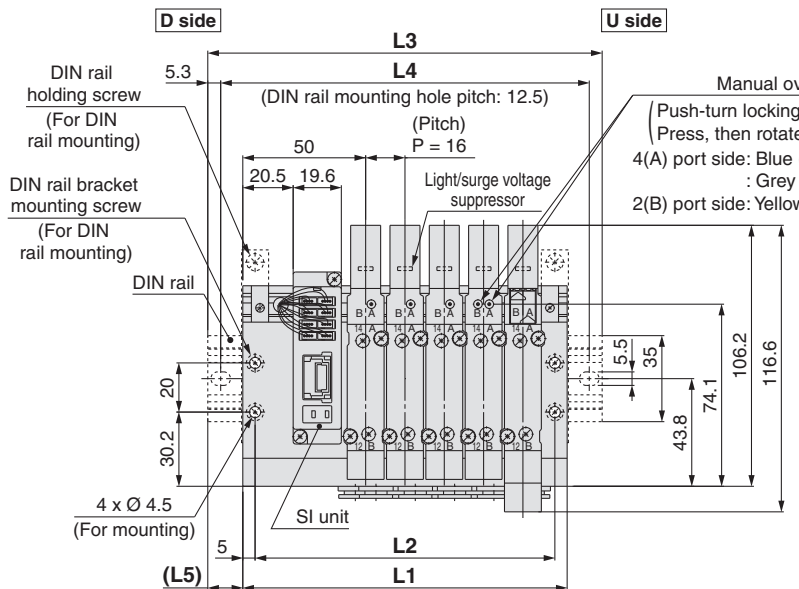
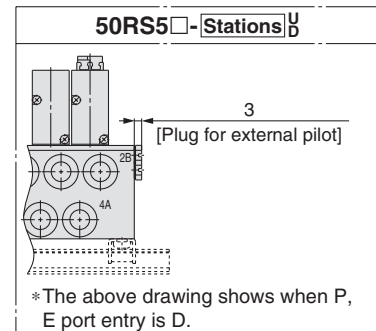
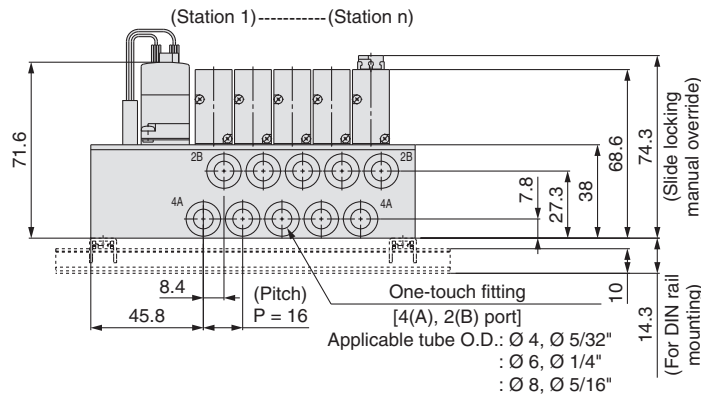
## Dimensions: Series SY5000

Plug-in  
Metal Base

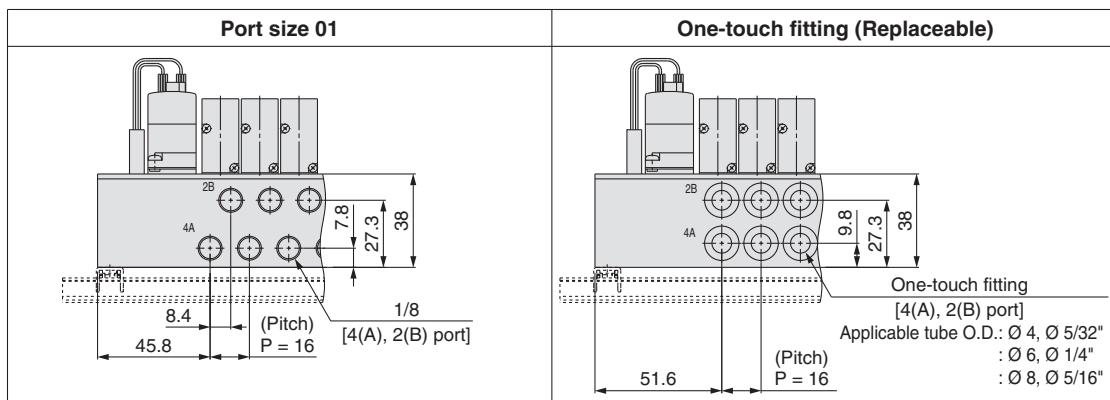
Type 50/Side Ported

EX510

SS5Y5-50(R)S5□-Stations  $\begin{matrix} \text{U} & 01 \\ \text{D} & \text{C}\square, \text{N}\square \\ \text{B} & \text{KC}\square, \text{KN}\square \end{matrix}$  □(D)



\*: These figures show the "SS5Y5-50S5-05B-C8".



| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 84    | 100   | 116   | 132   | 148   | 164   | 180   | 196   | 212   | 228   | 244   |
| L2          | 74    | 90    | 106   | 122   | 138   | 154   | 170   | 186   | 202   | 218   | 234   |
| L3          | 110.5 | 135.5 | 148   | 160.5 | 173   | 198   | 210.5 | 223   | 248   | 260.5 | 273   |
| L4          | 100   | 125   | 137.5 | 150   | 162.5 | 187.5 | 200   | 212.5 | 237.5 | 250   | 262.5 |
| L5          | 13.5  | 18    | 16    | 14.5  | 12.5  | 17    | 15.5  | 13.5  | 18    | 16.5  | 14.5  |



## Dimensions: Series SY5000

SS5Y5-50(R)S5□-Stations<sup>U</sup><sub>D</sub>-02□(D)

Plug-in  
Metal Base

Type 50/Side Ported  
EX510

Valve

Plug-in Sub-plate

Plug-in Metal Base

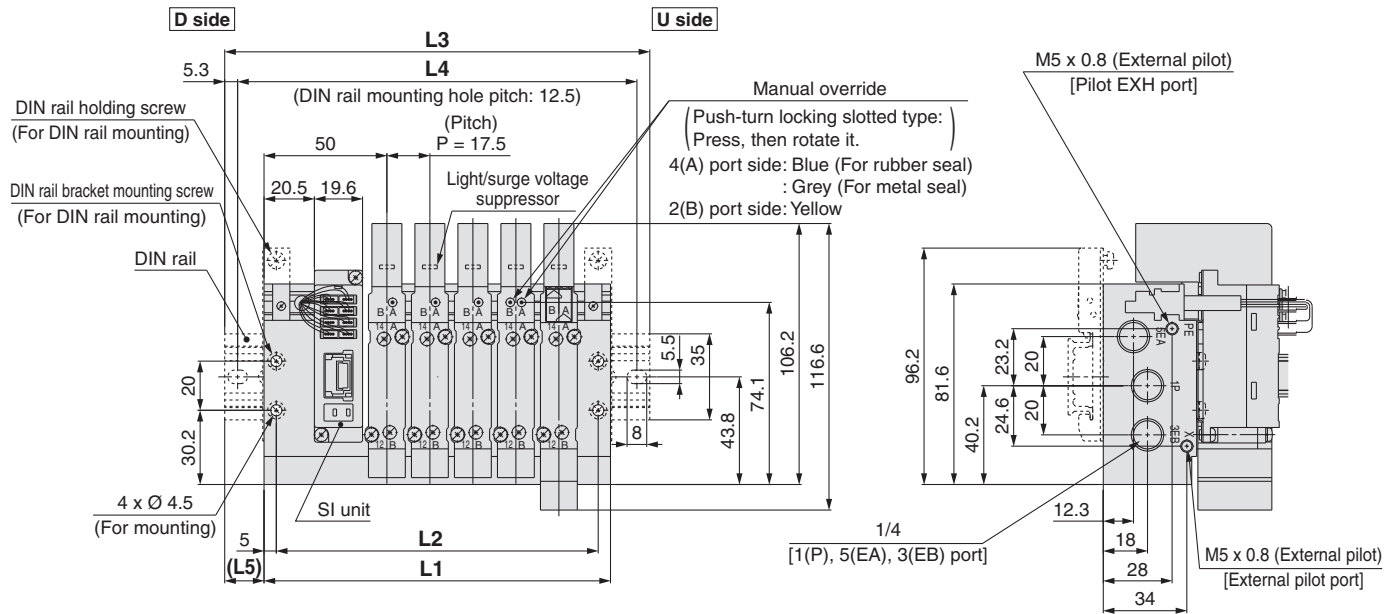
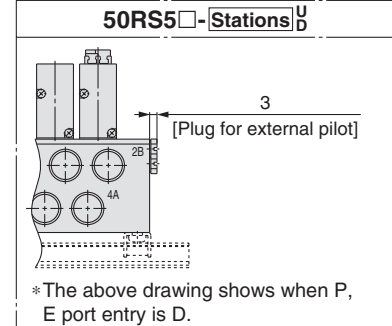
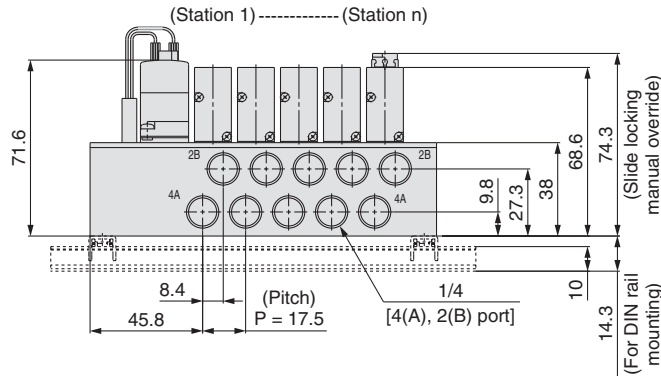
Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options



\*: These figures show the "SS5Y5-50S5-05B-02".

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 88.5  | 106   | 123.5 | 141   | 158.5 | 176   | 193.5 | 211   | 228.5 | 246   | 263.5 |
| L2          | 78.5  | 96    | 113.5 | 131   | 148.5 | 166   | 183.5 | 201   | 218.5 | 236   | 253.5 |
| L3          | 123   | 135.5 | 148   | 173   | 185.5 | 210.5 | 223   | 235.5 | 260.5 | 273   | 298   |
| L4          | 112.5 | 125   | 137.5 | 162.5 | 175   | 200   | 212.5 | 225   | 250   | 262.5 | 287.5 |
| L5          | 17.5  | 15    | 12.5  | 16    | 13.5  | 17.5  | 15    | 12.5  | 16    | 13.5  | 17.5  |

# Series SY3000/5000/7000

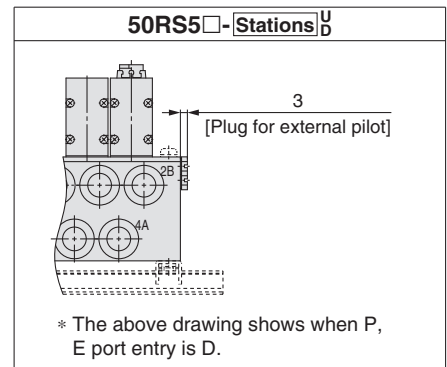
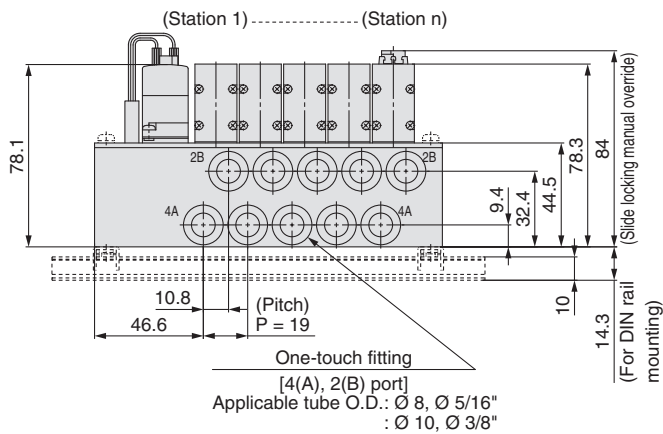
## Dimensions: Series SY7000

Plug-in  
Metal Base

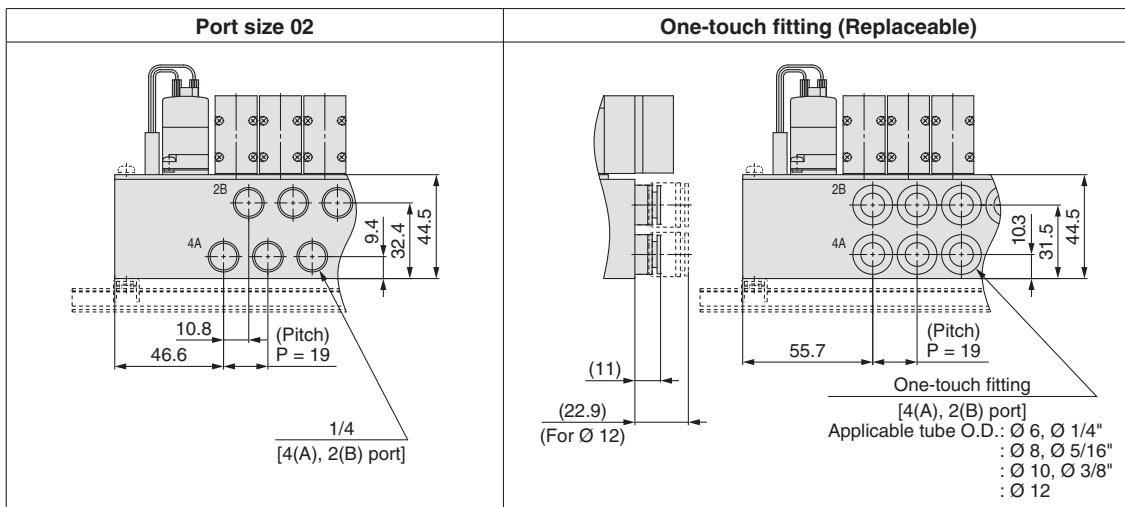
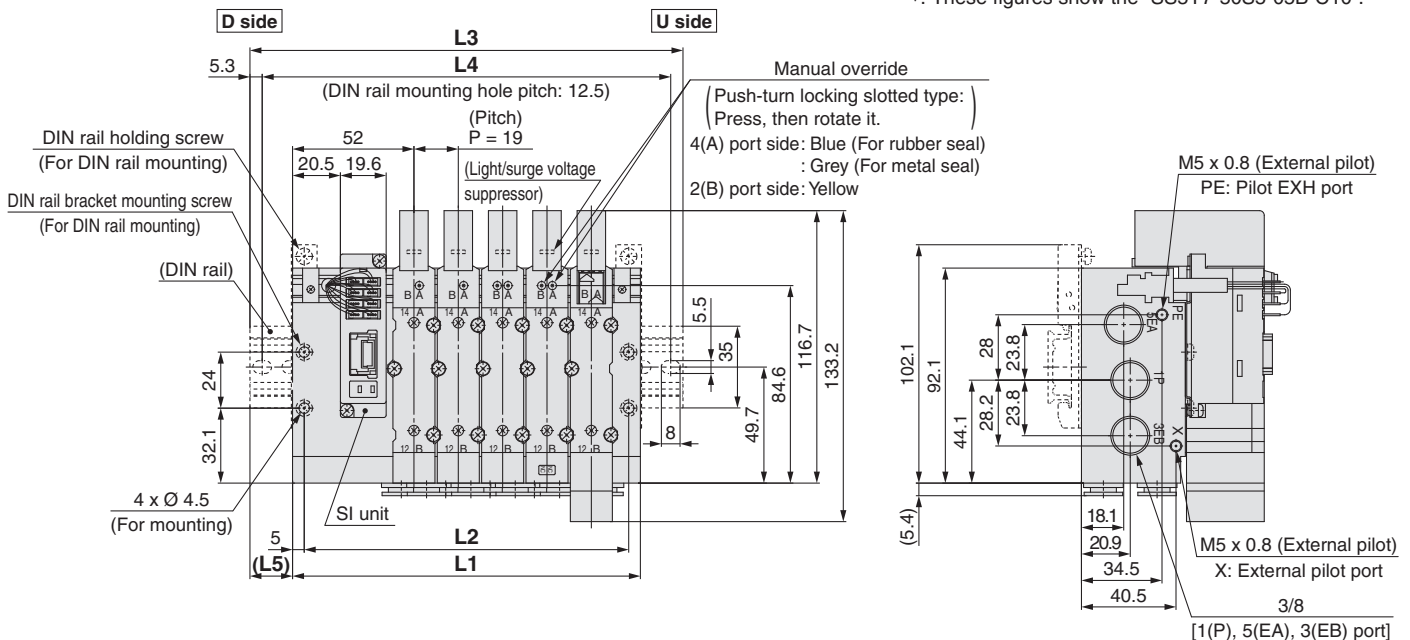
Type 50/Side Ported

EX510

SS5Y7-50(R)S5□-Stations  $\begin{matrix} \text{U} & \text{02} \\ \text{D} & \text{C} \square, \text{N} \square \\ \text{B} & \text{KC} \square, \text{KN} \square \end{matrix}$  (D)



\*: These figures show the "SS5Y7-50S5-05B-C10".



| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 92    | 111   | 130   | 149   | 168   | 187   | 206   | 225   | 244   | 263   | 282   |
| L2          | 82    | 101   | 120   | 139   | 158   | 177   | 196   | 215   | 234   | 253   | 272   |
| L3          | 123   | 148   | 160.5 | 185.5 | 198   | 223   | 235.5 | 260.5 | 273   | 298   | 310.5 |
| L4          | 112.5 | 137.5 | 150   | 175   | 187.5 | 212.5 | 225   | 250   | 262.5 | 287.5 | 300   |
| L5          | 15.5  | 18.5  | 15.5  | 18.5  | 15    | 18    | 15    | 18    | 14.5  | 17.5  | 14.5  |

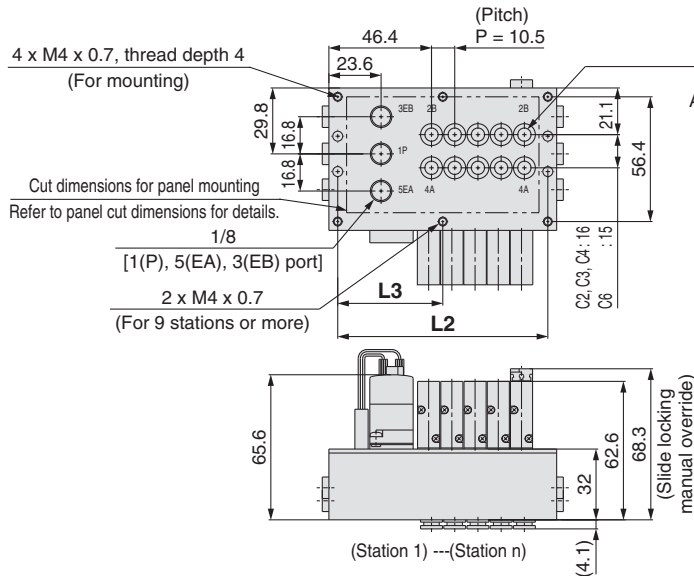
## Dimensions: Series SY3000

Plug-in  
Metal Base

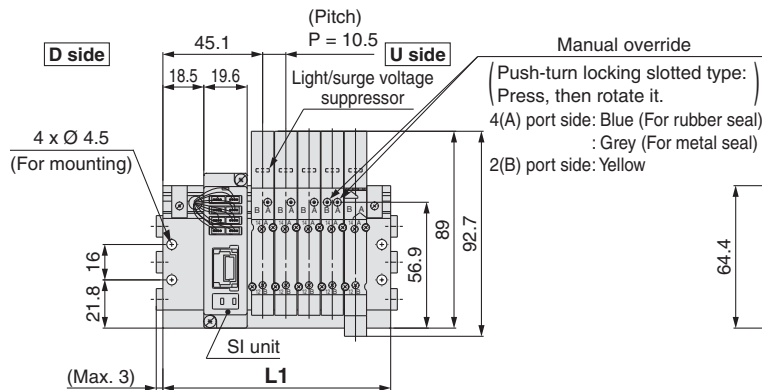
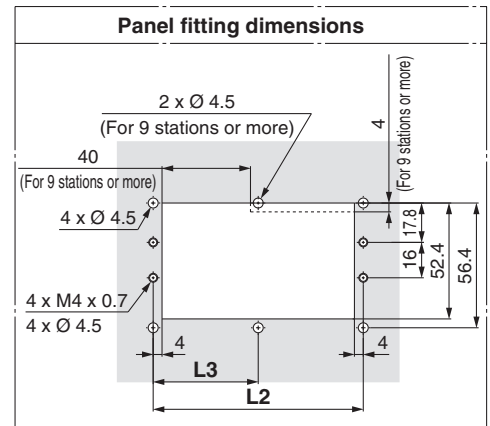
Type 51/Bottom Ported

EX510

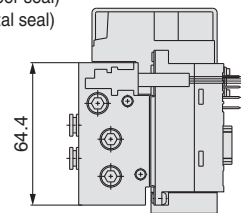
SS5Y3-51S5□-Stations D-<sup>M5, 01</sup>C□, N□  
KC□, KN□



One-touch fitting  
[4(A), 2(B) port]  
Applicable tube O.D.: Ø 2  
: Ø 3.2, Ø 1/8"  
: Ø 4, Ø 5/32"  
: Ø 6, Ø 1/4"



\*: These figures show the "SS5Y3-51S5-05D-C6".



| Port size M5                  |  | Port size 01             |  | One-touch fitting (Replaceable)                                                                                           |  |
|-------------------------------|--|--------------------------|--|---------------------------------------------------------------------------------------------------------------------------|--|
| (Pitch) P = 10.5              |  | (Pitch) P = 12.5         |  | (Pitch) P = 10.5                                                                                                          |  |
|                               |  |                          |  |                                                                                                                           |  |
|                               |  |                          |  |                                                                                                                           |  |
| M5 x 0.8<br>[4(A), 2(B) port] |  | 1/8<br>[4(A), 2(B) port] |  | One-touch fitting<br>[4(A), 2(B) port]<br>Applicable tube O.D.: Ø 2<br>: Ø 3.2, Ø 1/8"<br>: Ø 4, Ø 5/32"<br>: Ø 6, Ø 1/4" |  |
| (C6: 12.8)<br>(N7: 16.6)      |  |                          |  |                                                                                                                           |  |

Port Size M5, C□, N□, KC□, KN□

| n: Stations | 2    | 3  | 4    | 5   | 6     | 7   | 8     | 9    | 10    | 11  | 12    |
|-------------|------|----|------|-----|-------|-----|-------|------|-------|-----|-------|
| L1          | 71.5 | 82 | 92.5 | 103 | 113.5 | 124 | 134.5 | 145  | 155.5 | 166 | 176.5 |
| L2          | 63.5 | 74 | 84.5 | 95  | 105.5 | 116 | 126.5 | 137  | 147.5 | 158 | 168.5 |
| L3          | —    | —  | —    | —   | —     | —   | —     | 68.5 | 73.8  | 79  | 84.3  |

Port Size 01

| n: Stations | 2  | 3    | 4   | 5     | 6   | 7     | 8   | 9     | 10  | 11    | 12   |
|-------------|----|------|-----|-------|-----|-------|-----|-------|-----|-------|------|
| L1          | 76 | 88.5 | 101 | 113.5 | 126 | 138.5 | 151 | 163.5 | 176 | 188.5 | 201  |
| L2          | 68 | 80.5 | 93  | 105.5 | 118 | 130.5 | 143 | 155.5 | 168 | 180.5 | 193  |
| L3          | —  | —    | —   | —     | —   | —     | —   | 77.8  | 84  | 90.3  | 96.5 |

# Series SY3000/5000/7000

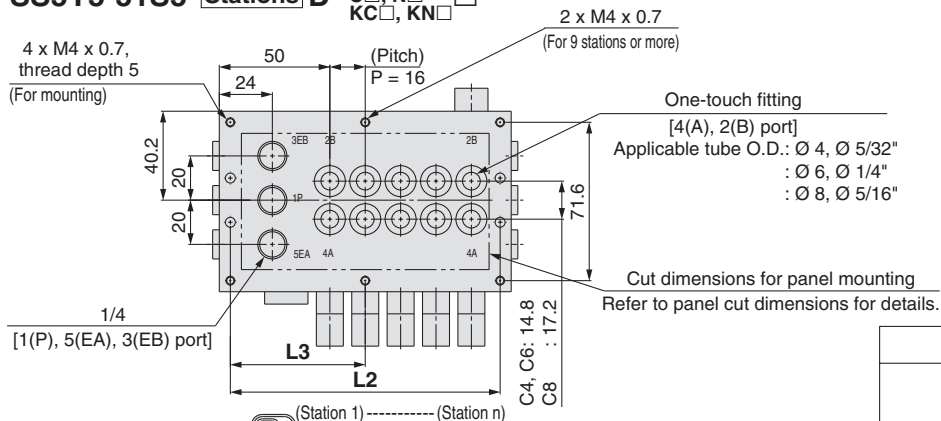
## Dimensions: Series SY5000

Plug-in  
Metal Base

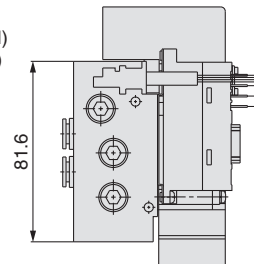
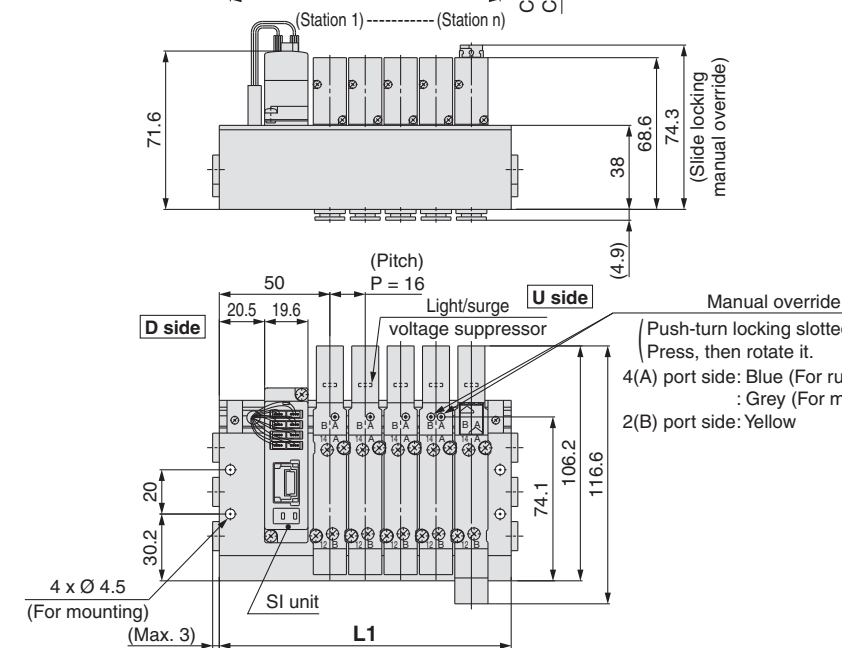
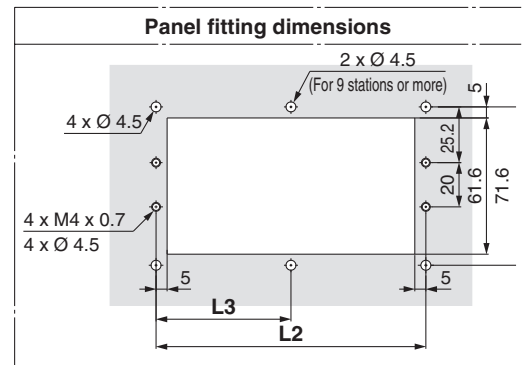
Type 51/Bottom Ported

EX510

SS5Y5-51S5- Stations D - C <sup>01, 02</sup> ☐ N ☐ ☐  
KC ☐ KN ☐



\*: These figures show the  
"SS5Y5-51S5-05D-C8".



| Port size 01 | Port size 02 | One-touch fitting (Replaceable) |
|--------------|--------------|---------------------------------|
|              |              |                                 |
|              |              |                                 |

### Port Size 01, C ☐, N ☐, KC ☐, KN ☐

| n: Stations | 2  | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  |
|-------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| L1          | 84 | 100 | 116 | 132 | 148 | 164 | 180 | 196 | 212 | 228 | 244 |
| L2          | 74 | 90  | 106 | 122 | 138 | 154 | 170 | 186 | 202 | 218 | 234 |
| L3          | —  | —   | —   | —   | —   | —   | —   | 93  | 101 | 109 | 117 |

### Port Size 02

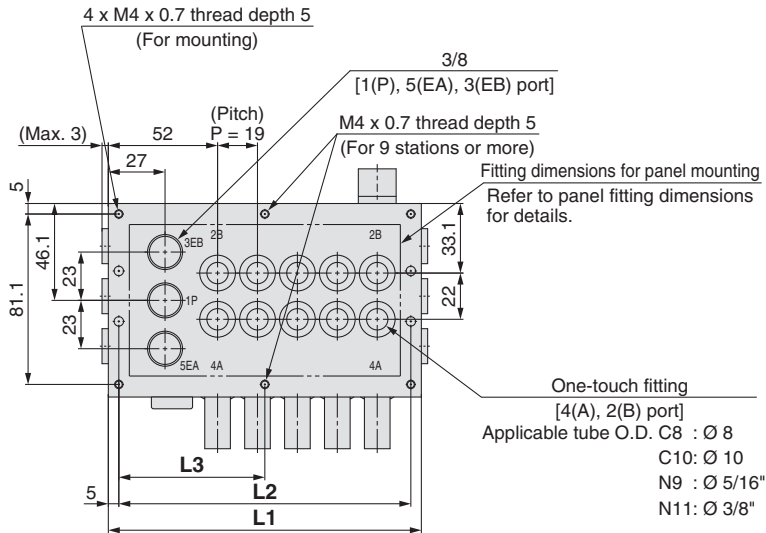
| n: Stations | 2    | 3   | 4     | 5   | 6     | 7   | 8     | 9     | 10    | 11  | 12    |
|-------------|------|-----|-------|-----|-------|-----|-------|-------|-------|-----|-------|
| L1          | 88.5 | 106 | 123.5 | 141 | 158.5 | 176 | 193.5 | 211   | 228.5 | 246 | 263.5 |
| L2          | 78.5 | 96  | 113.5 | 131 | 148.5 | 166 | 183.5 | 201   | 218.5 | 236 | 253.5 |
| L3          | —    | —   | —     | —   | —     | —   | —     | 100.5 | 109.3 | 118 | 126.8 |

## Dimensions: Series SY7000

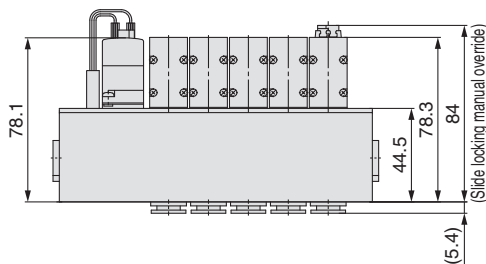
Plug-in  
Metal Base

Type 51/Bottom Ported  
EX510

SS5Y7-51S5□-Stations D-<sup>02</sup>  
C□, N□  
KC□, KN□ (D)

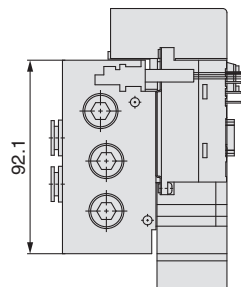
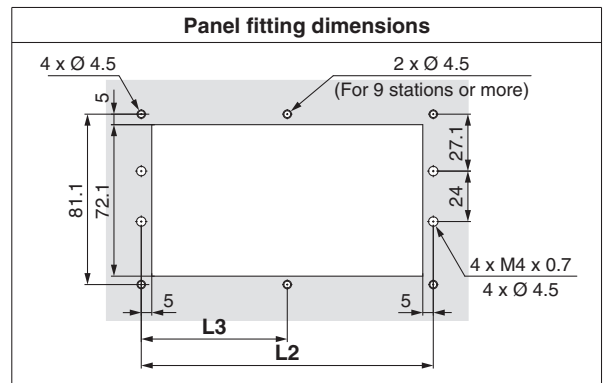
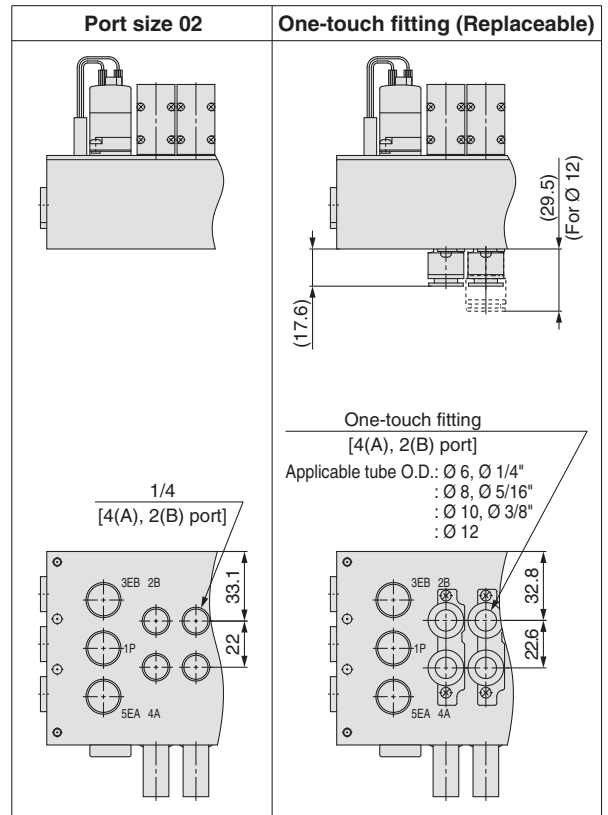
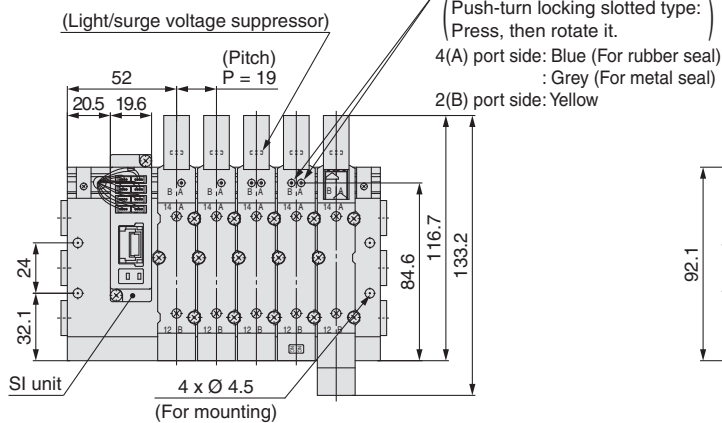


(Station 1) ..... (Station n)



D side

U side



\*: These figures show the "SS5Y7-51S5-05D-C10".

| n: Stations | 2  | 3   | 4   | 5   | 6   | 7   | 8   | 9     | 10  | 11    | 12  |
|-------------|----|-----|-----|-----|-----|-----|-----|-------|-----|-------|-----|
| L1          | 92 | 111 | 130 | 149 | 168 | 187 | 206 | 225   | 244 | 263   | 282 |
| L2          | 82 | 101 | 120 | 139 | 158 | 177 | 196 | 215   | 234 | 253   | 272 |
| L3          | —  | —   | —   | —   | —   | —   | —   | 107.5 | 117 | 126.5 | 136 |

Type 52  
Top Ported

Plug-in Metal Base EX510

# Series SY3000/5000/7000



## How to Order Manifold

SS5Y **3** - **52** S5 **□** - **□** **05** **D** - **□** **□**

1 2 3 4 5 6 7 8

### 1 Series

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

### 2 Type

|     |                            |
|-----|----------------------------|
| 52  | Top ported                 |
| 52R | Top ported, External pilot |

### 3 SI Unit output polarity

|   |                 |
|---|-----------------|
| — | Positive common |
| N | Negative common |

### 4 Wiring type

|   |                     |
|---|---------------------|
| — | All double wiring*1 |
| S | All single wiring*2 |

\*1: All double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

\*2: All single wiring: Available only for the manifold which has 2-position single for all stations. Note that 2-position double, 3- or 4-position valves cannot be used.

\*: If a mix of single and double wiring is required, it is supplied as a special order.

### 5 Valve stations

| Symbol | Stations    | Note              |
|--------|-------------|-------------------|
| 02     | 2 stations  | All double wiring |
| 08     | 8 stations  |                   |
| 02     | 2 stations  | All single wiring |
| 12     | 12 stations |                   |

\*: This also includes the number of blanking plate assembly.

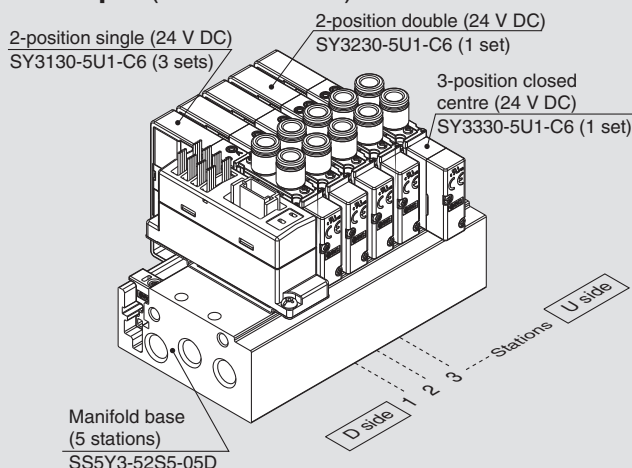
### 6 P, E port entry

|   |            |
|---|------------|
| U | U side*1   |
| D | D side*1   |
| B | Both sides |

\*1: Plugs are mounted on the opposite side of the selected ports.

## How to Order Manifold Assembly

### Example (SS5Y3-52S5-□)



SS5Y3-52S5-05D ..... 1 set (Type 52 5-station manifold base part no.)  
 \*SY3130-5U1-C6 ..... 3 sets (2-position single part no.)  
 \*SY3230-5U1-C6 ..... 1 set (2-position double part no.)  
 \*SY3330-5U1-C6 ..... 1 set (3-position closed centre part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

### 7 Thread type

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

### 8 Mounting

|     |                                      |
|-----|--------------------------------------|
| —   | Direct mounting                      |
| D   | DIN rail mounting (With DIN rail)    |
| D0  | DIN rail mounting (Without DIN rail) |
| D3  | For 3 stations                       |
| ⋮   | ⋮                                    |
| D12 | For 12 stations                      |

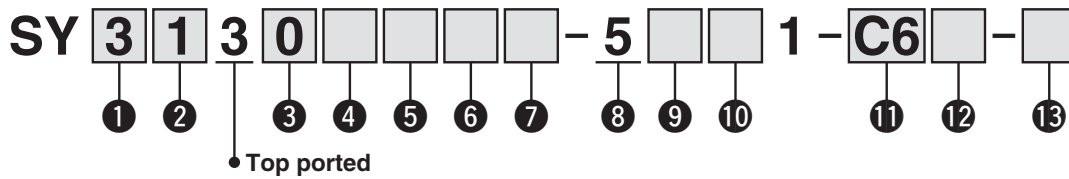
\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

For details on the EX510 Gateway-type Serial Transmission System, refer to the web catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. Please download the Operation Manual via SMC website, <http://www.smc.eu>



## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



### 1 Series

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

### 2 Type of actuation

|     |                 |                 |
|-----|-----------------|-----------------|
| 1   | 2-position      | Single          |
| 2   |                 | Double          |
| 3   | 3-position      | Closed centre   |
| 4   |                 | Exhaust centre  |
| 5   |                 | Pressure centre |
| A*1 | 4-position dual | N.C./N.C.       |
| B*1 |                 | N.O./N.O.       |
| C*1 | 3-port          | N.C./N.O.       |

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 5 Back pressure check valve (Built-in valve type)

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type  
\*: Back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.  
\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

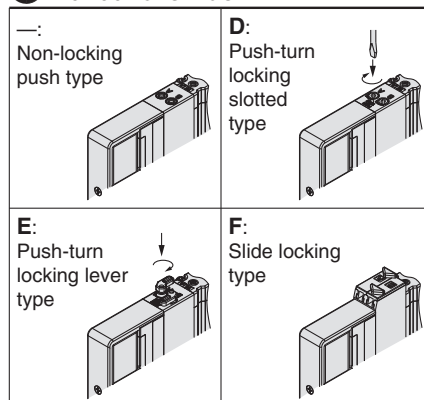
|   |         |
|---|---------|
| 5 | 24 V DC |
|---|---------|

### 9 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| R      | —          | ●                        | Non-polar            |
| U      | ●          |                          |                      |
| S      | —          |                          | Positive common      |
| Z      | ●          |                          |                      |
| NS     | —          |                          | Negative common      |
| NZ     | ●          |                          |                      |

\*: Only "Z" and "NZ" types are available for with the power saving circuit. Select a valve from R, U, S or Z when the SI Unit polarity is — (positive common). Select a valve from R, U, NS or NZ when the SI Unit output polarity is N (negative common).

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 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)

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| C2     | Ø 2       | ●      | —      | —      |
| C3     | Ø 3.2     | ●      | —      | —      |
| C4     | Ø 4       | ●      | ●      | —      |
| C6     | Ø 6       | ●      | ●      | ●      |
| C8     | Ø 8       | —      | ●      | ●      |
| C10    | Ø 10      | —      | —      | ●      |
| C12    | Ø 12      | —      | —      | ●      |

#### One-touch fitting (Inch)

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| N1     | Ø 1/8"    | ●      | —      | —      |
| N3     | Ø 5/32"   | ●      | ●      | —      |
| N7     | Ø 1/4"    | ●      | ●      | ●      |
| N9     | Ø 5/16"   | —      | ●      | ●      |
| N11    | Ø 3/8"    | —      | —      | ●      |

### 12 Thread type

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

\*: Only — is available for M5.

### 13 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 89 for part numbers of the base gasket and mounting screw.

\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.

## Series SY3000/5000/7000

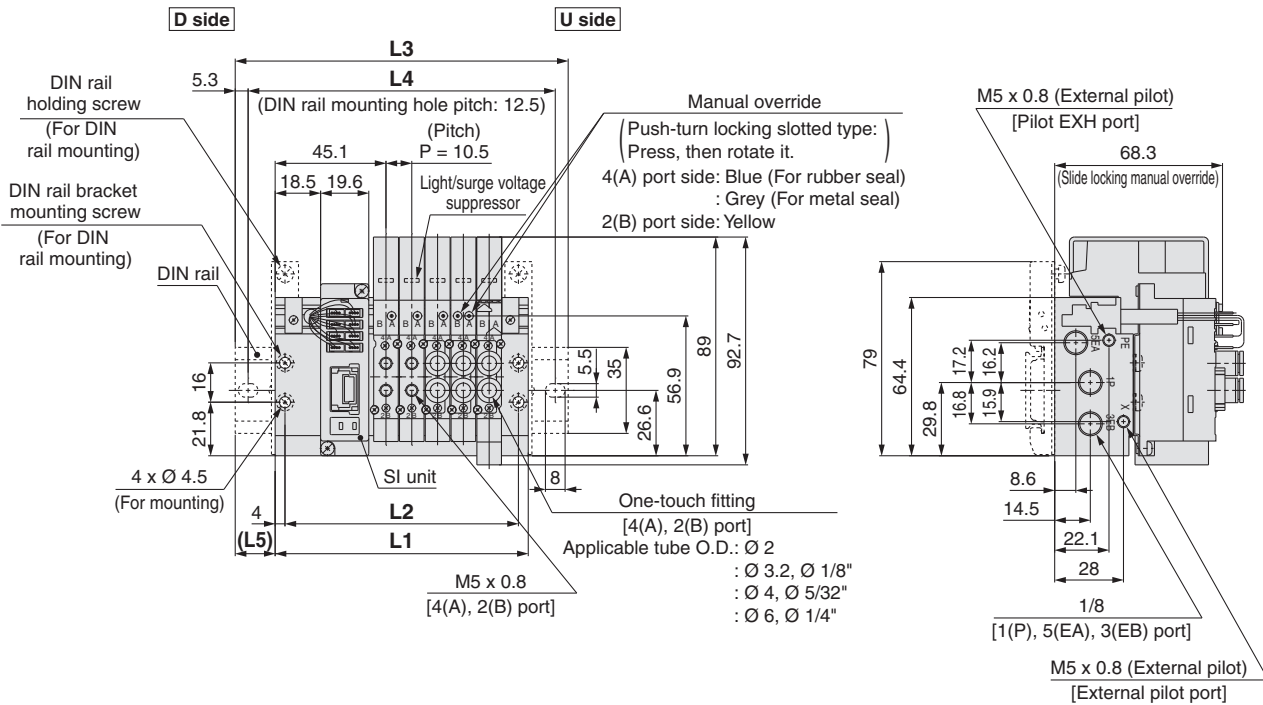
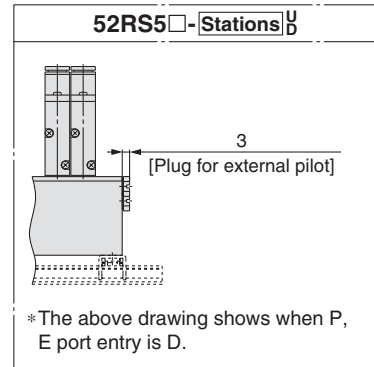
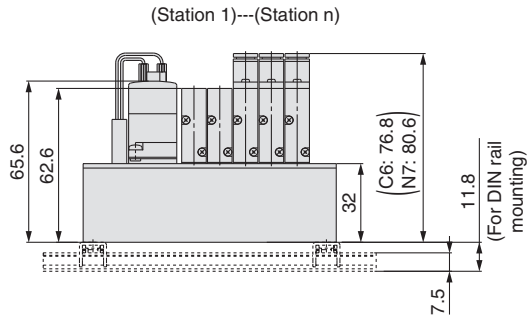
## Dimensions: Series SY3000

SS5Y3-52(R)S5□-Stations  $\frac{U}{D}$ -□(D)  
B

## Plug-in Metal Base

## Type 52/Top Ported

## EX510



\*: These figures show the “SS5Y3-52S5-05B”.

| n: Stations | 2    | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    |
|-------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 71.5 | 82    | 92.5  | 103   | 113.5 | 124   | 134.5 | 145   | 155.5 | 166   | 176.5 |
| L2          | 63.5 | 74    | 84.5  | 95    | 105.5 | 116   | 126.5 | 137   | 147.5 | 158   | 168.5 |
| L3          | 98   | 110.5 | 123   | 135.5 | 148   | 160.5 | 160.5 | 173   | 185.5 | 198   | 210.5 |
| L4          | 87.5 | 100   | 112.5 | 125   | 137.5 | 150   | 150   | 162.5 | 175   | 187.5 | 200   |
| L5          | 13.5 | 14.5  | 15.5  | 16.5  | 17.5  | 18.5  | 13    | 14    | 15    | 16    | 17    |

## Dimensions: Series SY5000

SS5Y5-52(R)S5□-Stations  $\frac{U}{D}$ -□(D)

Plug-in  
Metal Base

Type 52/Top Ported  
EX510

Valve

Plug-in Sub-plate

Plug-in Metal Base

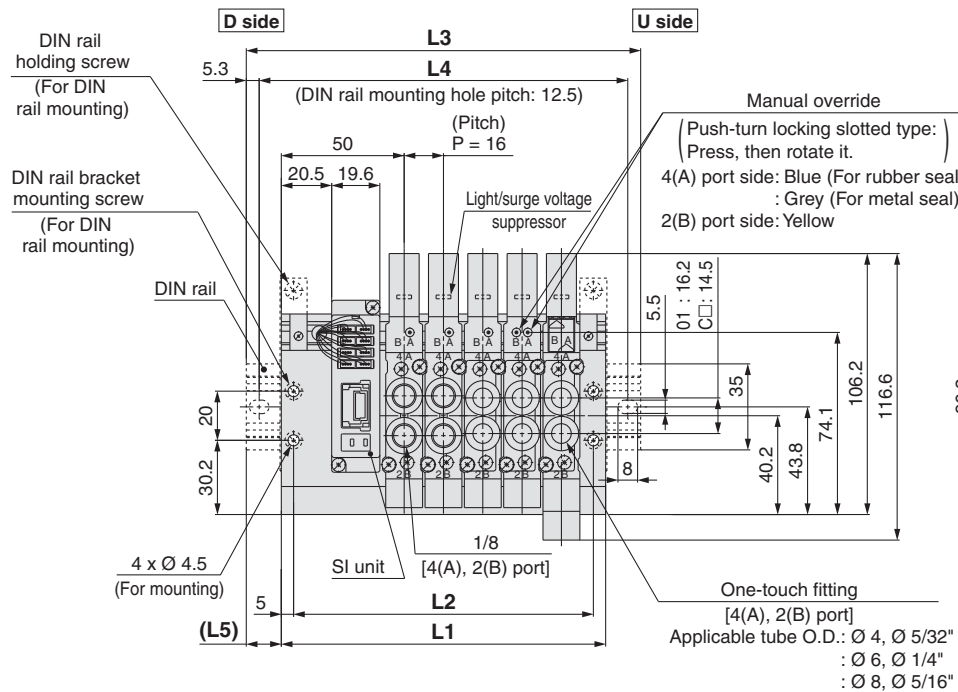
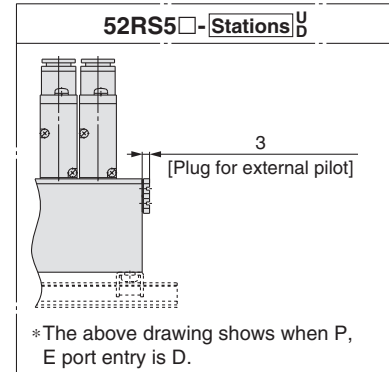
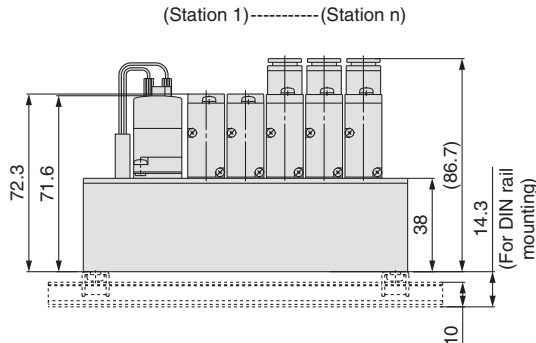
Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options



# Series SY3000/5000/7000

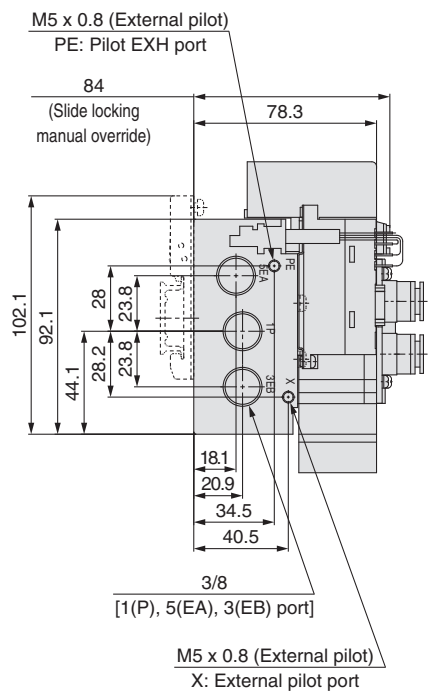
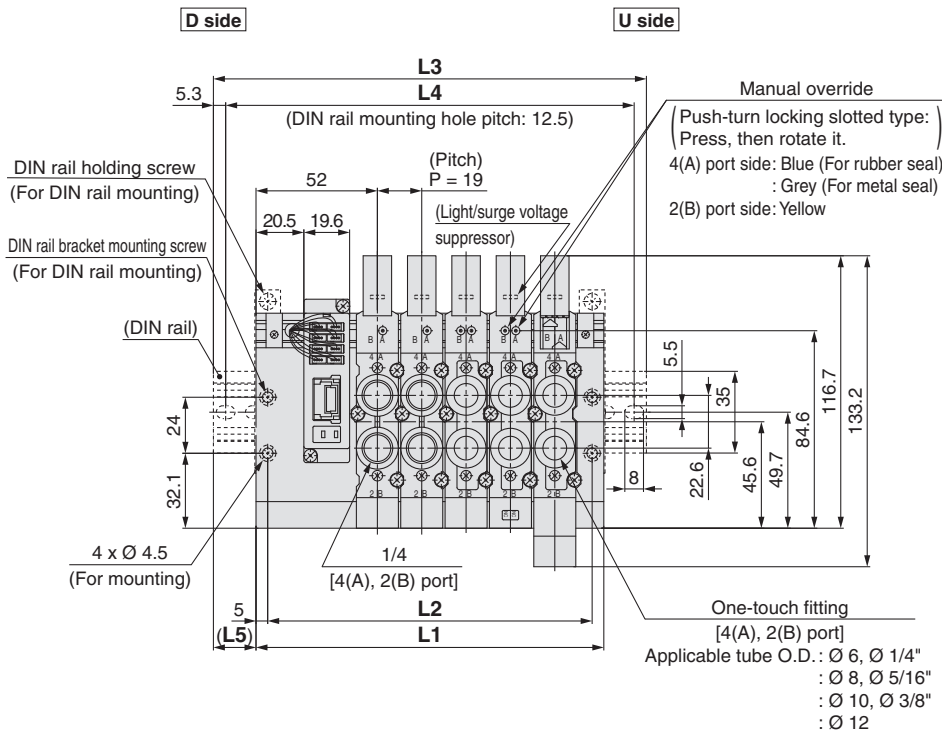
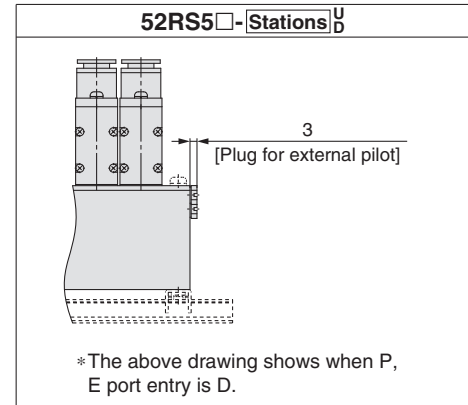
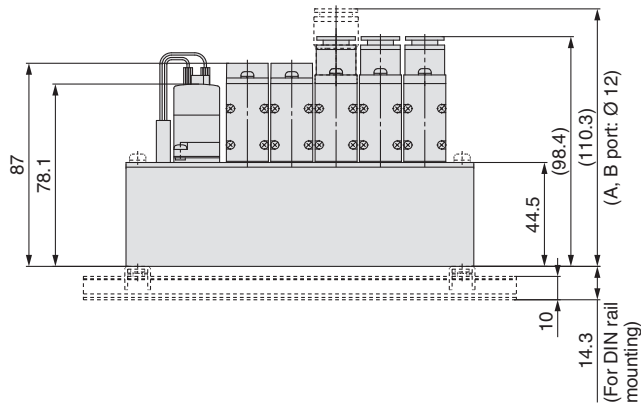
## Dimensions: Series SY7000

Plug-in  
Metal Base

Type 52/Top Ported  
EX510

SS5Y7-52(R)S5□-Stations  $\frac{U}{D}$ -□(D)

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



\*: These figures show the "SS5Y7-52S5-05B".

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 92    | 111   | 130   | 149   | 168   | 187   | 206   | 225   | 244   | 263   | 282   |
| L2          | 82    | 101   | 120   | 139   | 158   | 177   | 196   | 215   | 234   | 253   | 272   |
| L3          | 123   | 148   | 160.5 | 185.5 | 198   | 223   | 235.5 | 260.5 | 273   | 298   | 310.5 |
| L4          | 112.5 | 137.5 | 150   | 175   | 187.5 | 212.5 | 225   | 250   | 262.5 | 287.5 | 300   |
| L5          | 15.5  | 18.5  | 15.5  | 18.5  | 15    | 18    | 15    | 18    | 14.5  | 17.5  | 14.5  |

Manifold Options

One-touch Fittings/  
Plug Assembly Part No.

Type 10, 11, 12  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 50, 51, 52  
Manifold Exploded View

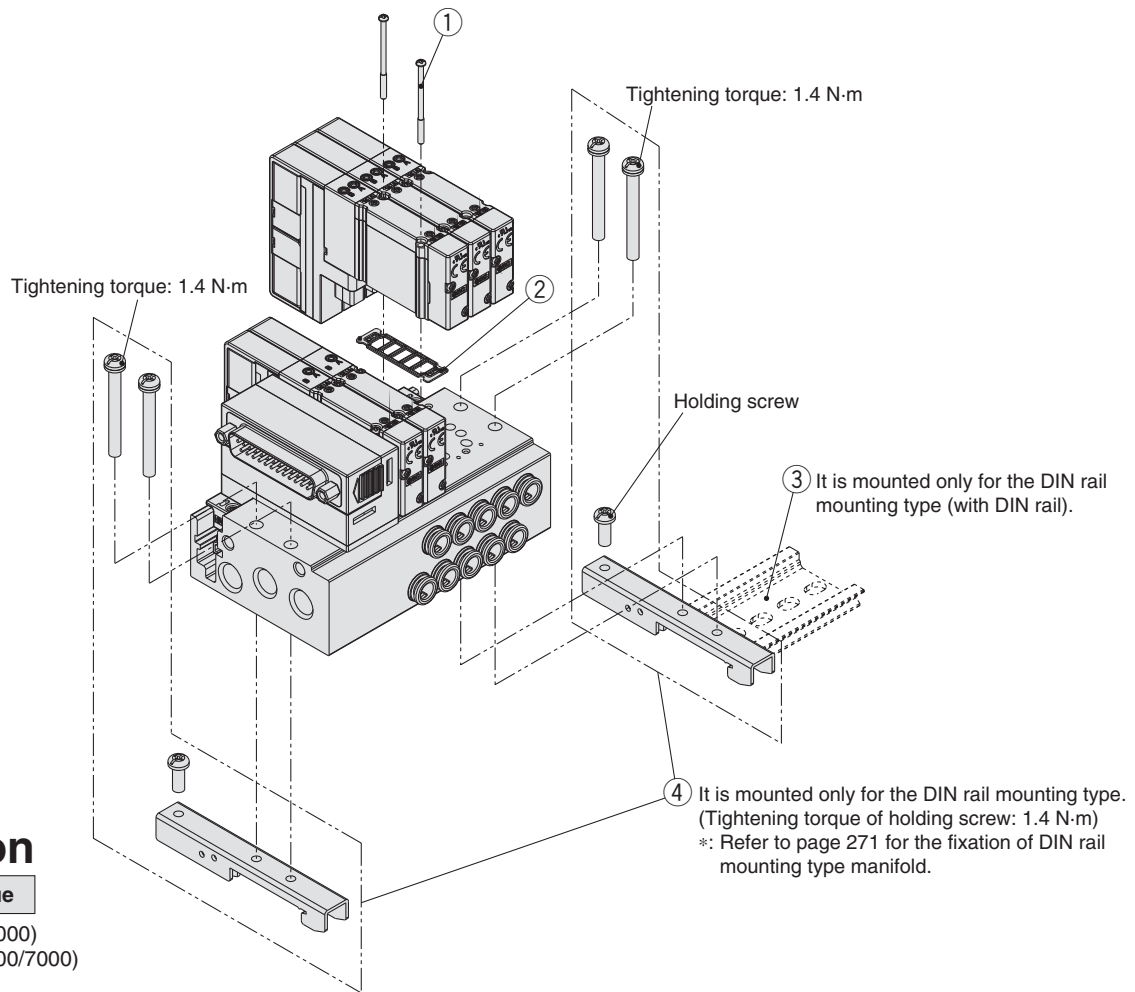
Plug-in Metal Base

Plug-in Sub-plate

Valve

# Series SY3000/5000/7000 Type 50, 51, 52

## Plug-in Metal Base Manifold Exploded View



### Manifold Parts No.

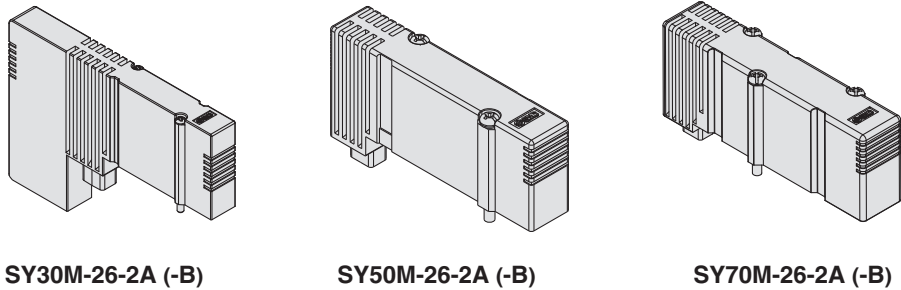
| No. | Description                                               |                               | Part no.                   |                              |                              | Note                                                                                                             |
|-----|-----------------------------------------------------------|-------------------------------|----------------------------|------------------------------|------------------------------|------------------------------------------------------------------------------------------------------------------|
|     |                                                           |                               | SY3000                     | SY5000                       | SY7000                       |                                                                                                                  |
| ①   | Valve mounting screw                                      | Round head combination screw  | SY3000-23-24A<br>(M2 x 32) | SY5000-221-1A<br>(M3 x 32.5) | SY7000-221-1A<br>(M3 x 36.5) | Part numbers shown on the left are for 10 valves (20 pcs.).<br>(30 pcs. for the SY7000)                          |
|     |                                                           | Hexagon socket head cap screw | SY3000-222-1A<br>(M2 x 32) | SY5000-222-1A<br>(M3 x 32.5) | SY7000-222-1A<br>(M3 x 36.5) |                                                                                                                  |
| ②   | Base gasket (for <b>plug-in</b> metal base and sub-plate) |                               | SY30M-11-1A                | SY50M-11-1A                  | SY70M-11-1A                  | Part numbers shown on the left are for 10 valves (10 pcs.).                                                      |
| ③   | DIN rail                                                  |                               | VZ1000-11-1-□              | VZ1000-11-4-□                | VZ1000-11-4-□                | Refer to page 249.                                                                                               |
| ④   | Clamp bracket assembly (for <b>plug-in</b> metal base)    |                               | SY30M-15-2A                | SY50M-15-2A                  | SY70M-15-2A                  | Part numbers shown on the left are for the clamp bracket assembly for one manifold (two sets of clamp brackets). |



Manifold Parts No.

■ Blanking plate assembly (With mounting screw)

Used when expecting valve additions, or for maintenance.  
A structure to prevent screws falling out is in place on the blanking plate, making it much harder for the mounting screws to fall out.



Refer to pages 260, 262, 264 for dimensions.

Refer to pages 250 to 254 for individual SUP/EXH and other options.

How to Order Blanking Plate Assembly

SY0M-26-2A-

● Series

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

● Option for mounting

|   |                                                        |
|---|--------------------------------------------------------|
| — | With mounting screw<br>(Round head combination screw)  |
| B | With mounting screw<br>(Hexagon socket head cap screw) |

● Base type

|   |                        |
|---|------------------------|
| 2 | For plug-in metal base |
|---|------------------------|

Circuit diagram

(A) 4

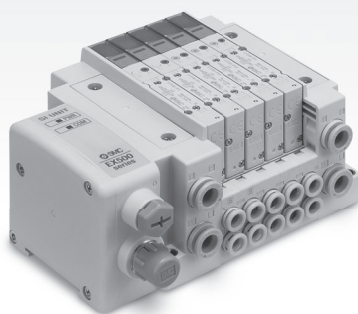
(B) 2

5 1 3

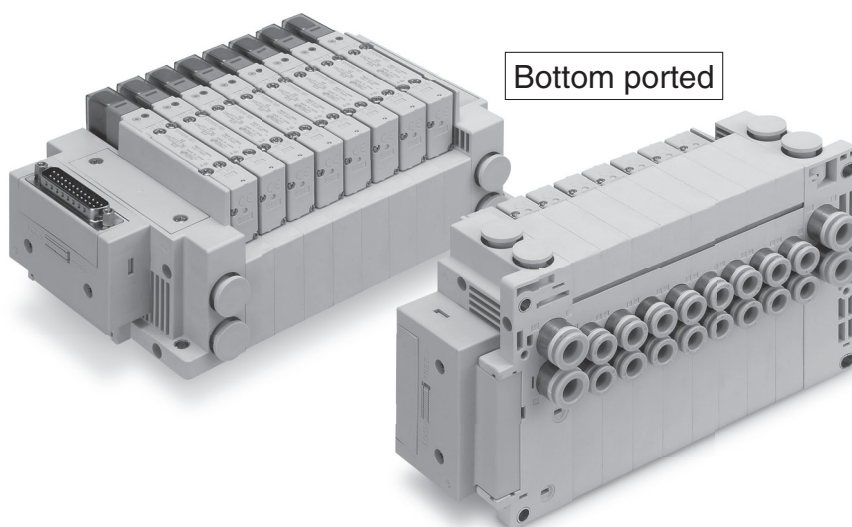
(EA) (P) (EB)



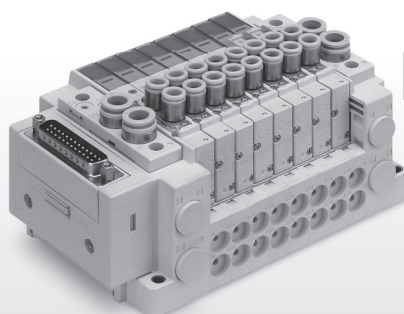
# Plug-in Connector Connecting Base



Side ported



Bottom ported



Top ported

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

# Series SY3000/5000/7000 Type 10, 11, 12

## Plug-in Connector Connecting Base



### Manifold Specifications

| Model                         |                   |        | D-sub connector                                                                                                                                                               |                                            | Flat ribbon cable                                                                                  |                                                     |                             | Terminal block box | Lead wire        | Circular connector | Serial wiring                       |                                                 |                               |                     |  |
|-------------------------------|-------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------|-----------------------------|--------------------|------------------|--------------------|-------------------------------------|-------------------------------------------------|-------------------------------|---------------------|--|
|                               |                   |        | F type                                                                                                                                                                        | FW type                                    | P type                                                                                             | PG type<br>J type<br>G type                         | PH type                     | T type             | L type           | M type             | S6□ type<br>(EX600)                 | SA2 type<br>(EX500)<br>S4□ type<br>(EX126)      | S□ type<br>(EX250)<br>(EX260) | S3□ type<br>(EX120) |  |
| Manifold type                 |                   |        | Plug-in connector connecting base                                                                                                                                             |                                            |                                                                                                    |                                                     |                             |                    |                  |                    |                                     |                                                 |                               |                     |  |
| SUP/EXH port type             |                   |        | Common SUP/EXH (Common for 3/5 port)                                                                                                                                          |                                            |                                                                                                    |                                                     |                             |                    |                  |                    |                                     |                                                 |                               |                     |  |
| Valve stations                |                   |        | 2 to 24 stations                                                                                                                                                              |                                            |                                                                                                    | 2 to 18 stations<br>(J/G type:<br>2 to 16 stations) | 2 to 8 stations             | 2 to 20 stations   | 2 to 24 stations |                    |                                     | 2 to 16 stations                                | 2 to 24 stations              | 2 to 16 stations    |  |
| Applicable connector          |                   |        | D-sub connector<br>Conforming to MIL-C-24308<br>JIS-X-5101<br>(Refer to page 95.)                                                                                             | Dedicated connector<br>(Refer to page 95.) | Flat ribbon cable connector with strain relief<br>Conforming to MIL-C-83503<br>(Refer to page 97.) |                                                     |                             | —                  |                  |                    |                                     |                                                 |                               |                     |  |
|                               |                   |        |                                                                                                                                                                               |                                            | Socket: 26 pins<br>MIL type                                                                        | Socket: 20 pins<br>MIL type                         | Socket: 10 pins<br>MIL type |                    |                  |                    |                                     |                                                 |                               |                     |  |
| Internal wiring               |                   |        | Positive common, Negative common                                                                                                                                              |                                            |                                                                                                    |                                                     |                             |                    |                  |                    |                                     |                                                 |                               |                     |  |
| Port size                     | 1(P), 3/5(E) port | SY3000 | Ø 8 One-touch fitting<br>Ø 5/16" One-touch fitting                                                                                                                            |                                            |                                                                                                    |                                                     |                             |                    |                  |                    |                                     |                                                 |                               |                     |  |
|                               |                   | SY5000 | Ø 10 One-touch fitting<br>Ø 3/8" One-touch fitting                                                                                                                            |                                            |                                                                                                    |                                                     |                             |                    |                  |                    |                                     |                                                 |                               |                     |  |
|                               |                   | SY7000 | Ø 12 One-touch fitting<br>Ø 1/2" One-touch fitting                                                                                                                            |                                            |                                                                                                    |                                                     |                             |                    |                  |                    |                                     |                                                 |                               |                     |  |
|                               | 4(A), 2(B) port   | SY3000 | Ø 2 One-touch fitting, Ø 3.2 One-touch fitting, Ø 4 One-touch fitting, Ø 6 One-touch fitting<br>Ø 1/8" One-touch fitting, Ø 5/32" One-touch fitting, Ø 1/4" One-touch fitting |                                            |                                                                                                    |                                                     |                             |                    |                  |                    |                                     |                                                 |                               |                     |  |
|                               |                   | SY5000 | Ø 4 One-touch fitting, Ø 6 One-touch fitting, Ø 8 One-touch fitting<br>Ø 5/32" One-touch fitting, Ø 1/4" One-touch fitting, Ø 5/16" One-touch fitting                         |                                            |                                                                                                    |                                                     |                             |                    |                  |                    |                                     |                                                 |                               |                     |  |
|                               |                   | SY7000 | Ø 6 One-touch fitting, Ø 8 One-touch fitting, Ø 10 One-touch fitting, Ø 12 One-touch fitting<br>Ø 1/4" One-touch fitting, Ø 5/16" One-touch fitting, Ø 3/8" One-touch fitting |                                            |                                                                                                    |                                                     |                             |                    |                  |                    |                                     |                                                 |                               |                     |  |
| Enclosure (Based on IEC60529) |                   |        | IP40                                                                                                                                                                          | IP67*                                      | IP40                                                                                               |                                                     |                             | IP67*              |                  |                    | IP67*<br>(I/O unit: partially IP40) | IP67*<br>(EX500 gateway unit, input unit: IP65) | IP67*<br>(Partially IP40)     | IP20                |  |

\* In the case of a metal seal, there are restrictions in the operating environment. Refer to the Specific Product Precautions (page 242).

## Manifold Flow Rate Characteristics<sup>\*1</sup>/Manifold Weight

### Valve Seal Type: Rubber Seal

| Model                    | Port size        |                | Valve flow-rate characteristics |      |                       |                    |      |                       | Weight: W [g] *2<br>(n: stations) |
|--------------------------|------------------|----------------|---------------------------------|------|-----------------------|--------------------|------|-----------------------|-----------------------------------|
|                          | 1, 3/5<br>(P, E) | 4, 2<br>(A, B) | 1→4/2 (P→A/B)                   |      |                       | 4/2→5/3 (A/B→E)    |      |                       |                                   |
|                          |                  |                | C<br>[dm³/(s·bar)]              | b    | Q [l/min]<br>(ANR) *3 | C<br>[dm³/(s·bar)] | b    | Q [l/min]<br>(ANR) *3 |                                   |
| SS5Y3-10 (Side ported)   | C8               | C6             | 1.4                             | 0.30 | 356                   | 1.6                | 0.19 | 381                   | 28.9n + 293                       |
| SS5Y3-12 (Top ported)    | C8               | C6             | 1.2                             | 0.29 | 303                   | 1.3                | 0.19 | 310                   | 25.1n + 314                       |
| SS5Y5-10 (Side ported)   | C10              | C8             | 3.3                             | 0.30 | 839                   | 3.6                | 0.17 | 848                   | 74.7n + 398                       |
| SS5Y5-11 (Bottom ported) | C10              | C8             | 3.3                             | 0.29 | 834                   | 4.2                | 0.26 | 1042                  | 76.8n + 445                       |
| SS5Y5-12 (Top ported)    | C10              | C8             | 2.8                             | 0.27 | 699                   | 3.8                | 0.23 | 926                   | 66.3n + 417                       |
| SS5Y7-10 (Side ported)   | C12              | C12            | 6.2                             | 0.23 | 1511                  | 5.9                | 0.20 | 1413                  | 106.6n + 496                      |
| SS5Y7-11 (Bottom ported) | C12              | C12            | 6.2                             | 0.25 | 1529                  | 6.6                | 0.21 | 1590                  | 117.9n + 532                      |
| SS5Y7-12 (Top ported)    | C12              | C12            | 5.6                             | 0.31 | 1433                  | 5.7                | 0.24 | 1397                  | 84.1n + 519                       |

### Valve Seal Type: Metal Seal

| Model                    | Port size        |                | Valve flow-rate characteristics |      |                       |                    |      |                       | Weight: W [g] *2<br>(n: stations) |
|--------------------------|------------------|----------------|---------------------------------|------|-----------------------|--------------------|------|-----------------------|-----------------------------------|
|                          | 1, 3/5<br>(P, E) | 4, 2<br>(A, B) | 1→4/2 (P→A/B)                   |      |                       | 4/2→5/3 (A/B→E)    |      |                       |                                   |
|                          |                  |                | C<br>[dm³/(s·bar)]              | b    | Q [l/min]<br>(ANR) *3 | C<br>[dm³/(s·bar)] | b    | Q [l/min]<br>(ANR) *3 |                                   |
| SS5Y3-10 (Side ported)   | C8               | C6             | 1.2                             | 0.19 | 286                   | 1.3                | 0.18 | 308                   | 28.9n + 293                       |
| SS5Y3-12 (Top ported)    | C8               | C6             | 1.2                             | 0.16 | 281                   | 1.3                | 0.18 | 308                   | 25.1n + 314                       |
| SS5Y5-10 (Side ported)   | C10              | C8             | 2.7                             | 0.24 | 662                   | 3.1                | 0.17 | 730                   | 74.7n + 398                       |
| SS5Y5-11 (Bottom ported) | C10              | C8             | 2.8                             | 0.25 | 690                   | 3.5                | 0.15 | 816                   | 76.8n + 445                       |
| SS5Y5-12 (Top ported)    | C10              | C8             | 2.6                             | 0.18 | 616                   | 3.0                | 0.16 | 703                   | 66.3n + 417                       |
| SS5Y7-10 (Side ported)   | C12              | C12            | 4.4                             | 0.14 | 1020                  | 4.4                | 0.17 | 1037                  | 106.6n + 496                      |
| SS5Y7-11 (Bottom ported) | C12              | C12            | 4.6                             | 0.16 | 1078                  | 4.7                | 0.18 | 1113                  | 117.9n + 532                      |
| SS5Y7-12 (Top ported)    | C12              | C12            | 3.9                             | 0.21 | 939                   | 4.1                | 0.14 | 950                   | 84.1n + 519                       |

\* Calculation of effective area S and sonic conductance C:  $S = 5.0 \times C$

\*1: The value is for manifold base with 5 stations and individually operated 2-position type.

\*2: Weight: W is the value of the internal pilot, and D-sub connector manifold with One-touch fitting straight piping type.

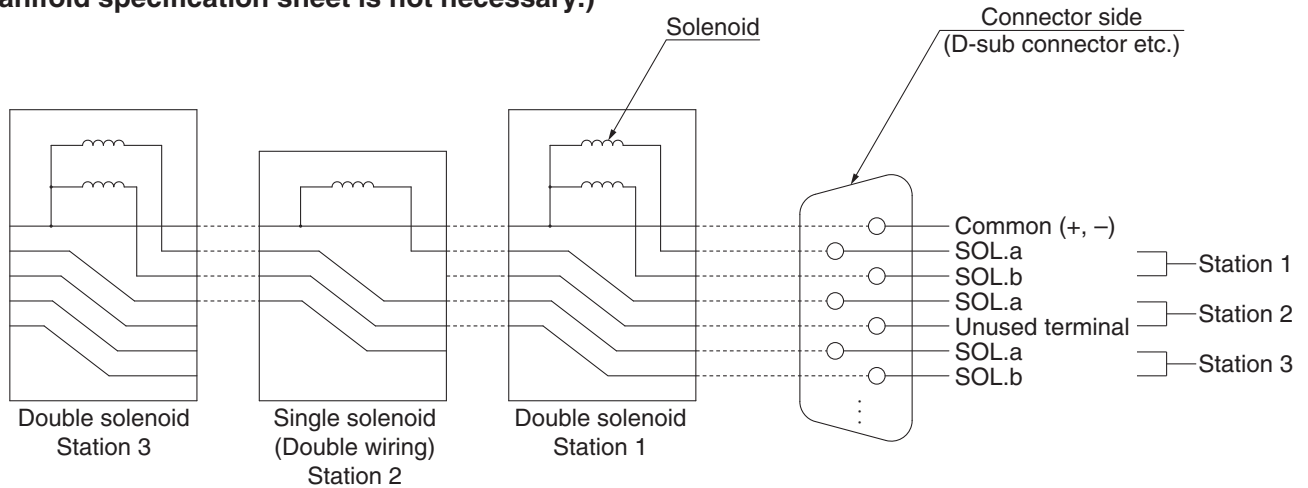
To obtain the weight with valves attached, add the valve weights given on page 15 for the appropriate number of stations

\*3: These values have been calculated according to ISO6358 and indicate the flow rate under standard conditions with an inlet pressure of 0.6 MPa (relative pressure) and a pressure drop of 0.1 MPa.

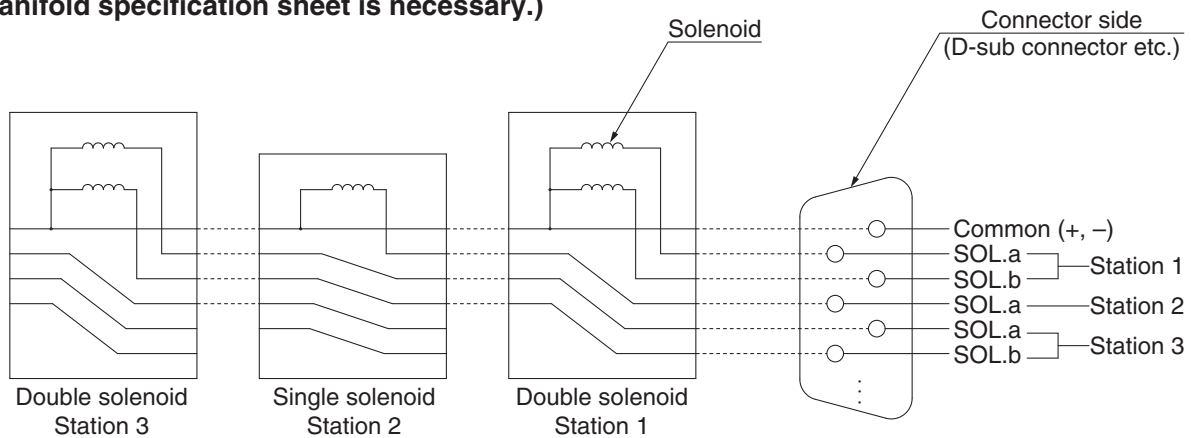
## Connector Wiring Layout

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

### ■ Single solenoid valve is installed to all double wiring. (in the case of all double wiring) (Manifold specification sheet is not necessary.)



### ■ Single/double wiring are mixed. (Manifold specification sheet is necessary.)



\*: These diagrams are for the purpose of explanation, and differ from the connector wiring used for testing.



Manifold Options

One-touch Fittings/  
Plug Assembly Part No.

Type 10, 11, 12  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Metal Base

Plug-in Sub-plate

Valve

Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

D-sub Connector

Flat Ribbon Cable

PC Wiring

## Series SY3000/5000/7000



### How to Order Manifold

Refer to pages 208 (SY5000) and 209 (SY7000) for dimensions of Type 11/Bottom ported type.

SS5Y **3** - **10** **F** **1** - **05** **U** - **C6**

1 2 3 4 5 6 7 8 9

#### 1 Series

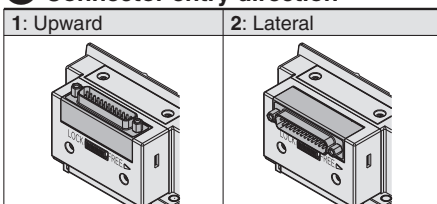
|   |        |
|---|--------|
| 3 | SY3000 |
| 5 | SY5000 |
| 7 | SY7000 |

#### 2 Type

|    |                 |
|----|-----------------|
| 10 | Side ported     |
| 11 | Bottom ported*1 |

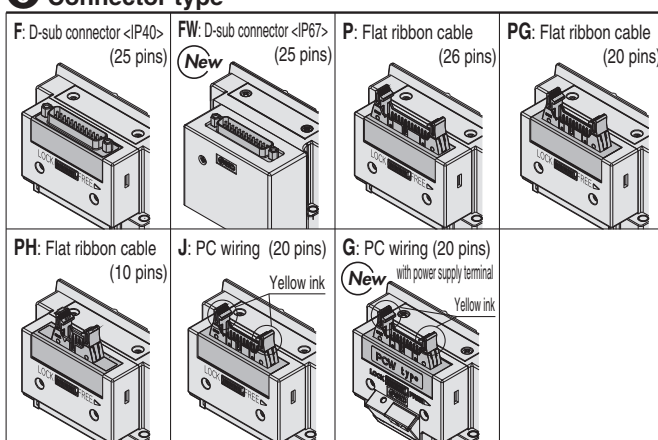
\*1: The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to "Plug-in Mixed Mounting Type Manifold" (from page 213).

#### 4 Connector entry direction



\*: The connector entry direction for connector type "FW" D-sub connector <IP67> can not be rotated. If it is necessary to change, order connector block assembly (page 231) separately.

#### 3 Connector type



#### 5 Valve stations

##### F/FW: D-sub connector (25 pins)

| Symbol | Stations    | Note                                                 |
|--------|-------------|------------------------------------------------------|
| 02     | 2 stations  | Double wiring*1                                      |
| :      | :           |                                                      |
| 12     | 12 stations | Specified layout*2<br>(Available up to 24 solenoids) |
| :      | :           |                                                      |
| 02     | 2 stations  | Specified layout*2<br>(Available up to 24 solenoids) |
| :      | :           |                                                      |
| 24     | 24 stations |                                                      |

##### PG: Flat ribbon cable (20 pins)

| Symbol | Stations    | Note                                                 |
|--------|-------------|------------------------------------------------------|
| 02     | 2 stations  | Double wiring*1                                      |
| :      | :           |                                                      |
| 09     | 9 stations  | Specified layout*2<br>(Available up to 18 solenoids) |
| :      | :           |                                                      |
| 02     | 2 stations  | Specified layout*2<br>(Available up to 18 solenoids) |
| :      | :           |                                                      |
| 18     | 18 stations |                                                      |

##### J/G: PC wiring (20 pins)

| Symbol | Stations    | Note                                                 |
|--------|-------------|------------------------------------------------------|
| 02     | 2 stations  | Double wiring*1                                      |
| :      | :           |                                                      |
| 08     | 8 stations  | Specified layout*2<br>(Available up to 16 solenoids) |
| :      | :           |                                                      |
| 02     | 2 stations  | Specified layout*2<br>(Available up to 16 solenoids) |
| :      | :           |                                                      |
| 16     | 16 stations |                                                      |

##### P: Flat ribbon cable (26 pins)

| Symbol | Stations    | Note                                                 |
|--------|-------------|------------------------------------------------------|
| 02     | 2 stations  | Double wiring*1                                      |
| :      | :           |                                                      |
| 12     | 12 stations | Specified layout*2<br>(Available up to 24 solenoids) |
| :      | :           |                                                      |
| 02     | 2 stations  | Specified layout*2<br>(Available up to 24 solenoids) |
| :      | :           |                                                      |
| 24     | 24 stations |                                                      |

##### PH: Flat ribbon cable (10 pins)

| Symbol | Stations   | Note                                                |
|--------|------------|-----------------------------------------------------|
| 02     | 2 stations | Double wiring*1                                     |
| :      | :          |                                                     |
| 04     | 4 stations | Specified layout*2<br>(Available up to 8 solenoids) |
| :      | :          |                                                     |
| 02     | 2 stations | Specified layout*2<br>(Available up to 8 solenoids) |
| :      | :          |                                                     |
| 08     | 8 stations |                                                     |

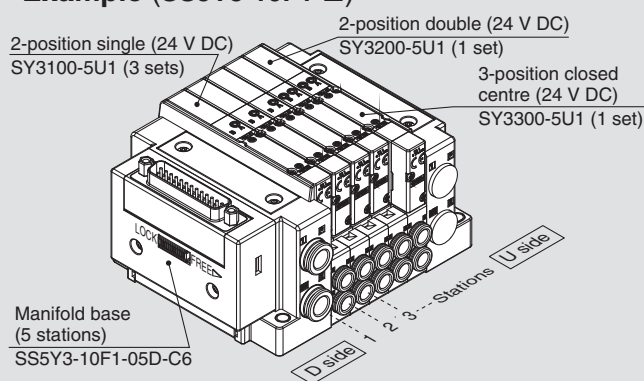
\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

\*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

\*: This also includes the number of blanking plate assembly.

### How to Order Manifold Assembly

#### Example (SS5Y3-10F1-□)



SS5Y3-10F1-05D-C6 ... 1 set (Type 10 5-station manifold base part no.)  
 \*SY3100-5U1 ..... 3 sets (2-position single part no.)  
 \*SY3200-5U1 ..... 1 set (2-position double part no.)  
 \*SY3300-5U1 ..... 1 set (3-position closed centre part no.)

The asterisk denotes the symbol for assembly.  
Prefix it to the part numbers of the valve etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

\*: When mixing top ported configurations, select from page 110.  
In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

## 6 P, E port entry

|          |                               |
|----------|-------------------------------|
| <b>U</b> | U side (2 to 10 stations)     |
| <b>D</b> | D side (2 to 10 stations)     |
| <b>B</b> | Both sides (2 to 24 stations) |

## 7 SUP/EXH block assembly

|          |                                      |
|----------|--------------------------------------|
| —        | Internal pilot                       |
| <b>S</b> | Internal pilot,<br>Built-in silencer |
| <b>R</b> | External pilot                       |

\*: 3/5(E) port is plugged for the built-in silencer type.

## 9 Mounting and Option

| Symbol     | Mounting          | Option     |                |
|------------|-------------------|------------|----------------|
|            |                   | Name plate | Station number |
| —          | Direct mounting   | —          | —              |
| <b>AA</b>  |                   | ●          | ●              |
| <b>BA</b>  |                   | ●          | —              |
| <b>D</b> □ | DIN rail mounting | —          | —              |
| <b>A</b> □ |                   | ●          | ●              |
| <b>B</b> □ |                   | ●          | —              |

### DIN Rail Option

| —         | Direct mounting                 |                                                                    |
|-----------|---------------------------------|--------------------------------------------------------------------|
| <b>0</b>  | Without DIN rail (with bracket) |                                                                    |
| <b>3</b>  | For 3 stations                  | Specify a longer rail than the total length of specified stations. |
| ⋮         | ⋮                               |                                                                    |
| <b>24</b> | For 24 stations                 |                                                                    |

\*: Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" above.)

\*: Only direct mounting is available for Type 11 (Bottom ported).

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

## 8 A, B port size (Metric/One-touch fitting)

| Symbol                                 | A, B port                                                         | Type 10/Side ported |        |        | Type 11/Bottom ported |        |
|----------------------------------------|-------------------------------------------------------------------|---------------------|--------|--------|-----------------------|--------|
|                                        |                                                                   | SY3000              | SY5000 | SY7000 | SY5000                | SY7000 |
| <b>C2</b>                              | Ø 2                                                               | ●                   | —      | —      | —                     | —      |
| <b>C3</b>                              | Ø 3.2                                                             | ●                   | —      | —      | —                     | —      |
| <b>C4</b>                              | Ø 4                                                               | ●                   | ●      | —      | ●                     | —      |
| <b>C6</b>                              | Ø 6                                                               | ●                   | ●      | ●      | ●                     | ●      |
| <b>C8</b>                              | Ø 8                                                               | —                   | ●      | ●      | ●                     | ●      |
| <b>C10</b>                             | Ø 10                                                              | —                   | —      | ●      | —                     | ●      |
| <b>C12</b>                             | Ø 12                                                              | —                   | —      | ●      | —                     | ●      |
| <b>CM</b> *1                           | Straight port, mixed sizes                                        | ●                   | ●      | ●      | ●                     | ●      |
| <b>L4</b>                              | Ø 4                                                               | ●                   | ●      | —      | —                     | —      |
| <b>L6</b>                              | Ø 6                                                               | ●                   | ●      | ●      | —                     | —      |
| <b>L8</b>                              | Ø 8                                                               | —                   | ●      | ●      | —                     | —      |
| <b>L10</b>                             | Ø 10                                                              | —                   | —      | ●      | —                     | —      |
| <b>L12</b>                             | Ø 12                                                              | —                   | —      | ●      | —                     | —      |
| <b>B4</b>                              | Ø 4                                                               | ●                   | ●      | —      | —                     | —      |
| <b>B6</b>                              | Ø 6                                                               | ●                   | ●      | ●      | —                     | —      |
| <b>B8</b>                              | Ø 8                                                               | —                   | ●      | ●      | —                     | —      |
| <b>B10</b>                             | Ø 10                                                              | —                   | —      | ●      | —                     | —      |
| <b>B12</b>                             | Ø 12                                                              | —                   | —      | ●      | —                     | —      |
| <b>LM</b> *1                           | Elbow port, mixed sizes<br>(Including upward and downward piping) | ●                   | ●      | ●      | —                     | —      |
| P, E port size<br>(One-touch fittings) |                                                                   | Ø 8                 | Ø 10   | Ø 12   | Ø 10                  | Ø 12   |

## A, B port size (Inch/One-touch fitting)

| Symbol                                 | A, B port                                                         | Type 10/Side ported |        |        | Type 11/Bottom ported |        |
|----------------------------------------|-------------------------------------------------------------------|---------------------|--------|--------|-----------------------|--------|
|                                        |                                                                   | SY3000              | SY5000 | SY7000 | SY5000                | SY7000 |
| <b>N1</b>                              | Ø 1/8"                                                            | ●                   | —      | —      | —                     | —      |
| <b>N3</b>                              | Ø 5/32"                                                           | ●                   | ●      | —      | ●                     | —      |
| <b>N7</b>                              | Ø 1/4"                                                            | ●                   | ●      | ●      | ●                     | ●      |
| <b>N9</b>                              | Ø 5/16"                                                           | —                   | ●      | ●      | ●                     | ●      |
| <b>N11</b>                             | Ø 3/8"                                                            | —                   | —      | ●      | —                     | ●      |
| <b>CM</b> *1                           | Straight port, mixed sizes                                        | ●                   | ●      | ●      | ●                     | ●      |
| <b>LN3</b>                             | Ø 5/32"                                                           | ●                   | —      | —      | —                     | —      |
| <b>LN7</b>                             | Ø 1/4"                                                            | ●                   | ●      | —      | —                     | —      |
| <b>LN9</b>                             | Ø 5/16"                                                           | —                   | ●      | —      | —                     | —      |
| <b>LN11</b>                            | Ø 3/8"                                                            | —                   | —      | ●      | —                     | —      |
| <b>BN3</b>                             | Ø 5/32"                                                           | ●                   | —      | —      | —                     | —      |
| <b>BN7</b>                             | Ø 1/4"                                                            | ●                   | ●      | —      | —                     | —      |
| <b>BN9</b>                             | Ø 5/16"                                                           | —                   | ●      | —      | —                     | —      |
| <b>BN11</b>                            | Ø 3/8"                                                            | —                   | —      | ●      | —                     | —      |
| <b>LM</b> *1                           | Elbow port, mixed sizes<br>(Including upward and downward piping) | ●                   | ●      | ●      | —                     | —      |
| P, E port size<br>(One-touch fittings) |                                                                   | Ø 5/16"             | Ø 3/8" | Ø 1/2" | Ø 3/8"                | Ø 1/2" |

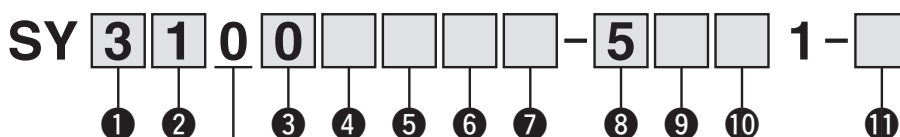
\*1: Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

\*2: To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 250 to 252).

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



Base mounted

### 1 Series

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

### 2 Type of actuation

|     |            |                 |
|-----|------------|-----------------|
| 1   | 2-position | Single          |
| 2   |            | Double          |
| 3   | 3-position | Closed centre   |
| 4   |            | Exhaust centre  |
| 5   |            | Pressure centre |
| A*1 | 4-position | N.C./N.C.       |
| B*1 | dual       | N.O./N.O.       |
| C*1 | 3-port     | N.C./N.O.       |

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 5 Back pressure check valve (Built-in valve type)

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

|   |         |
|---|---------|
| 5 | 24 V DC |
| 6 | 12 V DC |

\*: Connector type "G" (PC wiring with power supply terminal) of the manifold type is only available in 24 V DC.

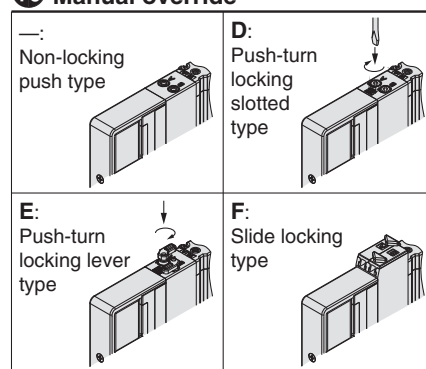
### 9 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| —      | —          | —                        | Non-polar            |
| R      | —          | ●                        |                      |
| U      | ●          |                          |                      |
| S      | —          |                          |                      |
| Z      | ●          |                          |                      |
| NS     | —          |                          |                      |
| NZ     | ●          |                          | Negative common      |

\*: Only "Z" and "NZ" types are available for with the power saving circuit.

\*: For connector type "G" (PC wiring with power supply terminal) of the manifold type, select non-polar or positive common.

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

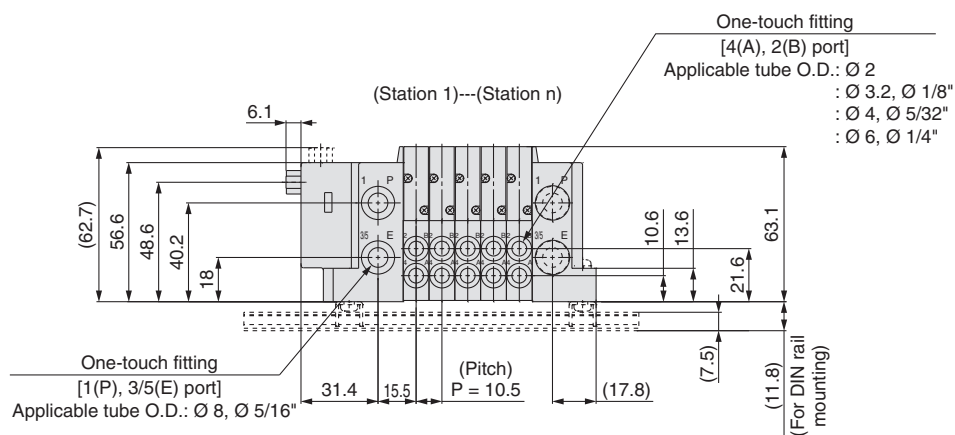
\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

## Dimensions: Series SY3000

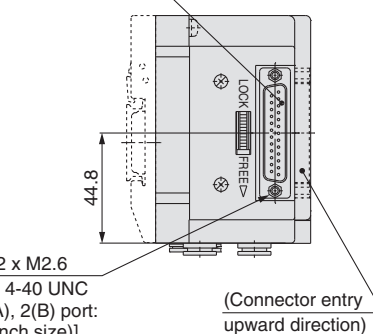
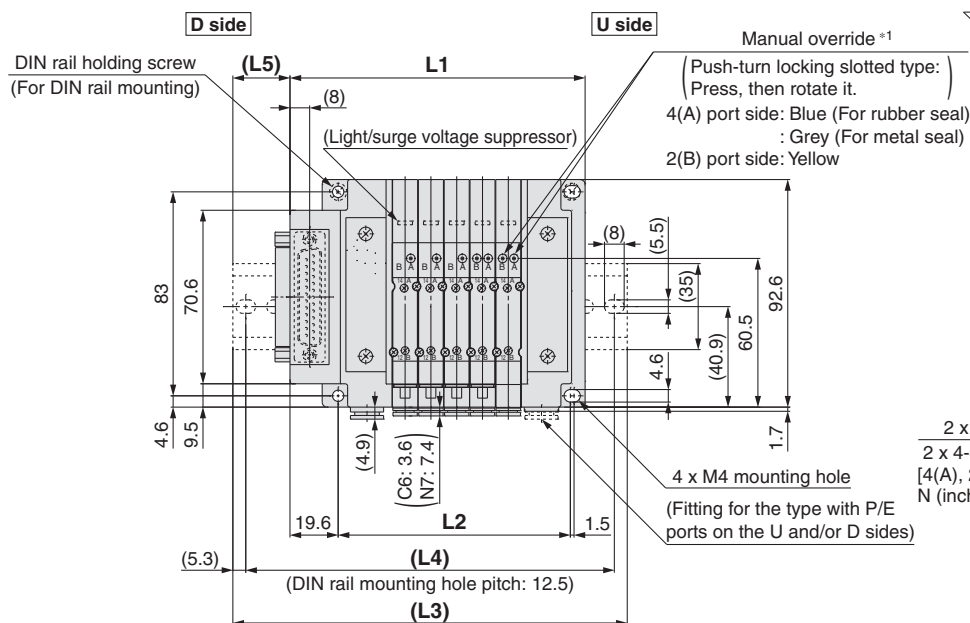
## Plug-in Connector Connecting Base

Type 10/Side Ported  
D-sub Connector (IP40)

SS5Y3-10F<sub>2</sub><sup>1</sup>- Stations  $\begin{matrix} \text{U} & \text{C2} \\ \text{D} & \text{C3, N1} \\ \text{B} & \text{C4, N3} \\ & \text{C6, N7} \end{matrix}$  (D)



Applicable connector: D-sub (JIS-X-5101 / MIL-C-24308) equivalent



\*1: Refer to page 205 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y3-10F2-05D-C6".

\*: Refer to page 210 for dimensions of A or B port top-ported type.

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 88.6  | 99.1  | 109.6 | 120.1 | 130.6 | 141.1 | 151.6 | 162.1 | 172.6 | 183.1 | 193.6 | 204.1 | 214.6 | 225.1 | 235.6 | 246.1 | 256.6 | 267.1 | 277.6 | 288.1 | 298.6 | 309.1 | 319.6 |
| L2          | 63    | 73.5  | 84    | 94.5  | 105   | 115.5 | 126   | 136.5 | 147   | 157.5 | 168   | 178.5 | 189   | 199.5 | 210   | 220.5 | 231   | 241.5 | 252   | 262.5 | 273   | 283.5 | 294   |
| L3          | 123   | 135.5 | 148   | 160.5 | 160.5 | 173   | 185.5 | 198   | 210.5 | 223   | 223   | 235.5 | 248   | 260.5 | 273   | 285.5 | 298   | 298   | 310.5 | 323   | 335.5 | 348   | 360.5 |
| L4          | 112.5 | 125   | 137.5 | 150   | 150   | 162.5 | 175   | 187.5 | 200   | 212.5 | 212.5 | 225   | 237.5 | 250   | 262.5 | 275   | 287.5 | 287.5 | 300   | 312.5 | 325   | 337.5 | 350   |
| L5          | 20.5  | 21.5  | 22.5  | 23.5  | 18    | 19    | 20    | 21    | 22    | 23    | 18    | 19    | 20    | 21    | 22    | 23    | 23.5  | 18.5  | 19.5  | 20.5  | 21.5  | 22.5  | 23.5  |

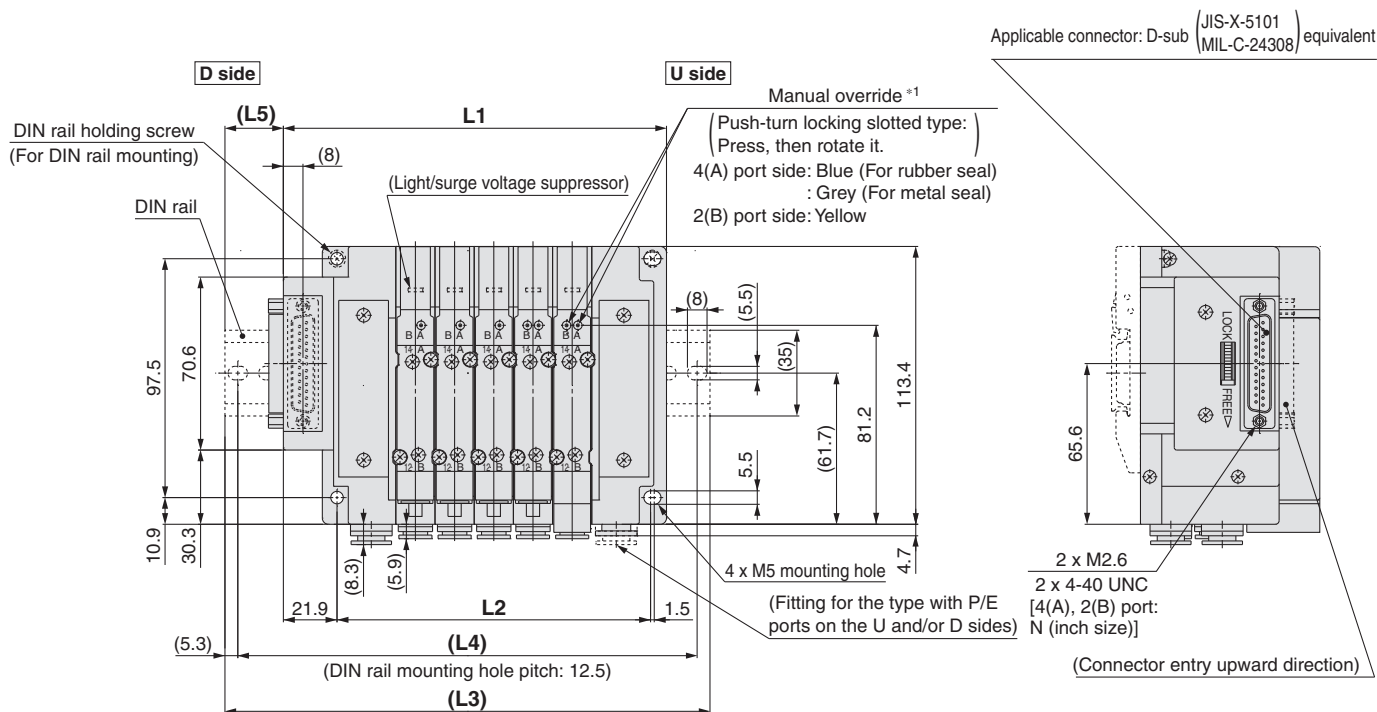
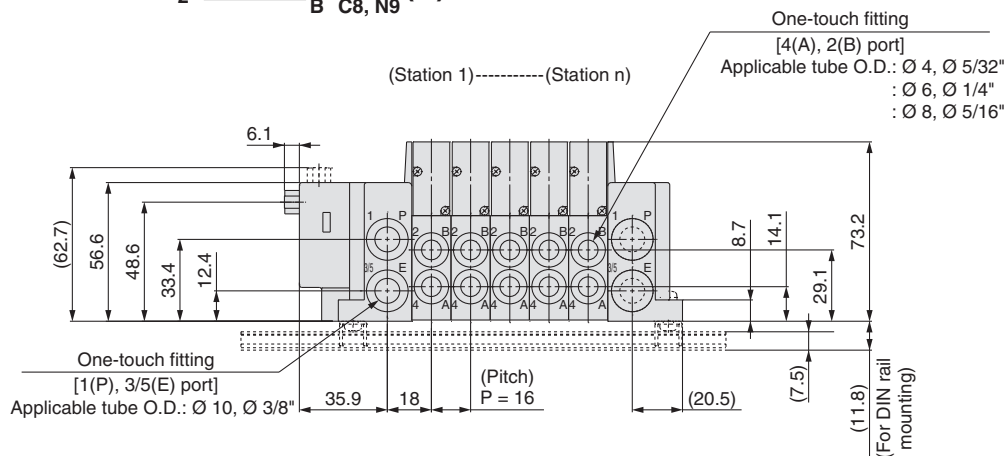
# Series SY3000/5000/7000

## Dimensions: Series SY5000

## Plug-in Connector Connecting Base

## Type 10/Side Ported D-sub Connector (IP40)

SS5Y5-10F<sub>2</sub><sup>1</sup> - Stations  $\begin{matrix} \text{U} & \text{C4, N3} \\ \text{D} & \text{C6, N7} \\ \text{B} & \text{C8, N9} \end{matrix}$  (D)



\*1: Refer to page 206 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y5-10F2-05D-C8".

\*: Refer to page 211 for dimensions of A or B port top-ported type.

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 108.4 | 124.4 | 140.4 | 156.4 | 172.4 | 188.4 | 204.4 | 220.4 | 236.4 | 252.4 | 268.4 | 284.4 | 300.4 | 316.4 | 332.4 | 348.4 | 364.4 | 380.4 | 396.4 | 412.4 | 428.4 | 444.4 | 460.4 |
| L2          | 80    | 96    | 112   | 128   | 144   | 160   | 176   | 192   | 208   | 224   | 240   | 256   | 272   | 288   | 304   | 320   | 336   | 352   | 368   | 384   | 400   | 416   | 432   |
| L3          | 148   | 160.5 | 173   | 198   | 210.5 | 223   | 235.5 | 260.5 | 273   | 285.5 | 298   | 323   | 335.5 | 348   | 373   | 385.5 | 398   | 410.5 | 435.5 | 448   | 460.5 | 485.5 | 498   |
| L4          | 137.5 | 150   | 162.5 | 187.5 | 200   | 212.5 | 225   | 250   | 262.5 | 275   | 287.5 | 312.5 | 325   | 337.5 | 362.5 | 375   | 387.5 | 400   | 425   | 437.5 | 450   | 475   | 487.5 |
| L5          | 23    | 21    | 19.5  | 24    | 22    | 20.5  | 18.5  | 23    | 21.5  | 19.5  | 18    | 22.5  | 20.5  | 19    | 23.5  | 21.5  | 20    | 18    | 22.5  | 21    | 19    | 23.5  | 22    |

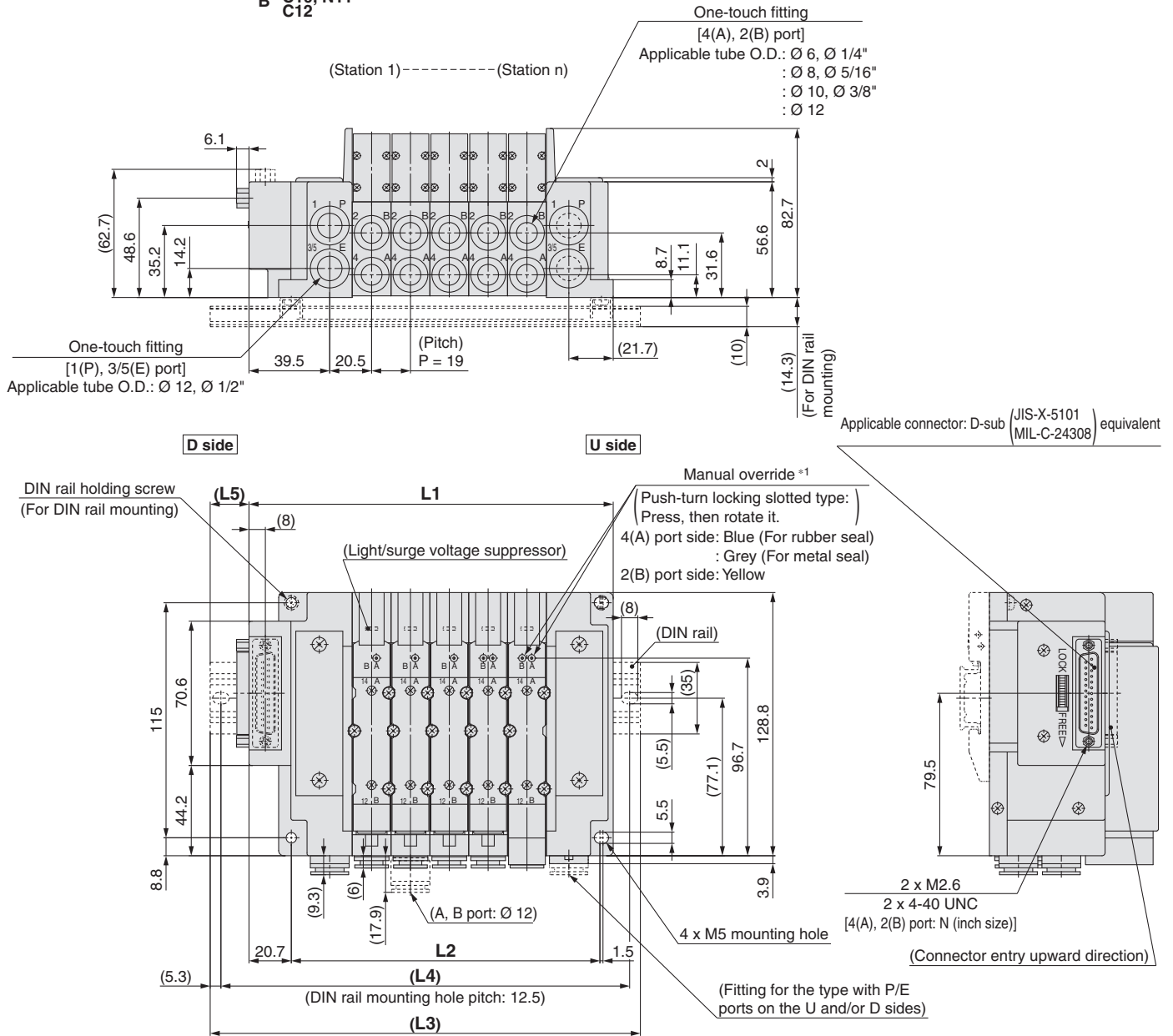


# Dimensions: Series **SY7000**

## Plug-in Connector Connecting Base

## Type 10/Side Ported D-sub Connector (IP40)

SS5Y7-10F<sub>2</sub>- Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix} \begin{matrix} \text{C6, N7} \\ \text{C8, N9} \\ \text{C10, N11} \end{matrix} \text{(D)}$



\*1: Refer to page 207 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y7-10F2-05D-C10".

\*: Refer to page 212 for dimensions of A or B port top-ported type.

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 121.2 | 140.2 | 159.2 | 178.2 | 197.2 | 216.2 | 235.2 | 254.2 | 273.2 | 292.2 | 311.2 | 330.2 | 349.2 | 368.2 | 387.2 | 406.2 | 425.2 | 444.2 | 463.2 | 482.2 | 501.2 | 520.2 | 539.2 |
| L2          | 94    | 113   | 132   | 151   | 170   | 189   | 208   | 227   | 246   | 265   | 284   | 303   | 322   | 341   | 360   | 379   | 398   | 417   | 436   | 455   | 474   | 493   | 512   |
| L3          | 160.5 | 173   | 198   | 210.5 | 235.5 | 248   | 273   | 285.5 | 310.5 | 323   | 348   | 360.5 | 385.5 | 398   | 423   | 435.5 | 460.5 | 485.5 | 498   | 523   | 535.5 | 560.5 | 573   |
| L4          | 150   | 162.5 | 187.5 | 200   | 225   | 237.5 | 262.5 | 275   | 300   | 312.5 | 337.5 | 350   | 375   | 387.5 | 412.5 | 425   | 450   | 475   | 487.5 | 512.5 | 525   | 550   | 562.5 |
| L5          | 22.5  | 19.5  | 22.5  | 19    | 22    | 19    | 22    | 18.5  | 21.5  | 18.5  | 21.5  | 18    | 21    | 18    | 21    | 17.5  | 20.5  | 23.5  | 20.5  | 23.5  | 20    | 23    | 20    |

# Series SY3000/5000/7000

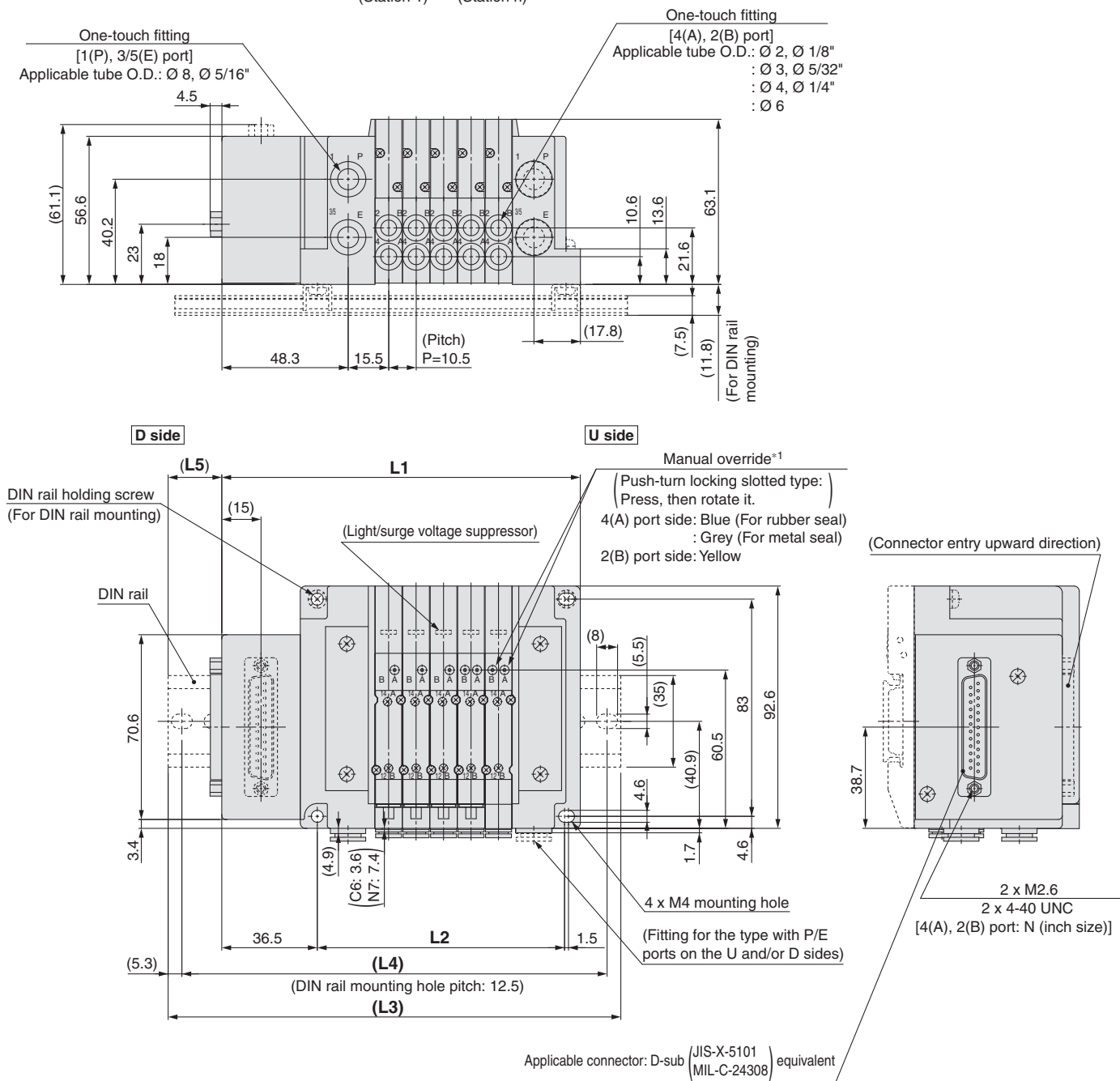
## Dimensions: Series SY3000

## Plug-in Connector Connecting Base

## Type 10/Side Ported D-sub Connector (IP67)

SS5Y3-10FW<sub>2</sub><sup>1</sup> - Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix}$   $\begin{matrix} \text{C2} \\ \text{C3}, \text{N1} \\ \text{C4}, \text{N3} \\ \text{C6}, \text{N7} \end{matrix}$  (D)

(Station 1) --- (Station n)



\*1: Refer to page 205 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y3-10FW2-05D-C6".

\*: Refer to page 210 for dimensions of A or B port top-ported type.

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>L1</b>   | 105.5 | 116   | 126.5 | 137   | 147.5 | 158   | 168.5 | 179   | 189.5 | 200   | 210.5 | 221   | 231.5 | 242   | 252.5 | 263   | 273.5 | 284   | 294.5 | 305   | 315.5 | 326   | 336.5 |
| <b>L2</b>   | 63    | 73.5  | 84    | 94.5  | 105   | 115.5 | 126   | 136.5 | 147   | 157.5 | 168   | 178.5 | 189   | 199.5 | 210   | 220.5 | 231   | 241.5 | 252   | 262.5 | 273   | 283.5 | 294   |
| <b>L3</b>   | 135.5 | 148   | 160.5 | 173   | 185.5 | 198   | 198   | 210.5 | 223   | 235.5 | 248   | 260.5 | 260.5 | 273   | 285.5 | 298   | 310.5 | 323   | 323   | 335.5 | 348   | 360.5 | 373   |
| <b>L4</b>   | 125   | 137.5 | 150   | 162.5 | 175   | 187.5 | 187.5 | 200   | 212.5 | 225   | 237.5 | 250   | 250   | 262.5 | 275   | 287.5 | 300   | 312.5 | 312.5 | 325   | 337.5 | 350   | 362.5 |
| <b>L5</b>   | 17.5  | 18.5  | 19.5  | 20.5  | 21.5  | 22.5  | 17    | 18    | 19    | 20    | 21    | 22    | 17    | 18    | 19    | 20    | 21    | 22    | 16.5  | 17.5  | 18.5  | 19.5  | 20.5  |

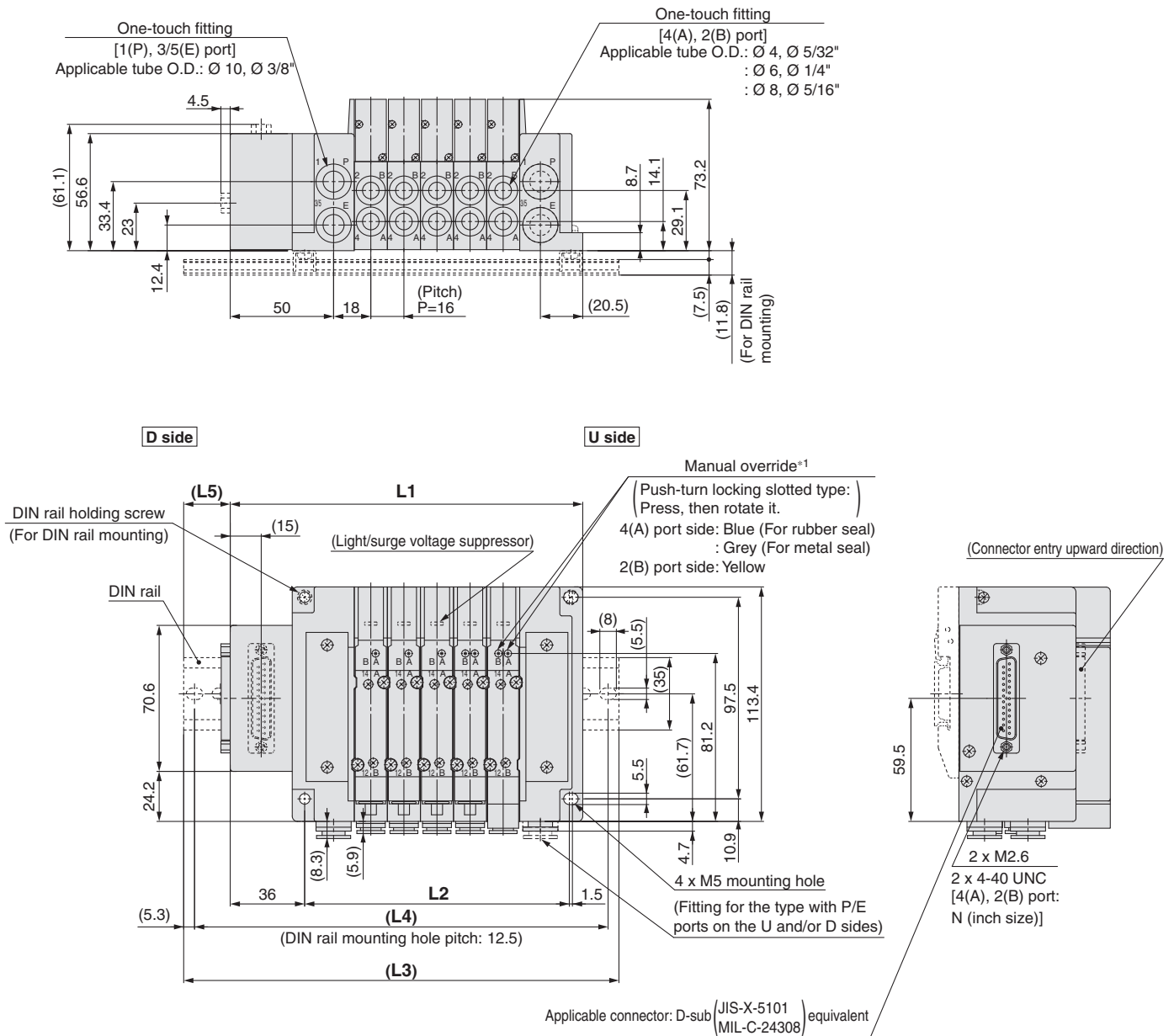
## Dimensions: Series SY5000

### Plug-in Connector Connecting Base

Type 10/Side Ported  
D-sub Connector (IP67)

SS5Y5-10FW<sub>2</sub> - Stations  $\begin{matrix} \text{U} & \text{C4, N3} \\ \text{D} & \text{C6, N7 (D)} \\ \text{B} & \text{C8, N9} \end{matrix}$

(Station 1) --- (Station n)



\*1: Refer to page 206 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y5-10FW2-05D-C8".

\*: Refer to page 211 for dimensions of A or B port top-ported type.

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 122.5 | 138.5 | 154.5 | 170.5 | 186.5 | 202.5 | 218.5 | 234.5 | 250.5 | 266.5 | 282.5 | 298.5 | 314.5 | 330.5 | 346.5 | 362.5 | 378.5 | 394.5 | 410.5 | 426.5 | 442.5 | 458.5 | 474.5 |
| L2          | 80    | 96    | 112   | 128   | 144   | 160   | 176   | 192   | 208   | 224   | 240   | 256   | 272   | 288   | 304   | 320   | 336   | 352   | 368   | 384   | 400   | 416   | 432   |
| L3          | 160.5 | 173   | 185.5 | 210.5 | 223   | 235.5 | 248   | 273   | 285.5 | 298   | 310.5 | 335.5 | 348   | 360.5 | 385.5 | 398   | 410.5 | 423   | 448   | 460.5 | 473   | 498   | 510.5 |
| L4          | 150   | 162.5 | 175   | 200   | 212.5 | 225   | 237.5 | 262.5 | 275   | 287.5 | 300   | 325   | 337.5 | 350   | 375   | 387.5 | 400   | 412.5 | 437.5 | 450   | 462.5 | 487.5 | 500   |
| L5          | 21.5  | 19.5  | 18    | 22.5  | 20.5  | 19    | 17    | 21.5  | 20    | 18    | 16.5  | 21    | 19    | 17.5  | 22    | 20    | 18.5  | 16.5  | 21    | 19.5  | 17.5  | 22    | 20.5  |

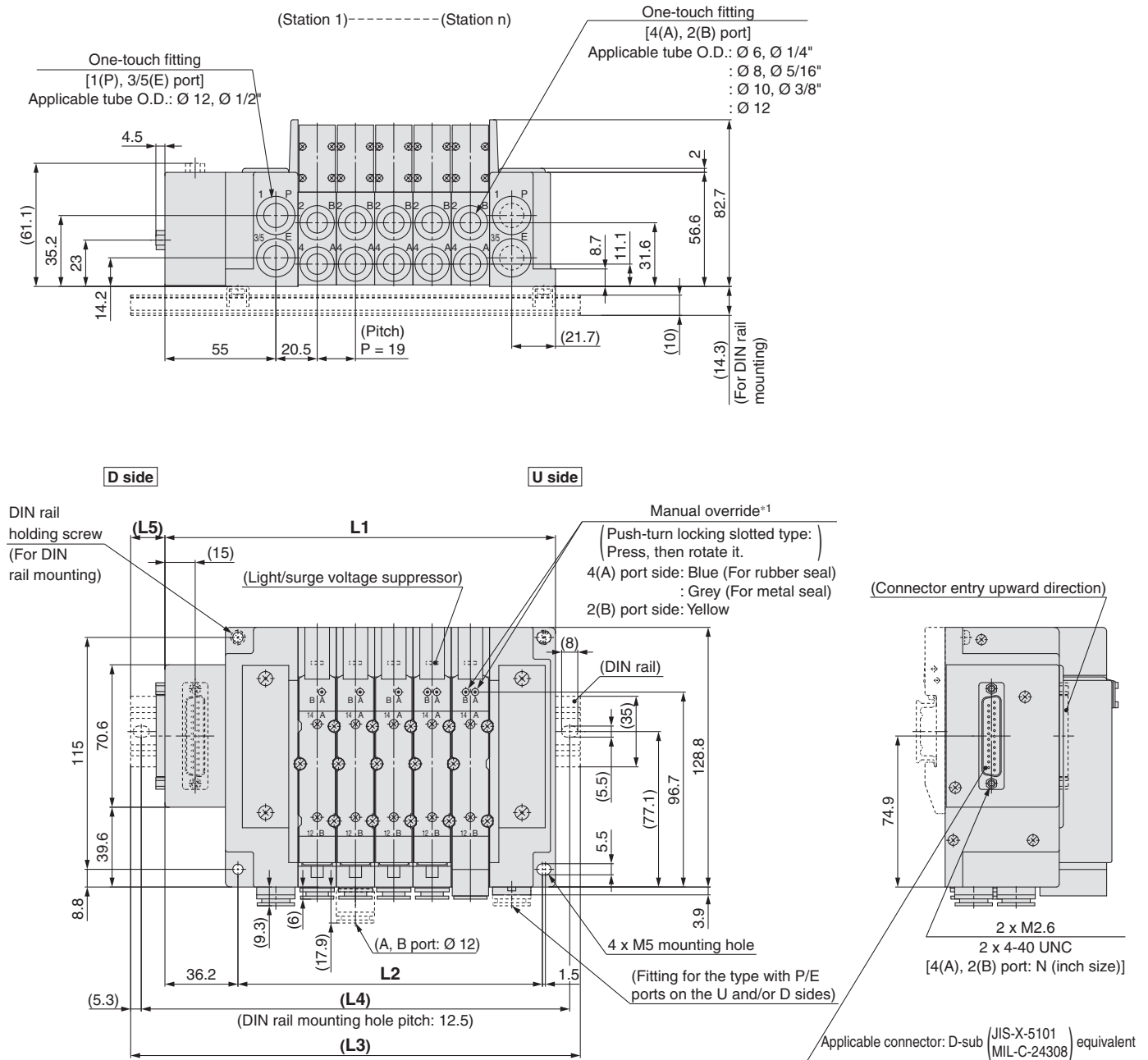
# Series SY3000/5000/7000

## Dimensions: Series SY7000

### Plug-in Connector Connecting Base

### Type 10/Side Ported D-sub Connector (IP67)

SS5Y7-10FW<sub>2</sub> - Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix} \begin{matrix} \text{C6, N7} \\ \text{C8, N9} \\ \text{C10, N11(D)} \\ \text{C12} \end{matrix}$



\*1: Refer to page 207 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y7-10FW2-05D-C10".

\*: Refer to page 212 for dimensions of A or B port top-ported type.

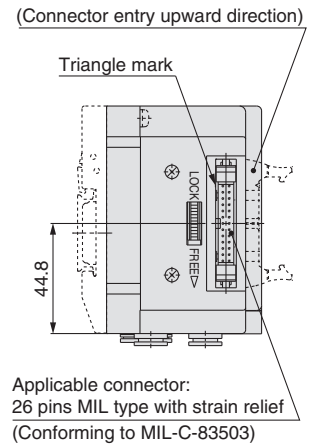
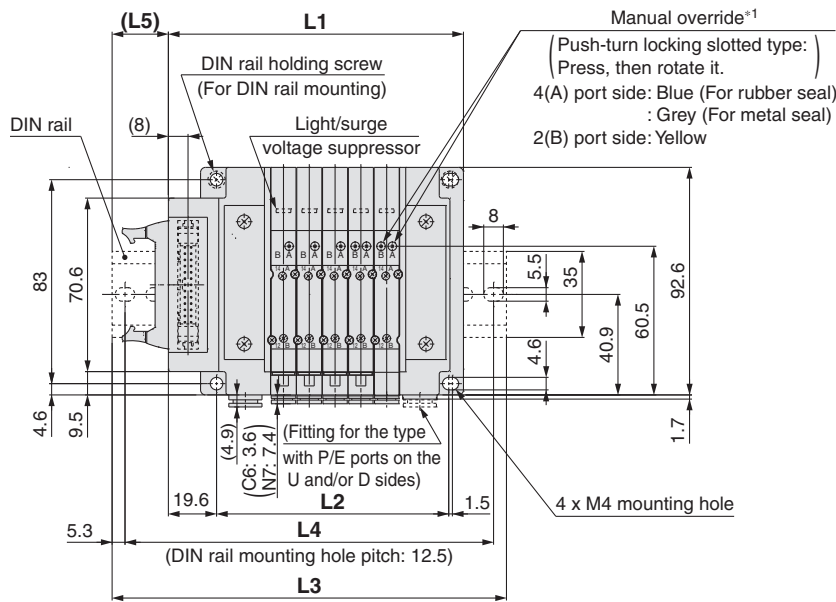
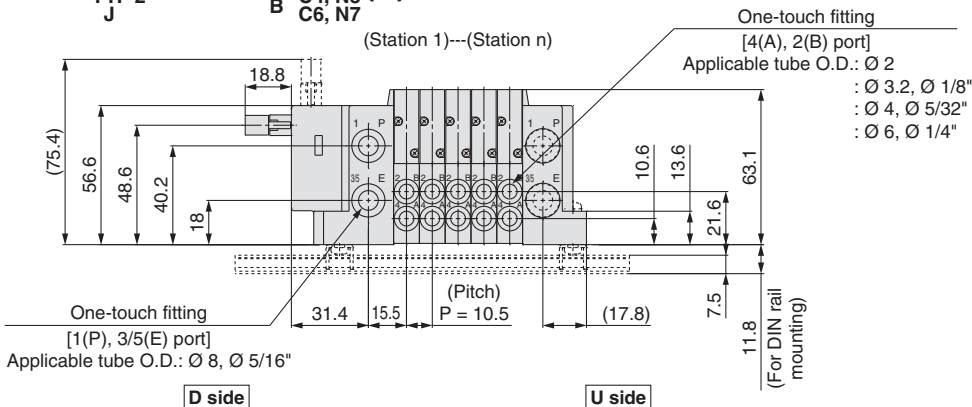
| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>L1</b>   | 136.7 | 155.7 | 174.7 | 193.7 | 212.7 | 231.7 | 250.7 | 269.7 | 288.7 | 307.7 | 326.7 | 345.7 | 364.7 | 383.7 | 402.7 | 421.7 | 440.7 | 459.7 | 478.7 | 497.7 | 516.7 | 535.7 | 554.7 |
| <b>L2</b>   | 94    | 113   | 132   | 151   | 170   | 189   | 208   | 227   | 246   | 265   | 284   | 303   | 322   | 341   | 360   | 379   | 398   | 417   | 436   | 455   | 474   | 493   | 512   |
| <b>L3</b>   | 173   | 185.5 | 210.5 | 223   | 248   | 260.5 | 285.5 | 298   | 323   | 335.5 | 360.5 | 385.5 | 398   | 423   | 435.5 | 460.5 | 473   | 498   | 510.5 | 535.5 | 548   | 573   | 585.5 |
| <b>L4</b>   | 162.5 | 175   | 200   | 212.5 | 237.5 | 250   | 275   | 287.5 | 312.5 | 325   | 350   | 375   | 387.5 | 412.5 | 425   | 450   | 462.5 | 487.5 | 500   | 525   | 537.5 | 562.5 | 575   |
| <b>L5</b>   | 20.5  | 17    | 20    | 17    | 20    | 16.5  | 19.5  | 16.5  | 19.5  | 16    | 19    | 22    | 19    | 22    | 18.5  | 21.5  | 18.5  | 21.5  | 18    | 21    | 18    | 21    | 17.5  |

## Dimensions: Series SY3000

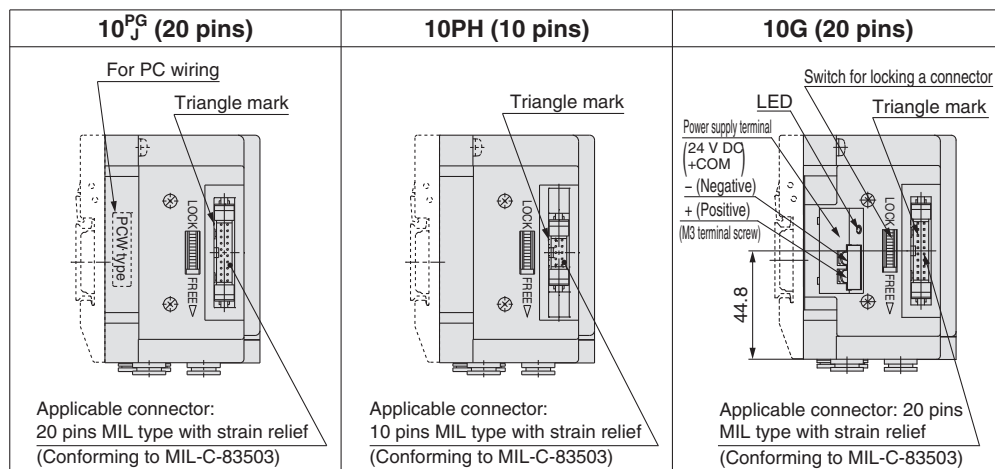
## Plug-in Connector Connecting Base

Type 10/Side Ported  
Flat Ribbon Cable

SS5Y3-10 <sup>P</sup>PG <sup>1</sup>2 - Stations <sup>U</sup>D <sup>C2</sup>C3, N1 (D)  
<sup>J</sup>PH <sup>B</sup>C4, N3  
C6, N7



- \*1: Refer to page 205 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y3-10P2-05D-C6".  
\*: Refer to page 210 for dimensions of A or B port top-ported type.  
\*: Only connectors are different for 10PG, 10PH, 10J and 10G. L1 to L5 dimensions are the same as 10P type.



| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 88.6  | 99.1  | 109.6 | 120.1 | 130.6 | 141.1 | 151.6 | 162.1 | 172.6 | 183.1 | 193.6 | 204.1 | 214.6 | 225.1 | 235.6 | 246.1 | 256.6 | 267.1 | 277.6 | 288.1 | 298.6 | 309.1 | 319.6 |
| L2          | 63    | 73.5  | 84    | 94.5  | 105   | 115.5 | 126   | 136.5 | 147   | 157.5 | 168   | 178.5 | 189   | 199.5 | 210   | 220.5 | 231   | 241.5 | 252   | 262.5 | 273   | 283.5 | 294   |
| L3          | 123   | 135.5 | 148   | 160.5 | 160.5 | 173   | 185.5 | 198   | 210.5 | 223   | 223   | 235.5 | 248   | 260.5 | 273   | 285.5 | 298   | 298   | 310.5 | 323   | 335.5 | 348   | 360.5 |
| L4          | 112.5 | 125   | 137.5 | 150   | 150   | 162.5 | 175   | 187.5 | 200   | 212.5 | 212.5 | 225   | 237.5 | 250   | 262.5 | 275   | 287.5 | 287.5 | 300   | 312.5 | 325   | 337.5 | 350   |
| L5          | 20.5  | 21.5  | 22.5  | 23.5  | 18    | 19    | 20    | 21    | 22    | 23    | 18    | 19    | 20    | 21    | 22    | 23    | 23.5  | 18.5  | 19.5  | 20.5  | 21.5  | 22.5  | 23.5  |

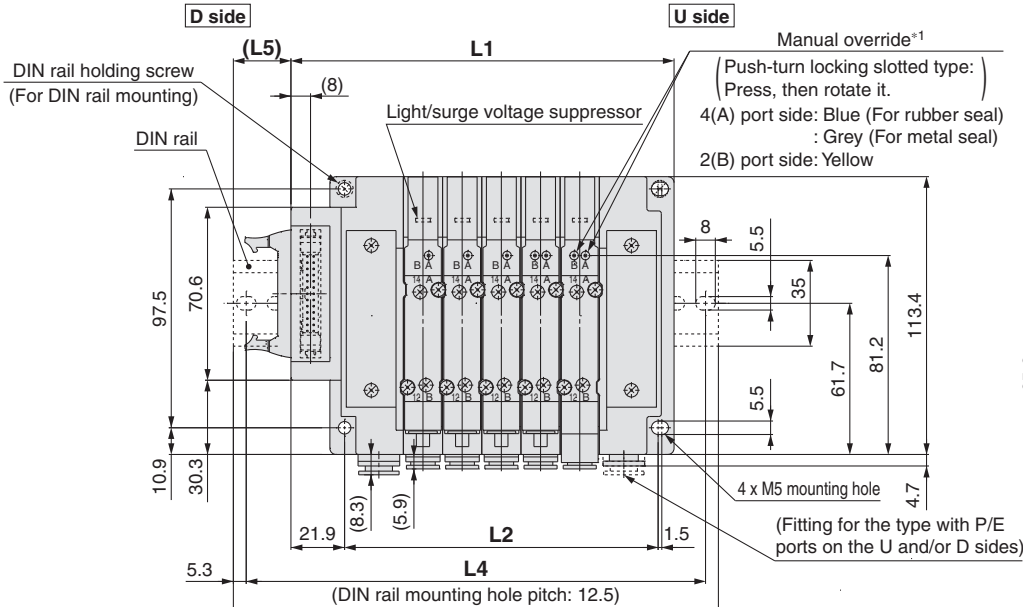
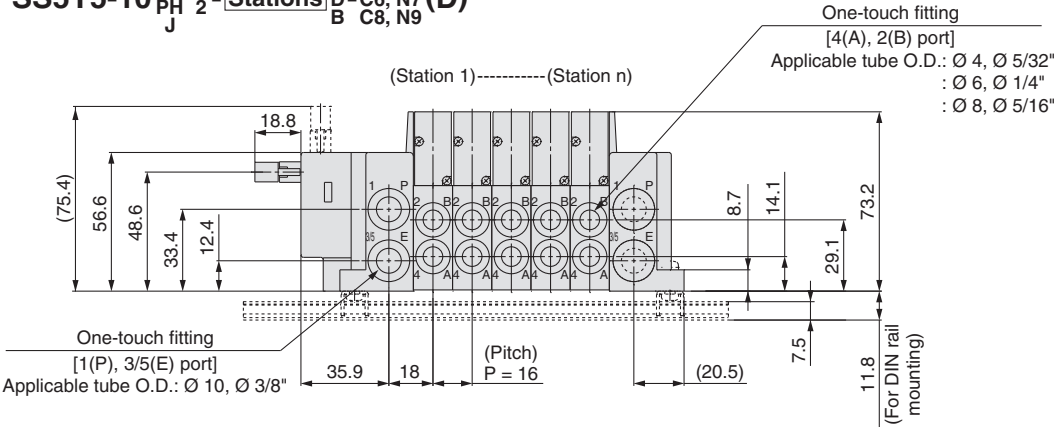
Series SY3000/5000/7000

Dimensions: Series SY5000

Plug-in  
Connector Connecting Base

Type 10/Side Ported  
Flat Ribbon Cable

SS5Y5-10<sup>PG</sup><sub>PH</sub> 1<sup>PG</sup> 2<sup>PH</sup> - Stations<sup>U</sup> C4, N3  
D-C6, N7 (D)  
B C8, N9



\*1: Refer to page 206 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y5-10P2-05D-C8".  
\*: Refer to page 211 for dimensions of A or B port top-ported type.  
\*: Only connectors are different for 10PG, 10PH and 10J. L1 to L5 dimensions are the same as 10P type.

|                       | 10PG (20 pins)                                                     | 10PH (10 pins)                                                     | 10G (20 pins)                                                      |
|-----------------------|--------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------|
| For PC wiring         | Triangle mark                                                      | Triangle mark                                                      | LED<br>Switch for locking a connector<br>Triangle mark             |
| Applicable connector: | 20 pins MIL type with strain relief<br>(Conforming to MIL-C-83503) | 10 pins MIL type with strain relief<br>(Conforming to MIL-C-83503) | 20 pins MIL type with strain relief<br>(Conforming to MIL-C-83503) |

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 108.4 | 124.4 | 140.4 | 156.4 | 172.4 | 188.4 | 204.4 | 220.4 | 236.4 | 252.4 | 268.4 | 284.4 | 300.4 | 316.4 | 332.4 | 348.4 | 364.4 | 380.4 | 396.4 | 412.4 | 428.4 | 444.4 | 460.4 |
| L2          | 80    | 96    | 112   | 128   | 144   | 160   | 176   | 192   | 208   | 224   | 240   | 256   | 272   | 288   | 304   | 320   | 336   | 352   | 368   | 384   | 400   | 416   | 432   |
| L3          | 148   | 160.5 | 173   | 198   | 210.5 | 223   | 235.5 | 260.5 | 273   | 285.5 | 298   | 323   | 335.5 | 348   | 373   | 385.5 | 398   | 410.5 | 435.5 | 448   | 460.5 | 485.5 | 498   |
| L4          | 137.5 | 150   | 162.5 | 187.5 | 200   | 212.5 | 225   | 250   | 262.5 | 275   | 287.5 | 312.5 | 325   | 337.5 | 362.5 | 375   | 387.5 | 400   | 425   | 437.5 | 450   | 475   | 487.5 |
| L5          | 23    | 21    | 19.5  | 24    | 22    | 20.5  | 18.5  | 23    | 21.5  | 19.5  | 18    | 22.5  | 20.5  | 19    | 23.5  | 21.5  | 20    | 18    | 22.5  | 21    | 19    | 23.5  | 22    |

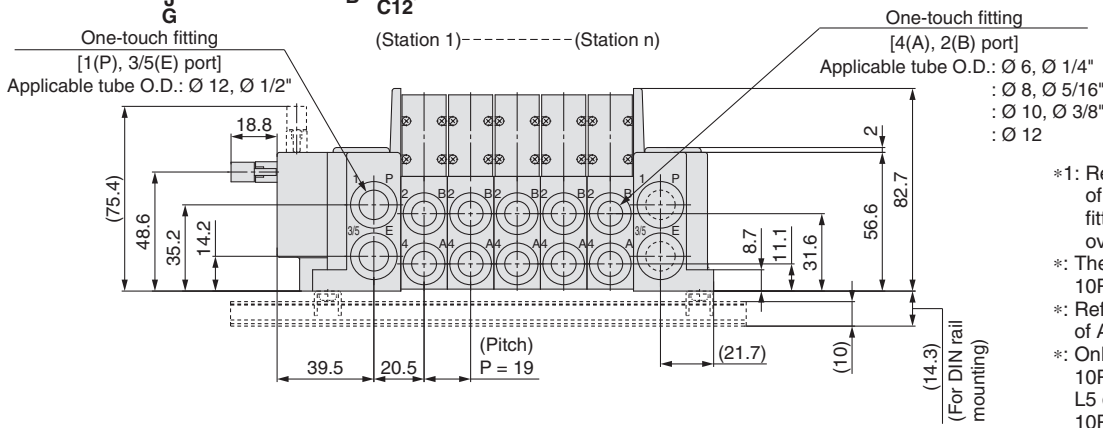


## Dimensions: Series SY7000

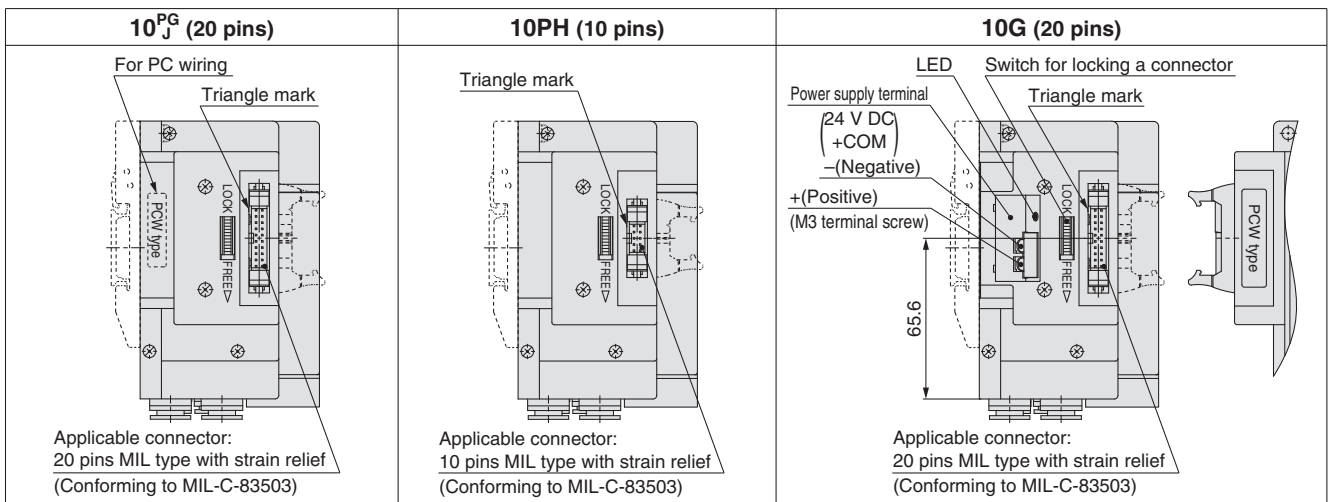
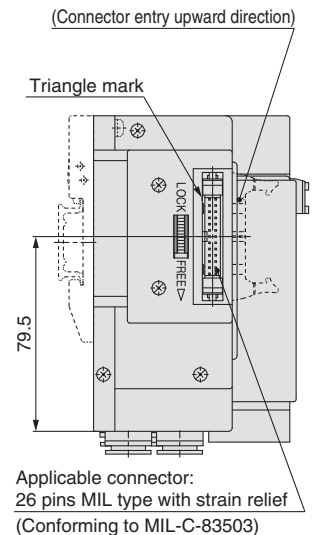
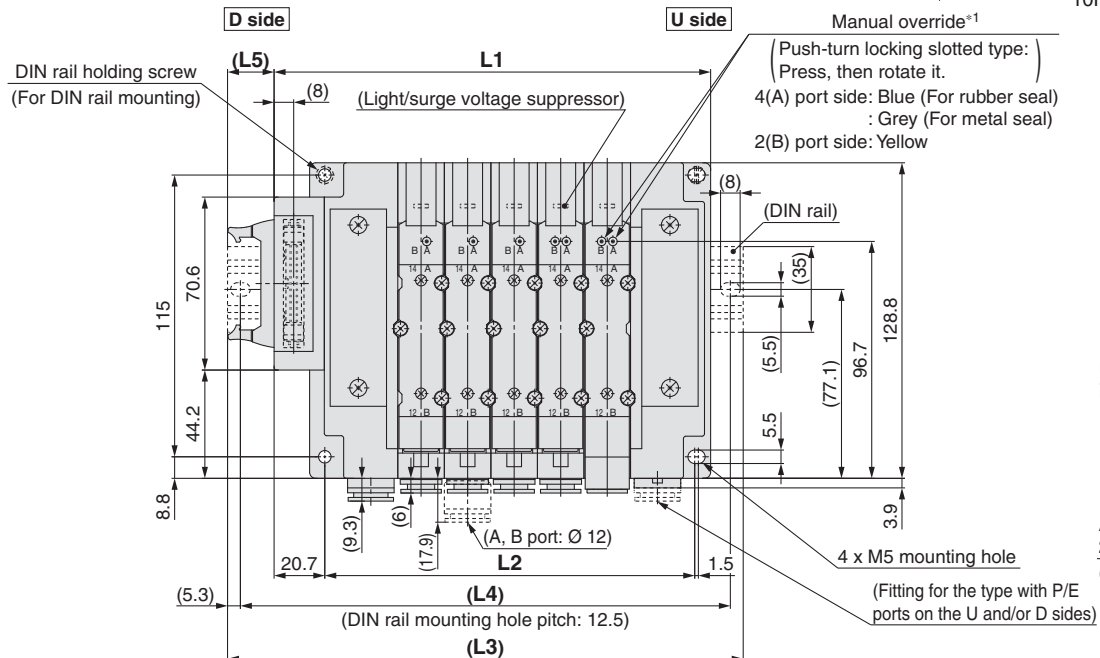
## Plug-in Connector Connecting Base

Type 10/Side Ported  
Flat Ribbon Cable

SS5Y7-10PGD<sub>2</sub>-Stations UD-C<sub>6</sub>, N<sub>7</sub>  
C<sub>8</sub>, N<sub>9</sub>  
C<sub>10</sub>, N<sub>11</sub>(D)  
JG



- \*1: Refer to page 207 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
- \*: These figures show the "SS5Y7-10P2-05D-C8".
- \*: Refer to page 212 for dimensions of A or B port top-ported type.
- \*: Only connectors are different for 10PG, 10PH, 10J and 10G. L1 to L5 dimensions are the same as 10P type.



| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 121.2 | 140.2 | 159.2 | 178.2 | 197.2 | 216.2 | 235.2 | 254.2 | 273.2 | 292.2 | 311.2 | 330.2 | 349.2 | 368.2 | 387.2 | 406.2 | 425.2 | 444.2 | 463.2 | 482.2 | 501.2 | 520.2 | 539.2 |
| L2          | 94    | 113   | 132   | 151   | 170   | 189   | 208   | 227   | 246   | 265   | 284   | 303   | 322   | 341   | 360   | 379   | 398   | 417   | 436   | 455   | 474   | 493   | 512   |
| L3          | 160.5 | 173   | 198   | 210.5 | 235.5 | 248   | 273   | 285.5 | 310.5 | 323   | 348   | 360.5 | 385.5 | 398   | 423   | 435.5 | 460.5 | 485.5 | 498   | 523   | 535.5 | 560.5 | 573   |
| L4          | 150   | 162.5 | 187.5 | 200   | 225   | 237.5 | 262.5 | 275   | 300   | 312.5 | 337.5 | 350   | 375   | 387.5 | 412.5 | 425   | 450   | 475   | 487.5 | 512.5 | 525   | 550   | 562.5 |
| L5          | 22.5  | 19.5  | 22.5  | 19    | 22    | 19    | 22    | 18.5  | 21.5  | 18.5  | 21.5  | 18    | 21    | 18    | 21    | 17.5  | 20.5  | 23.5  | 20.5  | 23.5  | 20    | 23    | 20    |

# Plug-in Connector Connecting Base

D-sub Connector

Flat Ribbon Cable

PC Wiring

Type 12  
Top Ported

## Series SY3000/5000/7000

RoHS

### How to Order Manifold

SS5Y **3** -12 **F** **1** -05 **U** - - -

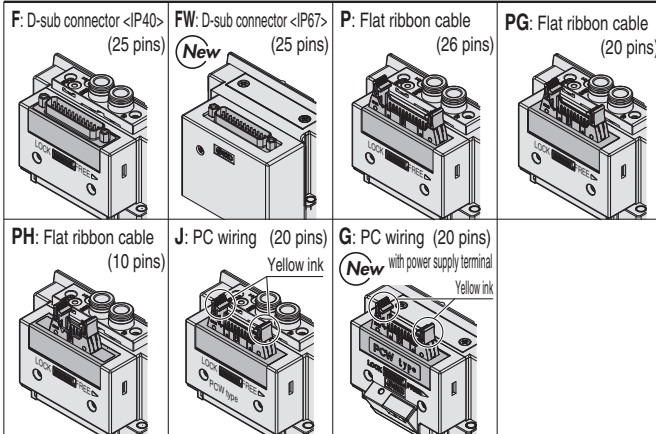
1 2 3 4 5 6 7 8

Refer to pages 210 to 212 for dimensions of Type 12/Top ported type.

#### 1 Series

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

#### 2 Connector type



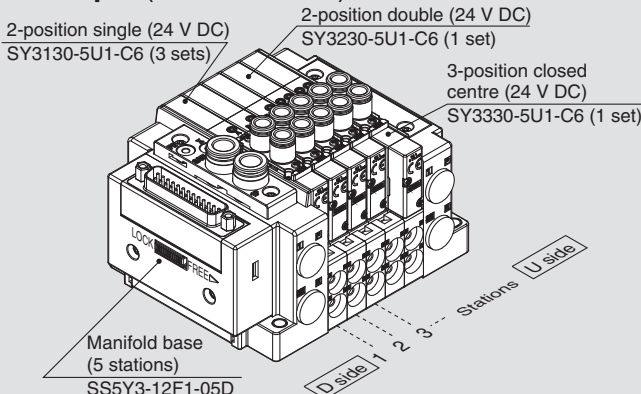
#### 5 P, E port entry

|     |                               |
|-----|-------------------------------|
| U*1 | U side (2 to 10 stations)     |
| D*1 | D side (2 to 10 stations)     |
| B   | Both sides (2 to 24 stations) |

\*1: 6 For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

### How to Order Manifold Assembly

#### Example (SS5Y3-12F1-□)

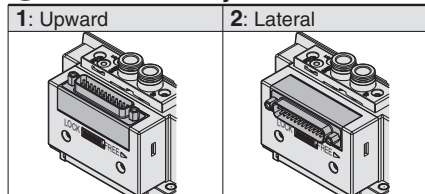


SS5Y3-12F1-05D ..... 1 set (Type 12 5-station manifold base part no.)  
 \*SY3130-5U1-C6 ..... 3 sets (2-position single part no.)  
 \*SY3230-5U1-C6 ..... 1 set (2-position double part no.)  
 \*SY3330-5U1-C6 ..... 1 set (3-position closed centre part no.)

The asterisk denotes the symbol for assembly. Prefix it to the part numbers of the valve etc.

- The valve arrangement is numbered as the 1st station from the D side.
  - Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above.
- If the arrangement becomes complicated, specify on a manifold specification sheet.

#### 3 Connector entry direction



\*: The connector entry direction for connector type "FW" D-sub connector <IP67> can not be rotated. If it is necessary to change, order connector block assembly (page 231) separately.

#### 4 Valve stations

##### F/FW: D-sub connector (25 pins)

| Symbol | Stations    | Note                                              |
|--------|-------------|---------------------------------------------------|
| 02     | 2 stations  | Double wiring*1                                   |
| 12     | 12 stations |                                                   |
| 02     | 2 stations  | Specified layout*2 (Available up to 24 solenoids) |
| 24     | 24 stations |                                                   |

##### PG: Flat ribbon cable (20 pins)

| Symbol | Stations    | Note                                              |
|--------|-------------|---------------------------------------------------|
| 02     | 2 stations  | Double wiring*1                                   |
| 09     | 9 stations  |                                                   |
| 02     | 2 stations  | Specified layout*2 (Available up to 18 solenoids) |
| 18     | 18 stations |                                                   |

##### J/G: PC wiring (20 pins)

| Symbol | Stations    | Note                                              |
|--------|-------------|---------------------------------------------------|
| 02     | 2 stations  | Double wiring*1                                   |
| 08     | 8 stations  |                                                   |
| 02     | 2 stations  | Specified layout*2 (Available up to 16 solenoids) |
| 16     | 16 stations |                                                   |

##### P: Flat ribbon cable (26 pins)

| Symbol | Stations    | Note                                              |
|--------|-------------|---------------------------------------------------|
| 02     | 2 stations  | Double wiring*1                                   |
| 12     | 12 stations |                                                   |
| 02     | 2 stations  | Specified layout*2 (Available up to 24 solenoids) |
| 24     | 24 stations |                                                   |

##### PH: Flat ribbon cable (10 pins)

| Symbol | Stations   | Note                                             |
|--------|------------|--------------------------------------------------|
| 02     | 2 stations | Double wiring*1                                  |
| 04     | 4 stations |                                                  |
| 02     | 2 stations | Specified layout*2 (Available up to 8 solenoids) |
| 08     | 8 stations |                                                  |

\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

\*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

\*: This also includes the number of blanking plate assembly.

#### 6 SUP/EXH block assembly

|   |                                   |
|---|-----------------------------------|
| — | Internal pilot                    |
| S | Internal pilot, Built-in silencer |
| R | External pilot                    |

\*: For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)

#### 8 Mounting

|     |                                      |
|-----|--------------------------------------|
| —   | Direct mounting                      |
| D   | DIN rail mounting (With DIN rail)    |
| D0  | DIN rail mounting (Without DIN rail) |
| D3  | For 3 stations                       |
| ... | ...                                  |
| D24 | For 24 stations                      |

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

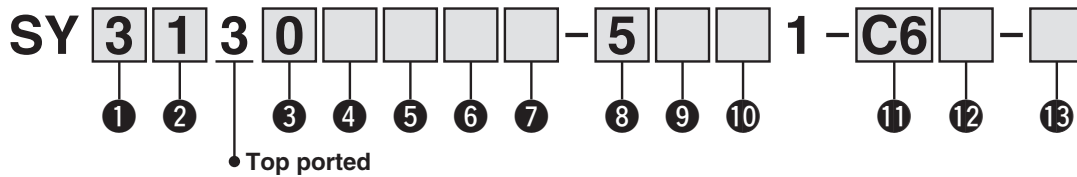
#### 7 P, E port size (One-touch fittings)

| Symbol | SY3000  | SY5000 | SY7000 |
|--------|---------|--------|--------|
| —      | Ø 8     | Ø 10   | Ø 12   |
| N      | Ø 5/16" | Ø 3/8" | Ø 1/2" |

\*: For N, sizes are in inches.

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



### 1 Series

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

### 2 Type of actuation

|     |            |                 |
|-----|------------|-----------------|
| 1   | 2-position | Single          |
| 2   |            | Double          |
| 3   | 3-position | Closed centre   |
| 4   |            | Exhaust centre  |
| 5   |            | Pressure centre |
| A*1 | 4-position | N.C./N.C.       |
| B*1 | dual       | N.O./N.O.       |
| C*1 | 3-port     | N.C./N.O.       |

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 5 Back pressure check valve (Built-in valve type)

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

|   |         |
|---|---------|
| 5 | 24 V DC |
| 6 | 12 V DC |

\*: Connector type "G" (PC wiring with power supply terminal) of the manifold type is only available in 24 V DC.

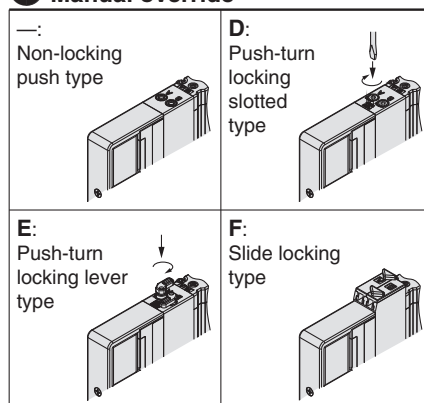
### 9 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| —      | —          | —                        | Non-polar            |
| R      | —          | —                        |                      |
| U      | ●          | —                        |                      |
| S      | —          | ●                        | Positive common      |
| Z      | ●          |                          | Negative common      |
| NS     | —          |                          |                      |
| NZ     | ●          | —                        |                      |

\*: Only "Z" and "NZ" types are available for with the power saving circuit.

\*: For connector type "G" (PC wiring with power supply terminal) of the manifold type, select non-polar or positive common.

### 10 Manual override



\*: Refer to page 31 for with safety slide locking manual override.

### 11 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            |

#### One-touch fitting (Metric)

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| C2     | Ø 2       | ●      | —      | —      |
| C3     | Ø 3.2     | ●      | —      | —      |
| C4     | Ø 4       | ●      | ●      | —      |
| C6     | Ø 6       | ●      | ●      | ●      |
| C8     | Ø 8       | —      | ●      | ●      |
| C10    | Ø 10      | —      | —      | ●      |
| C12    | Ø 12      | —      | —      | ●      |

#### One-touch fitting (Inch)

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| N1     | Ø 1/8"    | ●      | —      | —      |
| N3     | Ø 5/32"   | ●      | ●      | —      |
| N7     | Ø 1/4"    | ●      | ●      | ●      |
| N9     | Ø 5/16"   | —      | ●      | ●      |
| N11    | Ø 3/8"    | —      | —      | ●      |

### 12 Thread type

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

\*: Only — is available for M5.

### 13 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.

# Series SY3000/5000/7000

## Electrical Wiring Specifications

**D-sub connector**

If alignment is not specified, the internal wiring is double wiring (connected to SOL. a and SOL. b) regardless of number of stations, valve and option types.

Connector terminal no.

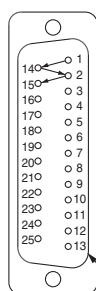
| Station   | SOL. a | SOL. b | Terminal no. | Polarity | Common |
|-----------|--------|--------|--------------|----------|--------|
| Station 1 | 1      | 14     | 1            | (-)      | (+)    |
|           | 2      | 15     | 2            | (-)      | (+)    |
| Station 2 | 3      | 16     | 3            | (-)      | (+)    |
|           | 4      | 17     | 4            | (-)      | (+)    |
| Station 3 | 5      | 18     | 5            | (-)      | (+)    |
|           | 6      | 19     | 6            | (-)      | (+)    |
| Station 4 | 7      | 20     | 7            | (-)      | (+)    |
|           | 8      | 21     | 8            | (-)      | (+)    |
| Station 5 | 9      | 22     | 9            | (-)      | (+)    |
|           | 10     | 23     | 10           | (-)      | (+)    |
| Station 6 | 11     | 24     | 11           | (-)      | (+)    |
|           | 12     | 25     | 12           | (-)      | (+)    |
| COM.      |        |        | 13           | (+)      | (-)    |

Positive common Negative common

\*: When using a valve with no polarity, either positive common or negative common can be used.

## Specified Layout

(25 pins)



Mixed wiring of single and double wiring can be specified on the manifold specification sheet. The maximum number of stations is determined according to the number of solenoids. The total number of solenoids should be 24 or less. 1 solenoid is required for 2-position single, and 2 solenoids for 2-position double, 3-position and 4-position.

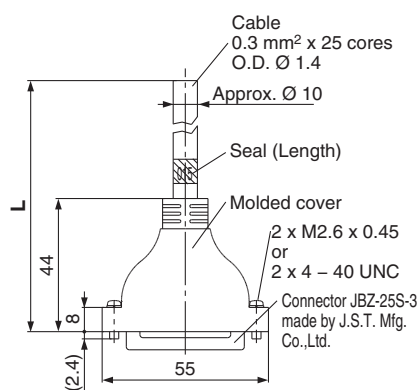
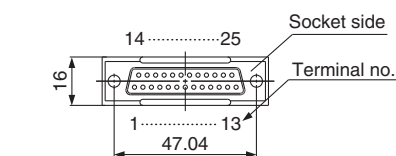
COM.

## Cable Assembly

**AXT100-DS25-030 (N) [IP40]**

015  
050

—: Metric  
N: Inch



### D-sub connector cable assembly [IP40]

| Cable length (L) | Assembly part no. | Note                        |
|------------------|-------------------|-----------------------------|
| 1.5 m            | AXT100-DS25-015   | Cable<br>0.3 mm² x 25 cores |
| 3 m              | AXT100-DS25-030   |                             |
| 5 m              | AXT100-DS25-050   |                             |

\*: When using a standard commercial connector, use a 25-pin type female connector conforming to MIL-C-24308.

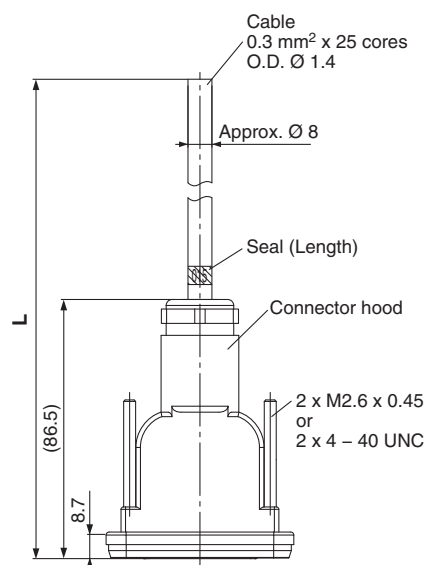
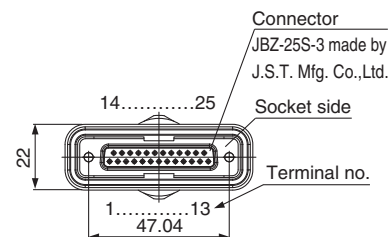
\*: Cannot be used for movable wiring.

\*: Lengths other than the above are also available. Please contact SMC for details.

**SY30M-DS25-030 (N) [IP67]**

015  
050

—: Metric  
N: Inch



### D-sub connector cable assembly [IP67]

| Cable length (L) | Assembly part no. | Note                        |
|------------------|-------------------|-----------------------------|
| 1.5 m            | SY30M-DS25-015    | Cable<br>0.3 mm² x 25 cores |
| 3 m              | SY30M-DS25-030    |                             |
| 5 m              | SY30M-DS25-050    |                             |

\*: Be sure to use the connector cable assembly in the table, to satisfy enclosure IP67.

\*: Cannot be used for movable wiring.

## Electrical characteristics

| Item                                  | Property   |
|---------------------------------------|------------|
| Conductor resistance<br>Ω/km, 20 °C   | 65 or less |
| Voltage limit<br>V, 1 minute, AC      | 1000       |
| Insulation resistance<br>MΩ/km, 20 °C | 5 or more  |

\*: The minimum bending radius of the D-sub connector cable is 20 mm.

## Connector Manufacturers' Example

- Fujitsu Limited
- Japan Aviation Electronics Industry, Limited
- J.S.T. Mfg. Co., Ltd.
- HIROSE ELECTRIC CO., LTD.

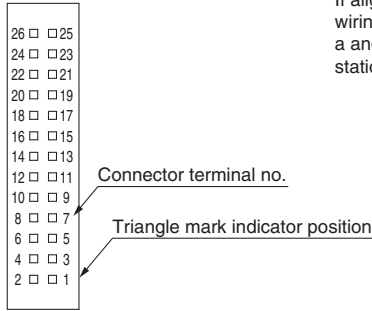
## D-sub connector cable assembly terminal numbers

| Terminal no.     | 1     | 2     | 3    | 4      | 5      | 6    | 7    | 8      | 9     | 10    | 11    | 12  | 13     | 14     | 15     | 16   | 17   | 18     | 19    | 20     | 21    | 22    | 23   | 24    | 25    |       |
|------------------|-------|-------|------|--------|--------|------|------|--------|-------|-------|-------|-----|--------|--------|--------|------|------|--------|-------|--------|-------|-------|------|-------|-------|-------|
| Lead wire colour | Black | Brown | Red  | Orange | Yellow | Pink | Blue | Purple | Grey  | White | White | Red | Yellow | Orange | Yellow | Pink | Blue | Purple | Grey  | Orange | Red   | Brown | Pink | Grey  | Black | White |
| Dot marking      | None  | None  | None | None   | None   | None | None | White  | Black | Black | Red   | Red | Black  | Black  | White  | None | None | None   | Black | White  | White | Red   | Red  | White | None  | None  |



## Electrical Wiring Specifications

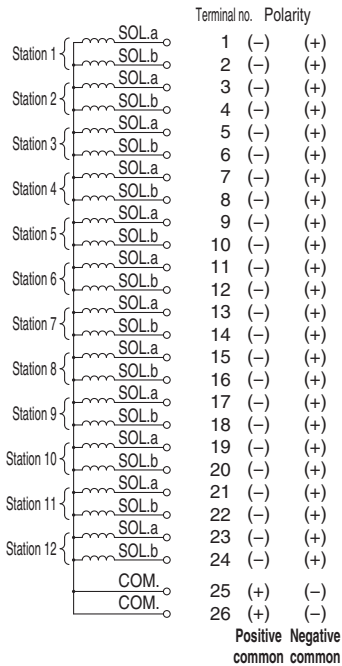
### Flat ribbon cable connector



If alignment is not specified, the internal wiring is double wiring (connected to SOL. a and SOL. b) regardless of number of stations, valve and option types.

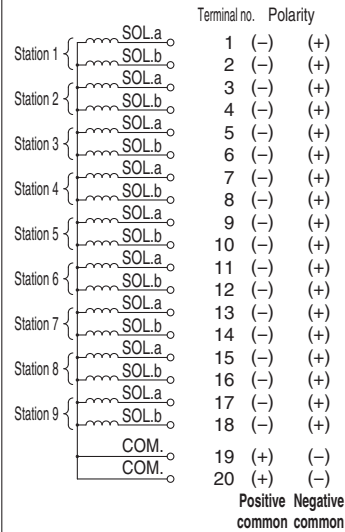
#### P: Flat ribbon cable (26 pins)

##### <Double wiring>



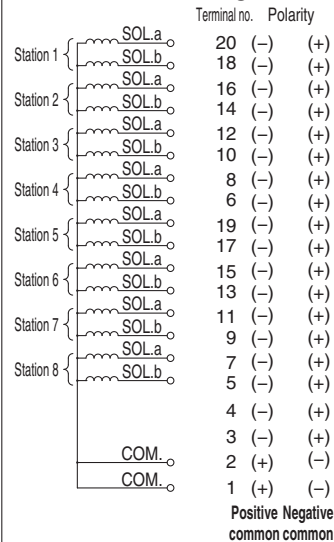
#### PG: Flat ribbon cable (20 pins)

##### <Double wiring>

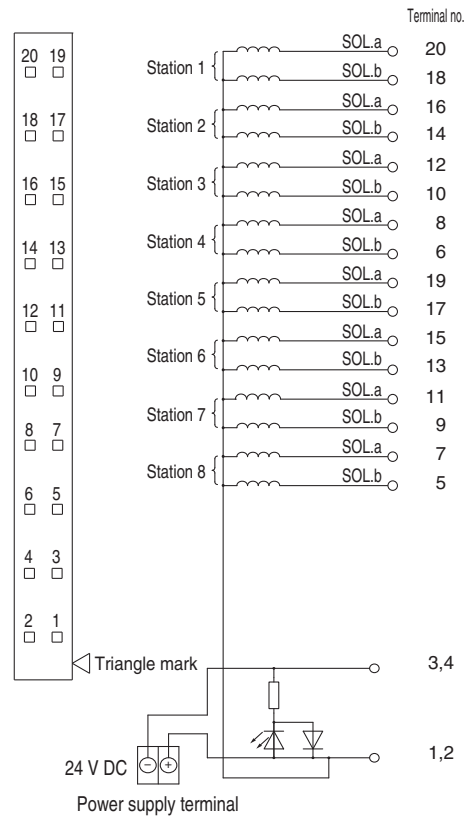


#### J: Flat ribbon cable (20 pins) PC wiring

##### <Double wiring>



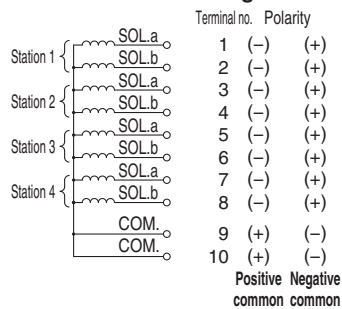
#### G: Flat ribbon cable (20 pins) PC wiring (with power supply terminal)



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

#### PH: Flat ribbon cable (10 pins)

##### <Double wiring>



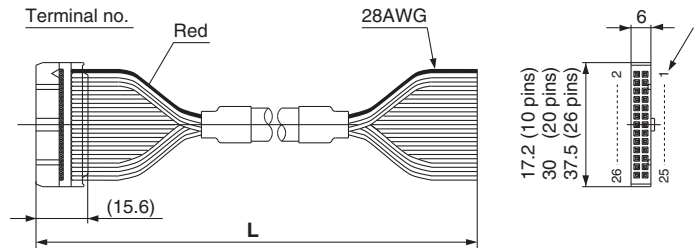
\*: When using a valve with no polarity, either positive common or negative common can be used.

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

# Series SY3000/5000/7000

## Flat Ribbon Cable Assembly

AXT100-FC<sup>10 1</sup><sub>20-2</sub><sup>26 3</sup>



Flat ribbon cable connector assembly

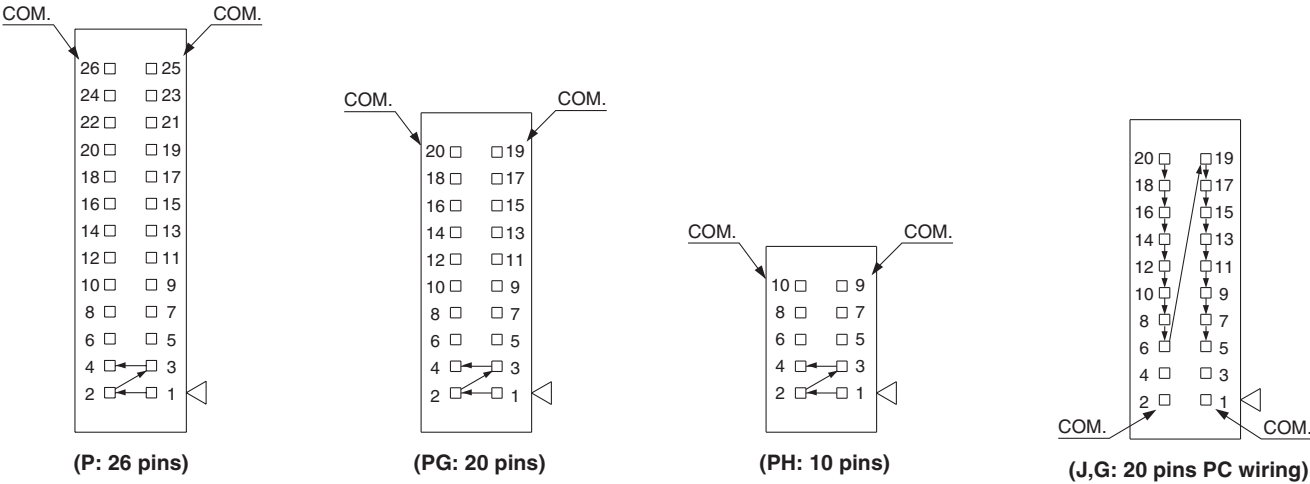
| Cable length (L) | Assembly part no. |               |               |
|------------------|-------------------|---------------|---------------|
|                  | 26 pins           | 20 pins       | 10 pins       |
| 1.5 m            | AXT100-FC26-1     | AXT100-FC20-1 | AXT100-FC10-1 |
| 3 m              | AXT100-FC26-2     | AXT100-FC20-2 | AXT100-FC10-2 |
| 5 m              | AXT100-FC26-3     | AXT100-FC20-3 | AXT100-FC10-3 |

\*: When using a standard commercial connector, use a 26-pin, 20-pin or 10-pin type connector conforming to MIL-C-83503 with strain relief.  
\*: Cannot be used for movable wiring.  
\*: Lengths other than the above are also available. Please contact SMC for details.

### Connector Manufacturers' Example

- HIROSE ELECTRIC CO., LTD.
- 3M Japan Limited
- Fujitsu Limited
- Japan Aviation Electronics Industry, Limited
- J.S.T. Mfg. Co., Ltd.
- Oki Electric Cable Co., Ltd.

## Specified Layout



Mixed wiring of single and double wiring can be specified on the manifold specification. The maximum number of stations is determined according to the number of solenoids. The total number of solenoids should be 24 or less for P, 18 or less for PG, 8 or less for PH, and 16 or less for J/G. 1 solenoid is required for 2-position single, and 2 solenoids for 2-position double, 3-position and 4-position.



Manifold Options

One-touch Fittings/  
Plug Assembly Part No.

Type 10, 11, 12  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Metal Base

Plug-in Sub-plate

Valve

Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

## Terminal Block Box

# Series SY3000/5000/7000



### How to Order Manifold

Refer to pages 208 (SY5000) and 209 (SY7000) for dimensions of Type 11/Bottom ported type.

SS5Y **3** - **10** T - **05** **U** **□** - **C6** **□**

1 2 3 4 5 6 7

#### 1 Series

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

#### 2 Type

|    |                 |
|----|-----------------|
| 10 | Side ported     |
| 11 | Bottom ported*1 |

\*1: The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to "Plug-in Mixed Mounting Type Manifold" (from page 213).

#### 3 Valve stations

| Symbol | Stations    | Note                                                 |
|--------|-------------|------------------------------------------------------|
| 02     | 2 stations  | Double wiring*1                                      |
| 10     | 10 stations |                                                      |
| 02     | 2 stations  | Specified layout*2<br>(Available up to 20 solenoids) |
| 20     | 20 stations |                                                      |

\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

\*2: Specified layout: Indicate the wiring specifications with the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

\*: This also includes the number of blanking plate assembly.

#### 4 P, E port entry

|   |                               |
|---|-------------------------------|
| U | U side (2 to 10 stations)     |
| D | D side (2 to 10 stations)     |
| B | Both sides (2 to 20 stations) |

#### 5 SUP/EXH block assembly

|   |                                   |
|---|-----------------------------------|
| — | Internal pilot                    |
| S | Internal pilot, Built-in silencer |
| R | External pilot                    |

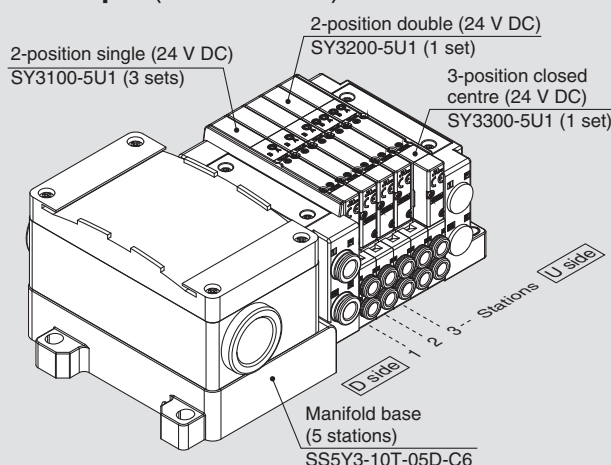
\*: 3/5(E) port is plugged for the built-in silencer type.

\*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

Refer to the page on the right for 6.

### How to Order Manifold Assembly

#### Example (SS5Y3-10T-□)



SS5Y3-10T-05D-C6 ... 1 set (Type 10 5-station manifold base part no.)

\*SY3100-5U1 ..... 3 sets (2-position single part no.)

\*SY3200-5U1 ..... 1 set (2-position double part no.)

\*SY3300-5U1 ..... 1 set (3-position closed centre part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

\*: When mixing top ported configurations, select from page 122.  
In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

#### 7 Mounting and Option

| Symbol | Mounting          | Option     |                |
|--------|-------------------|------------|----------------|
|        |                   | Name plate | Station number |
| —      | Direct mounting   | —          | —              |
| AA     |                   | ●          | ●              |
| BA     |                   | ●          | —              |
| D□     | DIN rail mounting | —          | —              |
| A□     |                   | ●          | ●              |
| B□     |                   | ●          | —              |

\*: Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" below.)

\*: Only direct mounting is available for Type 11 (Bottom ported).

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

##### DIN Rail Option

|     |                                 |                                                                    |
|-----|---------------------------------|--------------------------------------------------------------------|
| —   | Direct mounting                 |                                                                    |
| 0   | Without DIN rail (with bracket) |                                                                    |
| 3   | For 3 stations                  | Specify a longer rail than the total length of specified stations. |
| ... | ...                             |                                                                    |
| 20  | For 20 stations                 |                                                                    |

**6 A, B port size (Metric/One-touch fitting)**

| Symbol                                 | A, B port                                                         | Type 10/Side ported |        |        | Type 11/Bottom ported |        |
|----------------------------------------|-------------------------------------------------------------------|---------------------|--------|--------|-----------------------|--------|
|                                        |                                                                   | SY3000              | SY5000 | SY7000 | SY5000                | SY7000 |
| <b>C2</b>                              | Ø 2                                                               | ●                   | —      | —      | —                     | —      |
| <b>C3</b>                              | Ø 3.2                                                             | ●                   | —      | —      | —                     | —      |
| <b>C4</b>                              | Ø 4                                                               | ●                   | ●      | —      | ●                     | —      |
| <b>C6</b>                              | Ø 6                                                               | ●                   | ●      | ●      | ●                     | ●      |
| <b>C8</b>                              | Ø 8                                                               | —                   | ●      | ●      | ●                     | ●      |
| <b>C10</b>                             | Ø 10                                                              | —                   | —      | ●      | —                     | ●      |
| <b>C12</b>                             | Ø 12                                                              | —                   | —      | ●      | —                     | ●      |
| <b>CM*1</b>                            | Straight port, mixed sizes                                        | ●                   | ●      | ●      | ●                     | ●      |
| <b>L4</b>                              | Upward                                                            | Ø 4                 | ●      | ●      | —                     | —      |
| <b>L6</b>                              |                                                                   | Ø 6                 | ●      | ●      | —                     | —      |
| <b>L8</b>                              |                                                                   | Ø 8                 | —      | ●      | —                     | —      |
| <b>L10</b>                             |                                                                   | Ø 10                | —      | —      | ●                     | —      |
| <b>L12</b>                             | Downward                                                          | Ø 12                | —      | —      | ●                     | —      |
| <b>B4</b>                              |                                                                   | Ø 4                 | ●      | ●      | —                     | —      |
| <b>B6</b>                              |                                                                   | Ø 6                 | ●      | ●      | —                     | —      |
| <b>B8</b>                              |                                                                   | Ø 8                 | —      | ●      | —                     | —      |
| <b>B10</b>                             | Downward                                                          | Ø 10                | —      | —      | ●                     | —      |
| <b>B12</b>                             |                                                                   | Ø 12                | —      | —      | ●                     | —      |
| <b>LM*1</b>                            | Elbow port, mixed sizes<br>(Including upward and downward piping) | ●                   | ●      | ●      | —                     | —      |
| P, E port size<br>(One-touch fittings) |                                                                   | Ø 8                 | Ø 10   | Ø 12   | Ø 10                  | Ø 12   |

\*1: Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

\*2: To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 250 to 252).

**A, B port size (Inch/One-touch fitting)**

| Symbol                                 | A, B port                                                         | Type 10/Side ported |        |        | Type 11/Bottom ported |        |
|----------------------------------------|-------------------------------------------------------------------|---------------------|--------|--------|-----------------------|--------|
|                                        |                                                                   | SY3000              | SY5000 | SY7000 | SY5000                | SY7000 |
| <b>N1</b>                              | Ø 1/8"                                                            | ●                   | —      | —      | —                     | —      |
| <b>N3</b>                              | Ø 5/32"                                                           | ●                   | ●      | —      | ●                     | —      |
| <b>N7</b>                              | Ø 1/4"                                                            | ●                   | ●      | ●      | ●                     | ●      |
| <b>N9</b>                              | Ø 5/16"                                                           | —                   | ●      | ●      | ●                     | ●      |
| <b>N11</b>                             | Ø 3/8"                                                            | —                   | —      | ●      | —                     | ●      |
| <b>CM*1</b>                            | Straight port, mixed sizes                                        | ●                   | ●      | ●      | ●                     | ●      |
| <b>LN3</b>                             | Upward                                                            | Ø 5/32"             | ●      | —      | —                     | —      |
| <b>LN7</b>                             |                                                                   | Ø 1/4"              | ●      | ●      | —                     | —      |
| <b>LN9</b>                             |                                                                   | Ø 5/16"             | —      | ●      | —                     | —      |
| <b>LN11</b>                            | Downward                                                          | Ø 3/8"              | —      | —      | ●                     | —      |
| <b>BN3</b>                             |                                                                   | Ø 5/32"             | ●      | —      | —                     | —      |
| <b>BN7</b>                             |                                                                   | Ø 1/4"              | ●      | ●      | —                     | —      |
| <b>BN9</b>                             |                                                                   | Ø 5/16"             | —      | ●      | —                     | —      |
| <b>BN11</b>                            | Downward                                                          | Ø 3/8"              | —      | —      | ●                     | —      |
| <b>LM*1</b>                            | Elbow port, mixed sizes<br>(Including upward and downward piping) | ●                   | ●      | ●      | —                     | —      |
| P, E port size<br>(One-touch fittings) |                                                                   | Ø 5/16"             | Ø 3/8" | Ø 1/2" | Ø 3/8"                | Ø 1/2" |

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

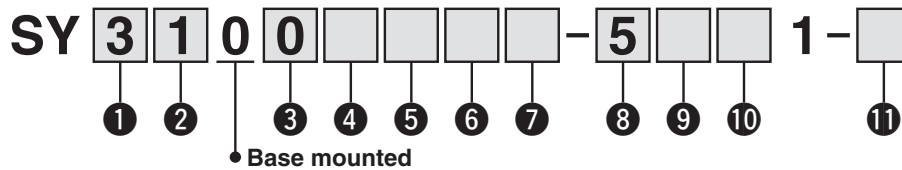
Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



### 1 Series

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

### 2 Type of actuation

|     |                        |                 |
|-----|------------------------|-----------------|
| 1   | 2-position             | Single          |
| 2   |                        | Double          |
| 3   | 3-position             | Closed centre   |
| 4   |                        | Exhaust centre  |
| 5   |                        | Pressure centre |
| A*1 | 4-position dual 3-port | N.C./N.C.       |
| B*1 |                        | N.O./N.O.       |
| C*1 |                        | N.C./N.O.       |

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 5 Back pressure check valve (Built-in valve type)

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

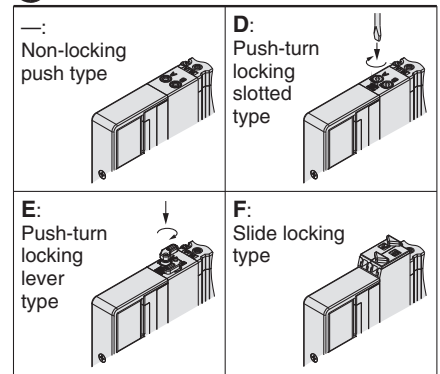
|   |         |
|---|---------|
| 5 | 24 V DC |
| 6 | 12 V DC |

### 9 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| —      | —          | —                        | Non-polar            |
| R      | —          | ●                        |                      |
| U      | ●          |                          |                      |
| S      | —          |                          |                      |
| Z      | ●          |                          |                      |
| NS     | —          |                          |                      |
| NZ     | ●          |                          | Negative common      |

\*: Only "Z" and "NZ" types are available for with the power saving circuit.

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

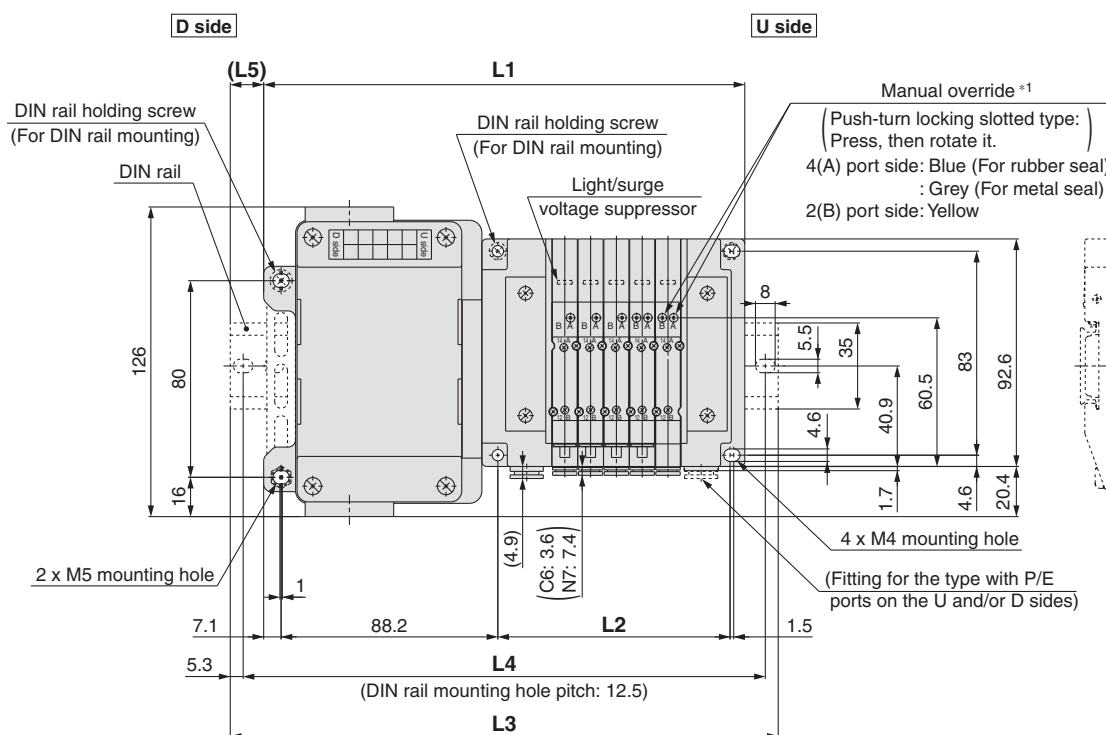
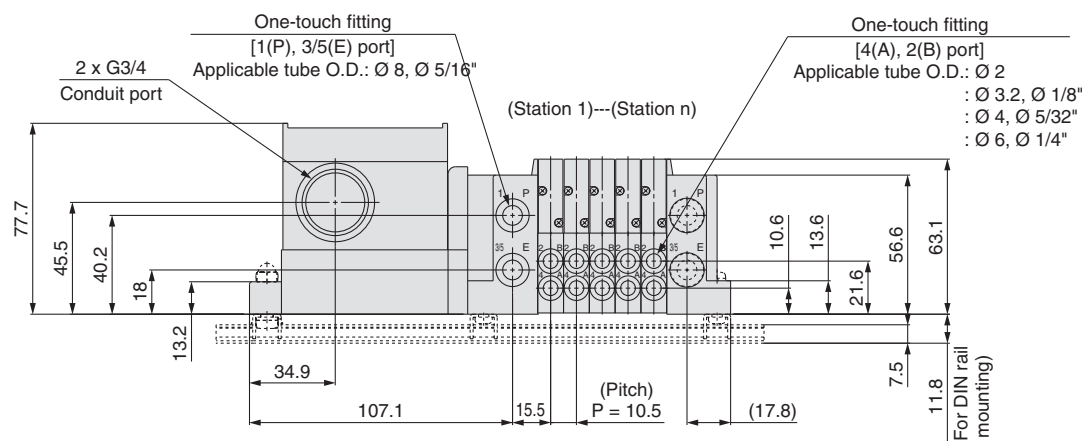
\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

## Dimensions: Series SY3000

### Plug-in Connector Connecting Base

Type 10/Side Ported  
Terminal Block Box

SS5Y3-10T-**Stations**  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix} \begin{matrix} \text{C2} \\ \text{C3, N1} \\ \text{C4, N3} \\ \text{C6, N7} \end{matrix} \text{(D)}$



\*1: Refer to page 205 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y3-10T-05D-C6".  
\*: Refer to page 210 for dimensions of A or B port top-ported type.

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 164.3 | 174.8 | 185.3 | 195.8 | 206.3 | 216.8 | 227.3 | 237.8 | 248.3 | 258.8 | 269.3 | 279.8 | 290.3 | 300.8 | 311.3 | 321.8 | 332.3 | 342.8 | 353.3 |
| L2          | 63    | 73.5  | 84    | 94.5  | 105   | 115.5 | 126   | 136.5 | 147   | 157.5 | 168   | 178.5 | 189   | 199.5 | 210   | 220.5 | 231   | 241.5 | 252   |
| L3          | 198   | 198   | 210.5 | 223   | 235.5 | 248   | 260.5 | 273   | 273   | 285.5 | 298   | 310.5 | 323   | 335.5 | 335.5 | 348   | 360.5 | 373   | 385.5 |
| L4          | 187.5 | 187.5 | 200   | 212.5 | 225   | 237.5 | 250   | 262.5 | 262.5 | 275   | 287.5 | 300   | 312.5 | 325   | 325   | 337.5 | 350   | 362.5 | 375   |
| L5          | 17    | 11.5  | 12.5  | 13.5  | 14.5  | 15.5  | 16.5  | 17.5  | 12.5  | 13.5  | 14.5  | 15.5  | 16.5  | 17.5  | 12    | 13    | 14    | 15    | 16    |

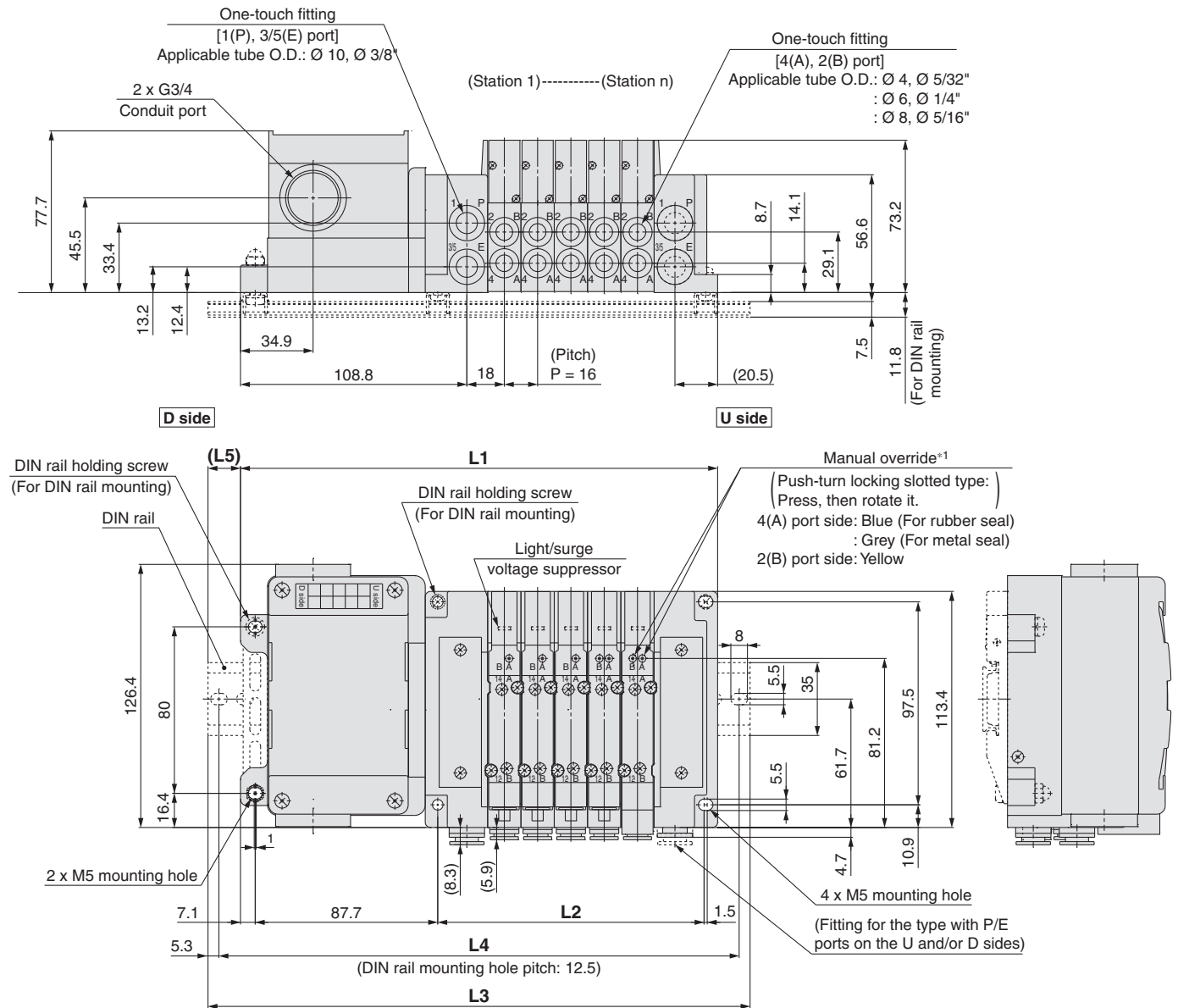
# Series SY3000/5000/7000

## Dimensions: Series SY5000

### Plug-in Connector Connecting Base

### Type 10/Side Ported Terminal Block Box

SS5Y5-10T- Stations  $\begin{matrix} \text{U} & \text{C4, N3} \\ \text{D} & \text{C6, N7} \\ \text{B} & \text{C8, N9} \end{matrix}$  (D)



\*1: Refer to page 206 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y5-10T-05D-C8".

\*: Refer to page 211 for dimensions of A or B port top-ported type.

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 181.3 | 197.3 | 213.3 | 229.3 | 245.3 | 261.3 | 277.3 | 293.3 | 309.3 | 325.3 | 341.3 | 357.3 | 373.3 | 389.3 | 405.3 | 421.3 | 437.3 | 453.3 | 469.3 |
| L2          | 80    | 96    | 112   | 128   | 144   | 160   | 176   | 192   | 208   | 224   | 240   | 256   | 272   | 288   | 304   | 320   | 336   | 352   | 368   |
| L3          | 210.5 | 223   | 248   | 260.5 | 273   | 285.5 | 310.5 | 323   | 335.5 | 360.5 | 373   | 385.5 | 398   | 423   | 435.5 | 448   | 460.5 | 485.5 | 498   |
| L4          | 200   | 212.5 | 237.5 | 250   | 262.5 | 275   | 300   | 312.5 | 325   | 350   | 362.5 | 375   | 387.5 | 412.5 | 425   | 437.5 | 450   | 475   | 487.5 |
| L5          | 14.5  | 13    | 17.5  | 15.5  | 14    | 12    | 16.5  | 15    | 13    | 17.5  | 16    | 14    | 12.5  | 17    | 15    | 13.5  | 11.5  | 16    | 14.5  |



## Dimensions: Series SY7000

## Plug-in Connector Connecting Base

Type 10/Side Ported

## Terminal Block Box

## Valve

### Plug-in Sub-plate

## Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

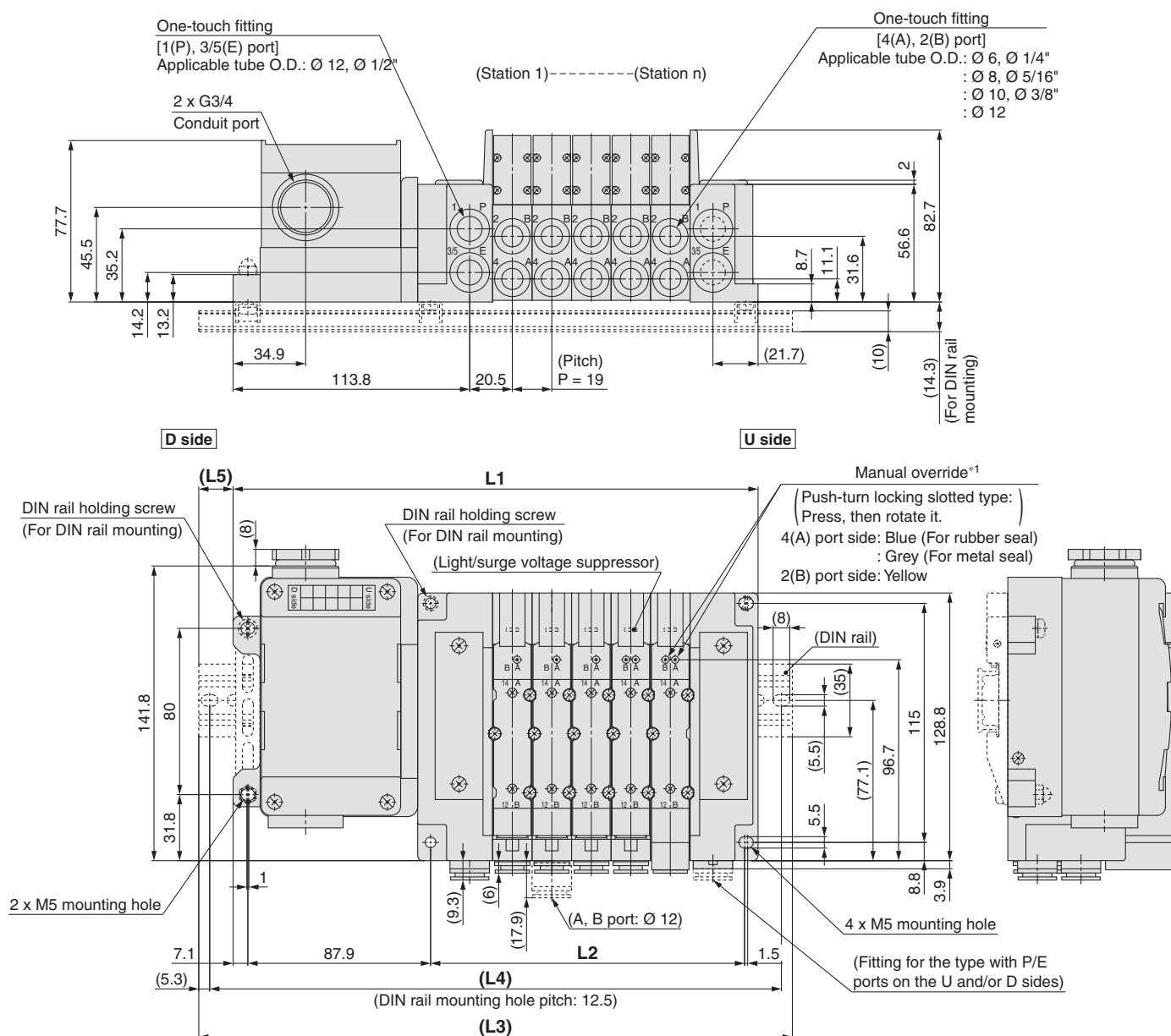
## Plug-in Connector Connecting Base

**Type 10, 11, 12  
Manifold Exploded View**

One-touch Fittings/  
Plug Assembly Part No.

## Manifold Options

**SS5Y7-10T-**StationsU  
D-  
BC6, N7  
C8, N9  
C10, N11  
C12**(D)**



\*1: Refer to page 207 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y7-10T-05D-C10".

\*: Refer to page 212 for dimensions of A or B port top-ported type.

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 195.5 | 214.5 | 233.5 | 252.5 | 271.5 | 290.5 | 309.5 | 328.5 | 347.5 | 366.5 | 385.5 | 404.5 | 423.5 | 442.5 | 461.5 | 480.5 | 499.5 | 518.5 | 537.5 |
| L2          | 94    | 113   | 132   | 151   | 170   | 189   | 208   | 227   | 246   | 265   | 284   | 303   | 322   | 341   | 360   | 379   | 398   | 417   | 436   |
| L3          | 223   | 248   | 260.5 | 285.5 | 298   | 323   | 335.5 | 360.5 | 373   | 398   | 410.5 | 435.5 | 448   | 473   | 485.5 | 510.5 | 523   | 548   | 573   |
| L4          | 212.5 | 237.5 | 250   | 275   | 287.5 | 312.5 | 325   | 350   | 362.5 | 387.5 | 400   | 425   | 437.5 | 462.5 | 475   | 500   | 512.5 | 537.5 | 562.5 |
| L5          | 14    | 17    | 13.5  | 16.5  | 13.5  | 16.5  | 13    | 16    | 13    | 16    | 12.5  | 15.5  | 12.5  | 15.5  | 12    | 15    | 12    | 15    | 18    |

# Plug-in Connector Connecting Base

## Terminal Block Box

Type 12  
Top Ported

# Series SY3000/5000/7000



### How to Order Manifold

SS5Y **3** - 12T - **05** **U** - - -

1

2

3

4

5

6

Refer to pages 210 to 212 for dimensions of Type 12/Top ported type.

#### 1 Series

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

#### 3 P, E port entry

|     |                               |
|-----|-------------------------------|
| U*1 | U side (2 to 10 stations)     |
| D*1 | D side (2 to 10 stations)     |
| B   | Both sides (2 to 20 stations) |

\*1: 4 For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

#### 2 Valve stations

| Symbol | Stations    | Note                                                 |
|--------|-------------|------------------------------------------------------|
| 02     | 2 stations  | Double wiring*1                                      |
| 10     | 10 stations |                                                      |
| 02     | 2 stations  | Specified layout*2<br>(Available up to 20 solenoids) |
| 20     | 20 stations |                                                      |

- \*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
- \*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)
- \*: This also includes the number of blanking plate assembly.

#### 4 SUP/EXH block assembly

|   |                                   |
|---|-----------------------------------|
| — | Internal pilot                    |
| S | Internal pilot, Built-in silencer |
| R | External pilot                    |

- \*: For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)
- \*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

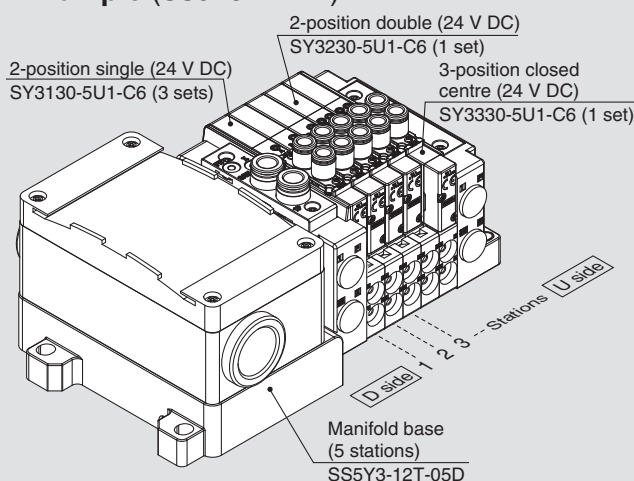
#### 5 P, E port size (One-touch fittings)

| Symbol | SY3000  | SY5000 | SY7000 |
|--------|---------|--------|--------|
| —      | Ø 8     | Ø 10   | Ø 12   |
| N      | Ø 5/16" | Ø 3/8" | Ø 1/2" |

\*: For N, sizes are in inches.

### How to Order Manifold Assembly

#### Example (SS5Y3-12T-□)



SS5Y3-12T-05D ..... 1 set (Type 12 5-station manifold base part no.)  
 \*SY3130-5U1-C6 ..... 3 sets (2-position single part no.)  
 \*SY3230-5U1-C6 ..... 1 set (2-position double part no.)  
 \*SY3330-5U1-C6 ..... 1 set (3-position closed centre part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

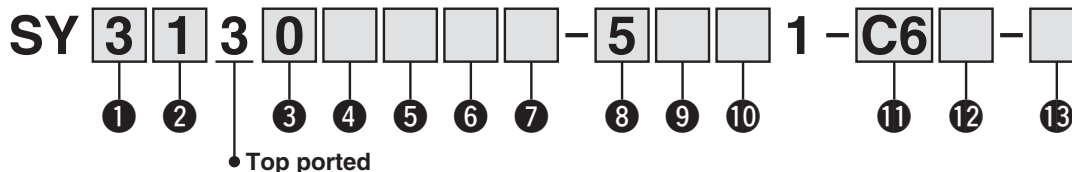
#### 6 Mounting

|     |                                         |
|-----|-----------------------------------------|
| —   | Direct mounting                         |
| D   | DIN rail mounting<br>(With DIN rail)    |
| D0  | DIN rail mounting<br>(Without DIN rail) |
| D3  | For 3 stations                          |
| ⋮   | ⋮                                       |
| D20 | For 20 stations                         |

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



### 1 Series

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

### 2 Type of actuation

|     |             |                 |
|-----|-------------|-----------------|
| 1   | 2-position  | Single          |
| 2   |             | Double          |
| 3   | 3-position  | Closed centre   |
| 4   |             | Exhaust centre  |
| 5   |             | Pressure centre |
| A*1 | 4-position  | N.C./N.C.       |
| B*1 | dual 3-port | N.O./N.O.       |
| C*1 |             | N.C./N.O.       |

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 5 Back pressure check valve (Built-in valve type)

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

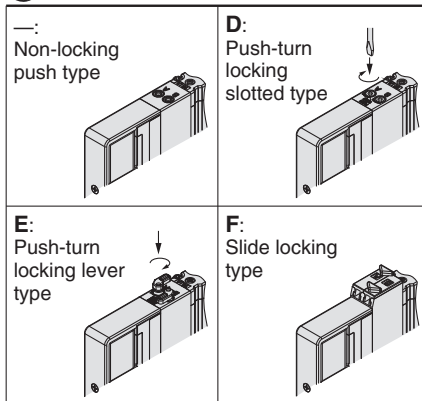
|   |         |
|---|---------|
| 5 | 24 V DC |
| 6 | 12 V DC |

### 9 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| —      | —          | —                        |                      |
| R      | —          | —                        | Non-polar            |
| U      | ●          | —                        |                      |
| S      | —          | ●                        | Positive common      |
| Z      | ●          | —                        |                      |
| NS     | —          | —                        | Negative common      |
| NZ     | ●          | —                        |                      |

\*: Only "Z" and "NZ" types are available for with the power saving circuit.

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 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)

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| C2     | Ø 2       | ●      | —      | —      |
| C3     | Ø 3.2     | ●      | —      | —      |
| C4     | Ø 4       | ●      | ●      | —      |
| C6     | Ø 6       | ●      | ●      | ●      |
| C8     | Ø 8       | —      | ●      | ●      |
| C10    | Ø 10      | —      | —      | ●      |
| C12    | Ø 12      | —      | —      | ●      |

#### One-touch fitting (Inch)

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| N1     | Ø 1/8"    | ●      | —      | —      |
| N3     | Ø 5/32"   | ●      | ●      | —      |
| N7     | Ø 1/4"    | ●      | ●      | ●      |
| N9     | Ø 5/16"   | —      | ●      | ●      |
| N11    | Ø 3/8"    | —      | —      | ●      |

### 12 Thread type

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

\*: Only — is available for M5.

### 13 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

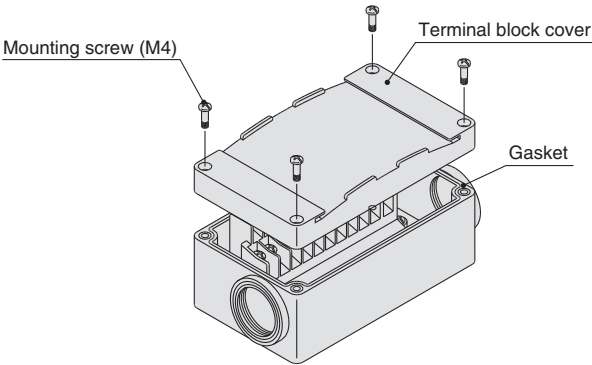
\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.

# Series SY3000/5000/7000

## Terminal Block Connection

### Step 1. Removing the terminal block cover

Loosen the 4 mounting screws (M4) to remove the terminal block cover.



### Step 3. Mounting the terminal block cover

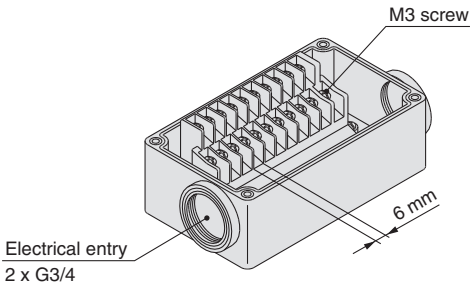
Securely tighten the screws to the torque shown in the below table only after confirming that the gasket is installed correctly.

| Proper tightening torque [N·m] |
|--------------------------------|
| 0.7 to 1.2                     |

### Step 2. The below diagram shows the terminal block wiring.

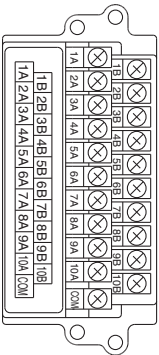
**All stations are provided with double wiring regardless of the mounted valves.**

Connect each wire to the power supply side, according to the markings provided inside the terminal block.



- Applicable crimped terminal: 1.25-3S, 1.25Y-3, 1.25Y-3N, 1.25Y-3.5
- Name plate: VVQ5000-N-T
- Drip-proof plug assembly (for G 3/4): AXT100-B06A

## Electrical Wiring Specifications (IP67 compatible)



If alignment is not specified, the internal wiring is double wiring (connected to SOL. a and SOL. b) regardless of number of stations, valve and option types.

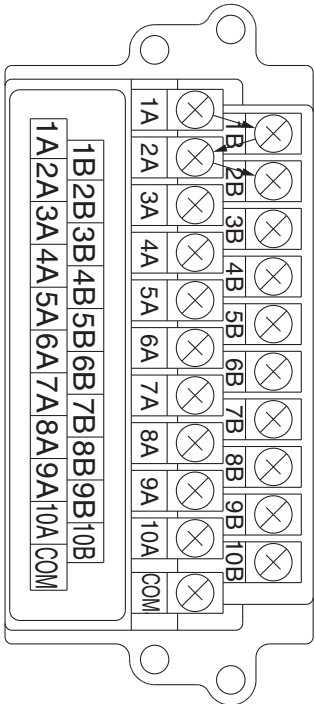
※: When using a valve with no polarity, either positive common or negative common can be used.

### Standard wiring

|            | Terminal no. | Polarity        |                 |
|------------|--------------|-----------------|-----------------|
| Station 1  | SOL.a        | 1A (-)          | (+)             |
|            | SOL.b        | 1B (-)          | (+)             |
| Station 2  | SOL.a        | 2A (-)          | (+)             |
|            | SOL.b        | 2B (-)          | (+)             |
| Station 3  | SOL.a        | 3A (-)          | (+)             |
|            | SOL.b        | 3B (-)          | (+)             |
| Station 4  | SOL.a        | 4A (-)          | (+)             |
|            | SOL.b        | 4B (-)          | (+)             |
| Station 5  | SOL.a        | 5A (-)          | (+)             |
|            | SOL.b        | 5B (-)          | (+)             |
| Station 6  | SOL.a        | 6A (-)          | (+)             |
|            | SOL.b        | 6B (-)          | (+)             |
| Station 7  | SOL.a        | 7A (-)          | (+)             |
|            | SOL.b        | 7B (-)          | (+)             |
| Station 8  | SOL.a        | 8A (-)          | (+)             |
|            | SOL.b        | 8B (-)          | (+)             |
| Station 9  | SOL.a        | 9A (-)          | (+)             |
|            | SOL.b        | 9B (-)          | (+)             |
| Station 10 | SOL.a        | 10A (-)         | (+)             |
|            | SOL.b        | 10B (-)         | (+)             |
|            | COM.         | (+)             | (-)             |
|            |              | Positive common | Negative common |

### Specified Layout

Mixed wiring of single and double wiring can be specified on the manifold specification sheet. The maximum number of stations is determined according to the number of solenoids. The total number of solenoids should be 20 or less. 1 solenoid is required for 2-position single, and 2 solenoids for 2-position double, 3-position and 4-position.



Manifold Options

One-touch Fittings/  
Plug Assembly Part No.

Type 10, 11, 12  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Metal Base

Plug-in Sub-plate

Valve

Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

Lead Wire

# Series SY3000/5000/7000



## How to Order Manifold

Refer to pages 208 (SY5000) and 209 (SY7000) for dimensions of Type 11/Bottom ported type.

SS5Y **3** - **10** **L1** **1** - **05** **U** - **C6**

1 2 3 4 5 6 7 8 9

### 1 Series

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

### 2 Type

|    |                 |
|----|-----------------|
| 10 | Side ported     |
| 11 | Bottom ported*1 |

\*1: The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to "Plug-in Mixed Mounting Type Manifold" (from page 213).

### 3 Number of cores (Lead wire)

|    |          |
|----|----------|
| L1 | 34 cores |
| L2 | 17 cores |
| L3 | 9 cores  |

### 4 Lead wire length

|   |       |
|---|-------|
| 1 | 0.6 m |
| 2 | 1.5 m |
| 3 | 3 m   |

### 5 Valve stations

#### (L1□)

| Symbol | Stations    | Note                                                 |
|--------|-------------|------------------------------------------------------|
| 02     | 2 stations  | Double wiring*1                                      |
| 16     | 16 stations |                                                      |
| 02     | 2 stations  | Specified layout*2<br>(Available up to 32 solenoids) |
| 24     | 24 stations |                                                      |

#### (L3□)

| Symbol | Stations   | Note                                                |
|--------|------------|-----------------------------------------------------|
| 02     | 2 stations | Double wiring*1                                     |
| 04     | 4 stations |                                                     |
| 02     | 2 stations | Specified layout*2<br>(Available up to 8 solenoids) |
| 08     | 8 stations |                                                     |

#### (L2□)

| Symbol | Stations    | Note                                                 |
|--------|-------------|------------------------------------------------------|
| 02     | 2 stations  | Double wiring*1                                      |
| 08     | 8 stations  |                                                      |
| 02     | 2 stations  | Specified layout*2<br>(Available up to 16 solenoids) |
| 16     | 16 stations |                                                      |

\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

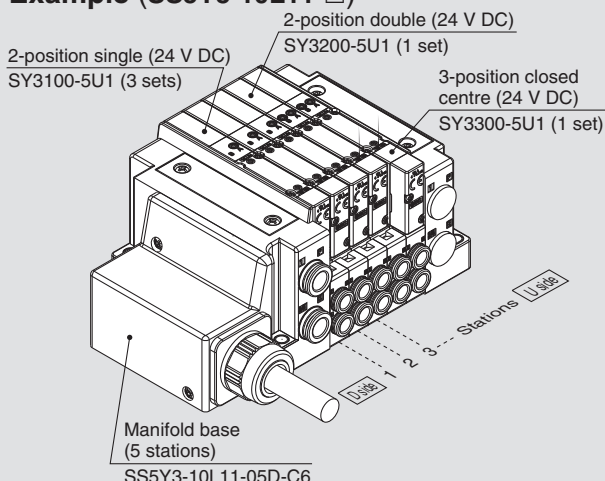
Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

\*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

\*: This also includes the number of blanking plate assembly.

## How to Order Manifold Assembly

### Example (SS5Y3-10L11-□)



SS5Y3-10L11-05D-C6 ... 1 set (Type 10 5-station manifold base part no.)  
 \*SY3100-5U1 ..... 3 sets (2-position single part no.)  
 \*SY3200-5U1 ..... 1 set (2-position double part no.)  
 \*SY3300-5U1 ..... 1 set (3-position closed centre part no.)

The asterisk denotes the symbol for assembly.  
Prefix it to the part numbers of the valve etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

\*: When mixing top ported configurations, select from page 132.

In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

### 6 P, E port entry

|   |                               |
|---|-------------------------------|
| U | U side (2 to 10 stations)     |
| D | D side (2 to 10 stations)     |
| B | Both sides (2 to 24 stations) |

### 7 SUP/EXH block assembly

|   |                                   |
|---|-----------------------------------|
| — | Internal pilot                    |
| S | Internal pilot, Built-in silencer |
| R | External pilot                    |

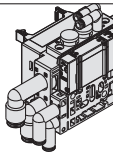
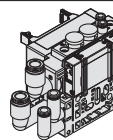
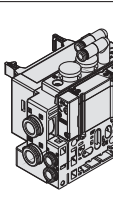
\*: 3/5(E) port is plugged for the built-in silencer type.

\*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.



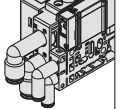
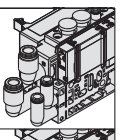
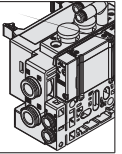
## 8 A, B port size (Metric/One-touch fitting)

| Symbol                                 | A, B port                                                         | Type 10/Side ported |        |        | Type 11/Bottom ported |        |
|----------------------------------------|-------------------------------------------------------------------|---------------------|--------|--------|-----------------------|--------|
|                                        |                                                                   | SY3000              | SY5000 | SY7000 | SY5000                | SY7000 |
| C2                                     | Ø 2                                                               | ●                   | —      | —      | —                     | —      |
| C3                                     | Ø 3.2                                                             | ●                   | —      | —      | —                     | —      |
| C4                                     | Ø 4                                                               | ●                   | ●      | —      | ●                     | —      |
| C6                                     | Ø 6                                                               | ●                   | ●      | ●      | ●                     | ●      |
| C8                                     | Ø 8                                                               | —                   | ●      | ●      | ●                     | ●      |
| C10                                    | Ø 10                                                              | —                   | —      | ●      | —                     | ●      |
| C12                                    | Ø 12                                                              | —                   | —      | ●      | —                     | ●      |
| CM*1                                   | Straight port, mixed sizes                                        | ●                   | ●      | ●      | ●                     | ●      |
| L4                                     | Ø 4                                                               | ●                   | ●      | —      | —                     | —      |
| L6                                     | Ø 6                                                               | ●                   | ●      | ●      | —                     | —      |
| L8                                     | Ø 8                                                               | —                   | ●      | ●      | —                     | —      |
| L10                                    | Ø 10                                                              | —                   | —      | ●      | —                     | —      |
| L12                                    | Ø 12                                                              | —                   | —      | ●      | —                     | —      |
| B4                                     | Ø 4                                                               | ●                   | ●      | —      | —                     | —      |
| B6                                     | Ø 6                                                               | ●                   | ●      | ●      | —                     | —      |
| B8                                     | Ø 8                                                               | —                   | ●      | ●      | —                     | —      |
| B10                                    | Ø 10                                                              | —                   | —      | ●      | —                     | —      |
| B12                                    | Ø 12                                                              | —                   | —      | ●      | —                     | —      |
| LM*1                                   | Elbow port, mixed sizes<br>(Including upward and downward piping) | ●                   | ●      | ●      | —                     | —      |
| P, E port size<br>(One-touch fittings) |                                                                   | Ø 8                 | Ø 10   | Ø 12   | Ø 10                  | Ø 12   |



## A, B port size (Inch/One-touch fitting)

| Symbol                                 | A, B port                                                         | Type 10/Side ported |        |        | Type 11/Bottom ported |        |
|----------------------------------------|-------------------------------------------------------------------|---------------------|--------|--------|-----------------------|--------|
|                                        |                                                                   | SY3000              | SY5000 | SY7000 | SY5000                | SY7000 |
| N1                                     | Ø 1/8"                                                            | ●                   | —      | —      | —                     | —      |
| N3                                     | Ø 5/32"                                                           | ●                   | ●      | —      | ●                     | —      |
| N7                                     | Ø 1/4"                                                            | ●                   | ●      | ●      | ●                     | ●      |
| N9                                     | Ø 5/16"                                                           | —                   | ●      | ●      | ●                     | ●      |
| N11                                    | Ø 3/8"                                                            | —                   | —      | ●      | —                     | ●      |
| CM*1                                   | Straight port, mixed sizes                                        | ●                   | ●      | ●      | ●                     | ●      |
| LN3                                    | Ø 5/32"                                                           | ●                   | —      | —      | —                     | —      |
| LN7                                    | Ø 1/4"                                                            | ●                   | ●      | —      | —                     | —      |
| LN9                                    | Ø 5/16"                                                           | —                   | ●      | —      | —                     | —      |
| LN11                                   | Ø 3/8"                                                            | —                   | —      | ●      | —                     | —      |
| BN3                                    | Ø 5/32"                                                           | ●                   | —      | —      | —                     | —      |
| BN7                                    | Ø 1/4"                                                            | ●                   | ●      | —      | —                     | —      |
| BN9                                    | Ø 5/16"                                                           | —                   | ●      | —      | —                     | —      |
| BN11                                   | Ø 3/8"                                                            | —                   | —      | ●      | —                     | —      |
| LM*1                                   | Elbow port, mixed sizes<br>(Including upward and downward piping) | ●                   | ●      | ●      | —                     | —      |
| P, E port size<br>(One-touch fittings) |                                                                   | Ø 5/16"             | Ø 3/8" | Ø 1/2" | Ø 3/8"                | Ø 1/2" |



\*1: Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

\*2: To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 250 to 252).

## 9 Mounting and Option

| Symbol | Mounting          | Option     |                |
|--------|-------------------|------------|----------------|
|        |                   | Name plate | Station number |
| —      | Direct mounting   | —          | —              |
| AA     |                   | ●          | ●              |
| BA     |                   | ●          | —              |
| D□     | DIN rail mounting | —          | —              |
| A□     |                   | ●          | ●              |
| B□     |                   | ●          | —              |

### DIN Rail Option

|    |                                 |                                                                    |
|----|---------------------------------|--------------------------------------------------------------------|
| —  | Direct mounting                 |                                                                    |
| 0  | Without DIN rail (with bracket) |                                                                    |
| 3  | For 3 stations                  | Specify a longer rail than the total length of specified stations. |
| ⋮  | ⋮                               |                                                                    |
| 24 | For 24 stations                 |                                                                    |

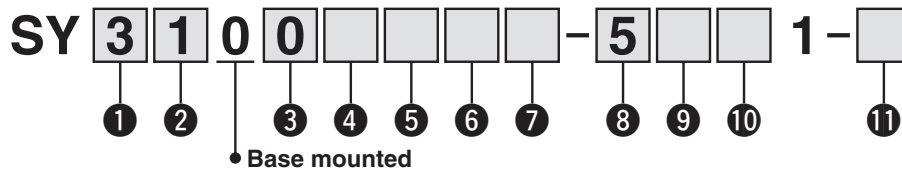
\*: Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" above.)

\*: Only direct mounting is available for Type 11 (Bottom ported).

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



### 1 Series

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

### 2 Type of actuation

|     |                        |                 |
|-----|------------------------|-----------------|
| 1   | 2-position             | Single          |
| 2   |                        | Double          |
| 3   | 3-position             | Closed centre   |
| 4   |                        | Exhaust centre  |
| 5   |                        | Pressure centre |
| A*1 | 4-position dual 3-port | N.C./N.C.       |
| B*1 |                        | N.O./N.O.       |
| C*1 |                        | N.C./N.O.       |

\*1: Only rubber seal is available for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 5 Back pressure check valve (Built-in valve type)

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

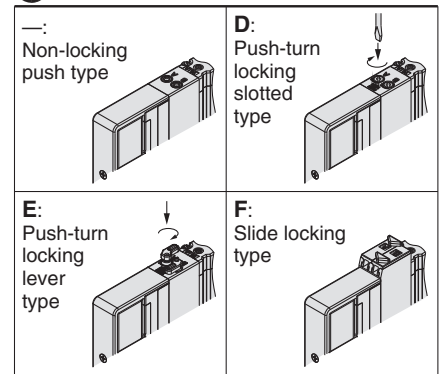
|   |         |
|---|---------|
| 5 | 24 V DC |
| 6 | 12 V DC |

### 9 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| —      | —          | —                        | Non-polar            |
| R      | —          | ●                        |                      |
| U      | ●          |                          |                      |
| S      | —          |                          |                      |
| Z      | ●          |                          |                      |
| NS     | —          |                          |                      |
| NZ     | ●          |                          | Negative common      |

\*: Only "Z" and "NZ" types are available for with the power saving circuit.

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

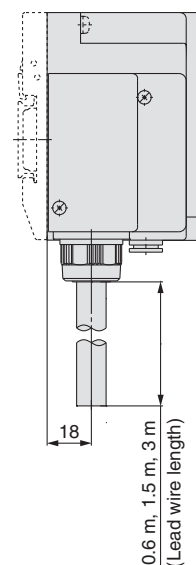
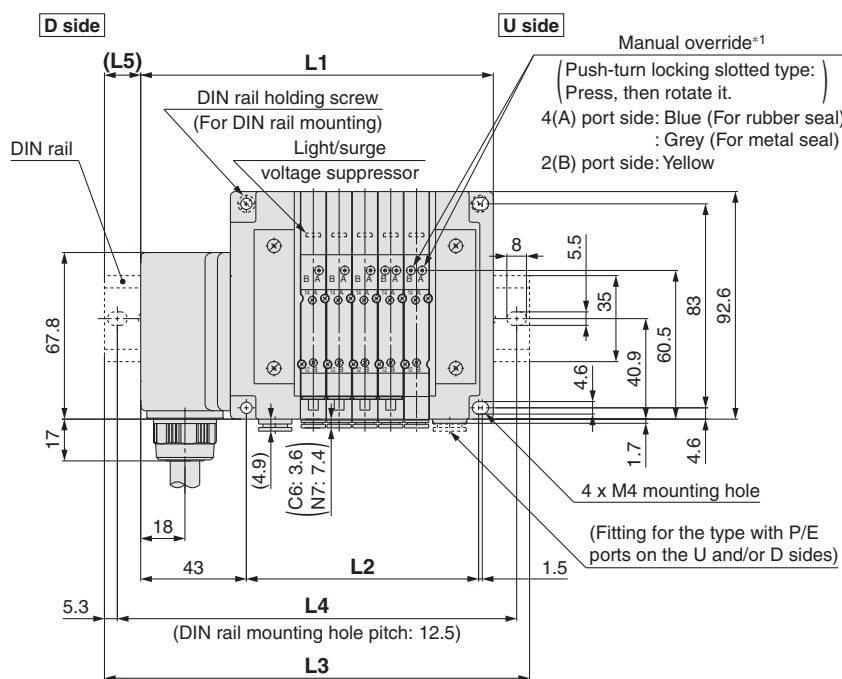
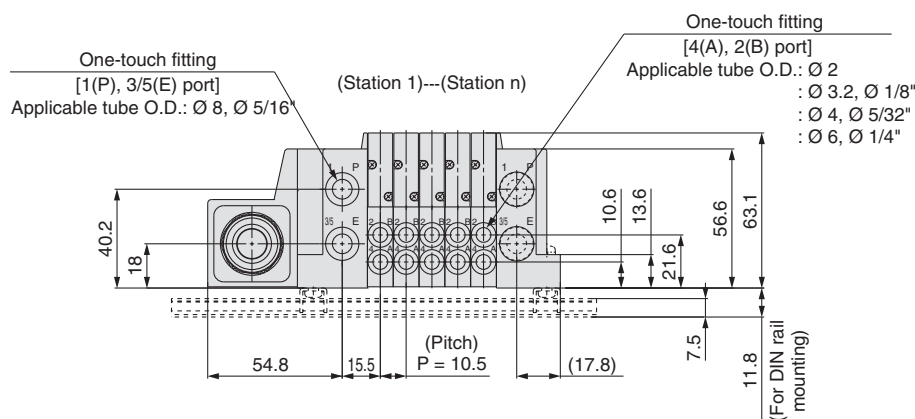
## Dimensions: Series SY3000

### Plug-in Connector Connecting Base

Type 10/Side Ported

Lead Wire

SS5Y3-10L<sub>2</sub><sup>1</sup>□-Stations<sub>3</sub><sup>U</sup><sub>B</sub>-C<sub>2</sub><sup>C3, N1</sup><sub>B</sub><sup>C4, N3</sup><sub>B</sub><sup>C6, N7</sup>(D)



\*1: Refer to page 205 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y3-10L1□-05D-C6".

\*: Refer to page 210 for dimensions of A or B port top-ported type.

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 112   | 122.5 | 133   | 143.5 | 154   | 164.5 | 175   | 185.5 | 196   | 206.5 | 217   | 227.5 | 238   | 248.5 | 259   | 269.5 | 280   | 290.5 | 301   | 311.5 | 322   | 332.5 | 343   |
| L2          | 63    | 73.5  | 84    | 94.5  | 105   | 115.5 | 126   | 136.5 | 147   | 157.5 | 168   | 178.5 | 189   | 199.5 | 210   | 220.5 | 231   | 241.5 | 252   | 262.5 | 273   | 283.5 | 294   |
| L3          | 135.5 | 148   | 160.5 | 173   | 185.5 | 198   | 210.5 | 210.5 | 223   | 235.5 | 248   | 260.5 | 273   | 273   | 285.5 | 298   | 310.5 | 323   | 335.5 | 335.5 | 348   | 360.5 | 373   |
| L4          | 125   | 137.5 | 150   | 162.5 | 175   | 187.5 | 200   | 200   | 212.5 | 225   | 237.5 | 250   | 262.5 | 262.5 | 275   | 287.5 | 300   | 312.5 | 325   | 325   | 337.5 | 350   | 362.5 |
| L5          | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 12.5  | 13.5  | 14.5  | 15.5  | 16.5  | 17.5  | 12.5  | 13.5  | 14.5  | 15.5  | 16.5  | 17.5  | 12    | 13    | 14    | 15    |

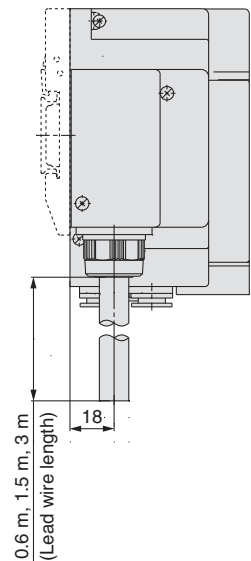
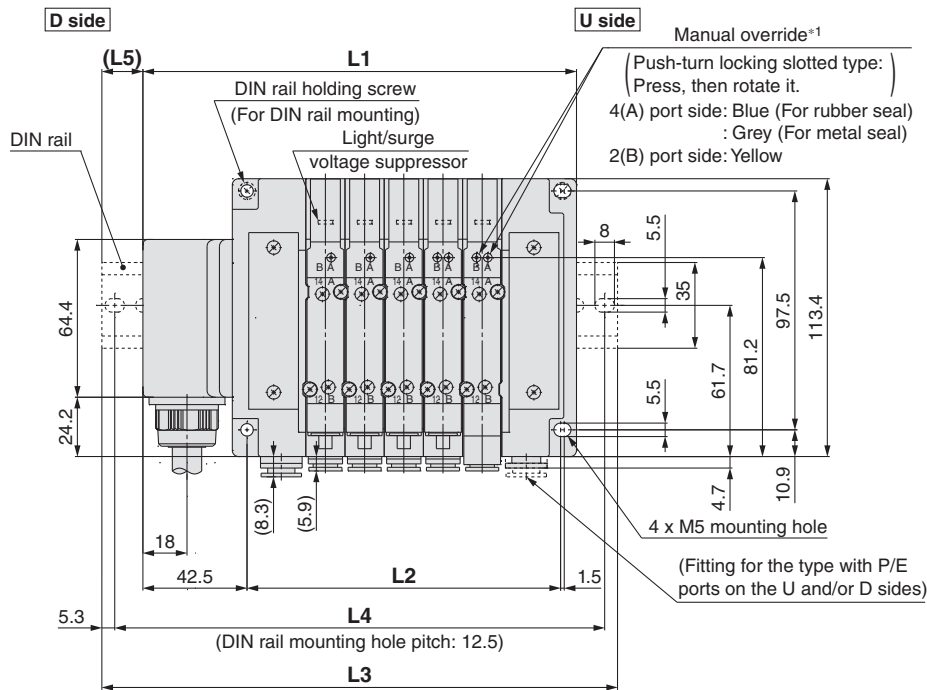
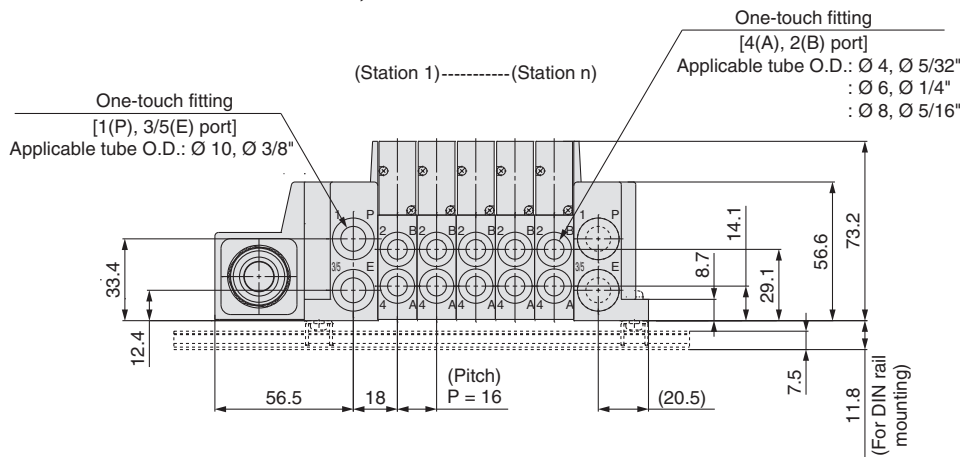
# Series SY3000/5000/7000

## Dimensions: Series SY5000

### Plug-in Connector Connecting Base

### Type 10/Side Ported Lead Wire

SS5Y5-10L  $\frac{1}{2}$  □ - Stations U C4, N3  
D-C6, N7 (D)  
B C8, N9



\*1: Refer to page 206 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y5-10L1□-05D-C8".

\*: Refer to page 211 for dimensions of A or B port top-ported type.

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 129   | 145   | 161   | 177   | 193   | 209   | 225   | 241   | 257   | 273   | 289   | 305   | 321   | 337   | 353   | 369   | 385   | 401   | 417   | 433   | 449   | 465   | 481   |
| L2          | 80    | 96    | 112   | 128   | 144   | 160   | 176   | 192   | 208   | 224   | 240   | 256   | 272   | 288   | 304   | 320   | 336   | 352   | 368   | 384   | 400   | 416   | 432   |
| L3          | 160.5 | 173   | 185.5 | 210.5 | 223   | 235.5 | 260.5 | 273   | 285.5 | 298   | 323   | 335.5 | 348   | 360.5 | 385.5 | 398   | 410.5 | 435.5 | 448   | 460.5 | 473   | 498   | 510.5 |
| L4          | 150   | 162.5 | 175   | 200   | 212.5 | 225   | 250   | 262.5 | 275   | 287.5 | 312.5 | 325   | 337.5 | 350   | 375   | 387.5 | 400   | 425   | 437.5 | 450   | 462.5 | 487.5 | 500   |
| L5          | 16    | 14    | 12.5  | 17    | 15    | 13.5  | 18    | 16    | 14.5  | 12.5  | 17    | 15.5  | 13.5  | 12    | 16.5  | 14.5  | 13    | 17.5  | 15.5  | 14    | 12    | 16.5  | 15    |

# Dimensions: Series SY7000

## Plug-in Connector Connecting Base

Type 10/Side Ported

Lead Wire

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

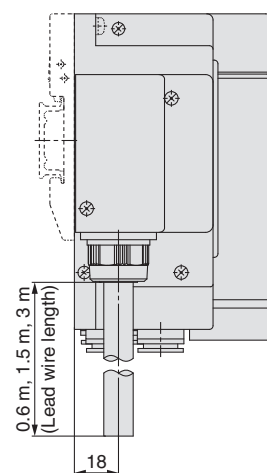
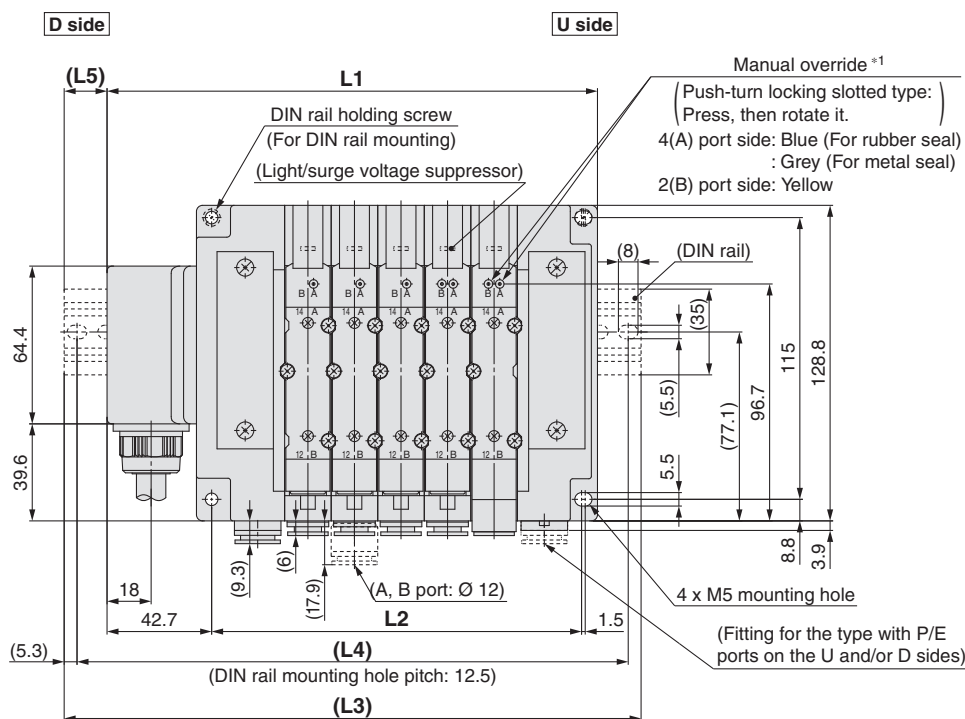
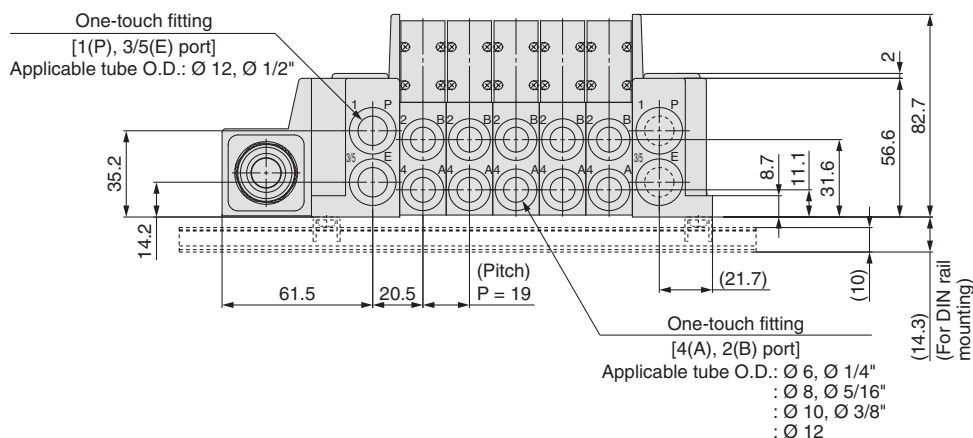
Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

SS5Y7-10L<sup>1</sup><sub>2</sub>□- Stations U<sup>C6, N7</sup><sub>D</sub><sup>C8, N9</sup><sub>B</sub><sup>C10, N11</sup> (D)  
C12

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



\*1: Refer to page 207 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y7-10L1□-05D-C10".  
\*: Refer to page 212 for dimensions of A or B port top-ported type.

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 143.2 | 162.2 | 181.2 | 200.2 | 219.2 | 238.2 | 257.2 | 276.2 | 295.2 | 314.2 | 333.2 | 352.2 | 371.2 | 390.2 | 409.2 | 428.2 | 447.2 | 466.2 | 485.2 | 504.2 | 523.2 | 542.2 | 561.2 |
| L2          | 94    | 113   | 132   | 151   | 170   | 189   | 208   | 227   | 246   | 265   | 284   | 303   | 322   | 341   | 360   | 379   | 398   | 417   | 436   | 455   | 474   | 493   | 512   |
| L3          | 173   | 185.5 | 210.5 | 235.5 | 248   | 273   | 285.5 | 310.5 | 323   | 348   | 360.5 | 385.5 | 398   | 423   | 435.5 | 460.5 | 473   | 498   | 510.5 | 535.5 | 548   | 573   | 585.5 |
| L4          | 162.5 | 175   | 200   | 225   | 237.5 | 262.5 | 275   | 300   | 312.5 | 337.5 | 350   | 375   | 387.5 | 412.5 | 425   | 450   | 462.5 | 487.5 | 500   | 525   | 537.5 | 562.5 | 575   |
| L5          | 15    | 11.5  | 14.5  | 17.5  | 14.5  | 17.5  | 14    | 17    | 14    | 17    | 13.5  | 16.5  | 13.5  | 16.5  | 13    | 16    | 13    | 16    | 12.5  | 15.5  | 12.5  | 15.5  | 12    |

# Plug-in Connector Connecting Base

## Lead Wire

Type 12  
Top Ported

# Series SY3000/5000/7000



### How to Order Manifold

SS5Y **3** - 12 **L1** **1** - **05** **U** - - -

1 2 3 4 5 6 7 8

Refer to pages 210 to 212 for dimensions of Type 12/Top ported type.

#### 1 Series

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

#### 2 Number of cores (Lead wire)

|    |          |
|----|----------|
| L1 | 34 cores |
| L2 | 17 cores |
| L3 | 9 cores  |

#### 3 Lead wire length

|   |       |
|---|-------|
| 1 | 0.6 m |
| 2 | 1.5 m |
| 3 | 3 m   |

#### 5 P, E port entry

|     |                               |
|-----|-------------------------------|
| U*1 | U side (2 to 10 stations)     |
| D*1 | D side (2 to 10 stations)     |
| B   | Both sides (2 to 24 stations) |

\*1: 6 For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

#### 4 Valve stations

##### (L1□)

| Symbol | Stations    | Note                                                 |
|--------|-------------|------------------------------------------------------|
| 02     | 2 stations  | Double wiring*1                                      |
| 16     | 16 stations |                                                      |
| 02     | 2 stations  | Specified layout*2<br>(Available up to 32 solenoids) |
| 24     | 24 stations |                                                      |

##### (L3□)

| Symbol | Stations   | Note                                                |
|--------|------------|-----------------------------------------------------|
| 02     | 2 stations | Double wiring*1                                     |
| 04     | 4 stations |                                                     |
| 02     | 2 stations | Specified layout*2<br>(Available up to 8 solenoids) |
| 08     | 8 stations |                                                     |

##### (L2□)

| Symbol | Stations    | Note                                                 |
|--------|-------------|------------------------------------------------------|
| 02     | 2 stations  | Double wiring*1                                      |
| 08     | 8 stations  |                                                      |
| 02     | 2 stations  | Specified layout*2<br>(Available up to 16 solenoids) |
| 16     | 16 stations |                                                      |

\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

\*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

\*: This also includes the number of blanking plate assembly.

#### 6 SUP/EXH block assembly

|   |                                   |
|---|-----------------------------------|
| — | Internal pilot                    |
| S | Internal pilot, Built-in silencer |
| R | External pilot                    |

\*: For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)

\*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

#### 7 P, E port size (One-touch fittings)

| Symbol | SY3000  | SY5000 | SY7000 |
|--------|---------|--------|--------|
| —      | Ø 8     | Ø 10   | Ø 12   |
| N      | Ø 5/16" | Ø 3/8" | Ø 1/2" |

\*: For N, sizes are in inches.

#### 8 Mounting

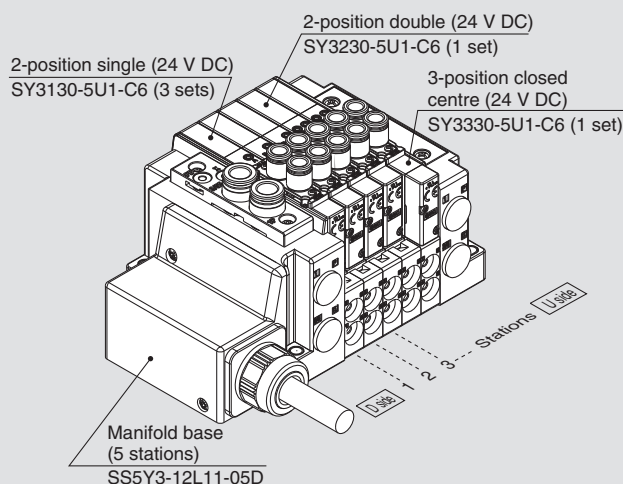
|     |                                      |
|-----|--------------------------------------|
| —   | Direct mounting                      |
| D   | DIN rail mounting (With DIN rail)    |
| D0  | DIN rail mounting (Without DIN rail) |
| D3  | For 3 stations                       |
| ⋮   | ⋮                                    |
| D24 | For 24 stations                      |

Specify a longer rail than the standard length.

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

### How to Order Manifold Assembly

#### Example (SS5Y3-12L11-□)



SS5Y3-12L11-05D ... 1 set (Type 12 5-station manifold base part no.)  
 \*SY3130-5U1-C6 ..... 3 sets (2-position single part no.)  
 \*SY3230-5U1-C6 ..... 1 set (2-position double part no.)  
 \*SY3330-5U1-C6 ..... 1 set (3-position closed centre part no.)

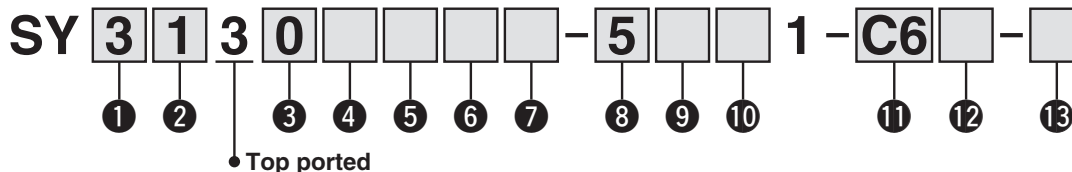
→ The asterisk denotes the symbol for assembly.  
Prefix it to the part numbers of the valve etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.



## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



### 1 Series

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

### 2 Type of actuation

|     |             |                 |
|-----|-------------|-----------------|
| 1   | 2-position  | Single          |
| 2   |             | Double          |
| 3   | 3-position  | Closed centre   |
| 4   |             | Exhaust centre  |
| 5   |             | Pressure centre |
| A*1 | 4-position  | N.C./N.C.       |
| B*1 | dual 3-port | N.O./N.O.       |
| C*1 |             | N.C./N.O.       |

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 5 Back pressure check valve (Built-in valve type)

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

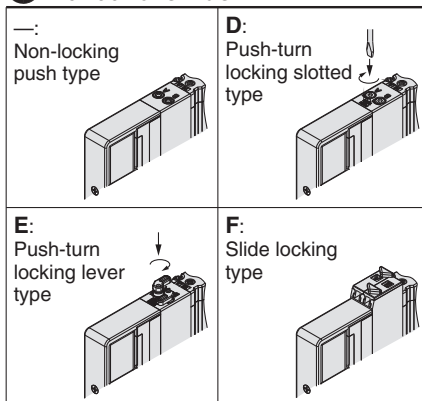
|   |         |
|---|---------|
| 5 | 24 V DC |
| 6 | 12 V DC |

### 9 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| —      | —          | —                        | Non-polar            |
| R      | —          | —                        |                      |
| U      | ●          | —                        |                      |
| S      | —          | ●                        | Positive common      |
| Z      | ●          | —                        | Negative common      |
| NS     | —          | —                        |                      |
| NZ     | ●          | —                        |                      |

\*: Only "Z" and "NZ" types are available for with the power saving circuit.

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 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)

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| C2     | Ø 2       | ●      | —      | —      |
| C3     | Ø 3.2     | ●      | —      | —      |
| C4     | Ø 4       | ●      | ●      | —      |
| C6     | Ø 6       | ●      | ●      | ●      |
| C8     | Ø 8       | —      | ●      | ●      |
| C10    | Ø 10      | —      | —      | ●      |
| C12    | Ø 12      | —      | —      | ●      |

#### One-touch fitting (Inch)

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| N1     | Ø 1/8"    | ●      | —      | —      |
| N3     | Ø 5/32"   | ●      | ●      | —      |
| N7     | Ø 1/4"    | ●      | ●      | ●      |
| N9     | Ø 5/16"   | —      | ●      | ●      |
| N11    | Ø 3/8"    | —      | —      | ●      |

### 12 Thread type

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

\*: Only — is available for M5.

### 13 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

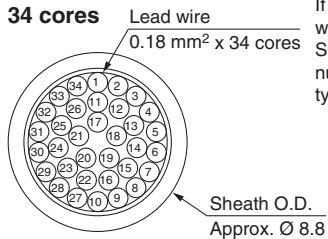
\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.

# Series SY3000/5000/7000

## Electrical Wiring Specifications

### Lead wire

#### 34 cores



If alignment is not specified, the internal wiring is double wiring (connected to SOL. a and SOL. b) regardless of number of stations, valve and option types.

### Electrical characteristics

| Item                                                        | Property    |
|-------------------------------------------------------------|-------------|
| Conductor resistance<br>$\Omega/\text{km}$ , 20 °C          | 143 or less |
| Voltage limit<br>V, 1 minute, AC                            | 2000        |
| Insulation resistance<br>$\text{M}\Omega/\text{km}$ , 20 °C | 10 or more  |

\*: Cannot be used for movable wiring.  
The minimum bending radius of the cable is 55 mm.

|            | Lead wire no. | Polarity | Lead wire colour | Printed mark (Both sides) |        |
|------------|---------------|----------|------------------|---------------------------|--------|
|            |               |          |                  | Type                      | Colour |
| Station 1  | SOL.a         | 1 (-)    | Orange           | —                         | Red    |
|            | SOL.b         | 2 (-)    |                  |                           | Black  |
| Station 2  | SOL.a         | 3 (-)    | Light grey       | —                         | Red    |
|            | SOL.b         | 4 (-)    |                  |                           | Black  |
| Station 3  | SOL.a         | 5 (-)    | White            | —                         | Red    |
|            | SOL.b         | 6 (-)    |                  |                           | Black  |
| Station 4  | SOL.a         | 7 (-)    | Yellow           | —                         | Red    |
|            | SOL.b         | 8 (-)    |                  |                           | Black  |
| Station 5  | SOL.a         | 9 (-)    | Pink             | —                         | Red    |
|            | SOL.b         | 10 (-)   |                  |                           | Black  |
| Station 6  | SOL.a         | 11 (-)   | Orange           | ---                       | Red    |
|            | SOL.b         | 12 (-)   |                  |                           | Black  |
| Station 7  | SOL.a         | 13 (-)   | Light grey       | ---                       | Red    |
|            | SOL.b         | 14 (-)   |                  |                           | Black  |
| Station 8  | SOL.a         | 15 (-)   | White            | ---                       | Red    |
|            | SOL.b         | 16 (-)   |                  |                           | Black  |
| Station 9  | SOL.a         | 17 (-)   | Yellow           | ---                       | Red    |
|            | SOL.b         | 18 (-)   |                  |                           | Black  |
| Station 10 | SOL.a         | 19 (-)   | Pink             | ---                       | Red    |
|            | SOL.b         | 20 (-)   |                  |                           | Black  |
| Station 11 | SOL.a         | 21 (-)   | Orange           | ----                      | Red    |
|            | SOL.b         | 22 (-)   |                  |                           | Black  |
| Station 12 | SOL.a         | 23 (-)   | Light grey       | ----                      | Red    |
|            | SOL.b         | 24 (-)   |                  |                           | Black  |
| Station 13 | SOL.a         | 25 (-)   | White            | ----                      | Red    |
|            | SOL.b         | 26 (-)   |                  |                           | Black  |
| Station 14 | SOL.a         | 27 (-)   | Yellow           | ----                      | Red    |
|            | SOL.b         | 28 (-)   |                  |                           | Black  |
| Station 15 | SOL.a         | 29 (-)   | Pink             | ----                      | Red    |
|            | SOL.b         | 30 (-)   |                  |                           | Black  |
| Station 16 | SOL.a         | 31 (-)   | Orange           | -----                     | Red    |
|            | SOL.b         | 32 (-)   |                  |                           | Black  |
|            | COM.          | 33 (+)   | Light grey       | -----                     | Red    |
|            | COM.          | 34 (+)   |                  |                           | Black  |

Positive common Negative common

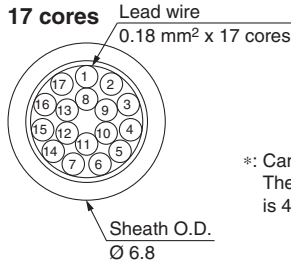
\*: For negative common specification, a valve for negative common or a valve without polarity should be used.

## Specified Layout

Mixed wiring of single and double wiring can be specified on the manifold specification. The maximum number of stations is determined according to the number of solenoids. The total number of solenoids should be 32 or less. 1 solenoid is required for 2-position single, and 2 solenoids for 2-position double, 3-position and 4-position.

## Electrical Wiring Specifications

### Lead wire



\*: Cannot be used for movable wiring.  
The minimum bending radius of the cable is 45 mm.

|           | Lead wire no. | Polarity | Lead wire colour | Printed mark (Both sides) |        |
|-----------|---------------|----------|------------------|---------------------------|--------|
|           |               |          |                  | Type                      | Colour |
| Station 1 | SOL.a         | 1 (-)    | Orange           | —                         | Red    |
|           | SOL.b         | 2 (-)    |                  |                           | Black  |
| Station 2 | SOL.a         | 3 (-)    | Light grey       | —                         | Red    |
|           | SOL.b         | 4 (-)    |                  |                           | Black  |
| Station 3 | SOL.a         | 5 (-)    | White            | —                         | Red    |
|           | SOL.b         | 6 (-)    |                  |                           | Black  |
| Station 4 | SOL.a         | 7 (-)    | Yellow           | —                         | Red    |
|           | SOL.b         | 8 (-)    |                  |                           | Black  |
| Station 5 | SOL.a         | 9 (-)    | Pink             | —                         | Red    |
|           | SOL.b         | 10 (-)   |                  |                           | Black  |
| Station 6 | SOL.a         | 11 (-)   | Orange           | —                         | Red    |
|           | SOL.b         | 12 (-)   |                  |                           | Black  |
| Station 7 | SOL.a         | 13 (-)   | Light grey       | —                         | Red    |
|           | SOL.b         | 14 (-)   |                  |                           | Black  |
| Station 8 | SOL.a         | 15 (-)   | White            | —                         | Red    |
|           | SOL.b         | 16 (-)   |                  |                           | Black  |
|           | COM.          | 17 (+)   | Yellow           | —                         | Red    |

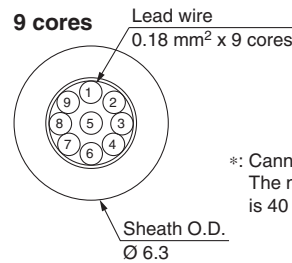
**Positive common**   **Negative common**

\*: For negative common specification, a valve for negative common or a valve without polarity should be used.

### Electrical characteristics

| Item                                  | Property    |
|---------------------------------------|-------------|
| Conductor resistance<br>Ω/km, 20 °C   | 143 or less |
| Voltage limit<br>V, 1 minute, AC      | 2000        |
| Insulation resistance<br>MΩ/km, 20 °C | 10 or more  |

\*: Cannot be used for movable wiring.  
The minimum bending radius of the cable is 40 mm.



|           | Lead wire no. | Polarity | Lead wire colour | Printed mark (Both sides) |        |
|-----------|---------------|----------|------------------|---------------------------|--------|
|           |               |          |                  | Type                      | Colour |
| Station 1 | SOL.a         | 1 (-)    | Orange           | —                         | Red    |
|           | SOL.b         | 2 (-)    |                  |                           | Black  |
| Station 2 | SOL.a         | 3 (-)    | Light grey       | —                         | Red    |
|           | SOL.b         | 4 (-)    |                  |                           | Black  |
| Station 3 | SOL.a         | 5 (-)    | White            | —                         | Red    |
|           | SOL.b         | 6 (-)    |                  |                           | Black  |
| Station 4 | SOL.a         | 7 (-)    | Yellow           | —                         | Red    |
|           | SOL.b         | 8 (-)    |                  |                           | Black  |
|           | COM.          | 9 (+)    | Pink             | —                         | Red    |

**Positive common**   **Negative common**

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

## Circular Connector

# Series SY3000/5000/7000



### How to Order Manifold

Refer to pages 208 (SY5000) and 209 (SY7000) for dimensions of Type 11/Bottom ported type.

SS5Y **5** - **10** M - **05** **U** **□** - **C6** **□**

1 2 3 4 5 6 7

#### 1 Series

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

#### 2 Type

|    |                 |
|----|-----------------|
| 10 | Side ported     |
| 11 | Bottom ported*1 |

\*1: The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to "Plug-in Mixed Mounting Type Manifold" (from page 213).

#### 3 Valve stations

| Symbol | Stations    | Note                                                 |
|--------|-------------|------------------------------------------------------|
| 02     | 2 stations  | Double wiring*1                                      |
| ⋮      | ⋮           |                                                      |
| 12     | 12 stations | Specified layout*2<br>(Available up to 24 solenoids) |
| 02     | 2 stations  |                                                      |
| ⋮      | ⋮           |                                                      |
| 24     | 24 stations |                                                      |

\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

\*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

\*: This also includes the number of blanking plate assembly.

#### 4 P, E port entry

|   |                               |
|---|-------------------------------|
| U | U side (2 to 10 stations)     |
| D | D side (2 to 10 stations)     |
| B | Both sides (2 to 24 stations) |

#### 5 SUP/EXH block assembly

|   |                                   |
|---|-----------------------------------|
| — | Internal pilot                    |
| S | Internal pilot, Built-in silencer |
| R | External pilot                    |

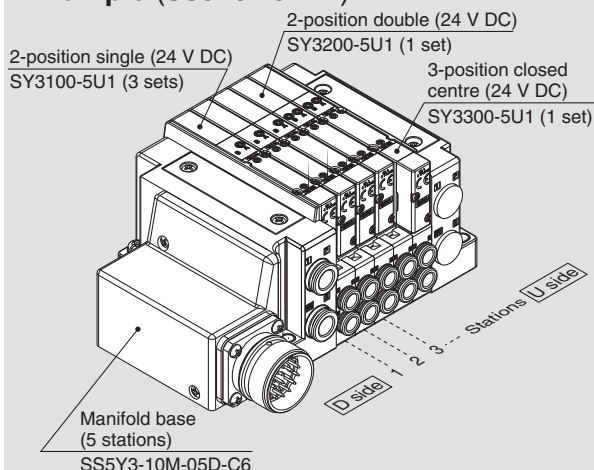
\*: 3/5(E) port is plugged for the built-in silencer type.

\*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

Refer to the page on the right for 6.

### How to Order Manifold Assembly

#### Example (SS5Y3-10M-□)



SS5Y3-10M-05D-C6 ... 1 set (Type 10 5-station manifold base part no.)  
 \*SY3100-5U1 ..... 3 sets (2-position single part no.)  
 \*SY3200-5U1 ..... 1 set (2-position double part no.)  
 \*SY3300-5U1 ..... 1 set (3-position closed centre part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

\*: When mixing top ported configurations, select from page 142.

In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

#### 7 Mounting and Option

| Symbol | Mounting          | Option     |                |
|--------|-------------------|------------|----------------|
|        |                   | Name plate | Station number |
| —      | Direct mounting   | —          | —              |
| AA     |                   | ●          | ●              |
| BA     |                   | ●          | —              |
| D□     | DIN rail mounting | —          | —              |
| A□     |                   | ●          | ●              |
| B□     |                   | ●          | —              |

\*: Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" below.)

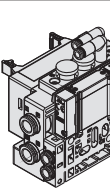
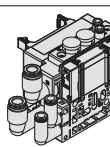
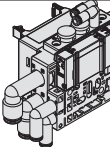
\*: Only direct mounting is available for Type 11 (Bottom ported).

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

#### DIN Rail Option

|    |                                 |                                                                    |
|----|---------------------------------|--------------------------------------------------------------------|
| —  | Direct mounting                 |                                                                    |
| 0  | Without DIN rail (with bracket) |                                                                    |
| 3  | For 3 stations                  | Specify a longer rail than the total length of specified stations. |
| ⋮  | ⋮                               |                                                                    |
| 24 | For 24 stations                 |                                                                    |

**6 A, B port size (Metric/One-touch fitting)**

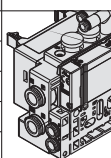
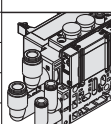
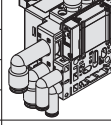
| Symbol                                 | A, B port                                                         | Type 10/Side ported |        |        | Type 11/Bottom ported |        |                                                                                     |
|----------------------------------------|-------------------------------------------------------------------|---------------------|--------|--------|-----------------------|--------|-------------------------------------------------------------------------------------|
|                                        |                                                                   | SY3000              | SY5000 | SY7000 | SY5000                | SY7000 |                                                                                     |
| <b>C2</b>                              | Ø 2                                                               | ●                   | —      | —      | —                     | —      |    |
| <b>C3</b>                              | Ø 3.2                                                             | ●                   | —      | —      | —                     | —      |                                                                                     |
| <b>C4</b>                              | Ø 4                                                               | ●                   | ●      | —      | ●                     | —      |                                                                                     |
| <b>C6</b>                              | Ø 6                                                               | ●                   | ●      | ●      | ●                     | ●      |                                                                                     |
| <b>C8</b>                              | Ø 8                                                               | —                   | ●      | ●      | ●                     | ●      |                                                                                     |
| <b>C10</b>                             | Ø 10                                                              | —                   | —      | ●      | —                     | ●      |                                                                                     |
| <b>C12</b>                             | Ø 12                                                              | —                   | —      | ●      | —                     | ●      |                                                                                     |
| <b>CM*1</b>                            | Straight port, mixed sizes                                        | ●                   | ●      | ●      | ●                     | ●      |   |
| <b>L4</b>                              | Ø 4                                                               | ●                   | ●      | —      | —                     | —      |                                                                                     |
| <b>L6</b>                              | Ø 6                                                               | ●                   | ●      | ●      | —                     | —      |                                                                                     |
| <b>L8</b>                              | Ø 8                                                               | —                   | ●      | ●      | —                     | —      |                                                                                     |
| <b>L10</b>                             | Ø 10                                                              | —                   | —      | ●      | —                     | —      |                                                                                     |
| <b>L12</b>                             | Ø 12                                                              | —                   | —      | ●      | —                     | —      |                                                                                     |
| <b>B4</b>                              | Ø 4                                                               | ●                   | ●      | —      | —                     | —      |  |
| <b>B6</b>                              | Ø 6                                                               | ●                   | ●      | ●      | —                     | —      |                                                                                     |
| <b>B8</b>                              | Ø 8                                                               | —                   | ●      | ●      | —                     | —      |                                                                                     |
| <b>B10</b>                             | Ø 10                                                              | —                   | —      | ●      | —                     | —      |                                                                                     |
| <b>B12</b>                             | Ø 12                                                              | —                   | —      | ●      | —                     | —      |                                                                                     |
| <b>LM*1</b>                            | Elbow port, mixed sizes<br>(Including upward and downward piping) | ●                   | ●      | ●      | —                     | —      |                                                                                     |
| P, E port size<br>(One-touch fittings) |                                                                   | Ø 8                 | Ø 10   | Ø 12   | Ø 10                  | Ø 12   |                                                                                     |

\*1: Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

\*2: To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 250 to 252).

**A, B port size (Inch/One-touch fitting)**

| Symbol                                 | A, B port                                                         | Type 10/Side ported |        |        | Type 11/Bottom ported |        |                                                                                      |
|----------------------------------------|-------------------------------------------------------------------|---------------------|--------|--------|-----------------------|--------|--------------------------------------------------------------------------------------|
|                                        |                                                                   | SY3000              | SY5000 | SY7000 | SY5000                | SY7000 |                                                                                      |
| <b>N1</b>                              | Ø 1/8"                                                            | ●                   | —      | —      | —                     | —      |   |
| <b>N3</b>                              | Ø 5/32"                                                           | ●                   | ●      | —      | ●                     | —      |                                                                                      |
| <b>N7</b>                              | Ø 1/4"                                                            | ●                   | ●      | ●      | ●                     | ●      |                                                                                      |
| <b>N9</b>                              | Ø 5/16"                                                           | —                   | ●      | ●      | ●                     | ●      |                                                                                      |
| <b>N11</b>                             | Ø 3/8"                                                            | —                   | —      | ●      | —                     | ●      |                                                                                      |
| <b>CM*1</b>                            | Straight port, mixed sizes                                        | ●                   | ●      | ●      | ●                     | ●      |                                                                                      |
| <b>LN3</b>                             | Ø 5/32"                                                           | ●                   | —      | —      | —                     | —      |   |
| <b>LN7</b>                             | Ø 1/4"                                                            | ●                   | ●      | —      | —                     | —      |                                                                                      |
| <b>LN9</b>                             | Ø 5/16"                                                           | —                   | ●      | —      | —                     | —      |                                                                                      |
| <b>LN11</b>                            | Ø 3/8"                                                            | —                   | —      | ●      | —                     | —      |  |
| <b>BN3</b>                             | Ø 5/32"                                                           | ●                   | —      | —      | —                     | —      |                                                                                      |
| <b>BN7</b>                             | Ø 1/4"                                                            | ●                   | ●      | —      | —                     | —      |                                                                                      |
| <b>BN9</b>                             | Ø 5/16"                                                           | —                   | ●      | —      | —                     | —      |                                                                                      |
| <b>BN11</b>                            | Ø 3/8"                                                            | —                   | —      | ●      | —                     | —      |                                                                                      |
| <b>LM*1</b>                            | Elbow port, mixed sizes<br>(Including upward and downward piping) | ●                   | ●      | ●      | —                     | —      |                                                                                      |
| P, E port size<br>(One-touch fittings) |                                                                   | Ø 5/16"             | Ø 3/8" | Ø 1/2" | Ø 3/8"                | Ø 1/2" |                                                                                      |

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

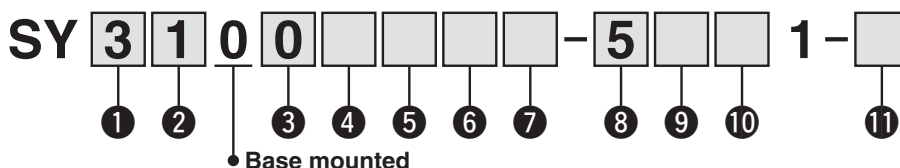
Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



### 1 Series

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

### 2 Type of actuation

|     |                        |                 |
|-----|------------------------|-----------------|
| 1   | 2-position             | Single          |
| 2   |                        | Double          |
| 3   | 3-position             | Closed centre   |
| 4   |                        | Exhaust centre  |
| 5   |                        | Pressure centre |
| A*1 | 4-position dual 3-port | N.C./N.C.       |
| B*1 |                        | N.O./N.O.       |
| C*1 |                        | N.C./N.O.       |

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 5 Back pressure check valve (Built-in valve type)

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

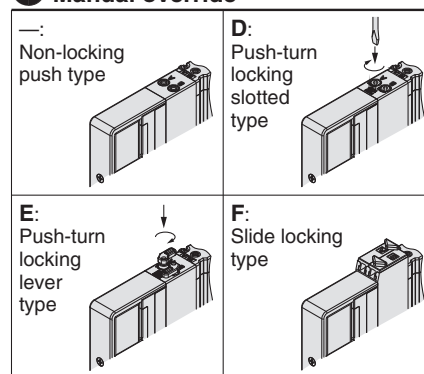
|   |         |
|---|---------|
| 5 | 24 V DC |
| 6 | 12 V DC |

### 9 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| —      | —          | —                        | Non-polar            |
| R      | —          | ●                        |                      |
| U      | ●          |                          |                      |
| S      | —          |                          |                      |
| Z      | ●          |                          | Positive common      |
| NS     | —          |                          | Negative common      |
| NZ     | ●          |                          |                      |

\*: Only "Z" and "NZ" types are available for with the power saving circuit.

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

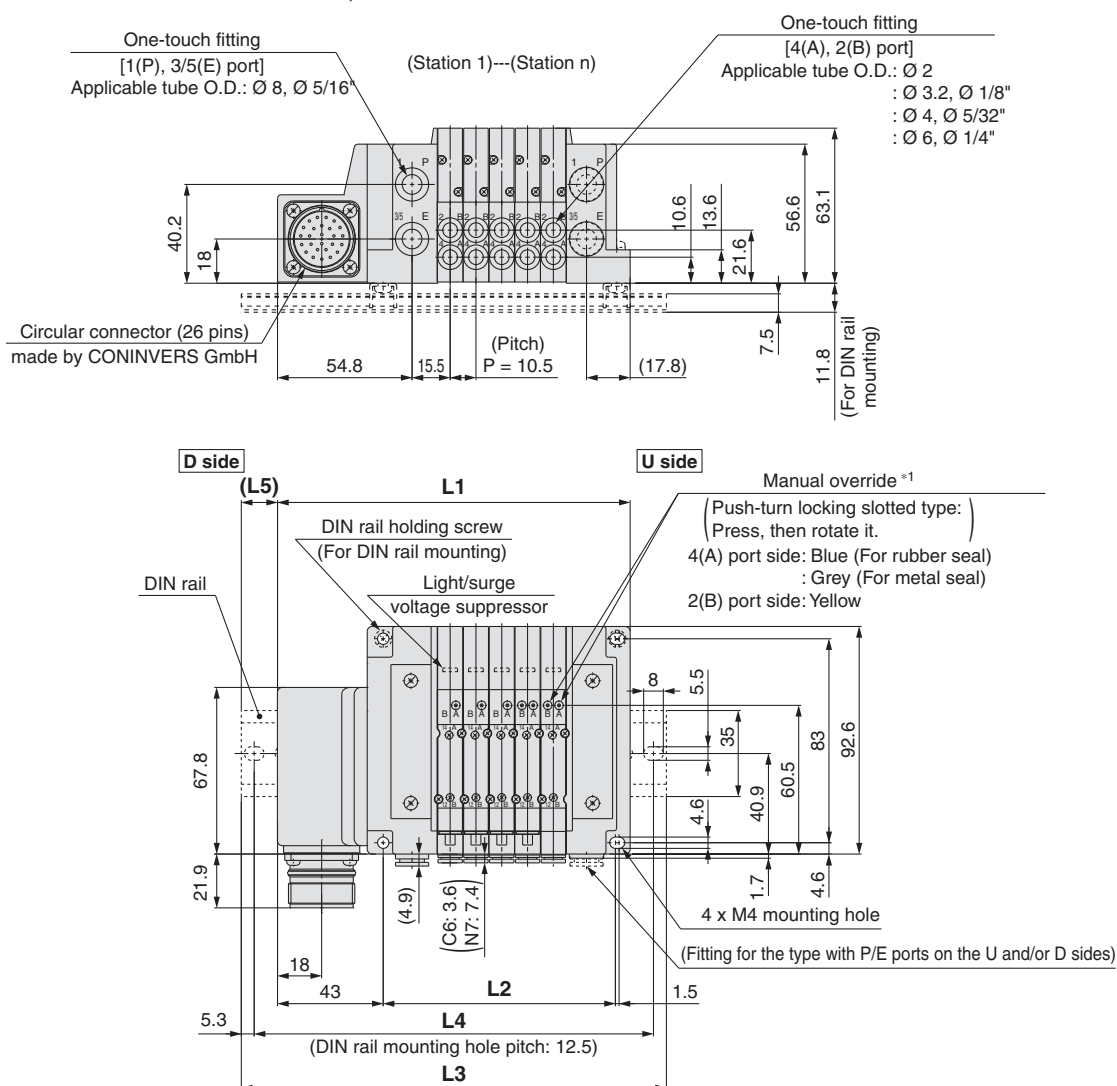


## Dimensions: Series SY3000

### Plug-in Connector Connecting Base

Type 10/Side Ported  
Circular Connector

SS5Y3-10M- Stations  $\begin{matrix} U \\ D \end{matrix}$   $\begin{matrix} C2 \\ C3, N1 \\ C4, N3 \\ C6, N7 \end{matrix}$  (D)



\*1: Refer to page 205 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y3-10M-05D-C6".

\*: Refer to page 210 for dimensions of A or B port top-ported type.

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 112   | 122.5 | 133   | 143.5 | 154   | 164.5 | 175   | 185.5 | 196   | 206.5 | 217   | 227.5 | 238   | 248.5 | 259   | 269.5 | 280   | 290.5 | 301   | 311.5 | 322   | 332.5 | 343   |
| L2          | 63    | 73.5  | 84    | 94.5  | 105   | 115.5 | 126   | 136.5 | 147   | 157.5 | 168   | 178.5 | 189   | 199.5 | 210   | 220.5 | 231   | 241.5 | 252   | 262.5 | 273   | 283.5 | 294   |
| L3          | 135.5 | 148   | 160.5 | 173   | 185.5 | 198   | 210.5 | 210.5 | 223   | 235.5 | 248   | 260.5 | 273   | 273   | 285.5 | 298   | 310.5 | 323   | 335.5 | 335.5 | 348   | 360.5 | 373   |
| L4          | 125   | 137.5 | 150   | 162.5 | 175   | 187.5 | 200   | 200   | 212.5 | 225   | 237.5 | 250   | 262.5 | 262.5 | 275   | 287.5 | 300   | 312.5 | 325   | 325   | 337.5 | 350   | 362.5 |
| L5          | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 12.5  | 13.5  | 14.5  | 15.5  | 16.5  | 17.5  | 12.5  | 13.5  | 14.5  | 15.5  | 16.5  | 17.5  | 12    | 13    | 14    | 15    |

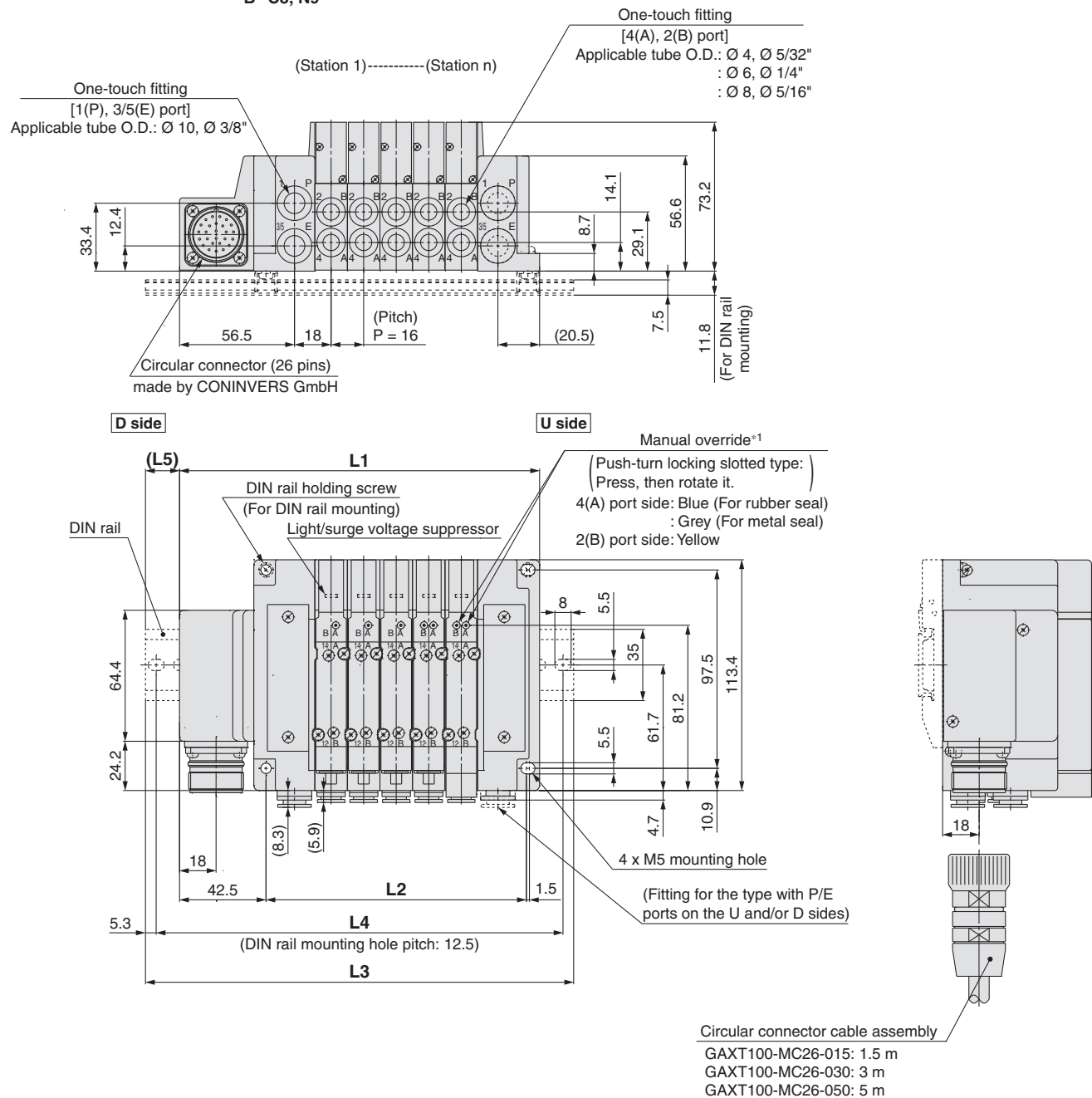
# Series SY3000/5000/7000

## Dimensions: Series SY5000

### Plug-in Connector Connecting Base

### Type 10/Side Ported Circular Connector

SS5Y5-10M-**Stations**  $\begin{matrix} \text{U} & \text{C4, N3} \\ \text{D} & \text{C6, N7} \\ \text{B} & \text{C8, N9} \end{matrix}$  (D)



\*1: Refer to page 206 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y5-10M-05D-C8".

\*: Refer to page 211 for dimensions of A or B port top-ported type.

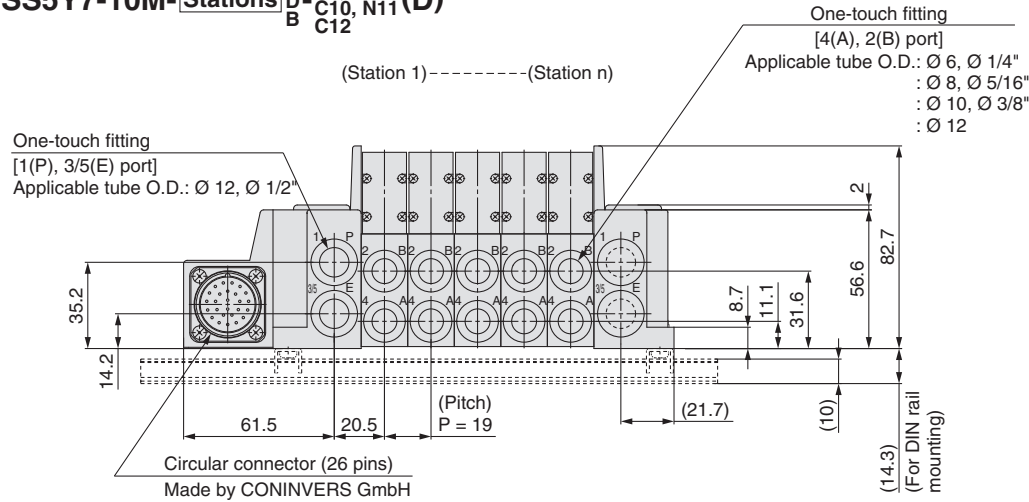
| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 129   | 145   | 161   | 177   | 193   | 209   | 225   | 241   | 257   | 273   | 289   | 305   | 321   | 337   | 353   | 369   | 385   | 401   | 417   | 433   | 449   | 465   | 481   |
| L2          | 80    | 96    | 112   | 128   | 144   | 160   | 176   | 192   | 208   | 224   | 240   | 256   | 272   | 288   | 304   | 320   | 336   | 352   | 368   | 384   | 400   | 416   | 432   |
| L3          | 160.5 | 173   | 185.5 | 210.5 | 223   | 235.5 | 260.5 | 273   | 285.5 | 298   | 323   | 335.5 | 348   | 360.5 | 385.5 | 398   | 410.5 | 435.5 | 448   | 460.5 | 473   | 498   | 510.5 |
| L4          | 150   | 162.5 | 175   | 200   | 212.5 | 225   | 250   | 262.5 | 275   | 287.5 | 312.5 | 325   | 337.5 | 350   | 375   | 387.5 | 400   | 425   | 437.5 | 450   | 462.5 | 487.5 | 500   |
| L5          | 16    | 14    | 12.5  | 17    | 15    | 13.5  | 18    | 16    | 14.5  | 12.5  | 17    | 15.5  | 13.5  | 12    | 16.5  | 14.5  | 13    | 17.5  | 15.5  | 14    | 12    | 16.5  | 15    |

# Dimensions: Series **SY7000**

## Plug-in Connector Connecting Base

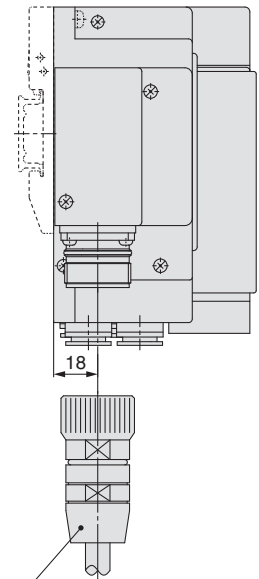
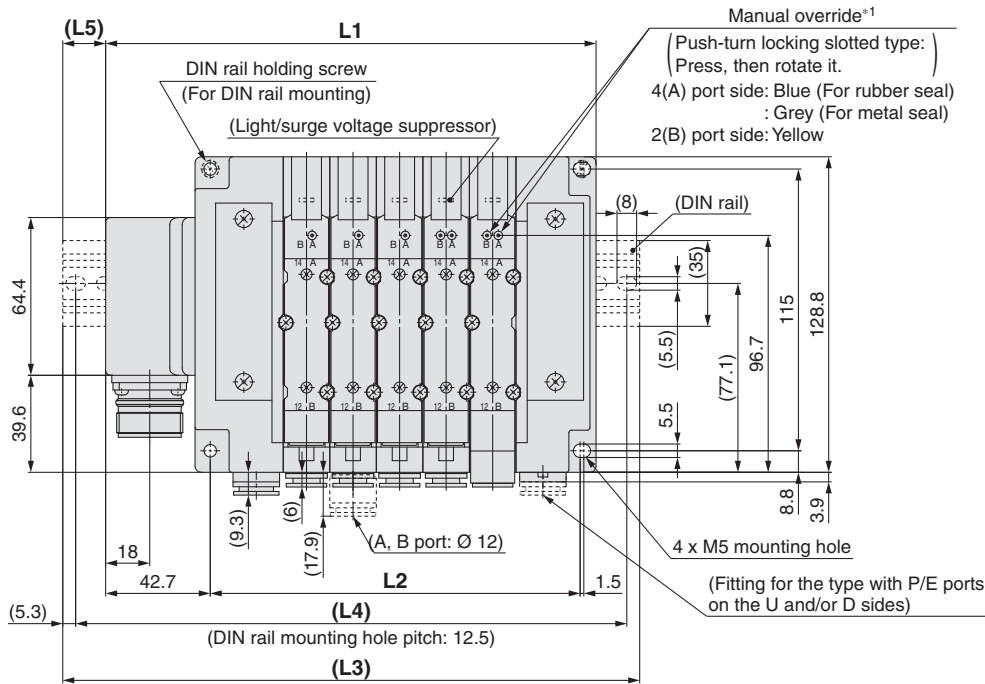
## Type 10/Side Ported Circular Connector

**SS5Y7-10M-** Stations **U**  
**D** **B** C6, N7  
C8, N9  
C10, N11 (D)  
C12



**D side**

**U side**



Circular connector cable assembly  
GAXT100-MC26-015: 1.5 m  
GAXT100-MC26-030: 3 m  
GAXT100-MC26-050: 5 m

\*1: Refer to page 207 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y7-10M-05D-C10".

\*: Refer to page 212 for dimensions of A or B port top-ported type.

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>L1</b>   | 143.2 | 162.2 | 181.2 | 200.2 | 219.2 | 238.2 | 257.2 | 276.2 | 295.2 | 314.2 | 333.2 | 352.2 | 371.2 | 390.2 | 409.2 | 428.2 | 447.2 | 466.2 | 485.2 | 504.2 | 523.2 | 542.2 | 561.2 |
| <b>L2</b>   | 94    | 113   | 132   | 151   | 170   | 189   | 208   | 227   | 246   | 265   | 284   | 303   | 322   | 341   | 360   | 379   | 398   | 417   | 436   | 455   | 474   | 493   | 512   |
| <b>L3</b>   | 173   | 185.5 | 210.5 | 235.5 | 248   | 273   | 285.5 | 310.5 | 323   | 348   | 360.5 | 385.5 | 398   | 423   | 435.5 | 460.5 | 473   | 498   | 510.5 | 535.5 | 548   | 573   | 585.5 |
| <b>L4</b>   | 162.5 | 175   | 200   | 225   | 237.5 | 262.5 | 275   | 300   | 312.5 | 337.5 | 350   | 375   | 387.5 | 412.5 | 425   | 450   | 462.5 | 487.5 | 500   | 525   | 537.5 | 562.5 | 575   |
| <b>L5</b>   | 15    | 11.5  | 14.5  | 17.5  | 14.5  | 17.5  | 14    | 17    | 14    | 17    | 13.5  | 16.5  | 13.5  | 16.5  | 13    | 16    | 13    | 16    | 12.5  | 15.5  | 12.5  | 15.5  | 12    |

# Plug-in Connector Connecting Base

## Circular Connector

Type 12  
Top Ported

# Series SY3000/5000/7000



### How to Order Manifold

SS5Y **3** - 12M - **05** **U** **□** - **□** **□**

1 2 3 4 5 6

Refer to pages 210 to 212 for dimensions of Type 12/Top ported type.

#### 1 Series

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

#### 2 Valve stations

| Symbol | Stations    | Note                                                 |
|--------|-------------|------------------------------------------------------|
| 02     | 2 stations  | Double wiring*1                                      |
| ⋮      | ⋮           |                                                      |
| 12     | 12 stations | Specified layout*2<br>(Available up to 24 solenoids) |
| 02     | 2 stations  |                                                      |
| ⋮      | ⋮           |                                                      |
| 24     | 24 stations |                                                      |

\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

\*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

\*: This also includes the number of blanking plate assembly.

#### 3 P, E port entry

|     |                               |
|-----|-------------------------------|
| U*1 | U side (2 to 10 stations)     |
| D*1 | D side (2 to 10 stations)     |
| B   | Both sides (2 to 24 stations) |

\*1: 4 For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

#### 4 SUP/EXH block assembly

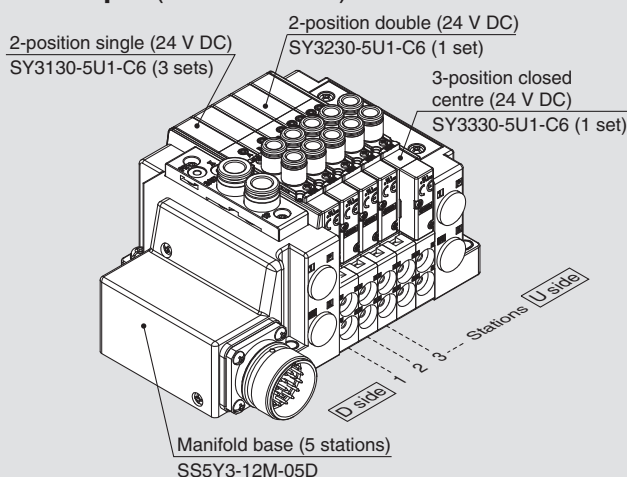
|   |                                   |
|---|-----------------------------------|
| — | Internal pilot                    |
| S | Internal pilot, Built-in silencer |
| R | External pilot                    |

\*: For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)

\*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

### How to Order Manifold Assembly

#### Example (SS5Y3-12M-□)



SS5Y3-12M-05D ..... 1 set (Type 12 5-station manifold base part no.)  
 \*SY3130-5U1-C6 ..... 3 sets (2-position single part no.)  
 \*SY3230-5U1-C6 ..... 1 set (2-position double part no.)  
 \*SY3330-5U1-C6 ..... 1 set (3-position closed centre part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

#### 5 P, E port size (One-touch fittings)

| Symbol | SY3000  | SY5000 | SY7000 |
|--------|---------|--------|--------|
| —      | Ø 8     | Ø 10   | Ø 12   |
| N      | Ø 5/16" | Ø 3/8" | Ø 1/2" |

\*: For N, sizes are in inches.

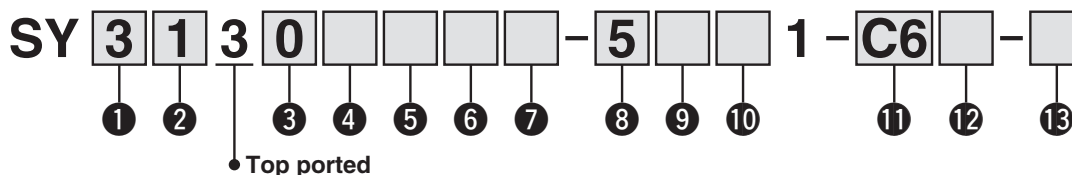
#### 6 Mounting

|     |                                         |
|-----|-----------------------------------------|
| —   | Direct mounting                         |
| D   | DIN rail mounting<br>(With DIN rail)    |
| D0  | DIN rail mounting<br>(Without DIN rail) |
| D3  | For 3 stations                          |
| ⋮   | ⋮                                       |
| D24 | For 24 stations                         |

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



### 1 Series

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

### 2 Type of actuation

|     |             |                 |
|-----|-------------|-----------------|
| 1   | 2-position  | Single          |
| 2   |             | Double          |
| 3   | 3-position  | Closed centre   |
| 4   |             | Exhaust centre  |
| 5   |             | Pressure centre |
| A*1 | 4-position  | N.C./N.C.       |
| B*1 | dual 3-port | N.O./N.O.       |
| C*1 |             | N.C./N.O.       |

\*1: Only rubber seal is available for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 5 Back pressure check valve (Built-in valve type)

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

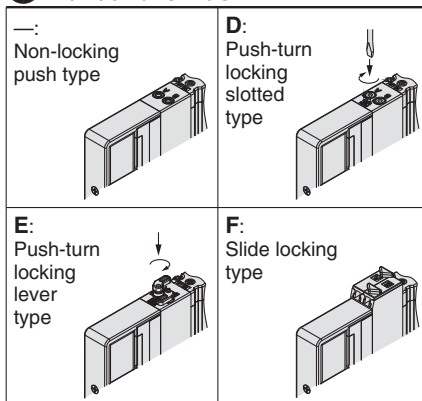
|   |         |
|---|---------|
| 5 | 24 V DC |
| 6 | 12 V DC |

### 9 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| —      | —          | —                        | Non-polar            |
| R      | —          | —                        |                      |
| U      | ●          | —                        |                      |
| S      | —          | ●                        | Positive common      |
| Z      | ●          | —                        | Negative common      |
| NS     | —          | —                        |                      |
| NZ     | ●          | —                        |                      |

\*: Only "Z" and "NZ" types are available for with the power saving circuit.

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 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)

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| C2     | Ø 2       | ●      | —      | —      |
| C3     | Ø 3.2     | ●      | —      | —      |
| C4     | Ø 4       | ●      | ●      | —      |
| C6     | Ø 6       | ●      | ●      | ●      |
| C8     | Ø 8       | —      | ●      | ●      |
| C10    | Ø 10      | —      | —      | ●      |
| C12    | Ø 12      | —      | —      | ●      |

#### One-touch fitting (Inch)

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| N1     | Ø 1/8"    | ●      | —      | —      |
| N3     | Ø 5/32"   | ●      | ●      | —      |
| N7     | Ø 1/4"    | ●      | ●      | ●      |
| N9     | Ø 5/16"   | —      | ●      | ●      |
| N11    | Ø 3/8"    | —      | —      | ●      |

### 12 Thread type

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

\*: Only — is available for M5.

### 13 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

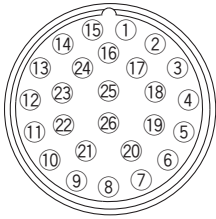
Refer to page 244 for part numbers of the base gasket and mounting screw.

\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.

# Series SY3000/5000/7000

## Electrical Wiring Specifications

### Circular connector



If alignment is not specified, the internal wiring is double wiring (connected to SOL. a and SOL. b) regardless of number of stations, valve and option types.

|            | Terminal no. | Polarity |     |
|------------|--------------|----------|-----|
| Station 1  | SOL.a        | 1 (-)    | (+) |
|            | SOL.b        | 2 (-)    | (+) |
| Station 2  | SOL.a        | 3 (-)    | (+) |
|            | SOL.b        | 4 (-)    | (+) |
| Station 3  | SOL.a        | 5 (-)    | (+) |
|            | SOL.b        | 6 (-)    | (+) |
| Station 4  | SOL.a        | 7 (-)    | (+) |
|            | SOL.b        | 8 (-)    | (+) |
| Station 5  | SOL.a        | 9 (-)    | (+) |
|            | SOL.b        | 10 (-)   | (+) |
| Station 6  | SOL.a        | 11 (-)   | (+) |
|            | SOL.b        | 12 (-)   | (+) |
| Station 7  | SOL.a        | 13 (-)   | (+) |
|            | SOL.b        | 14 (-)   | (+) |
| Station 8  | SOL.a        | 15 (-)   | (+) |
|            | SOL.b        | 16 (-)   | (+) |
| Station 9  | SOL.a        | 17 (-)   | (+) |
|            | SOL.b        | 18 (-)   | (+) |
| Station 10 | SOL.a        | 19 (-)   | (+) |
|            | SOL.b        | 20 (-)   | (+) |
| Station 11 | SOL.a        | 21 (-)   | (+) |
|            | SOL.b        | 22 (-)   | (+) |
| Station 12 | SOL.a        | 23 (-)   | (+) |
|            | SOL.b        | 24 (-)   | (+) |
|            | COM.         | 25 (+)   | (-) |
|            | COM.         | 26 (+)   | (-) |

Positive Negative  
common common

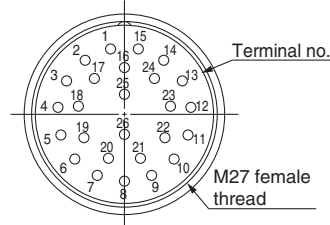
\*: When using a valve with no polarity, either positive common or negative common can be used.

### Specified Layout

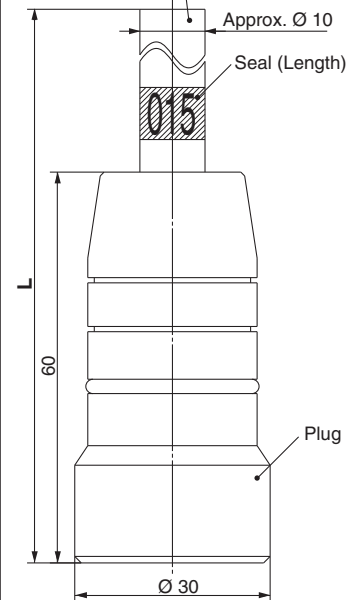
Mixed wiring of single and double wiring can be specified on the manifold specification sheet. The maximum number of stations is determined according to the number of solenoids. The total number of solenoids should be 24 or less. 1 solenoid is required for 2-position single, and 2 solenoids for 2-position double, 3-position and 4-position.

## Cable Assembly

015  
AXT100-MC26-030  
050



Cable  
0.3 mm<sup>2</sup> x 26 cores  
O.D. Ø 1.4



### Lead wire colour for circular connector cable assembly by terminal number

| Terminal no. | Lead wire colour | 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            | Grey             | 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           | Grey             | None        |
| 19           | Orange           | Black       |
| 20           | Red              | White       |
| 21           | Brown            | White       |
| 22           | Pink             | Red         |
| 23           | Grey             | Red         |
| 24           | Black            | White       |
| 25           | White            | None        |
| 26           | White            | None        |

### Electrical characteristics

| Item                                  | Property   |
|---------------------------------------|------------|
| Conductor resistance<br>Ω/km, 20 °C   | 65 or less |
| Voltage limit<br>V, 1 minute, AC      | 1000       |
| Insulation resistance<br>MΩ/km, 20 °C | 5 or more  |

\*: The minimum bending radius of the circular connector cable is 20 mm.

### Circular connector cable assembly

| Cable length (L) | Assembly part no.<br>26 pins |
|------------------|------------------------------|
| 1.5 m            | GAXT100-MC26-015             |
| 3 m              | GAXT100-MC26-030             |
| 5 m              | GAXT100-MC26-050             |

\*: Cannot be used for movable wiring.

\*: Lengths other than the above is also available. Please contact SMC for details.



Manifold Options

One-touch Fittings/  
Plug Assembly Part No.

Type 10, 11, 12  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Metal Base

Plug-in Sub-plate

Valve

Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

EX500 Gateway Decentralised System 2 (128 Points)

# Series SY3000/5000/7000



## How to Order Manifold

Refer to pages 208 (SY5000) and 209 (SY7000) for dimensions of Type 11/Bottom ported type.

SS5Y **3** - **10** S **A3N** - **05** **U** - **C6**

### 1 Series

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

\*: For mixed mounting, refer to page 213 and later.

### 2 Type

|    |                             |
|----|-----------------------------|
| 10 | Side ported                 |
| 11 | Bottom ported <sup>*1</sup> |

\*1: The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to "Plug-in Mixed Mounting Type Manifold" (from page 213).

\*: When mixing top ported configurations, select from page 158.  
In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

### 3 SI Unit (Number of outputs, Output polarity, Max. number of valve stations)

|     |                                                                                                           |
|-----|-----------------------------------------------------------------------------------------------------------|
| 0   | Without SI Unit                                                                                           |
| A3N | 32 outputs <sup>*1*4</sup> , 1 to 16 stations (24 stations <sup>*3</sup> ), Negative common <sup>*2</sup> |

- \*1: 16 outputs can be set by switching the built-in setting switch.
- \*2: Ensure a match with the common specification of the valve.
- \*3: ( ): Maximum number of stations for mixed single and double wiring.
- \*4: When using the SI Unit with 32 outputs, use the GW Unit compatible with the EX500 Gateway Decentralised System 2 (128 points).

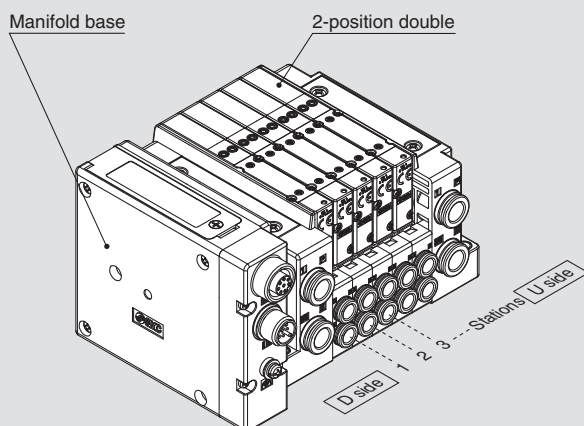
### 4 Valve stations

| Stations       | Note                                                                           |
|----------------|--------------------------------------------------------------------------------|
| 02 2 stations  | Double wiring <sup>*1</sup>                                                    |
| 16 16 stations |                                                                                |
| 02 2 stations  | Mixed wiring, Specified layout <sup>*2</sup><br>(Available up to 32 solenoids) |
| 24 24 stations |                                                                                |

- \*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.  
Use of a 2-position single solenoid will result in an unused control signal.  
If this is not desired, order with a specified layout.
- \*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)
- \*: When the product without the SI Unit (S0) is selected, note the maximum number of solenoids of the SI Unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.
- \*: This also includes the number of blanking plate assembly.

## How to Order Manifold Assembly

### Example



SS5Y3-10SA3N-05D-C6...1 set (Manifold base part number)  
 \* SY3200-5U1 .....5 sets (2-position double part number)  
 ↳ The asterisk denotes the symbol for assembly.  
 Prefix it to the part numbers of the valve etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold base part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on the manifold specification sheet.

### 5 P, E port entry

|   |                               |
|---|-------------------------------|
| U | U side (2 to 10 stations)     |
| D | D side (2 to 10 stations)     |
| B | Both sides (2 to 24 stations) |

### 6 SUP/EXH block assembly

|   |                                                   |
|---|---------------------------------------------------|
| — | Internal pilot                                    |
| S | Internal pilot, Built-in silencer <sup>*1*2</sup> |
| R | External pilot                                    |

- \*1: 3/5(E) port is plugged for the built-in silencer type.
- \*2: When built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

\*: A separate GW Unit and communication cable are required.

For details about the EX 5 0 0 Gateway-type Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 235 in this catalogue. Please download the Operation Manual via SMC website, <http://www.smc.eu>

## 7 A, B port size (Metric/One-touch fitting)

|             | A, B port   | Type 10/Side Ported |        |        | Type 11/Bottom Ported |        |
|-------------|-------------|---------------------|--------|--------|-----------------------|--------|
|             |             | SY3000              | SY5000 | SY7000 | SY5000                | SY7000 |
| C2          | Ø 2         | ●                   | —      | —      | —                     | —      |
| C3          | Ø 3.2       | ●                   | —      | —      | —                     | —      |
| C4          | Ø 4         | ●                   | ●      | —      | ●                     | —      |
| C6          | Ø 6         | ●                   | ●      | ●      | ●                     | ●      |
| C8          | Ø 8         | —                   | ●      | ●      | ●                     | ●      |
| C10         | Ø 10        | —                   | —      | ●      | —                     | ●      |
| C12         | Ø 12        | —                   | —      | ●      | —                     | ●      |
| CM*1        | Mixed sizes | ●                   | ●      | ●      | ●                     | ●      |
| L4          | Ø 4         | ●                   | ●      | —      | —                     | —      |
| L6          | Ø 6         | ●                   | ●      | ●      | —                     | —      |
| L8          | Ø 8         | —                   | ●      | ●      | —                     | —      |
| L10         | Ø 10        | —                   | —      | ●      | —                     | —      |
| L12         | Ø 12        | —                   | —      | ●      | —                     | —      |
| B4          | Ø 4         | ●                   | ●      | —      | —                     | —      |
| B6          | Ø 6         | ●                   | ●      | ●      | —                     | —      |
| B8          | Ø 8         | —                   | ●      | ●      | —                     | —      |
| B10         | Ø 10        | —                   | —      | ●      | —                     | —      |
| B12         | Ø 12        | —                   | —      | ●      | —                     | —      |
| LM*1        | Mixed sizes | ●                   | ●      | ●      | —                     | —      |
| P, E port*3 |             | Ø 8                 | Ø 10   | Ø 12   | Ø 10                  | Ø 12   |

## A, B port size (Inch/One-touch fitting)

|             | A, B port   | Type 10/Side Ported |        |        | Type 11/Bottom Ported |        |
|-------------|-------------|---------------------|--------|--------|-----------------------|--------|
|             |             | SY3000              | SY5000 | SY7000 | SY5000                | SY7000 |
| N1          | Ø 1/8"      | ●                   | —      | —      | —                     | —      |
| N3          | Ø 5/32"     | ●                   | ●      | —      | ●                     | —      |
| N7          | Ø 1/4"      | ●                   | ●      | ●      | ●                     | ●      |
| N9          | Ø 5/16"     | —                   | ●      | ●      | ●                     | ●      |
| N11         | Ø 3/8"      | —                   | —      | ●      | —                     | ●      |
| CM*1        | Mixed sizes | ●                   | ●      | ●      | ●                     | ●      |
| LN3         | Ø 5/32"     | ●                   | —      | —      | —                     | —      |
| LN7         | Ø 1/4"      | ●                   | ●      | —      | —                     | —      |
| LN9         | Ø 5/16"     | —                   | ●      | —      | —                     | —      |
| LN11        | Ø 3/8"      | —                   | —      | ●      | —                     | —      |
| BN3         | Ø 5/32"     | ●                   | —      | —      | —                     | —      |
| BN7         | Ø 1/4"      | ●                   | ●      | —      | —                     | —      |
| BN9         | Ø 5/16"     | —                   | ●      | —      | —                     | —      |
| BN11        | Ø 3/8"      | —                   | —      | ●      | —                     | —      |
| LM*1        | Mixed sizes | ●                   | ●      | ●      | —                     | —      |
| P, E port*3 |             | Ø 5/16"             | Ø 3/8" | Ø 1/2" | Ø 3/8"                | Ø 1/2" |

\*1: Indicate the sizes on the manifold specification sheet.

\*2: To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 250 to 252).

\*3: The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

## 8 Mounting and Option

|      | Mounting          | Option     |                |
|------|-------------------|------------|----------------|
|      |                   | Name plate | Station number |
| —    | Direct mounting   | —          | —              |
| AA   |                   | ●          | ●              |
| BA   |                   | ●          | —              |
| D□*1 | DIN rail mounting | —          | —              |
| A□*1 |                   | ●          | ●              |
| B□*1 |                   | ●          | —              |

\*1: Refer to "DIN Rail Option" below.

\*: Select the direct mounting type for Type 11 (Bottom ported).

### DIN Rail Option

|      |                                                 |
|------|-------------------------------------------------|
| —    | With DIN bracket, DIN rail with standard length |
| 0    | With DIN bracket, without DIN rail              |
| 3*1  | With DIN bracket, DIN rail for 3 stations       |
| ⋮    | ⋮                                               |
| 24*1 | With DIN bracket, DIN rail for 24 stations      |

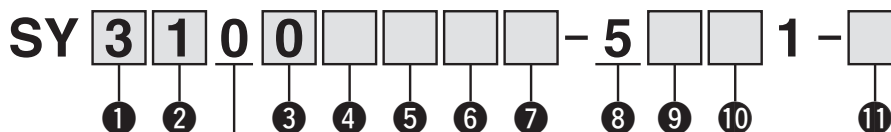
\*1: Specify a longer rail than the length of valve stations.

\*: If the DIN rail must be mounted without an SI Unit, select "D0" and order the DIN rail separately. Refer to L3 of the dimensions for the DIN rail length. Refer to page 249 for the DIN rail part number.

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



• Base mounted

### 1 Series

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

### 2 Type of actuation

|     |                              |                 |
|-----|------------------------------|-----------------|
| 1   | 2-position                   | Single          |
| 2   |                              | Double          |
| 3   | 3-position                   | Closed centre   |
| 4   |                              | Exhaust centre  |
| 5   |                              | Pressure centre |
| A*1 | 4-position dual 3-port valve | N.C./N.C.       |
| B*1 |                              | N.O./N.O.       |
| C*1 |                              | N.C./N.O.       |

\*1: Select the rubber seal type for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 5 Back pressure check valve

|     |          |
|-----|----------|
| —   | None     |
| H*1 | Built-in |

\*1: Select the rubber seal type when the back pressure check valve is built-in. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. For ordering example, refer to page 256. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: Select "—" for 3-position type and the SY7000.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Select the metal seal type for high pressure type.

### 7 Coil type

|   |                                                      |
|---|------------------------------------------------------|
| — | Standard                                             |
| T | With power saving circuit (Continuous duty type)*1*2 |

\*1: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*2: Be careful of the energising time when the power saving circuit is selected. For details, refer to page 268.

### 8 Rated voltage

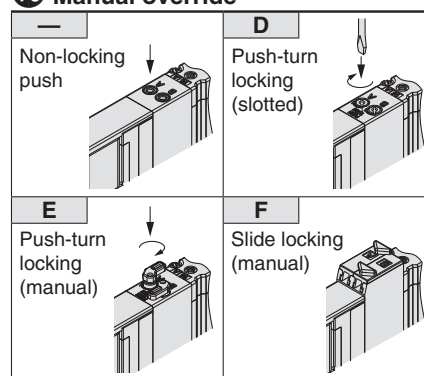
|   |         |
|---|---------|
| 5 | 24 V DC |
|---|---------|

### 9 Light/surge voltage suppressor and common specification

|    | With light | Surge voltage suppressor | Common specification |
|----|------------|--------------------------|----------------------|
| R  | —          | ●                        | Non-polar            |
| U  | ●          |                          | Negative common      |
| NS | —          |                          |                      |
| NZ | ●          |                          |                      |

\*: Select "NZ" for with the power saving circuit.

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 Type of mounting screw

|   |                                                               |
|---|---------------------------------------------------------------|
| — | Round head combination screw                                  |
| B | Hexagon socket head cap screw                                 |
| K | Round head combination screw (Falling-out-prevention type)*1  |
| H | Hexagon socket head cap screw (Falling-out-prevention type)*1 |

\*1: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

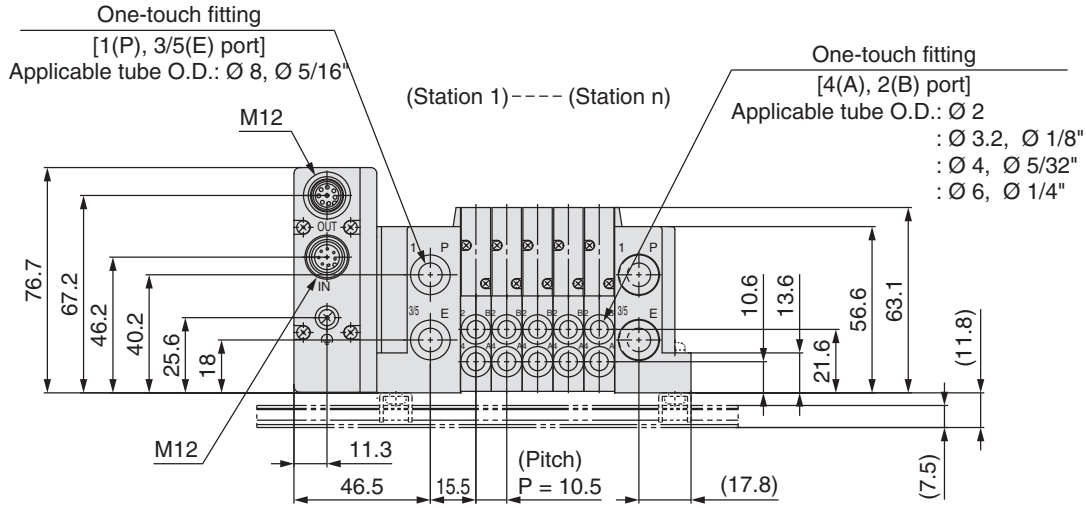
\*: Select "—" or "K" for the optional individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

# Dimensions: Series **SY3000**

## Plug-in Connector Connecting Base

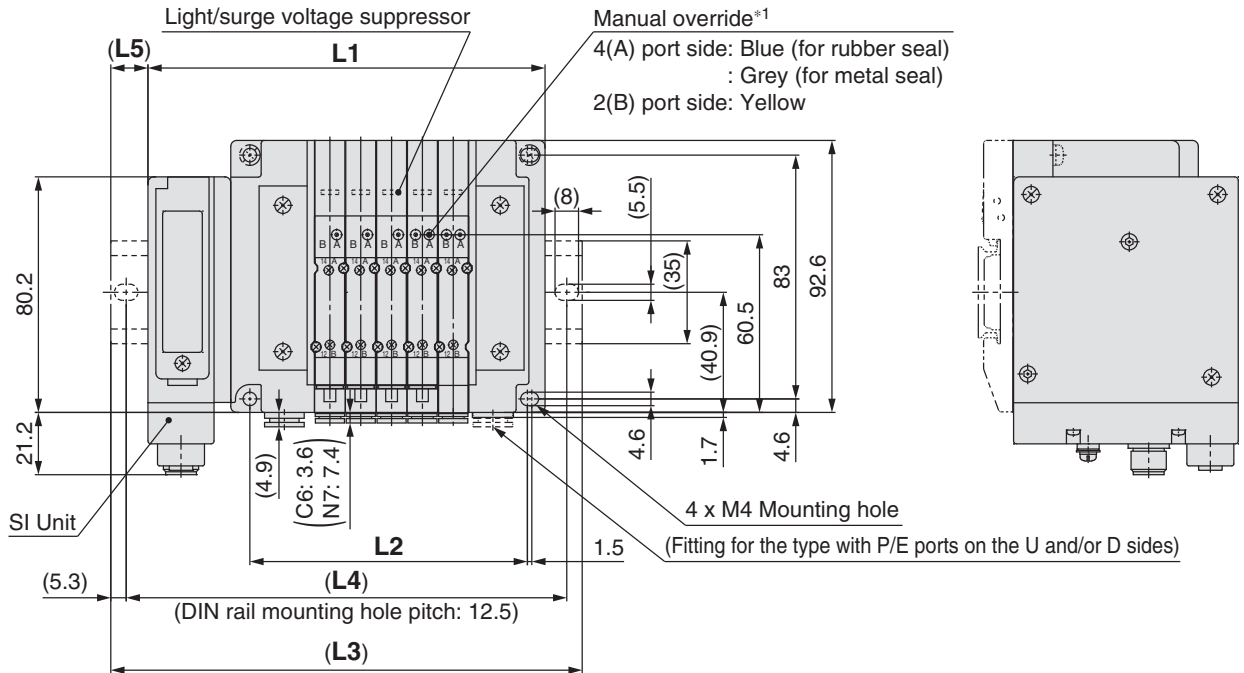
Type 10/Side Ported  
EX500 (128 Points)

SS5Y3-10SA3N- Stations  $\begin{matrix} \text{U} & \text{C2} \\ \text{D} & \text{C3, N1} \\ \text{B} & \text{C4, N3} \\ & \text{C6, N7} \end{matrix}$  (D)



D side

U side



\*1: Refer to page 205 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y3-10SA3N-05D-C6".

\*: Refer to page 210 for dimensions of A or B port top-ported type.

## L: Dimensions

| L \ n | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1    | 103.7 | 114.2 | 124.7 | 135.2 | 145.7 | 156.2 | 166.7 | 177.2 | 187.7 | 198.2 | 208.7 | 219.2 | 229.7 | 240.2 | 250.7 |
| L2    | 63    | 73.5  | 84    | 94.5  | 105   | 115.5 | 126   | 136.5 | 147   | 157.5 | 168   | 178.5 | 189   | 199.5 | 210   |
| L3    | 135.5 | 148   | 148   | 160.5 | 173   | 185.5 | 198   | 210.5 | 223   | 223   | 235.5 | 248   | 260.5 | 273   | 285.5 |
| L4    | 125   | 137.5 | 137.5 | 150   | 162.5 | 175   | 187.5 | 200   | 212.5 | 212.5 | 225   | 237.5 | 250   | 262.5 | 275   |
| L5    | 16    | 17    | 11.5  | 12.5  | 13.5  | 14.5  | 15.5  | 16.5  | 17.5  | 12.5  | 13.5  | 14.5  | 15.5  | 16.5  | 17.5  |

| L \ n | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1    | 261.2 | 271.7 | 282.2 | 292.7 | 303.2 | 313.7 | 324.2 | 334.7 |
| L2    | 220.5 | 231   | 241.5 | 252   | 262.5 | 273   | 283.5 | 294   |
| L3    | 285.5 | 298   | 310.5 | 323   | 335.5 | 348   | 348   | 360.5 |
| L4    | 275   | 287.5 | 300   | 312.5 | 325   | 337.5 | 337.5 | 350   |
| L5    | 12    | 13    | 14    | 15    | 16    | 17    | 12    | 13    |

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

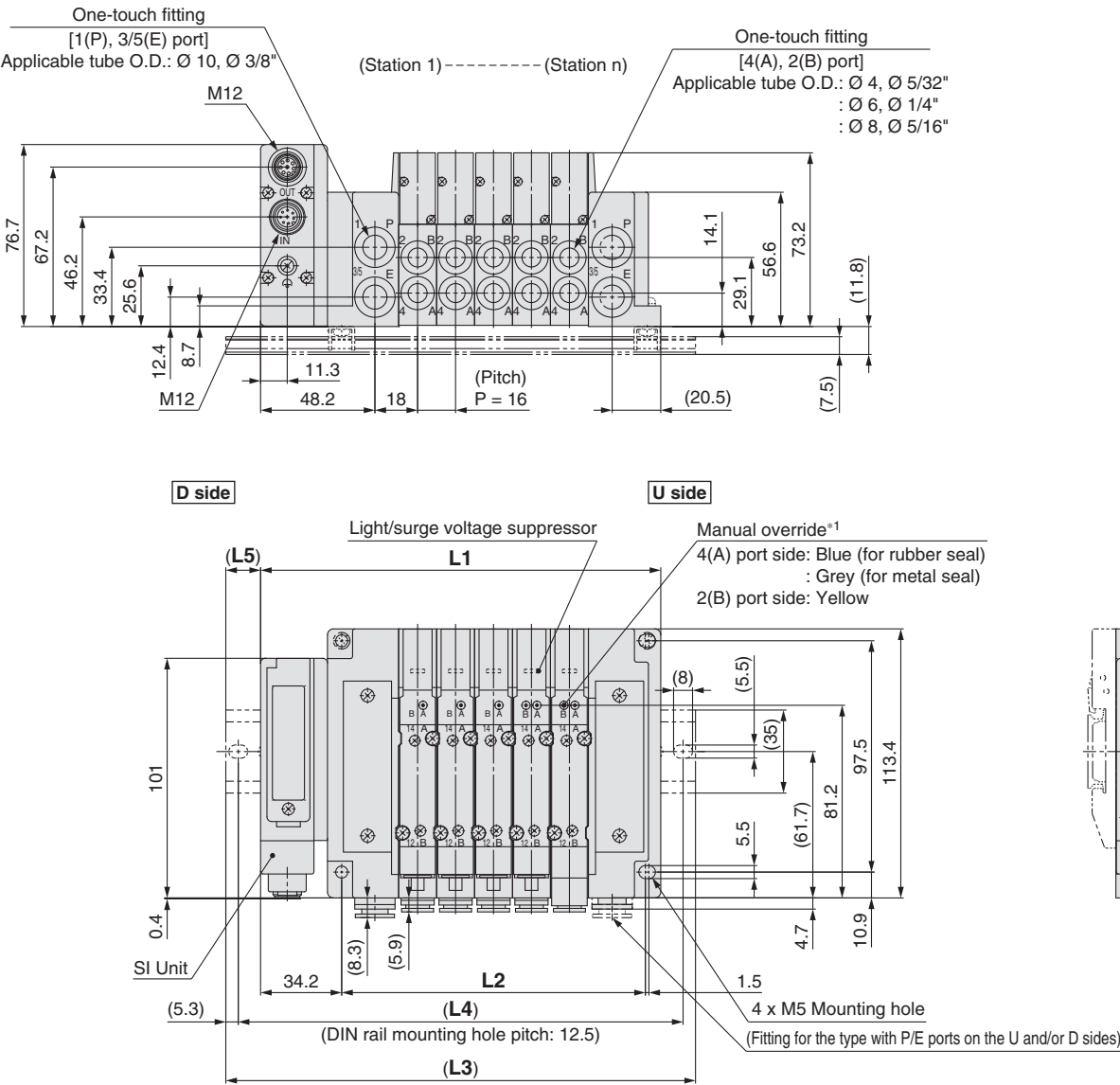
Series SY3000/5000/7000

Dimensions: Series SY5000

Plug-in  
Connector Connecting Base

Type 10/Side Ported  
EX500 (128 Points)

SS5Y5-10SA3N- Stations U C4, N3  
D-C6, N7 (D)  
B C8, N9



\*1: Refer to page 206 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y5-10SA3N-05D-C8".  
\*: Refer to page 211 for dimensions of A or B port top-ported type.

L: Dimensions

n: Stations

| L \ n | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1    | 120.7 | 136.7 | 152.7 | 168.7 | 184.7 | 200.7 | 216.7 | 232.7 | 248.7 | 264.7 | 280.7 | 296.7 | 312.7 | 328.7 | 344.7 |
| L2    | 80    | 96    | 112   | 128   | 144   | 160   | 176   | 192   | 208   | 224   | 240   | 256   | 272   | 288   | 304   |
| L3    | 148   | 160.5 | 185.5 | 198   | 210.5 | 235.5 | 248   | 260.5 | 273   | 298   | 310.5 | 323   | 348   | 360.5 | 373   |
| L4    | 137.5 | 150   | 175   | 187.5 | 200   | 225   | 237.5 | 250   | 262.5 | 287.5 | 300   | 312.5 | 337.5 | 350   | 362.5 |
| L5    | 13.5  | 12    | 16.5  | 14.5  | 13    | 17.5  | 15.5  | 14    | 12    | 16.5  | 15    | 13    | 17.5  | 16    | 14    |

| L \ n | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1    | 360.7 | 376.7 | 392.7 | 408.7 | 424.7 | 440.7 | 456.7 | 472.7 |
| L2    | 320   | 336   | 352   | 368   | 384   | 400   | 416   | 432   |
| L3    | 385.5 | 410.5 | 423   | 435.5 | 448   | 473   | 485.5 | 498   |
| L4    | 375   | 400   | 412.5 | 425   | 437.5 | 462.5 | 475   | 487.5 |
| L5    | 12.5  | 17    | 15    | 13.5  | 11.5  | 16    | 14.5  | 12.5  |

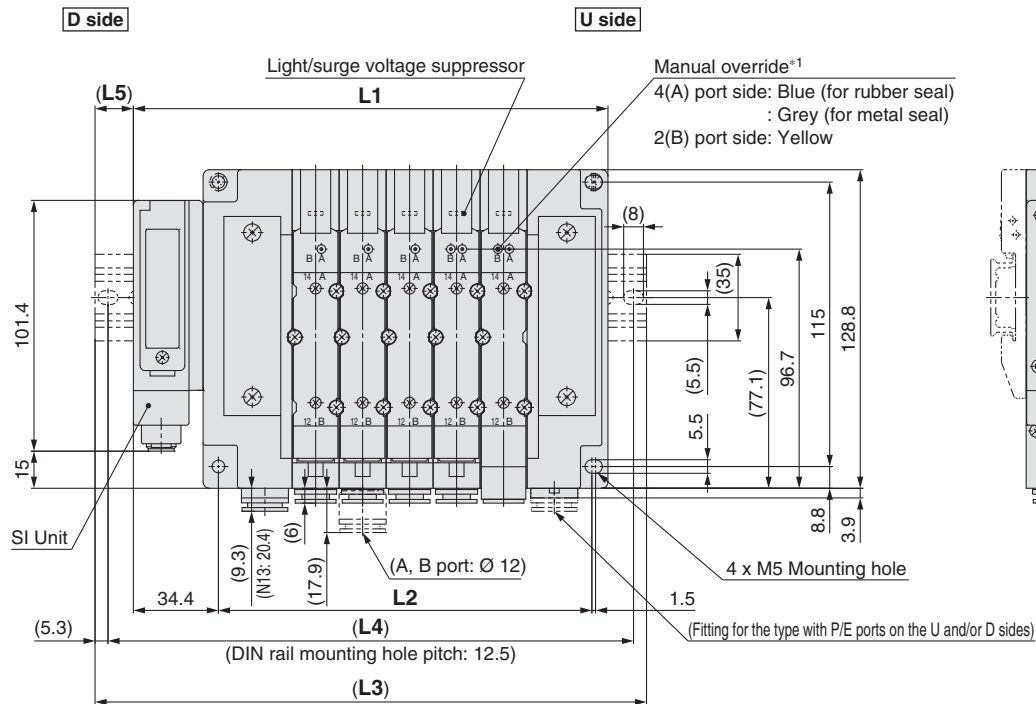
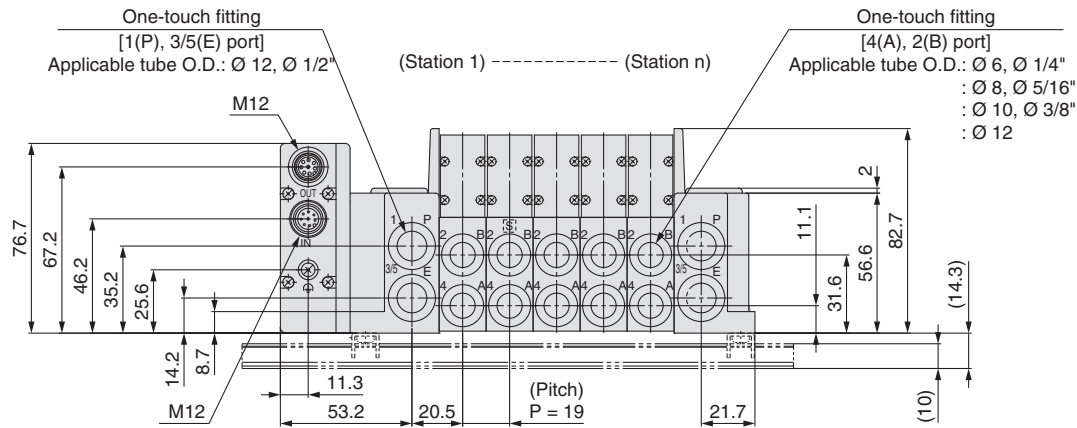


## Dimensions: Series SY7000

## Plug-in Connector Connecting Base

Type 10/Side Ported  
EX500 (128 Points)

SS5Y7-10SA3N- Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix} \begin{matrix} \text{C6, N7} \\ \text{C8, N9} \\ \text{C10, N11} \end{matrix} \text{ (D)}$



\*1: Refer to page 207 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y7-10SA3N-05D-C10".

\*: Refer to page 212 for dimensions of A or B port top-ported type.

### L: Dimensions

n: Stations

| L \ n | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1    | 134.9 | 153.9 | 172.9 | 191.9 | 210.9 | 229.9 | 248.9 | 267.9 | 286.9 | 305.9 | 324.9 | 343.9 | 362.9 | 381.9 | 400.9 |
| L2    | 94    | 113   | 132   | 151   | 170   | 189   | 208   | 227   | 246   | 265   | 284   | 303   | 322   | 341   | 360   |
| L3    | 160.5 | 185.5 | 198   | 223   | 235.5 | 260.5 | 273   | 298   | 310.5 | 335.5 | 348   | 373   | 398   | 410.5 | 435.5 |
| L4    | 150   | 175   | 187.5 | 212.5 | 225   | 250   | 262.5 | 287.5 | 300   | 325   | 337.5 | 362.5 | 387.5 | 400   | 425   |
| L5    | 13    | 16    | 12.5  | 15.5  | 12.5  | 15.5  | 12    | 15    | 12    | 15    | 11.5  | 14.5  | 17.5  | 14.5  | 17.5  |

| L \ n | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1    | 419.9 | 438.9 | 457.9 | 476.9 | 495.9 | 514.9 | 533.9 | 552.9 |
| L2    | 379   | 398   | 417   | 436   | 455   | 474   | 493   | 512   |
| L3    | 448   | 473   | 485.5 | 510.5 | 523   | 548   | 560.5 | 585.5 |
| L4    | 437.5 | 462.5 | 475   | 500   | 512.5 | 537.5 | 550   | 575   |
| L5    | 14    | 17    | 14    | 17    | 13.5  | 16.5  | 13.5  | 16.5  |

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

Type 10  
Side Ported

Type 11  
Bottom Ported

## Plug-in Connector Connecting Base

EX500 Gateway Decentralised System (64 Points)

# Series SY3000/5000/7000



### How to Order Manifold

Refer to pages 208 (SY5000) and 209 (SY7000) for dimensions of Type 11/Bottom ported type.

SS5Y **3** - **10** S **A2** - **05** **U** - **C6**

1 2 3 4 5 6 7 8

#### 1 Series

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

\*: For mixed mounting, refer to page 213 and later.

#### 2 Type

|    |                 |
|----|-----------------|
| 10 | Side ported     |
| 11 | Bottom ported*1 |

\*1: The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to "Plug-in Mixed Mounting Type Manifold" (from page 213).

\*: When mixing top ported configurations, select from page 160. In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

#### 3 SI Unit (Number of outputs, Output polarity, Max. number of valve stations)

|     |                                                                       |
|-----|-----------------------------------------------------------------------|
| 0   | Without SI Unit                                                       |
| A2  | 16 outputs,<br>Positive common*1,<br>1 to 18 stations (16 stations)*2 |
| A2N | 16 outputs,<br>Negative common*1,<br>1 to 18 stations (16 stations)*2 |

\*1: Ensure a match with the common specification of the valve to be used.

\*2: ( ): Maximum number of stations for mixed single and double wiring.

#### 4 Valve stations

| Stations | Note        |
|----------|-------------|
| 02       | 2 stations  |
| :        | :           |
| 08       | 8 stations  |
| 02       | 2 stations  |
| :        | :           |
| 16       | 16 stations |

\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

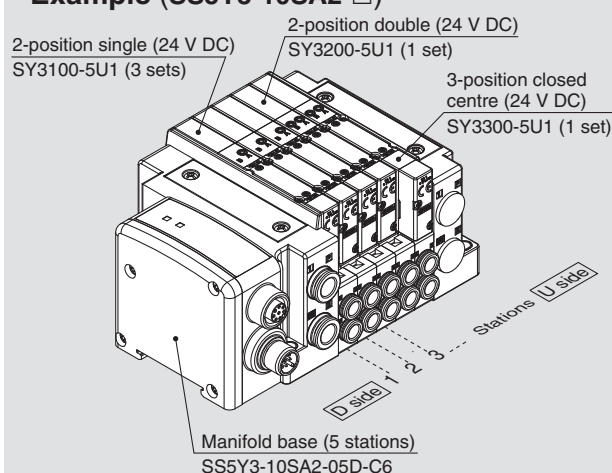
\*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

\*: When the product without the SI Unit (S0) is selected, note the maximum number of solenoids of the SI Unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

\*: This also includes the number of blanking plate assembly.

### How to Order Manifold Assembly

#### Example (SS5Y3-10SA2-□)



SS5Y3-10SA2-05D-C6 ... 1 set (Type 10 5-station manifold base part no.)  
 \*SY3100-5U1 ..... 3 sets (2-position single part no.)  
 \*SY3200-5U1 ..... 1 set (2-position double part no.)  
 \*SY3300-5U1 ..... 1 set (3-position closed centre part no.)

The asterisk denotes the symbol for assembly.  
 Prefix it to the part numbers of the valve etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

#### 5 P, E port entry

|   |                               |
|---|-------------------------------|
| U | U side (2 to 10 stations)     |
| D | D side (2 to 10 stations)     |
| B | Both sides (2 to 16 stations) |

#### 6 SUP/EXH block assembly

|   |                                   |
|---|-----------------------------------|
| — | Internal pilot                    |
| S | Internal pilot, Built-in silencer |
| R | External pilot                    |

\*: 3/5(E) port is plugged for the built-in silencer type.

\*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

\*: A separate GW Unit and communication cable are required.

For details about the EX500 Gateway-type Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 236 in this catalogue. Please download the Operation Manual via SMC website, <http://www.smc.eu>

## 7 A, B port size (Metric/One-touch fitting)

|                                     | A, B port   | Type 10/Side Ported |        |        | Type 11/Bottom Ported |        |
|-------------------------------------|-------------|---------------------|--------|--------|-----------------------|--------|
|                                     |             | SY3000              | SY5000 | SY7000 | SY5000                | SY7000 |
| C2                                  | Ø 2         | ●                   | —      | —      | —                     | —      |
| C3                                  | Ø 3.2       | ●                   | —      | —      | —                     | —      |
| C4                                  | Ø 4         | ●                   | ●      | —      | ●                     | —      |
| C6                                  | Ø 6         | ●                   | ●      | ●      | ●                     | ●      |
| C8                                  | Ø 8         | —                   | ●      | ●      | ●                     | ●      |
| C10                                 | Ø 10        | —                   | —      | ●      | —                     | ●      |
| C12                                 | Ø 12        | —                   | —      | ●      | —                     | ●      |
| CM*1                                | Mixed sizes | ●                   | ●      | ●      | ●                     | ●      |
| L4                                  | Ø 4         | ●                   | ●      | —      | —                     | —      |
| L6                                  | Ø 6         | ●                   | ●      | ●      | —                     | —      |
| L8                                  | Ø 8         | —                   | ●      | ●      | —                     | —      |
| L10                                 | Ø 10        | —                   | —      | ●      | —                     | —      |
| L12                                 | Ø 12        | —                   | —      | ●      | —                     | —      |
| B4                                  | Ø 4         | ●                   | ●      | —      | —                     | —      |
| B6                                  | Ø 6         | ●                   | ●      | ●      | —                     | —      |
| B8                                  | Ø 8         | —                   | ●      | ●      | —                     | —      |
| B10                                 | Ø 10        | —                   | —      | ●      | —                     | —      |
| B12                                 | Ø 12        | —                   | —      | ●      | —                     | —      |
| LM*1                                | Mixed sizes | ●                   | ●      | ●      | —                     | —      |
| P, E port*3<br>(One-touch fittings) |             | Ø 8                 | Ø 10   | Ø 12   | Ø 10                  | Ø 12   |

## A, B port size (Inch/One-touch fitting)

|                                     | A, B port   | Type 10/Side Ported |        |        | Type 11/Bottom Ported |        |
|-------------------------------------|-------------|---------------------|--------|--------|-----------------------|--------|
|                                     |             | SY3000              | SY5000 | SY7000 | SY5000                | SY7000 |
| N1                                  | Ø 1/8"      | ●                   | —      | —      | —                     | —      |
| N3                                  | Ø 5/32"     | ●                   | ●      | —      | ●                     | —      |
| N7                                  | Ø 1/4"      | ●                   | ●      | ●      | ●                     | ●      |
| N9                                  | Ø 5/16"     | —                   | ●      | ●      | ●                     | ●      |
| N11                                 | Ø 3/8"      | —                   | —      | ●      | —                     | ●      |
| CM*1                                | Mixed sizes | ●                   | ●      | ●      | ●                     | ●      |
| LN3                                 | Ø 5/32"     | ●                   | —      | —      | —                     | —      |
| LN7                                 | Ø 1/4"      | ●                   | ●      | —      | —                     | —      |
| LN9                                 | Ø 5/16"     | —                   | ●      | —      | —                     | —      |
| LN11                                | Ø 3/8"      | —                   | —      | ●      | —                     | —      |
| BN3                                 | Ø 5/32"     | ●                   | —      | —      | —                     | —      |
| BN7                                 | Ø 1/4"      | ●                   | ●      | —      | —                     | —      |
| BN9                                 | Ø 5/16"     | —                   | ●      | —      | —                     | —      |
| BN11                                | Ø 3/8"      | —                   | —      | ●      | —                     | —      |
| LM*1                                | Mixed sizes | ●                   | ●      | ●      | —                     | —      |
| P, E port*3<br>(One-touch fittings) |             | Ø 5/16"             | Ø 3/8" | Ø 1/2" | Ø 3/8"                | Ø 1/2" |

\*1: Indicate the sizes on the manifold specification sheet.

\*2: To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 250 to 252).

\*3: The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

## 8 Mounting and Option

|      | Mounting          | Option     |                |
|------|-------------------|------------|----------------|
|      |                   | Name plate | Station number |
| —    | Direct mounting   | —          | —              |
| AA   |                   | ●          | ●              |
| BA   |                   | ●          | —              |
| D□*1 | DIN rail mounting | —          | —              |
| A□*1 |                   | ●          | ●              |
| B□*1 |                   | ●          | —              |

\*1: Refer to "DIN Rail Option" below.

\*: Select the direct mounting type for Type 11 (Bottom ported).

### DIN Rail Option

|      |                                                 |
|------|-------------------------------------------------|
| —    | With DIN bracket, DIN rail with standard length |
| 0    | With DIN bracket, without DIN rail              |
| 3*1  | With DIN bracket, DIN rail for 3 stations       |
| ⋮    | ⋮                                               |
| 16*1 | With DIN bracket, DIN rail for 16 stations      |

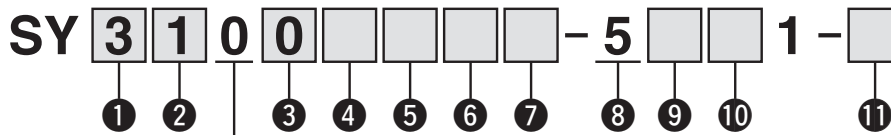
\*1: Specify a longer rail than the length of valve stations.

\*: If the DIN rail must be mounted without an SI Unit, select "D0" and order the DIN rail separately. Refer to L3 of the dimensions for the DIN rail length. Refer to page 249 for the DIN rail part number.

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



Base mounted

### 1 Series

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

### 2 Type of actuation

|     |                        |                 |
|-----|------------------------|-----------------|
| 1   | 2-position             | Single          |
| 2   |                        | Double          |
| 3   | 3-position             | Closed centre   |
| 4   |                        | Exhaust centre  |
| 5   |                        | Pressure centre |
| A*1 | 4-position dual 3-port | N.C./N.C.       |
| B*1 |                        | N.O./N.O.       |
| C*1 |                        | N.C./N.O.       |

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 5 Back pressure check valve (Built-in valve type)

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

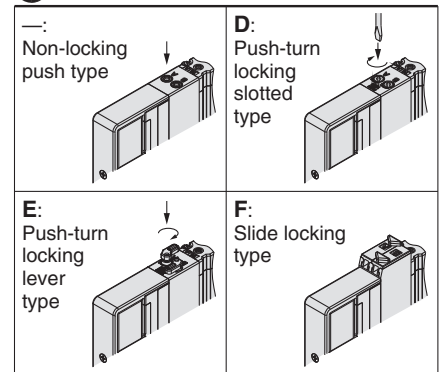
|   |         |
|---|---------|
| 5 | 24 V DC |
|---|---------|

### 9 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| R      | —          |                          | Non-polar            |
| U      | ●          |                          |                      |
| S      | —          | ●                        | Positive common      |
| Z      | ●          |                          |                      |
| NS     | —          |                          | Negative common      |
| NZ     | ●          |                          |                      |

\*: Only "Z" and "NZ" are available for with the power saving circuit. Select a valve from R, U, S or Z when the SI Unit specification is A2 (positive common). Select a valve from R, U, NS or NZ when the SI Unit specification is A2N (negative common).

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

# Dimensions: Series SY3000

## Plug-in Connector Connecting Base

Type 10/Side Ported  
EX500 (64 Points)

SS5Y3-10SA2- Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix} \begin{matrix} \text{C2} \\ \text{C3, N1} \\ \text{C4, N3} \\ \text{C6, N7} \end{matrix} \text{ (D)}$

Valve

Plug-in Sub-plate

Plug-in Metal Base

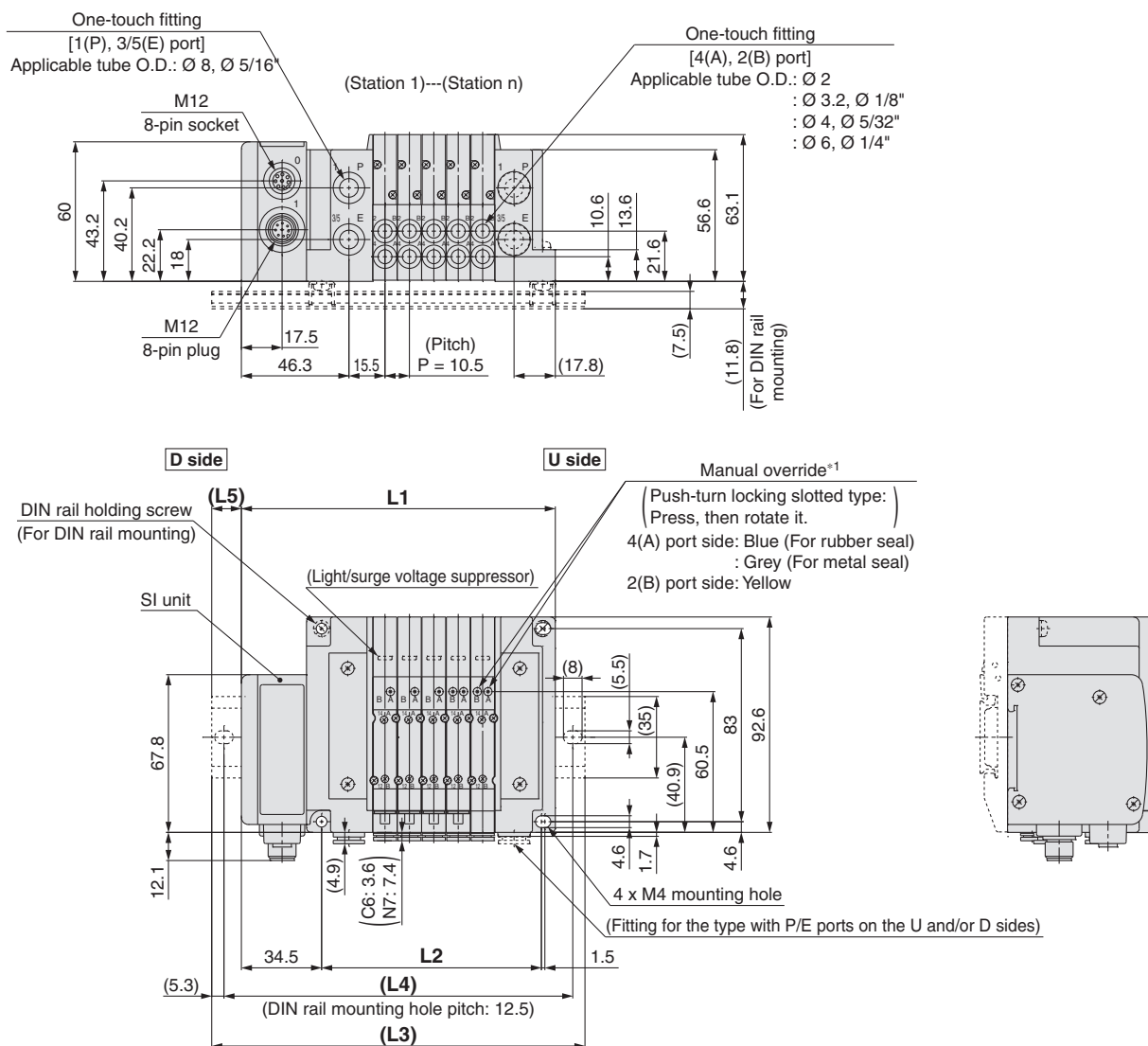
Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options



\*1: Refer to page 205 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y3-10SA2-05D-C6".

\*: Refer to page 210 for dimensions of A or B port top-ported type.

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 103.5 | 114   | 124.5 | 135   | 145.5 | 156   | 166.5 | 177   | 187.5 | 198   | 208.5 | 219   | 229.5 | 240   | 250.5 |
| L2          | 63    | 73.5  | 84    | 94.5  | 105   | 115.5 | 126   | 136.5 | 147   | 157.5 | 168   | 178.5 | 189   | 199.5 | 210   |
| L3          | 135.5 | 148   | 148   | 160.5 | 173   | 185.5 | 198   | 210.5 | 223   | 223   | 235.5 | 248   | 260.5 | 273   | 285.5 |
| L4          | 125   | 137.5 | 137.5 | 150   | 162.5 | 175   | 187.5 | 200   | 212.5 | 212.5 | 225   | 237.5 | 250   | 262.5 | 275   |
| L5          | 16    | 17    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 12.5  | 13.5  | 14.5  | 15.5  | 16.5  | 17.5  |

## Series SY3000/5000/7000

## Dimensions: Series SY5000

**SS5Y5-10SA2-** **Stations**

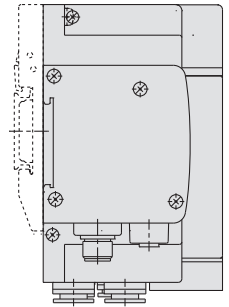
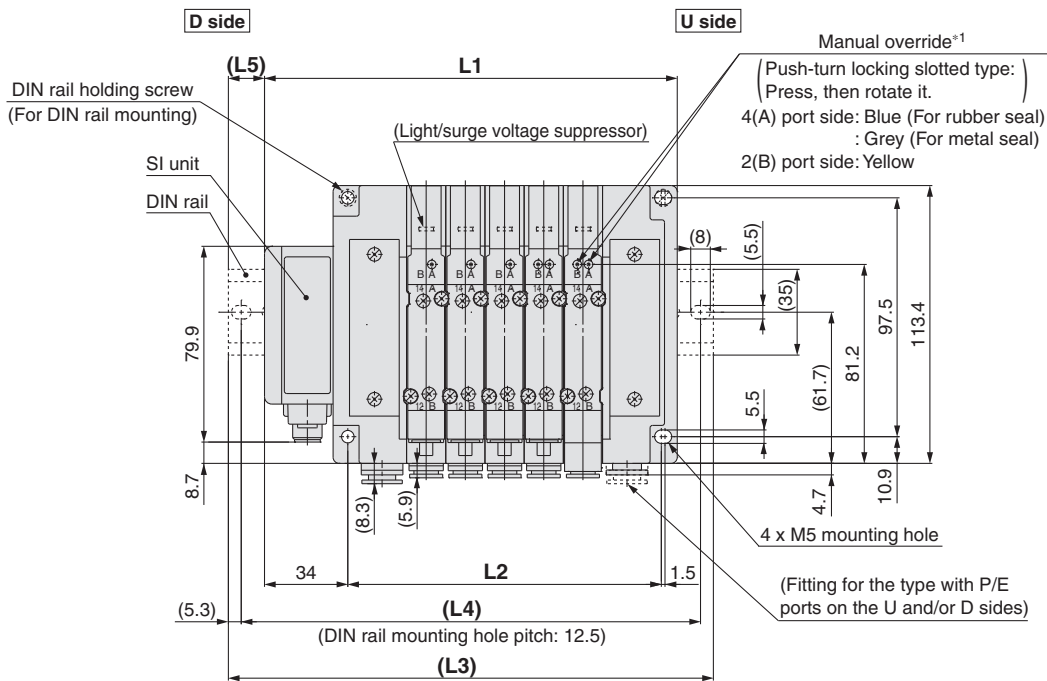
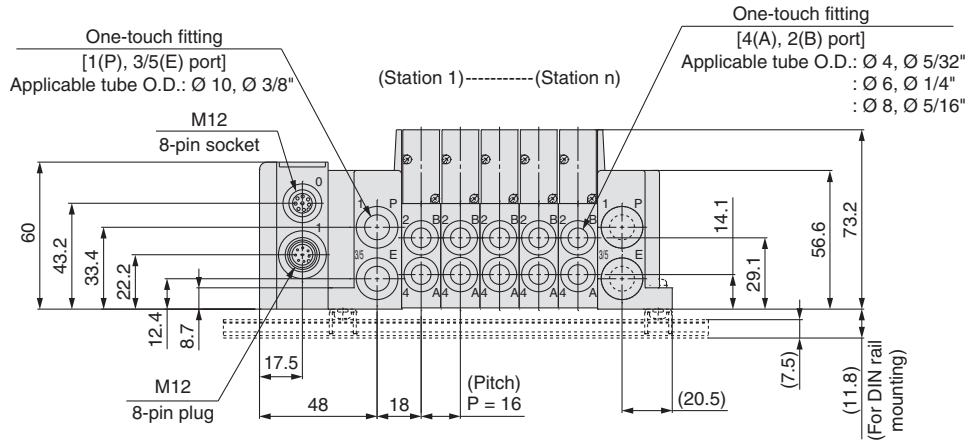
|   |
|---|
| U |
| D |
| B |

**C4, N3  
C6, N7  
C8, N9 (D)**

## Plug-in Connector Connecting Base

Type 10/Side Ported

**EX500 (64 Points)**



\*1: Refer to page 206 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the “SS5Y5-10SA2-05D-C8”.

\*: Refer to page 211 for dimensions of A or B port top-ported type.

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 120.5 | 136.5 | 152.5 | 168.5 | 184.5 | 200.5 | 216.5 | 232.5 | 248.5 | 264.5 | 280.5 | 296.5 | 312.5 | 328.5 | 344.5 |
| L2          | 80    | 96    | 112   | 128   | 144   | 160   | 176   | 192   | 208   | 224   | 240   | 256   | 272   | 288   | 304   |
| L3          | 148   | 160.5 | 185.5 | 198   | 210.5 | 235.5 | 248   | 260.5 | 273   | 298   | 310.5 | 323   | 348   | 360.5 | 373   |
| L4          | 137.5 | 150   | 175   | 187.5 | 200   | 225   | 237.5 | 250   | 262.5 | 287.5 | 300   | 312.5 | 337.5 | 350   | 362.5 |
| L5          | 14    | 12    | 16.5  | 15    | 13    | 17.5  | 16    | 14    | 12.5  | 17    | 15    | 13.5  | 18    | 16    | 14.5  |

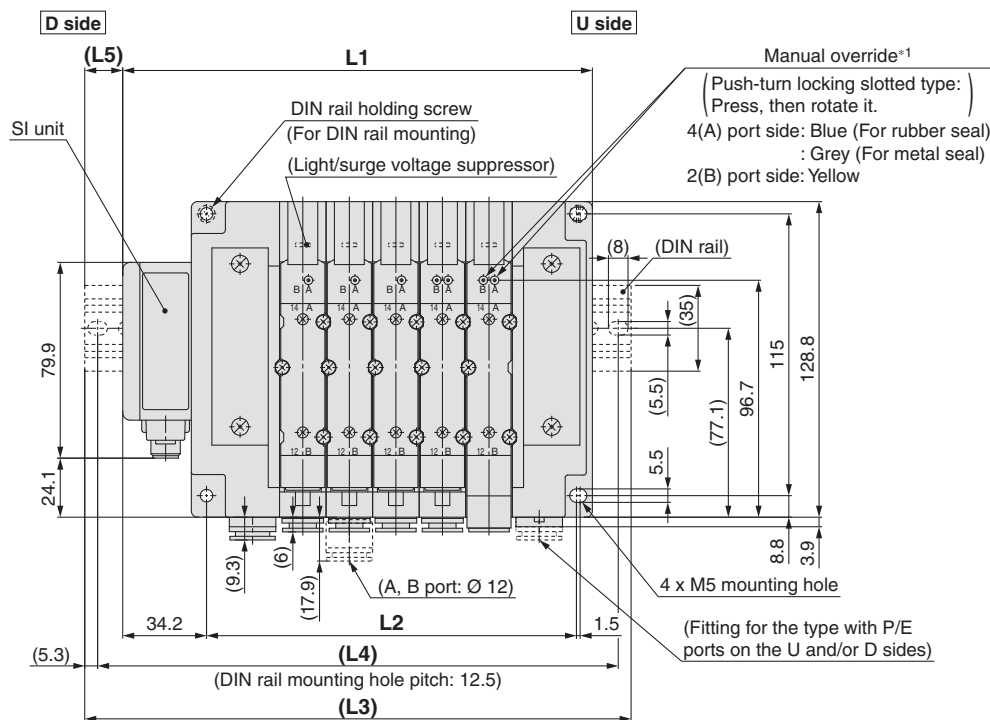
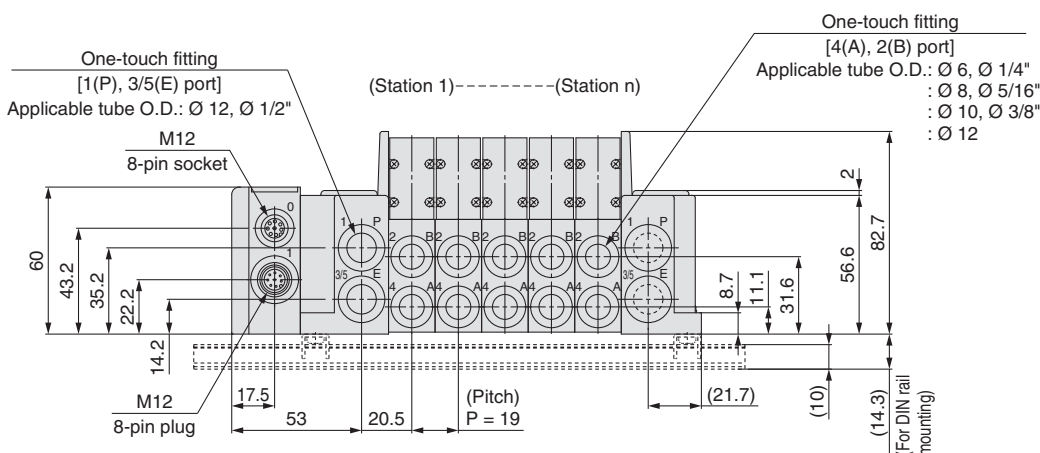


# Dimensions: Series SY7000

## Plug-in Connector Connecting Base

Type 10/Side Ported  
EX500 (64 Points)

SS5Y7-10SA2- Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix}$   $\begin{matrix} \text{C6, N7} \\ \text{C8, N9} \\ \text{C10, N11 (D)} \\ \text{C12} \end{matrix}$



\*1: Refer to page 207 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y7-10SA2-05D-C10".

\*: Refer to page 212 for dimensions of A or B port top-ported type.

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 134.7 | 153.7 | 172.7 | 191.7 | 210.7 | 229.7 | 248.7 | 267.7 | 286.7 | 305.7 | 324.7 | 343.7 | 362.7 | 381.7 | 400.7 |
| L2          | 94    | 113   | 132   | 151   | 170   | 189   | 208   | 227   | 246   | 265   | 284   | 303   | 322   | 341   | 360   |
| L3          | 160.5 | 185.5 | 198   | 223   | 235.5 | 260.5 | 273   | 298   | 310.5 | 335.5 | 348   | 373   | 398   | 410.5 | 435.5 |
| L4          | 150   | 175   | 187.5 | 212.5 | 225   | 250   | 262.5 | 287.5 | 300   | 325   | 337.5 | 362.5 | 387.5 | 400   | 425   |
| L5          | 13    | 16    | 12.5  | 15.5  | 12.5  | 15.5  | 12    | 15    | 12    | 15    | 11.5  | 14.5  | 17.5  | 14.5  | 17.5  |

# Plug-in Connector Connecting Base

EX500 Gateway Decentralised System 2 (128 Points)

Type 12  
Top Ported

# Series SY3000/5000/7000



## How to Order Manifold

SS5Y **3** - 12S **A3N** - **05** **U** **□** **□** **□**

1                      2                      3                      4                      5                      6                      7

Refer to pages 210 to 212 for dimensions of Type 12/Top ported type.

### 1 Series

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

\*: For mixed mounting, refer to page 213 and later.

### 2 SI Unit (Number of outputs, Output polarity, Max. number of valve stations)

|     |                                                                     |
|-----|---------------------------------------------------------------------|
| 0   | Without SI Unit                                                     |
| A3N | 32 outputs*1*4, 1 to 16 stations (24 stations*3), Negative common*2 |

- \*1: 16 outputs can be set by switching the built-in setting switch.
- \*2: Ensure a match with the common specification of the valve.
- \*3: ( ): Maximum number of stations for mixed single and double wiring.
- \*4: When using the SI Unit with 32 outputs, use the GW Unit compatible with the EX500 Gateway Decentralised System 2 (128 points).

### 3 Valve stations

| Stations | Note        |
|----------|-------------|
| 02       | 2 stations  |
| 16       | 16 stations |
| 02       | 2 stations  |
| 24       | 24 stations |

- \*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
- \*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)
- \*3: When the product without the SI Unit (S0) is selected, note the maximum number of solenoids of the SI Unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.
- \*4: This also includes the number of blanking plate assembly.

### 4 P, E port entry

|     |                               |
|-----|-------------------------------|
| U*1 | U side (2 to 10 stations)     |
| D*1 | D side (2 to 10 stations)     |
| B   | Both sides (2 to 24 stations) |

\*1: For type "S", supply/exhaust block assembly with built-in silencer, choose "U" or "D" for P, E port entry.

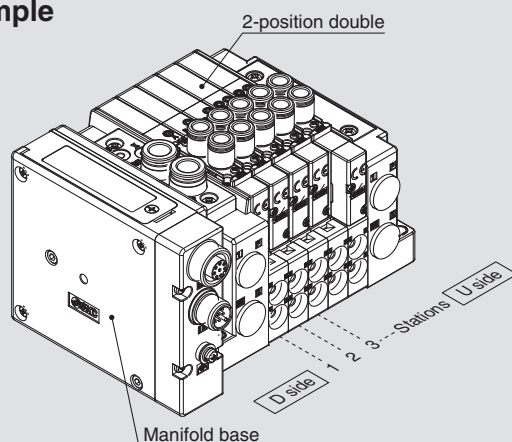
### 5 SUP/EXH block assembly

|     |                                     |
|-----|-------------------------------------|
| —   | Internal pilot                      |
| S*1 | Internal pilot, Built-in silencer*2 |
| R   | External pilot                      |

- \*1: For type "S", supply/exhaust block assembly with built-in silencer, choose "U" or "D" for P, E port entry. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)
- \*2: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

## How to Order Manifold Assembly

### Example



SS5Y3-12SA3N-05D.....1 set (Manifold base part number)  
 \* SY3230-5U1-C6.....5 sets (2-position double part number)  
 The asterisk denotes the symbol for assembly.  
 Prefix it to the part numbers of the valve etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold base part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on the manifold specification sheet.

### 6 P, E port size (One-touch fittings)

|     | SY3000  | SY5000 | SY7000 |
|-----|---------|--------|--------|
| —   | Ø 8     | Ø 10   | Ø 12   |
| N*1 | Ø 5/16" | Ø 3/8" | Ø 1/2" |

\*1: For "N", sizes are in inches.

### 7 Mounting

|       |                                                 |
|-------|-------------------------------------------------|
| —     | Direct mounting                                 |
| D     | With DIN bracket, DIN rail with standard length |
| D0    | With DIN bracket, without DIN rail              |
| D3*1  | With DIN bracket, DIN rail for 3 stations       |
| ...   | ...                                             |
| D24*1 | With DIN bracket, DIN rail for 24 stations      |

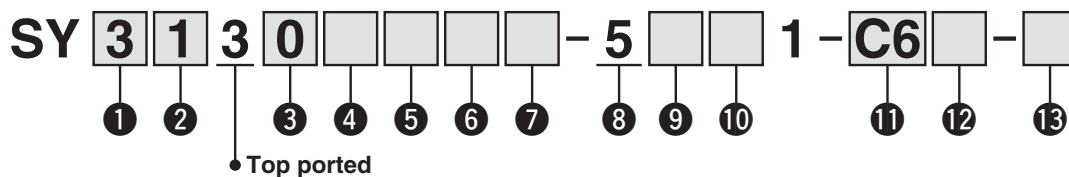
- \*1: Specify a longer rail than the length of valve stations.
- \*: If the DIN rail must be mounted without an SI Unit, select "D0". Then, refer to L3 of the dimensions for the DIN rail length and order separately. Refer to page 249 for the DIN rail part number.
- \*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

\*: A separate GW Unit and communication cable are required.

For details about the EX500 Gateway-type Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 235 in this catalogue. Please download the Operation Manual via SMC website, <http://www.smc.eu>

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



### 1 Series

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

### 2 Type of actuation

|     |                              |                 |
|-----|------------------------------|-----------------|
| 1   | 2-position                   | Single          |
| 2   |                              | Double          |
| 3   | 3-position                   | Closed centre   |
| 4   |                              | Exhaust centre  |
| 5   |                              | Pressure centre |
| A*1 | 4-position dual 3-port valve | N.C./N.C.       |
| B*1 |                              | N.O./N.O.       |
| C*1 |                              | N.C./N.O.       |

\*1: Select the rubber seal type for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 5 Back pressure check valve (Built-in valve type)

|     |          |
|-----|----------|
| —   | None     |
| H*1 | Built-in |

\*1: Select the rubber seal type when the back pressure check valve is built-in. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. For ordering example, refer to page 256. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: Select "—" for 3-position type and the SY7000.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Select the metal seal type for high pressure type.

### 7 Coil type

|   |                                                      |
|---|------------------------------------------------------|
| — | Standard                                             |
| T | With power saving circuit (Continuous duty type)*1*2 |

\*1: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*2: Be careful of the energising time when the power saving circuit is selected. For details, refer to page 268.

### 8 Rated voltage

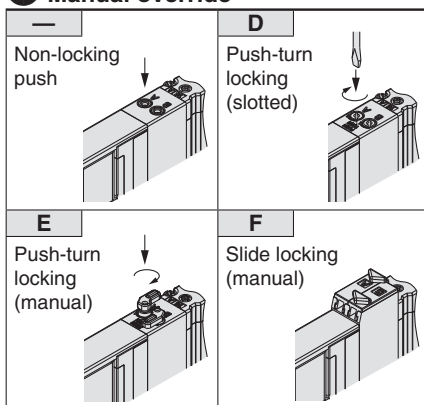
|   |         |
|---|---------|
| 5 | 24 V DC |
|---|---------|

### 9 Light/surge voltage suppressor and common specification

|    | With light | Surge voltage suppressor | Common specification |
|----|------------|--------------------------|----------------------|
| R  | —          | ●                        | Non-polar            |
| U  | ●          |                          |                      |
| NS | —          |                          | Negative common      |
| NZ | ●          |                          |                      |

\*: Select "NZ" for with the power saving circuit.

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 A, B port size

#### Thread piping

| Port size | SY3000   | SY5000 | SY7000 |
|-----------|----------|--------|--------|
| M5        | M5 x 0.8 | ●      | —      |
| O1        | 1/8      | —      | ●      |
| O2        | 1/4      | —      | ●      |

#### One-touch fitting (Metric)

| A, B port | SY3000 | SY5000 | SY7000 |
|-----------|--------|--------|--------|
| C2        | Ø 2    | ●      | —      |
| C3        | Ø 3.2  | ●      | —      |
| C4        | Ø 4    | ●      | —      |
| C6        | Ø 6    | ●      | ●      |
| C8        | Ø 8    | —      | ●      |
| C10       | Ø 10   | —      | ●      |
| C12       | Ø 12   | —      | ●      |

#### One-touch fitting (Inch)

| A, B port | SY3000  | SY5000 | SY7000 |
|-----------|---------|--------|--------|
| N1        | Ø 1/8"  | ●      | —      |
| N3        | Ø 5/32" | ●      | —      |
| N7        | Ø 1/4"  | ●      | ●      |
| N9        | Ø 5/16" | —      | ●      |
| N11       | Ø 3/8"  | —      | ●      |

### 12 A, B port thread type

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

\*: Select "—" for M5.

### 13 Type of mounting screw

|   |                                                               |
|---|---------------------------------------------------------------|
| — | Round head combination screw                                  |
| B | Hexagon socket head cap screw                                 |
| K | Round head combination screw (Falling-out-prevention type*1)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type*1) |

\*1: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

\*: Select "—" or "K" for the optional individual SUP/EXH spacer assembly or interface regulator.

# Plug-in Connector Connecting Base

EX500 Gateway Decentralised System (64 Points)

Type 12  
Top Ported

# Series SY3000/5000/7000



## How to Order Manifold

SS5Y **3** - 12S **A2** - **05** **U** **□** - **□** **□**

1 2 3 4 5 6 7

Refer to pages 210 to 212 for dimensions of Type 12/Top ported type.

### 1 Series

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

\*: For mixed mounting, refer to page 213 and later.

### 2 SI Unit (Number of outputs, Output polarity, Max. number of valve stations)

|     |                                                                |
|-----|----------------------------------------------------------------|
| 0   | Without SI Unit                                                |
| A2  | 16 outputs, Positive common*1, 1 to 8 stations (16 stations)*2 |
| A2N | 16 outputs, Negative common*1, 1 to 8 stations (16 stations)*2 |

\*1: Ensure a match with the common specification of the valve to be used.

\*2: ( ): Maximum number of stations for mixed single and double wiring.

### 4 P, E port entry

|     |                               |
|-----|-------------------------------|
| U*1 | U side (2 to 10 stations)     |
| D*1 | D side (2 to 10 stations)     |
| B   | Both sides (2 to 16 stations) |

\*1: ⑤ For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

### 5 SUP/EXH block assembly

|   |                                  |
|---|----------------------------------|
| — | Internal pilot                   |
| S | Internal pilot/Built-in silencer |
| R | External pilot                   |

\*: For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)

\*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

### 3 Valve stations

| Symbol | Stations    | Note                                                 |
|--------|-------------|------------------------------------------------------|
| 02     | 2 stations  | Double wiring*1                                      |
| :      | :           |                                                      |
| 08     | 8 stations  | Specified layout*2<br>(Available up to 16 solenoids) |
| 02     | 2 stations  |                                                      |
| :      | :           |                                                      |
| 16     | 16 stations |                                                      |

\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

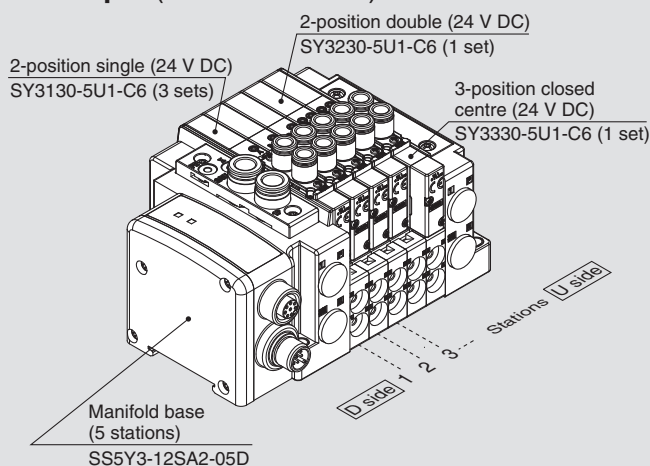
\*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

\*: When the product without the SI Unit (S0) is selected, note the maximum number of solenoids of the SI Unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

\*: This also includes the number of blanking plate assembly.

## How to Order Manifold Assembly

### Example (SS5Y3-12SA2-□)



SS5Y3-12SA2-05D ... 1 set (Type 12 5-station manifold base part no.)  
 \*SY3130-5U1-C6 ..... 3 sets (2-position single part no.)  
 \*SY3230-5U1-C6 ..... 1 set (2-position double part no.)  
 \*SY3330-5U1-C6 ..... 1 set (3-position closed centre part no.)

The asterisk denotes the symbol for assembly. Prefix it to the part numbers of the valve etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

### 6 P, E port size (One-touch fittings)

| Symbol | SY3000  | SY5000 | SY7000 |
|--------|---------|--------|--------|
| —      | Ø 8     | Ø 10   | Ø 12   |
| N      | Ø 5/16" | Ø 3/8" | Ø 1/2" |

\*: For N, sizes are in inches.

### 7 Mounting

| —     | Direct mounting                                 |
|-------|-------------------------------------------------|
| D     | With DIN bracket, DIN rail with standard length |
| D0    | With DIN bracket, without DIN rail              |
| D3*1  | With DIN bracket, DIN rail for 3 stations       |
| :     | :                                               |
| D16*1 | With DIN bracket, DIN rail for 16 stations      |

\*1: Specify a longer rail than the length of valve stations.

\*: If the DIN rail must be mounted without an SI Unit, select "D0". Then, refer to L3 of the dimensions for the DIN rail length and order separately. Refer to page 249 for the DIN rail part number.

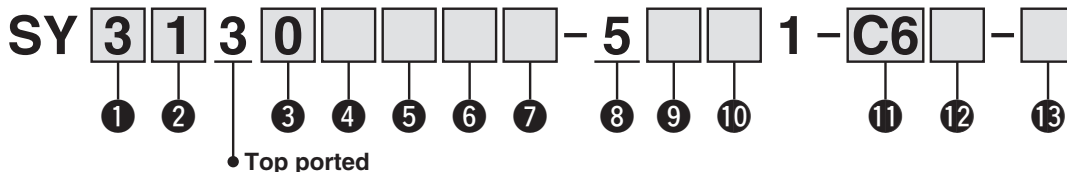
\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

\*: A separate GW Unit and communication cable are required.

For details about the EX500 Gateway-type Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 236 in this catalogue. Please download the Operation Manual via SMC website, <http://www.smc.eu>

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



### 1 Series

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

### 2 Type of actuation

|     |             |                 |
|-----|-------------|-----------------|
| 1   | 2-position  | Single          |
| 2   |             | Double          |
| 3   | 3-position  | Closed centre   |
| 4   |             | Exhaust centre  |
| 5   |             | Pressure centre |
| A*1 | 4-position  | N.C./N.C.       |
| B*1 | dual 3-port | N.O./N.O.       |
| C*1 |             | N.C./N.O.       |

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 5 Back pressure check valve (Built-in valve type)

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

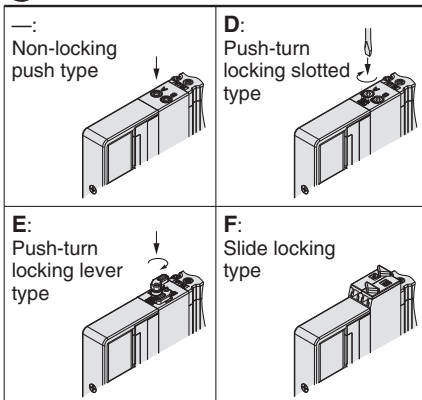
|   |         |
|---|---------|
| 5 | 24 V DC |
|---|---------|

### 9 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| R      | —          | ●                        | Non-polar            |
| U      | ●          |                          | Positive common      |
| S      | —          |                          | Negative common      |
| Z      | ●          |                          |                      |
| NS     | —          |                          |                      |
| NZ     | ●          |                          |                      |

\*: Select "Z" or "NZ" for with the power saving circuit. Select a valve from R, U, S or Z when the SI Unit specification is A2 (positive common). Select a valve from R, U, NS or NZ when the SI Unit specification is A2N (negative common).

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 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)

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| C2     | Ø 2       | ●      | —      | —      |
| C3     | Ø 3.2     | ●      | —      | —      |
| C4     | Ø 4       | ●      | ●      | —      |
| C6     | Ø 6       | ●      | ●      | ●      |
| C8     | Ø 8       | —      | ●      | ●      |
| C10    | Ø 10      | —      | —      | ●      |
| C12    | Ø 12      | —      | —      | ●      |

#### One-touch fitting (Inch)

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| N1     | Ø 1/8"    | ●      | —      | —      |
| N3     | Ø 5/32"   | ●      | ●      | —      |
| N7     | Ø 1/4"    | ●      | ●      | ●      |
| N9     | Ø 5/16"   | —      | ●      | ●      |
| N11    | Ø 3/8"    | —      | —      | ●      |

### 12 Thread type

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

\*: Only — is available for M5.

### 13 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.



Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

EX600

# Series SY3000/5000/7000



## How to Order Manifold

Refer to pages 208 (SY5000) and 209 (SY7000) for dimensions of Type 11/Bottom ported type.

SS5Y **3** - **10** S6 **Q** **2** - **05** **U** - **C6**

1 2 3 4 5 6 7 8 9

### 1 Series

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

### 2 Type

|    |                 |
|----|-----------------|
| 10 | Side ported     |
| 11 | Bottom ported*1 |

\*1: The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to "Plug-in Mixed Mounting Type Manifold" (from page 213).

### 3 SI Unit

|    |                                            |
|----|--------------------------------------------|
| 0  | Without SI Unit                            |
| Q  | DeviceNet™                                 |
| N  | PROFIBUS DP                                |
| V  | CC-Link                                    |
| ZE | EtherNet/IP™ (1 port)                      |
| EA | EtherNet/IP™ (2 ports)                     |
| D  | EtherCAT®                                  |
| F  | PROFINET                                   |
| WE | EtherNet/IP™ compatible wireless master *1 |
| WF | PROFINET compatible wireless master *1     |
| WS | Wireless slave *1                          |

\*1 The wireless system is suitable for use only in a country where it is in accordance with the Radio Act and regulations of that country.

\*: I/O Unit cannot be mounted without SI Unit.

\*: Valve plate which connects manifold and SI Unit is not mounted to a valve without SI Unit. Refer to the EX600 catalogue (CAT.EU02-24E-UK) for mounting.

### 4 SI Unit output polarity, end plate type

| SI Unit output polarity | Power supply with M12 connector | Power supply with 7/8 inch connector | Power supply with M12 connector. IN/OUT pin arrangement 1 | Power supply with M12 connector. IN/OUT pin arrangement 2 |
|-------------------------|---------------------------------|--------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|
| Without SI Unit         | —                               |                                      |                                                           |                                                           |
| SI Unit positive common | 2                               | 3                                    | 6                                                         | 8                                                         |
| SI Unit negative common | 4                               | 5                                    | 7                                                         | 9                                                         |

\*: Ensure a match with the common specification of the valve to be used.

\*: Without SI Unit, the symbol is —.

### 5 I/O Unit stations

|   |            |
|---|------------|
| — | None       |
| 1 | 1 station  |
| ⋮ | ⋮          |
| 9 | 9 stations |

\*: Without SI Unit, the symbol is —.

\*: SI Unit is not included in I/O Unit stations.

\*: When I/O Unit is selected, it is shipped separately, and assembled by users. Refer to the attached operation manual for mounting.

### 6 Valve stations

| Symbol | Stations    | Note                                                 |
|--------|-------------|------------------------------------------------------|
| 02     | 2 stations  | Double wiring*1                                      |
| ⋮      | ⋮           |                                                      |
| 16     | 16 stations | Specified layout*2<br>(Available up to 32 solenoids) |
| 02     | 2 stations  |                                                      |
| ⋮      | ⋮           |                                                      |
| 24     | 24 stations |                                                      |

\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

\*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

\*: This also includes the number of blanking plate assembly.

### 9 Mounting and Option

| Symbol | Mounting          | Option     |                |
|--------|-------------------|------------|----------------|
|        |                   | Name plate | Station number |
| —      | Direct mounting   | —          | —              |
| AA     |                   | ●          | ●              |
| BA     | DIN rail mounting | ●          | —              |
| D□     |                   | —          | —              |
| A□     |                   | ●          | ●              |
| B□     |                   | ●          | —              |

\*: Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" below.)

\*: Only direct mounting is available for Type 11 (Bottom ported).

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

#### DIN Rail Option

|    |                                 |                                                                    |
|----|---------------------------------|--------------------------------------------------------------------|
| —  | Direct mounting                 |                                                                    |
| 0  | Without DIN rail (with bracket) |                                                                    |
| 3  | For 3 stations                  | Specify a longer rail than the total length of specified stations. |
| ⋮  | ⋮                               |                                                                    |
| 24 | For 24 stations                 |                                                                    |

\*: If the DIN rail must be mounted without an SI Unit, select D0. Then, refer to L3 of the dimensions for the DIN rail length and order separately. (Refer to page 249 for the DIN rail part number.)

### 7 P, E port entry, SUP/EXH block assembly

| P, E port entry               | Internal pilot | Internal pilot, Built-in silencer | External pilot |
|-------------------------------|----------------|-----------------------------------|----------------|
| U side (2 to 10 stations)     | U              | C                                 | G              |
| D side (2 to 10 stations)     | D              | E                                 | H              |
| Both sides (2 to 24 stations) | B              | F                                 | J              |

\*: 3/5(E) port is plugged for the built-in silencer type.

\*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

Refer to the page on the right for 8.

For details about the EX600 Integrated-type (For Input/Output) Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to pages 237 and 238 in this catalogue. (IP40 specifications may be required according to the I/O Unit to be selected.) Please download the Operation Manual via SMC website, <http://www.smc.eu>



## 8 A, B port size (Metric/One-touch fitting)

| Symbol                              | A, B port                                                      | Type 10/Side ported |        |        | Type 11/Bottom ported |        |
|-------------------------------------|----------------------------------------------------------------|---------------------|--------|--------|-----------------------|--------|
|                                     |                                                                | SY3000              | SY5000 | SY7000 | SY5000                | SY7000 |
| C2                                  | Ø 2                                                            | ●                   | —      | —      | —                     | —      |
| C3                                  | Ø 3.2                                                          | ●                   | —      | —      | —                     | —      |
| C4                                  | Ø 4                                                            | ●                   | ●      | —      | ●                     | —      |
| C6                                  | Ø 6                                                            | ●                   | ●      | ●      | ●                     | ●      |
| C8                                  | Ø 8                                                            | —                   | ●      | ●      | ●                     | ●      |
| C10                                 | Ø 10                                                           | —                   | —      | ●      | —                     | ●      |
| C12                                 | Ø 12                                                           | —                   | —      | ●      | —                     | ●      |
| CM*1                                | Straight port, mixed sizes                                     | ●                   | ●      | ●      | ●                     | ●      |
| L4                                  | Ø 4                                                            | ●                   | ●      | —      | —                     | —      |
| L6                                  | Ø 6                                                            | ●                   | ●      | ●      | —                     | —      |
| L8                                  | Ø 8                                                            | —                   | ●      | ●      | —                     | —      |
| L10                                 | Ø 10                                                           | —                   | —      | ●      | —                     | —      |
| L12                                 | Ø 12                                                           | —                   | —      | ●      | —                     | —      |
| B4                                  | Ø 4                                                            | ●                   | ●      | —      | —                     | —      |
| B6                                  | Ø 6                                                            | ●                   | ●      | ●      | —                     | —      |
| B8                                  | Ø 8                                                            | —                   | ●      | ●      | —                     | —      |
| B10                                 | Ø 10                                                           | —                   | —      | ●      | —                     | —      |
| B12                                 | Ø 12                                                           | —                   | —      | ●      | —                     | —      |
| LM*1                                | Elbow port, mixed sizes (Including upward and downward piping) | ●                   | ●      | ●      | —                     | —      |
| P, E port size (One-touch fittings) |                                                                | Ø 8                 | Ø 10   | Ø 12   | Ø 10                  | Ø 12   |

\*1: Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

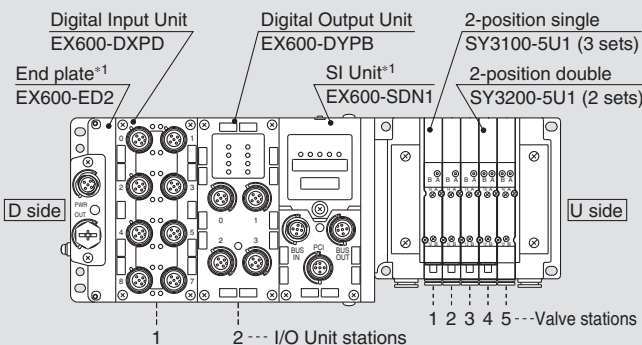
\*2: To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 250 to 252).

## A, B port size (Inch/One-touch fitting)

| Symbol                              | A, B port                                                      | Type 10/Side ported |        |        | Type 11/Bottom ported |        |
|-------------------------------------|----------------------------------------------------------------|---------------------|--------|--------|-----------------------|--------|
|                                     |                                                                | SY3000              | SY5000 | SY7000 | SY5000                | SY7000 |
| N1                                  | Ø 1/8"                                                         | ●                   | —      | —      | —                     | —      |
| N3                                  | Ø 5/32"                                                        | ●                   | ●      | —      | ●                     | —      |
| N7                                  | Ø 1/4"                                                         | ●                   | ●      | ●      | ●                     | ●      |
| N9                                  | Ø 5/16"                                                        | —                   | ●      | ●      | ●                     | ●      |
| N11                                 | Ø 3/8"                                                         | —                   | —      | ●      | —                     | ●      |
| CM*1                                | Straight port, mixed sizes                                     | ●                   | ●      | ●      | ●                     | ●      |
| LN3                                 | Ø 5/32"                                                        | ●                   | —      | —      | —                     | —      |
| LN7                                 | Ø 1/4"                                                         | ●                   | ●      | —      | —                     | —      |
| LN9                                 | Ø 5/16"                                                        | —                   | ●      | —      | —                     | —      |
| LN11                                | Ø 3/8"                                                         | —                   | —      | ●      | —                     | —      |
| BN3                                 | Ø 5/32"                                                        | ●                   | —      | —      | —                     | —      |
| BN7                                 | Ø 1/4"                                                         | ●                   | ●      | —      | —                     | —      |
| BN9                                 | Ø 5/16"                                                        | —                   | ●      | —      | —                     | —      |
| BN11                                | Ø 3/8"                                                         | —                   | —      | ●      | —                     | —      |
| LM*1                                | Elbow port, mixed sizes (Including upward and downward piping) | ●                   | ●      | ●      | —                     | —      |
| P, E port size (One-touch fittings) |                                                                | Ø 5/16"             | Ø 3/8" | Ø 1/2" | Ø 3/8"                | Ø 1/2" |

## How to Order Manifold Assembly

### Example (SS5Y3-10S6□-□)



SS5Y3-10S6Q42-05B-C6... 1 set (Type 10 5-station manifold base part no.)

\*SY3100-5U1 ..... 3 sets (2-position single part no.)

\*SY3200-5U1 ..... 2 sets (2-position double part no.)

\*EX600-DXPD ..... 1 set I/O Unit part number (Station 1)

\*EX600-DYPB ..... 1 set I/O Unit part number (Station 2)

The asterisk denotes the symbol for assembly. Prefix it to the part numbers of the valve etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted, then the I/O Units in order from the 1st station as shown in the figure on the left. If the arrangement becomes complicated, specify on a manifold specification sheet.

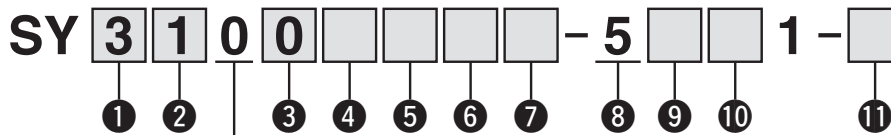
\*1: Do not enter the SI Unit part number and the end plate part number together.

\*: When mixing top ported configurations, select from page 172.

In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



Base mounted

### 1 Series

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

### 2 Type of actuation

|     |                        |                 |
|-----|------------------------|-----------------|
| 1   | 2-position             | Single          |
| 2   |                        | Double          |
| 3   | 3-position             | Closed centre   |
| 4   |                        | Exhaust centre  |
| 5   |                        | Pressure centre |
| A*1 | 4-position dual 3-port | N.C./N.C.       |
| B*1 |                        | N.O./N.O.       |
| C*1 |                        | N.C./N.O.       |

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 5 Back pressure check valve (Built-in valve type)

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

|   |         |
|---|---------|
| 5 | 24 V DC |
|---|---------|

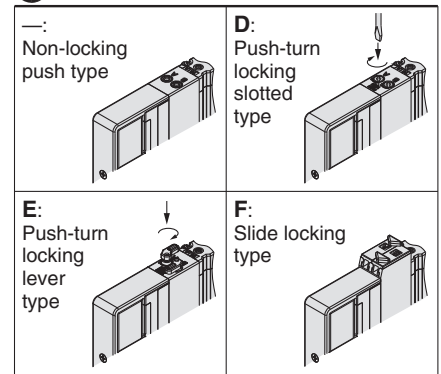
### 9 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| R      | —          | ●                        | Non-polar            |
| U      | ●          |                          | Positive common      |
| S      | —          |                          | Negative common      |
| Z      | ●          |                          |                      |
| NS     | —          |                          |                      |
| NZ     | ●          |                          |                      |

\*: Select a valve from R, U, S or Z when the SI Unit polarity is positive common. Select a valve from R, U, NS or NZ when the SI Unit output polarity is negative common.

\*: Only "Z" and "NZ" types are available for with the power saving circuit.

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

## Dimensions: Series SY3000

## Plug-in Connector Connecting Base

Type 10/Side Ported

## EX600 (M12 Connector)

## Valve

### Plug-in Sub-plate

## Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

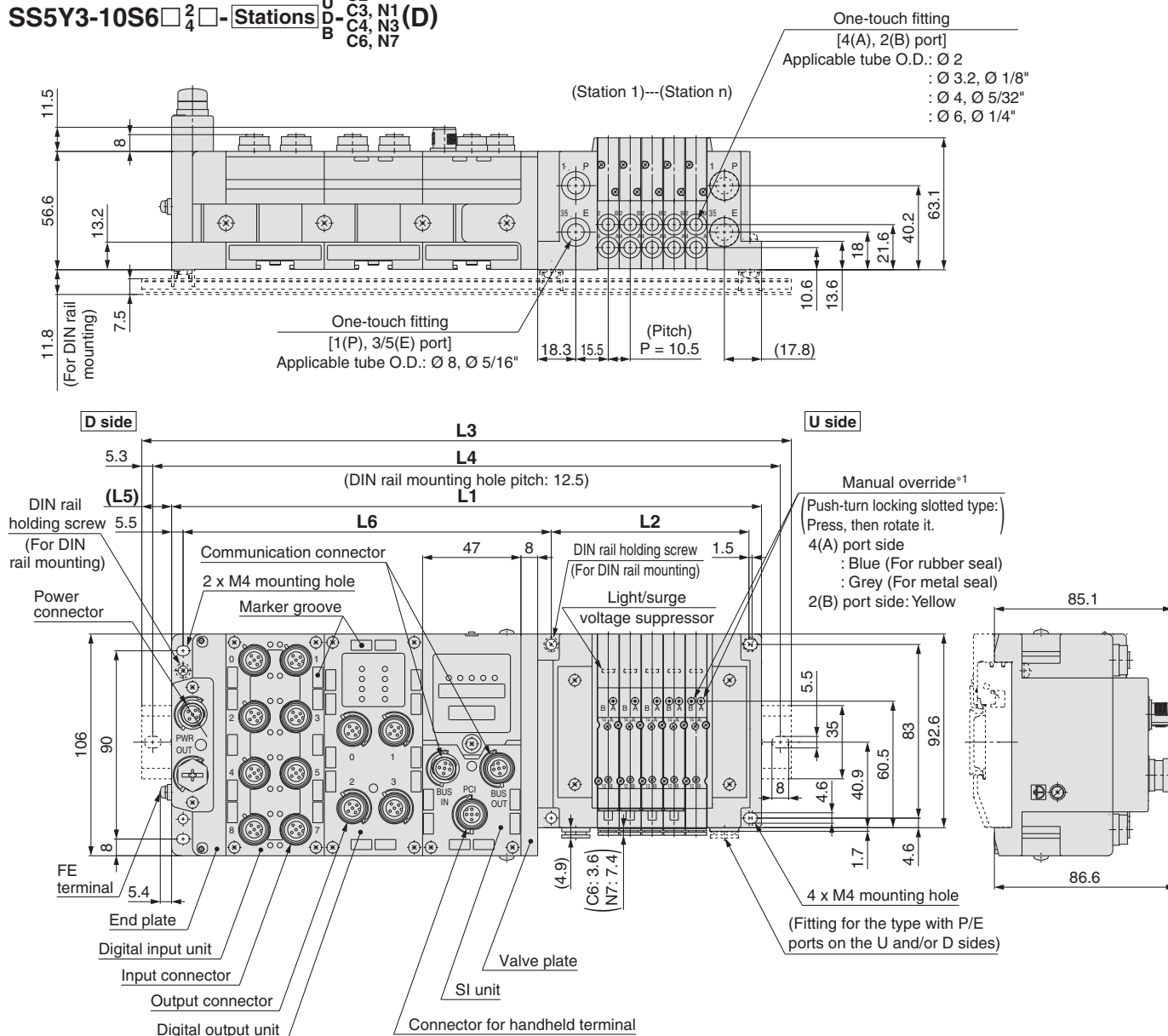
## Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

## Manifold Options

SS5Y3-10S6  $\square \frac{2}{4} \square$  - Stations  $\begin{matrix} \text{U} & \text{C2} \\ \text{D} & \text{C3, N1} \\ \text{B} & \text{C4, N3} \\ & \text{C6, N7} \end{matrix}$  (D)


$$\begin{aligned} L1 &= 10.5 \times n1 + 135.5 + 47 \times n2 \\ L2 &= 10.5 \times n1 + 42 \\ L4 &= L3 - 10.5 \\ L5 &= (L3 - L1)/2 \\ L6 &= 47 \times n2 + 82 \end{aligned}$$

n1: Valve stations  
n2: I/O Unit stations

\*1: Refer to page 205 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y3-10S6Q22-05D-C6".

\*: Refer to page 210 for dimensions of A or B port top-ported type.

### L3: DIN Rail Overall Length

| Table 1: Valve Station Spacing               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|----------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| I/O Unit stations (n2) \ Valve stations (n1) | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
| 0                                            | 185.5 | 198   | 210.5 | 223   | 223   | 235.5 | 248   | 260.5 | 273   | 285.5 | 285.5 | 298   | 310.5 | 323   | 335.5 | 348   | 348   | 360.5 | 373   | 385.5 | 398   | 410.5 | 423   |
| 1                                            | 235.5 | 248   | 248   | 260.5 | 273   | 285.5 | 298   | 310.5 | 323   | 323   | 335.5 | 348   | 360.5 | 373   | 385.5 | 385.5 | 398   | 410.5 | 423   | 435.5 | 448   | 448   | 460.5 |
| 2                                            | 285.5 | 285.5 | 298   | 310.5 | 323   | 335.5 | 348   | 348   | 360.5 | 373   | 385.5 | 398   | 410.5 | 423   | 435.5 | 448   | 460.5 | 473   | 485.5 | 485.5 | 498   | 510.5 | 510.5 |
| 3                                            | 323   | 335.5 | 348   | 360.5 | 373   | 385.5 | 385.5 | 398   | 410.5 | 423   | 435.5 | 448   | 448   | 460.5 | 473   | 485.5 | 498   | 510.5 | 510.5 | 523   | 535.5 | 548   | 560.5 |
| 4                                            | 373   | 385.5 | 398   | 410.5 | 410.5 | 423   | 435.5 | 448   | 460.5 | 473   | 473   | 485.5 | 498   | 510.5 | 523   | 535.5 | 548   | 548   | 560.5 | 573   | 585.5 | 598   | 610.5 |
| 5                                            | 423   | 435.5 | 448   | 448   | 460.5 | 473   | 485.5 | 498   | 510.5 | 510.5 | 523   | 535.5 | 548   | 560.5 | 573   | 573   | 585.5 | 598   | 610.5 | 623   | 635.5 | 635.5 | 648   |
| 6                                            | 473   | 473   | 485.5 | 498   | 510.5 | 523   | 535.5 | 535.5 | 548   | 560.5 | 573   | 585.5 | 598   | 610.5 | 610.5 | 623   | 635.5 | 648   | 660.5 | 673   | 673   | 685.5 | 698   |
| 7                                            | 510.5 | 523   | 535.5 | 548   | 560.5 | 573   | 573   | 585.5 | 598   | 610.5 | 623   | 635.5 | 635.5 | 648   | 660.5 | 673   | 685.5 | 698   | 698   | 710.5 | 723   | 735.5 | 748   |
| 8                                            | 560.5 | 573   | 585.5 | 598   | 598   | 610.5 | 623   | 635.5 | 648   | 660.5 | 673   | 673   | 685.5 | 698   | 710.5 | 723   | 735.5 | 735.5 | 748   | 760.5 | 773   | 785.5 | 798   |
| 9                                            | 610.5 | 623   | 635.5 | 635.5 | 648   | 660.5 | 673   | 685.5 | 698   | 698   | 710.5 | 723   | 735.5 | 748   | 760.5 | 760.5 | 773   | 785.5 | 798   | 810.5 | 823   | 835.5 | 835.5 |

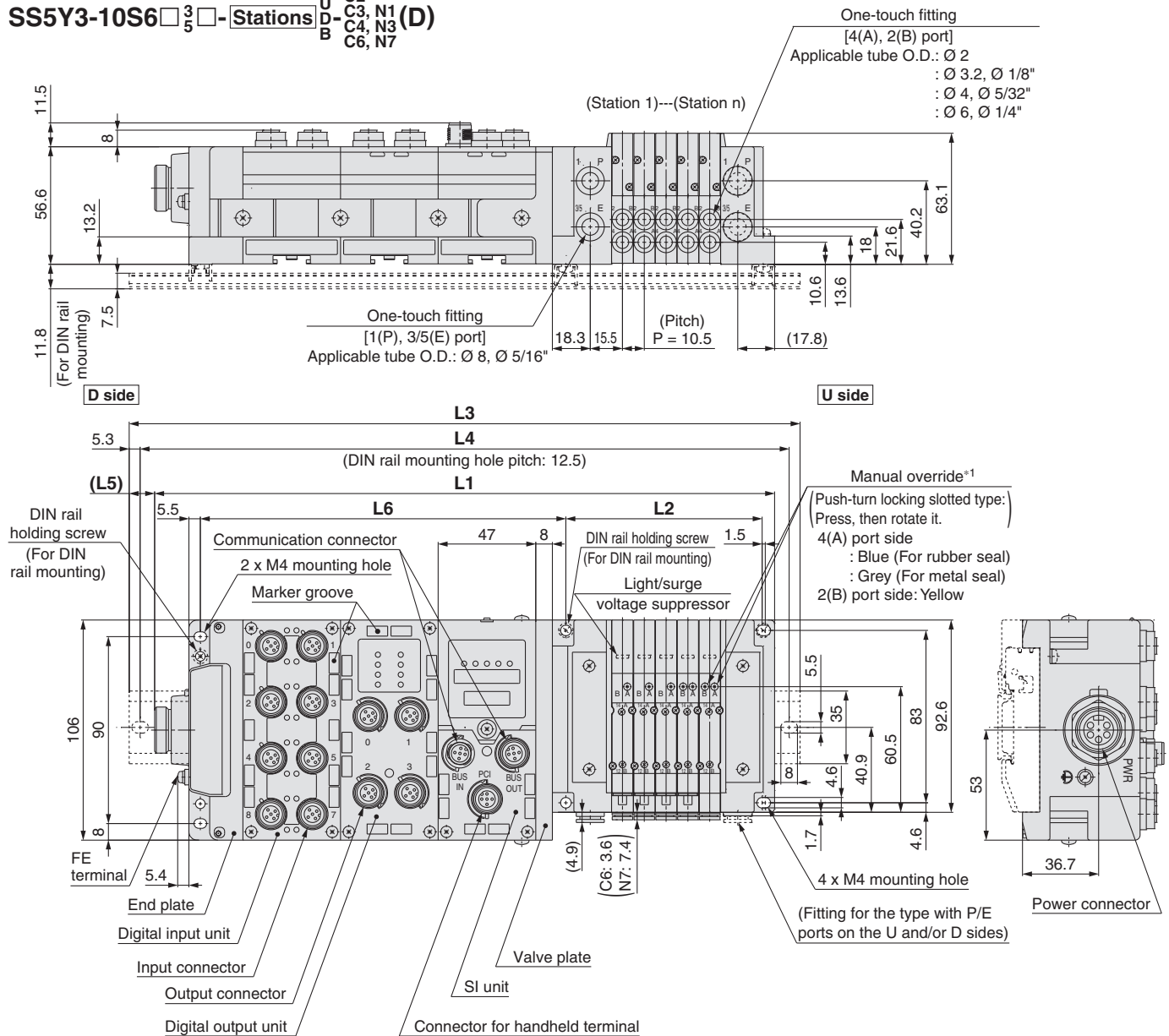
# Series SY3000/5000/7000

## Dimensions: Series SY3000

### Plug-in Connector Connecting Base

### Type 10/Side Ported EX600 (7/8 Inch Connector)

SS5Y3-10S6□<sup>3</sup>/<sub>5</sub>□ - Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix} \begin{matrix} \text{C2} \\ \text{C3, N1 (D)} \\ \text{C4, N3} \\ \text{C6, N7} \end{matrix}$



$$\begin{aligned} L1 &= 10.5 \times n1 + 152 + 47 \times n2 \\ L2 &= 10.5 \times n1 + 42 \\ L4 &= L3 - 10.5 \\ L5 &= (L3 - L1)/2 \\ L6 &= 47 \times n2 + 82 \end{aligned}$$

n1: Valve stations  
n2: I/O Unit stations

### L3: DIN Rail Overall Length

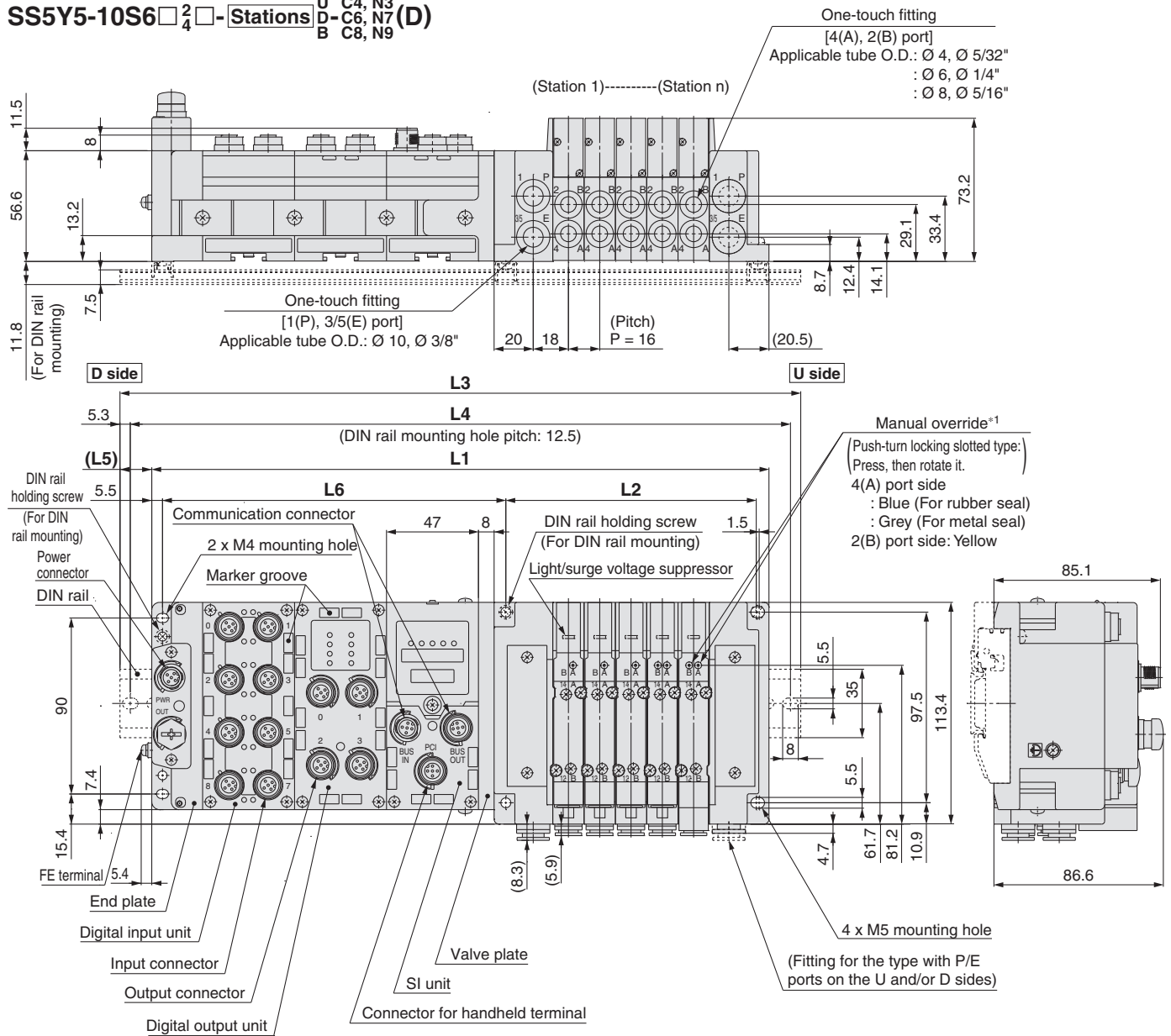
| Valve stations (n1)<br>I/O Unit stations (n2) | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|-----------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0                                             | 198   | 210.5 | 223   | 235.5 | 248   | 260.5 | 260.5 | 273   | 285.5 | 298   | 310.5 | 323   | 323   | 335.5 | 348   | 360.5 | 373   | 385.5 | 385.5 | 398   | 410.5 | 423   | 435.5 |
| 1                                             | 248   | 260.5 | 273   | 285.5 | 285.5 | 298   | 310.5 | 323   | 335.5 | 348   | 360.5 | 360.5 | 373   | 385.5 | 398   | 410.5 | 423   | 423   | 435.5 | 448   | 460.5 | 473   | 485.5 |
| 2                                             | 298   | 310.5 | 323   | 323   | 335.5 | 348   | 360.5 | 373   | 385.5 | 385.5 | 398   | 410.5 | 423   | 435.5 | 448   | 448   | 460.5 | 473   | 485.5 | 498   | 510.5 | 523   | 523   |
| 3                                             | 348   | 348   | 360.5 | 373   | 385.5 | 398   | 410.5 | 423   | 423   | 435.5 | 448   | 460.5 | 473   | 485.5 | 485.5 | 498   | 510.5 | 523   | 535.5 | 548   | 548   | 560.5 | 573   |
| 4                                             | 385.5 | 398   | 410.5 | 423   | 435.5 | 448   | 448   | 460.5 | 473   | 485.5 | 498   | 510.5 | 510.5 | 523   | 535.5 | 548   | 560.5 | 573   | 585.5 | 585.5 | 598   | 610.5 | 623   |
| 5                                             | 435.5 | 448   | 460.5 | 473   | 485.5 | 485.5 | 498   | 510.5 | 523   | 535.5 | 548   | 548   | 560.5 | 573   | 585.5 | 598   | 610.5 | 623   | 635.5 | 648   | 660.5 | 673   |       |
| 6                                             | 485.5 | 498   | 510.5 | 510.5 | 523   | 535.5 | 548   | 560.5 | 573   | 573   | 585.5 | 598   | 610.5 | 623   | 635.5 | 648   | 648   | 660.5 | 673   | 685.5 | 698   | 710.5 | 710.5 |
| 7                                             | 535.5 | 548   | 548   | 560.5 | 573   | 585.5 | 598   | 610.5 | 610.5 | 623   | 635.5 | 648   | 660.5 | 673   | 673   | 685.5 | 698   | 710.5 | 723   | 735.5 | 735.5 | 748   | 760.5 |
| 8                                             | 573   | 585.5 | 598   | 610.5 | 623   | 635.5 | 635.5 | 648   | 660.5 | 673   | 685.5 | 698   | 710.5 | 710.5 | 723   | 735.5 | 748   | 760.5 | 773   | 773   | 785.5 | 798   | 810.5 |
| 9                                             | 623   | 635.5 | 648   | 660.5 | 673   | 673   | 685.5 | 698   | 710.5 | 723   | 735.5 | 735.5 | 748   | 760.5 | 773   | 785.5 | 798   | 798   | 810.5 | 823   | 835.5 | 848   | 860.5 |

## Dimensions: Series SY5000

### Plug-in Connector Connecting Base

Type 10/Side Ported  
EX600 (M12 Connector)

SS5Y5-10S6□<sup>2</sup>□□-Stations <sup>U</sup>C4, N3  
<sup>D</sup>C6, N7 (D)  
<sup>B</sup>C8, N9



$$L1 = 16 \times n1 + 141.5 + 47 \times n2$$

$$L2 = 16 \times n1 + 48$$

$$L4 = L3 - 10.5$$

$$L5 = (L3 - L1)/2$$

$$L6 = 47 \times n2 + 81.5$$

n1: Valve stations  
n2: I/O Unit stations

\*1: Refer to page 206 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y5-10S6Q22-05D-C8".  
\*: Refer to page 211 for dimensions of A or B port top-ported type.

### L3: DIN Rail Overall Length

| Valve stations (n1)<br>I/O Unit stations (n2) | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|-----------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0                                             | 198   | 223   | 235.5 | 248   | 273   | 285.5 | 298   | 310.5 | 335.5 | 348   | 360.5 | 373   | 398   | 410.5 | 423   | 448   | 460.5 | 473   | 485.5 | 510.5 | 523   | 535.5 | 560.5 |
| 1                                             | 248   | 260.5 | 285.5 | 298   | 310.5 | 335.5 | 348   | 360.5 | 373   | 398   | 410.5 | 423   | 448   | 460.5 | 473   | 485.5 | 510.5 | 523   | 535.5 | 548   | 573   | 585.5 | 598   |
| 2                                             | 298   | 310.5 | 323   | 348   | 360.5 | 373   | 398   | 410.5 | 423   | 435.5 | 460.5 | 473   | 485.5 | 510.5 | 523   | 535.5 | 548   | 573   | 585.5 | 598   | 623   | 635.5 | 648   |
| 3                                             | 348   | 360.5 | 373   | 398   | 410.5 | 423   | 435.5 | 460.5 | 473   | 485.5 | 498   | 523   | 535.5 | 548   | 573   | 585.5 | 598   | 610.5 | 635.5 | 648   | 660.5 | 685.5 | 698   |
| 4                                             | 385.5 | 410.5 | 423   | 435.5 | 460.5 | 473   | 485.5 | 498   | 523   | 535.5 | 548   | 573   | 585.5 | 598   | 610.5 | 635.5 | 648   | 660.5 | 673   | 698   | 710.5 | 723   | 748   |
| 5                                             | 435.5 | 448   | 473   | 485.5 | 498   | 523   | 535.5 | 548   | 560.5 | 585.5 | 598   | 610.5 | 635.5 | 648   | 660.5 | 673   | 698   | 710.5 | 723   | 748   | 760.5 | 773   | 785.5 |
| 6                                             | 485.5 | 498   | 523   | 535.5 | 548   | 560.5 | 585.5 | 598   | 610.5 | 623   | 648   | 660.5 | 673   | 698   | 710.5 | 723   | 735.5 | 760.5 | 773   | 785.5 | 810.5 | 823   | 835.5 |
| 7                                             | 535.5 | 548   | 560.5 | 585.5 | 598   | 610.5 | 623   | 648   | 660.5 | 673   | 698   | 710.5 | 723   | 735.5 | 760.5 | 773   | 785.5 | 798   | 823   | 835.5 | 848   | 873   | 885.5 |
| 8                                             | 573   | 598   | 610.5 | 623   | 648   | 660.5 | 673   | 685.5 | 710.5 | 723   | 735.5 | 760.5 | 773   | 785.5 | 798   | 823   | 835.5 | 848   | 873   | 885.5 | 898   | 910.5 | 935.5 |
| 9                                             | 623   | 648   | 660.5 | 673   | 685.5 | 710.5 | 723   | 735.5 | 748   | 773   | 785.5 | 798   | 823   | 835.5 | 848   | 860.5 | 885.5 | 898   | 910.5 | 935.5 | 948   | 960.5 | 973   |



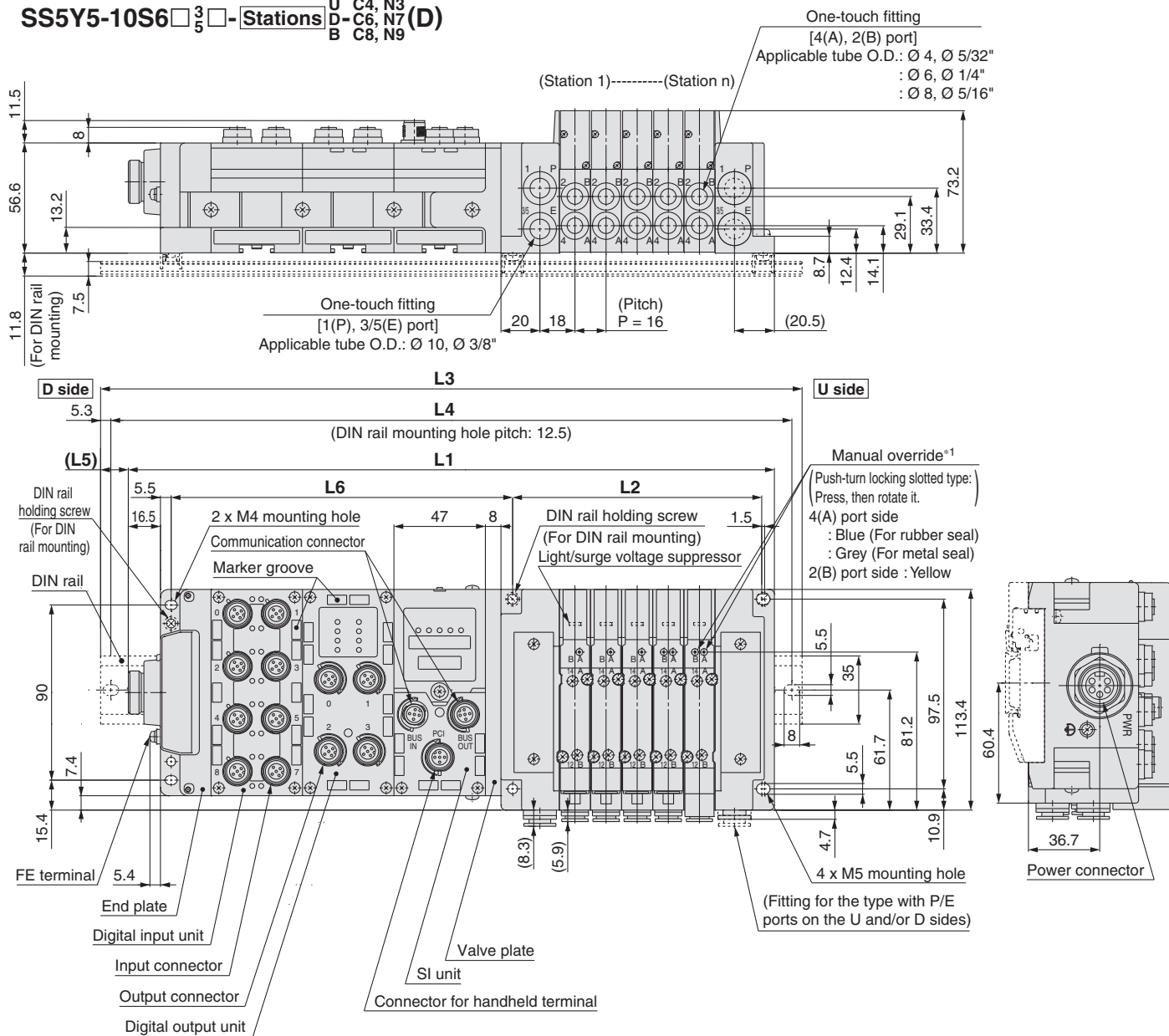
# Series SY3000/5000/7000

## Dimensions: Series SY5000

## Plug-in Connector Connecting Base

## Type 10/Side Ported EX600 (7/8 Inch Connector)

SS5Y5-10S6□□□ - Stations  $\begin{matrix} \text{U} & \text{C4, N3} \\ \text{D} & \text{C6, N7} \\ \text{B} & \text{C8, N9} \end{matrix}$  (D)



$$\begin{aligned} L1 &= 16 \times n1 + 158 + 47 \times n2 \\ L2 &= 16 \times n1 + 48 \\ L4 &= L3 - 10.5 \\ L5 &= (L3 - L1)/2 \\ L6 &= 47 \times n2 + 81.5 \end{aligned}$$

n1: Valve stations  
n2: I/O Unit stations

### L3: DIN Rail Overall Length

| Valve stations (n1)<br>I/O Unit stations (n2) | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|-----------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0                                             | 223   | 235.5 | 248   | 273   | 285.5 | 298   | 310.5 | 335.5 | 348   | 360.5 | 385.5 | 398   | 410.5 | 423   | 448   | 460.5 | 473   | 485.5 | 510.5 | 523   | 535.5 | 560.5 | 573   |
| 1                                             | 260.5 | 285.5 | 298   | 310.5 | 335.5 | 348   | 360.5 | 373   | 398   | 410.5 | 423   | 448   | 460.5 | 473   | 485.5 | 510.5 | 523   | 535.5 | 560.5 | 573   | 585.5 | 598   | 623   |
| 2                                             | 310.5 | 335.5 | 348   | 360.5 | 373   | 398   | 410.5 | 423   | 435.5 | 460.5 | 473   | 485.5 | 510.5 | 523   | 535.5 | 548   | 573   | 585.5 | 598   | 623   | 635.5 | 648   | 660.5 |
| 3                                             | 360.5 | 373   | 398   | 410.5 | 423   | 435.5 | 460.5 | 473   | 485.5 | 510.5 | 523   | 535.5 | 548   | 573   | 585.5 | 598   | 610.5 | 635.5 | 648   | 660.5 | 685.5 | 698   | 710.5 |
| 4                                             | 410.5 | 423   | 435.5 | 460.5 | 473   | 485.5 | 498   | 523   | 535.5 | 548   | 573   | 585.5 | 598   | 610.5 | 635.5 | 648   | 660.5 | 673   | 698   | 710.5 | 723   | 748   | 760.5 |
| 5                                             | 460.5 | 473   | 485.5 | 498   | 523   | 535.5 | 548   | 560.5 | 585.5 | 598   | 610.5 | 635.5 | 648   | 660.5 | 673   | 698   | 710.5 | 723   | 748   | 760.5 | 773   | 785.5 | 810.5 |
| 6                                             | 498   | 523   | 535.5 | 548   | 560.5 | 585.5 | 598   | 610.5 | 635.5 | 648   | 660.5 | 673   | 698   | 710.5 | 723   | 735.5 | 760.5 | 773   | 785.5 | 810.5 | 823   | 835.5 | 848   |
| 7                                             | 548   | 560.5 | 585.5 | 598   | 610.5 | 623   | 648   | 660.5 | 673   | 698   | 710.5 | 723   | 735.5 | 760.5 | 773   | 785.5 | 810.5 | 823   | 835.5 | 848   | 873   | 885.5 | 898   |
| 8                                             | 598   | 610.5 | 623   | 648   | 660.5 | 673   | 685.5 | 710.5 | 723   | 735.5 | 760.5 | 773   | 785.5 | 798   | 823   | 835.5 | 848   | 873   | 885.5 | 898   | 910.5 | 935.5 | 948   |
| 9                                             | 648   | 660.5 | 673   | 685.5 | 710.5 | 723   | 735.5 | 760.5 | 773   | 785.5 | 798   | 823   | 835.5 | 848   | 860.5 | 885.5 | 898   | 910.5 | 935.5 | 948   | 960.5 | 973   | —     |



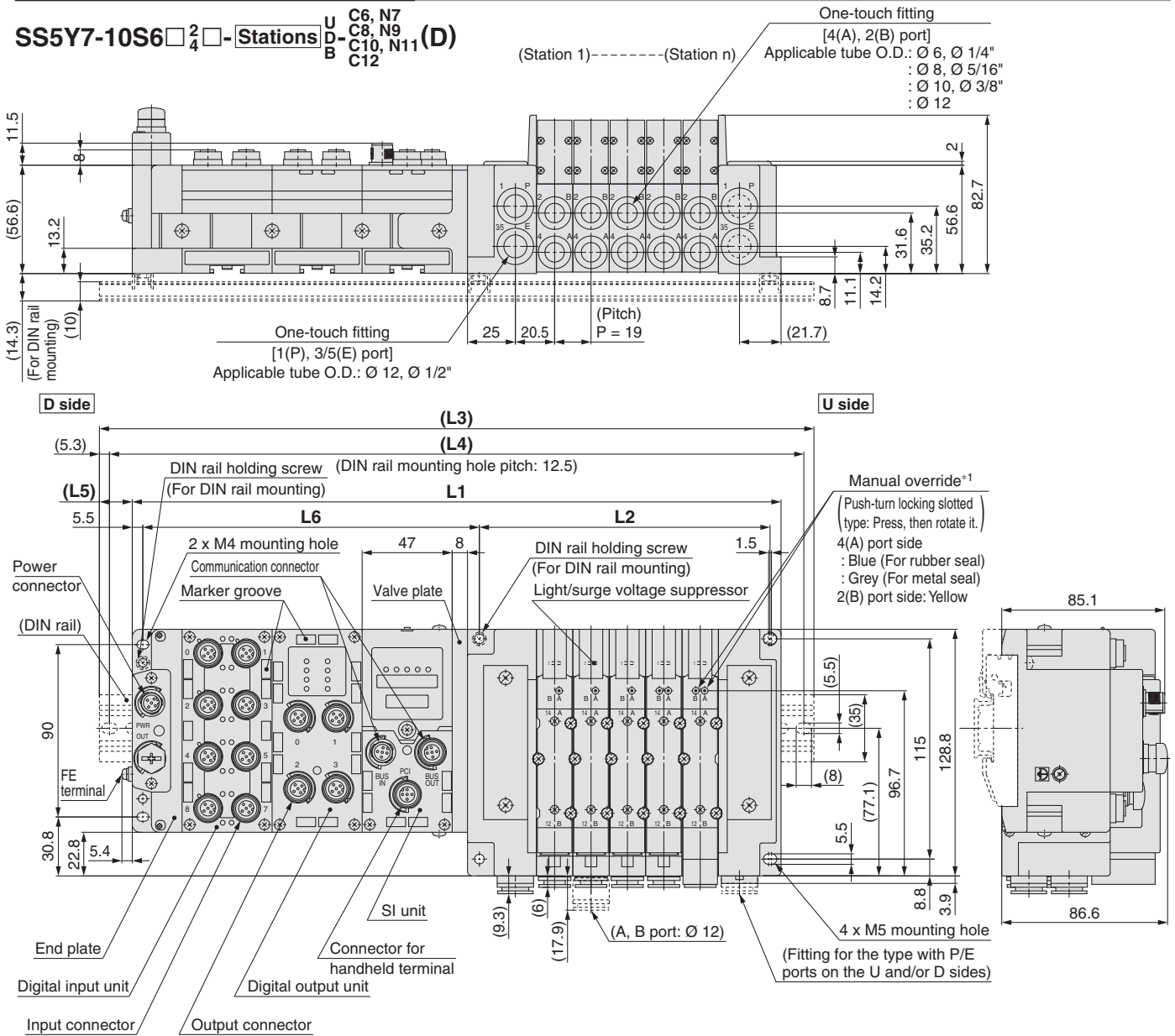
# Dimensions: Series SY7000

## Plug-in Connector Connecting Base

Type 10/Side Ported

EX600 (M12 Connector)

SS5Y7-10S6□<sup>2</sup>□<sup>4</sup>-Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix}$   $\begin{matrix} \text{C6, N7} \\ \text{C8, N9} \\ \text{C10, N11} \end{matrix}$  (D)



L1 = 19 x n1 + 149.7 + 47 x n2  
 L2 = 19 x n1 + 56  
 L3 = DIN rail dimension  
 L4 = L3 - 10.5  
 L5 = (L3 - L1)/2  
 L6 = 47 x n2 + 81.7

n1: Valve stations  
 n2: I/O Unit stations

\*1: Refer to page 207 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
 \*: These figures show the "SS5Y7-10S6Q22-05D-C10".  
 \*: Refer to page 212 for dimensions of A or B port top-ported type.

### L3: DIN Rail Overall Length

| Valve stations (n1)<br>I/O Unit stations (n2) | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|-----------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0                                             | 223   | 235.5 | 260.5 | 273   | 298   | 310.5 | 335.5 | 348   | 373   | 385.5 | 410.5 | 423   | 448   | 460.5 | 485.5 | 498   | 523   | 535.5 | 560.5 | 573   | 598   | 610.5 | 635.5 |
| 1                                             | 260.5 | 285.5 | 298   | 323   | 335.5 | 360.5 | 373   | 398   | 410.5 | 435.5 | 448   | 473   | 498   | 510.5 | 535.5 | 548   | 573   | 585.5 | 610.5 | 623   | 648   | 660.5 | 685.5 |
| 2                                             | 310.5 | 335.5 | 348   | 373   | 385.5 | 410.5 | 423   | 448   | 460.5 | 485.5 | 498   | 523   | 535.5 | 560.5 | 573   | 598   | 610.5 | 635.5 | 648   | 673   | 685.5 | 710.5 | 723   |
| 3                                             | 360.5 | 373   | 398   | 410.5 | 435.5 | 448   | 473   | 485.5 | 510.5 | 523   | 548   | 573   | 585.5 | 610.5 | 623   | 648   | 660.5 | 685.5 | 698   | 723   | 735.5 | 760.5 | 773   |
| 4                                             | 410.5 | 423   | 448   | 460.5 | 485.5 | 498   | 523   | 535.5 | 560.5 | 573   | 598   | 610.5 | 635.5 | 648   | 673   | 685.5 | 710.5 | 723   | 748   | 760.5 | 785.5 | 798   | 823   |
| 5                                             | 448   | 473   | 485.5 | 510.5 | 523   | 548   | 560.5 | 585.5 | 598   | 623   | 648   | 660.5 | 685.5 | 698   | 723   | 735.5 | 760.5 | 773   | 798   | 810.5 | 835.5 | 848   | 873   |
| 6                                             | 498   | 523   | 535.5 | 560.5 | 573   | 598   | 610.5 | 635.5 | 648   | 673   | 685.5 | 710.5 | 723   | 748   | 760.5 | 785.5 | 798   | 823   | 835.5 | 860.5 | 873   | 898   | 923   |
| 7                                             | 548   | 560.5 | 585.5 | 598   | 623   | 635.5 | 660.5 | 673   | 698   | 723   | 735.5 | 760.5 | 773   | 798   | 810.5 | 835.5 | 848   | 873   | 885.5 | 910.5 | 923   | 948   | 960.5 |
| 8                                             | 598   | 610.5 | 635.5 | 648   | 673   | 685.5 | 710.5 | 723   | 748   | 760.5 | 785.5 | 798   | 823   | 835.5 | 860.5 | 873   | 898   | 910.5 | 935.5 | 948   | 973   | —     | —     |
| 9                                             | 635.5 | 660.5 | 673   | 698   | 710.5 | 735.5 | 748   | 773   | 798   | 810.5 | 835.5 | 848   | 873   | 885.5 | 910.5 | 923   | 948   | 960.5 | 985.5 | —     | —     | —     | —     |

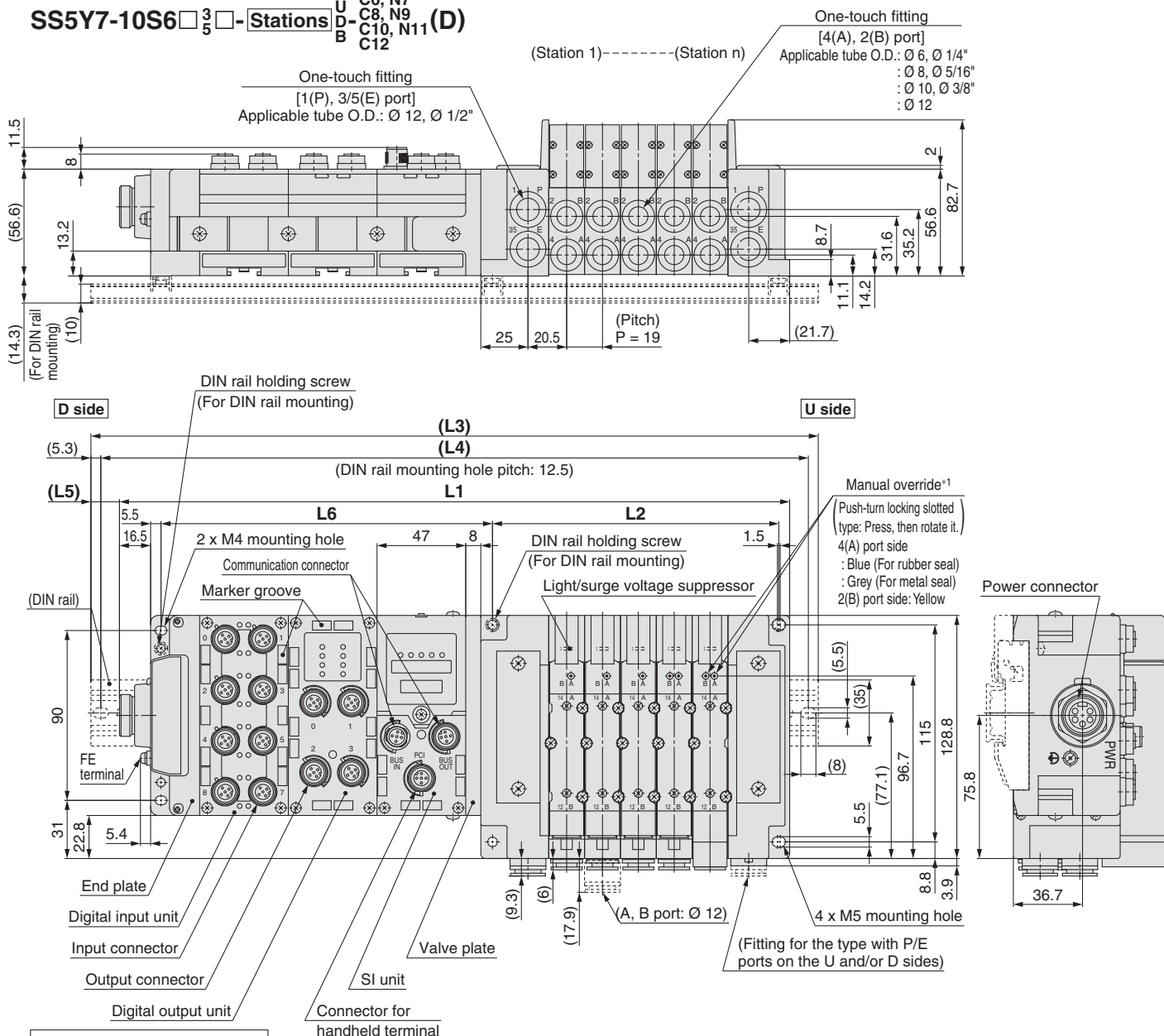
# Series SY3000/5000/7000

## Dimensions: Series SY7000

## Plug-in Connector Connecting Base

## Type 10/Side Ported EX600 (7/8 Inch Connector)

SS5Y7-10S6□<sup>3</sup>/<sub>5</sub>□ - Stations  $\begin{matrix} \text{U} \\ \text{D} \end{matrix} \begin{matrix} \text{C6, N7} \\ \text{C8, N9} \\ \text{C10, N11} \end{matrix} \begin{matrix} \text{D} \\ \text{C12} \end{matrix}$



L1 = 19 x n1 + 166.2 + 47 x n2  
L2 = 19 x n1 + 56  
L3 = 19 x n1 + 10.5  
L4 = (L3 - L1)/2  
L5 = 47 x n2 + 81.7

n1: Valve stations  
n2: I/O Unit stations

\*1: Refer to page 207 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y7-10S6Q32-05D-C10".  
\*: Refer to page 212 for dimensions of A or B port top-ported type.

### L3: DIN Rail Overall Length

| Valve stations (n1)<br>I/O Unit stations (n2) | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|-----------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0                                             | 235.5 | 248   | 273   | 285.5 | 310.5 | 323   | 348   | 360.5 | 385.5 | 410.5 | 423   | 448   | 460.5 | 485.5 | 498   | 523   | 535.5 | 560.5 | 573   | 598   | 610.5 | 635.5 | 648   |
| 1                                             | 285.5 | 298   | 323   | 335.5 | 360.5 | 373   | 398   | 410.5 | 435.5 | 448   | 473   | 485.5 | 510.5 | 523   | 548   | 560.5 | 585.5 | 598   | 623   | 635.5 | 660.5 | 685.5 | 698   |
| 2                                             | 323   | 348   | 360.5 | 385.5 | 398   | 423   | 435.5 | 460.5 | 485.5 | 498   | 523   | 535.5 | 560.5 | 573   | 598   | 610.5 | 635.5 | 648   | 673   | 685.5 | 710.5 | 723   | 748   |
| 3                                             | 373   | 398   | 410.5 | 435.5 | 448   | 473   | 485.5 | 510.5 | 523   | 548   | 560.5 | 585.5 | 598   | 623   | 635.5 | 660.5 | 673   | 698   | 710.5 | 735.5 | 760.5 | 773   | 798   |
| 4                                             | 423   | 435.5 | 460.5 | 473   | 498   | 510.5 | 535.5 | 560.5 | 573   | 598   | 610.5 | 635.5 | 648   | 673   | 685.5 | 710.5 | 723   | 748   | 760.5 | 785.5 | 798   | 823   | 835.5 |
| 5                                             | 473   | 485.5 | 510.5 | 523   | 548   | 560.5 | 585.5 | 598   | 623   | 635.5 | 660.5 | 673   | 698   | 710.5 | 735.5 | 748   | 773   | 785.5 | 810.5 | 835.5 | 848   | 873   | 885.5 |
| 6                                             | 510.5 | 535.5 | 548   | 573   | 585.5 | 610.5 | 635.5 | 648   | 673   | 685.5 | 710.5 | 723   | 748   | 760.5 | 785.5 | 798   | 823   | 835.5 | 860.5 | 873   | 898   | 910.5 | 935.5 |
| 7                                             | 560.5 | 585.5 | 598   | 623   | 635.5 | 660.5 | 673   | 698   | 710.5 | 735.5 | 748   | 773   | 785.5 | 810.5 | 823   | 848   | 860.5 | 885.5 | 910.5 | 923   | 948   | 960.5 | 985.5 |
| 8                                             | 610.5 | 623   | 648   | 660.5 | 685.5 | 710.5 | 723   | 748   | 760.5 | 785.5 | 798   | 823   | 835.5 | 860.5 | 873   | 898   | 910.5 | 935.5 | 948   | 973   | 985.5 | —     | —     |
| 9                                             | 660.5 | 673   | 698   | 710.5 | 735.5 | 748   | 773   | 785.5 | 810.5 | 823   | 848   | 860.5 | 885.5 | 898   | 923   | 935.5 | 960.5 | 985.5 | —     | —     | —     | —     | —     |

Manifold Options

One-touch Fittings/  
Plug Assembly Part No.

Type 10, 11, 12  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Metal Base

Plug-in Sub-plate

Valve

# Plug-in Connector Connecting Base

EX600

Type 12  
Top Ported

# Series SY3000/5000/7000

CE

RoHS

## How to Order Manifold

Refer to pages 210 to 212 for dimensions of Type 12/Top ported type.

SS5Y **3** - 12S6 **Q** **2** - **05** **U** - **□** **□**

1 2 3 4 5 6 7 8

### 1 Series

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

### 3 SI Unit output polarity, end plate type

| SI Unit output polarity | Power supply with M12 connector | Power supply with 7/8 inch connector | Power supply with M12 connector. IN/OUT pin arrangement 1 | Power supply with M12 connector. IN/OUT pin arrangement 2 |
|-------------------------|---------------------------------|--------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|
| Without SI Unit         | —                               |                                      |                                                           |                                                           |
| SI Unit positive common | 2                               | 3                                    | 6                                                         | 8                                                         |
| SI Unit negative common | 4                               | 5                                    | 7                                                         | 9                                                         |

\*: Ensure a match with the common specification of the valve to be used.

\*: Without SI Unit, the symbol is —.

### 5 Valve stations

| Symbol | Stations    | Note                                                 |
|--------|-------------|------------------------------------------------------|
| 02     | 2 stations  | Double wiring*1                                      |
| :      | :           |                                                      |
| 16     | 16 stations | Specified layout*2<br>(Available up to 32 solenoids) |
| 02     | 2 stations  |                                                      |
| :      | :           |                                                      |
| 24     | 24 stations |                                                      |

\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

\*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

\*: This also includes the number of blanking plate assembly.

### 2 SI Unit

|    |                                           |
|----|-------------------------------------------|
| 0  | Without SI Unit                           |
| Q  | DeviceNet™                                |
| N  | PROFIBUS DP                               |
| V  | CC-Link                                   |
| ZE | EtherNet/IP™ (1 port)                     |
| EA | EtherNet/IP™ (2 ports)                    |
| D  | EtherCAT®                                 |
| F  | PROFINET                                  |
| WE | EtherNet/IP™ compatible wireless master*1 |
| WF | PROFINET compatible wireless master*1     |
| WS | Wireless slave*1                          |

\*1 The wireless system is suitable for use only in a country where it is in accordance with the Radio Act and regulations of that country.

\*: I/O Unit cannot be mounted without SI Unit.

\*: Valve plate which connects manifold and SI Unit is not mounted to a valve without SI Unit. Refer to the EX600 catalogue (CAT.EU02-24E-UK) for mounting.

### 4 I/O Unit stations

|   |            |
|---|------------|
| — | None       |
| 1 | 1 station  |
| : | :          |
| 9 | 9 stations |

\*: Without SI Unit, the symbol is —.

\*: SI Unit is not included in I/O Unit stations.

\*: When I/O Unit is selected, it is shipped separately, and assembled by users. Refer to the attached operation manual for mounting.

### 6 P, E port entry, SUP/EXH block assembly

| P, E port entry               | Internal pilot | Internal pilot, Built-in silencer | External pilot |
|-------------------------------|----------------|-----------------------------------|----------------|
| U side (2 to 10 stations)     | U              | C*1                               | G              |
| D side (2 to 10 stations)     | D              | E*1                               | H              |
| Both sides (2 to 24 stations) | B              | —                                 | J              |

\*1: For SUP/EXH block assembly specifications, built-in silencer types will have P port entry stipulated.

\*: For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)

\*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

### 7 P, E port size (One-touch fittings)

| Symbol | SY3000  | SY5000 | SY7000 |
|--------|---------|--------|--------|
| —      | Ø 8     | Ø 10   | Ø 12   |
| N      | Ø 5/16" | Ø 3/8" | Ø 1/2" |

\*: For N, sizes are in inches.

### 8 Mounting

|     |                                      |
|-----|--------------------------------------|
| —   | Direct mounting                      |
| D   | DIN rail mounting (With DIN rail)    |
| D0  | DIN rail mounting (Without DIN rail) |
| D3  | For 3 stations                       |
| :   | :                                    |
| D24 | For 24 stations                      |

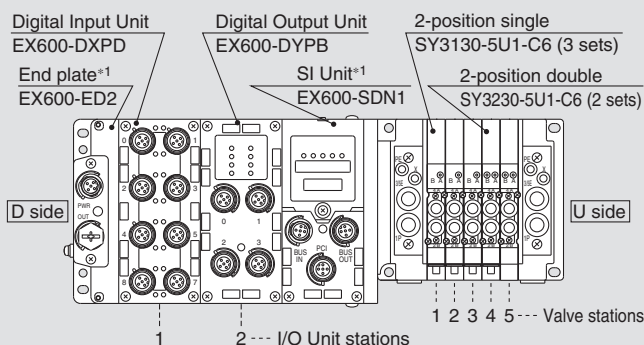
\*: When it is necessary to mount a DIN rail without an SI Unit, select D0 and order DIN rail length separately, referring to L3 in the dimensions. (Refer to page 249 for part numbers of DIN rail.)

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

For details about the EX600 Integrated-type (For Input/Output) Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to pages 237 and 238 in this catalogue. (IP40 specifications may be required according to the I/O Unit to be selected.) Please download the Operation Manual via SMC website, <http://www.smc.eu>

## How to Order Manifold Assembly

### Example (SS5Y3-12S6□-□)



SS5Y3-12S6Q42-05B ..... 1 set (Type 12 5-station manifold base part no.)  
 \*SY3130-5U1-C6 ..... 3 sets (2-position single part no.)  
 \*SY3230-5U1-C6 ..... 2 sets (2-position double part no.)  
 \*EX600-DXPD ..... 1 set I/O Unit part number (Station 1)  
 \*EX600-DYPB ..... 1 set I/O Unit part number (Station 2)

The asterisk denotes the symbol for assembly.  
 Prefix it to the part numbers of the valve etc.

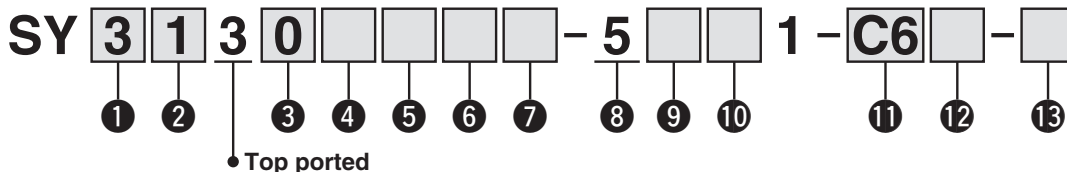
• The valve arrangement is numbered as the 1st station from the D side.  
 • Under the manifold part number, state the valves to be mounted, then the I/O Units in order from the 1st station as shown in the figure above.

If the arrangement becomes complicated, specify on a manifold specification sheet.

\*1: Do not enter the SI Unit part number and the end plate part number together.

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



### 1 Series

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

### 2 Type of actuation

|     |             |                 |
|-----|-------------|-----------------|
| 1   | 2-position  | Single          |
| 2   |             | Double          |
| 3   | 3-position  | Closed centre   |
| 4   |             | Exhaust centre  |
| 5   |             | Pressure centre |
| A*1 | 4-position  | N.C./N.C.       |
| B*1 | dual 3-port | N.O./N.O.       |
| C*1 |             | N.C./N.O.       |

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 5 Back pressure check valve

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

|   |         |
|---|---------|
| 5 | 24 V DC |
|---|---------|

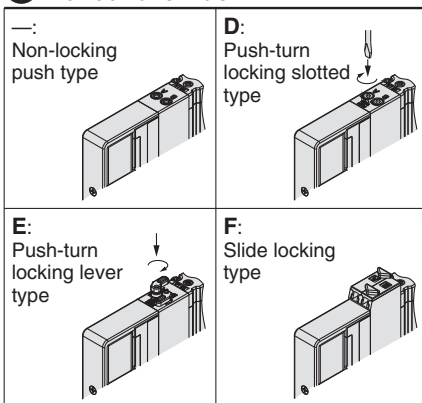
### 9 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| R      | —          |                          | Non-polar            |
| U      | ●          |                          |                      |
| S      | —          | ●                        | Positive common      |
| Z      | ●          |                          |                      |
| NS     | —          |                          | Negative common      |
| NZ     | ●          |                          |                      |

\*: Select a valve from R, U, S or Z when the SI Unit polarity is positive common. Select a valve from R, U, NS or NZ when the SI Unit output polarity is negative common.

\*: Only "Z" and "NZ" types are available for with the power saving circuit.

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 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)

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| C2     | Ø 2       | ●      | —      | —      |
| C3     | Ø 3.2     | ●      | —      | —      |
| C4     | Ø 4       | ●      | ●      | —      |
| C6     | Ø 6       | ●      | ●      | ●      |
| C8     | Ø 8       | —      | ●      | ●      |
| C10    | Ø 10      | —      | —      | ●      |
| C12    | Ø 12      | —      | —      | ●      |

#### One-touch fitting (Inch)

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| N1     | Ø 1/8"    | ●      | —      | —      |
| N3     | Ø 5/32"   | ●      | ●      | —      |
| N7     | Ø 1/4"    | ●      | ●      | ●      |
| N9     | Ø 5/16"   | —      | ●      | ●      |
| N11    | Ø 3/8"    | —      | —      | ●      |

### 12 Thread type

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

\*: Only — is available for M5.

### 13 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.



Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

EX250

# Series SY3000/5000/7000



## How to Order Manifold

Refer to pages 208 (SY5000) and 209 (SY7000) for dimensions of Type 11/Bottom ported type.

SS5Y **3** - **10** S **Q** **□** **□** - **05** **U** - **C6** **□**

1 2 3 4 5 6 7 8 9

### 1 Series

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

### 2 Type

|    |                 |
|----|-----------------|
| 10 | Side ported     |
| 11 | Bottom ported*1 |

\*1: The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to "Plug-in Mixed Mounting Type Manifold" (from page 213).

### 4 Input block stations

|   |            |
|---|------------|
| — | None       |
| 1 | 1 station  |
| ⋮ | ⋮          |
| 8 | 8 stations |

\*: Without SI Unit, the symbol is —. The maximum number of stations is limited for the AS-Interface applicable SI Unit.

### 3 SI Unit

|    |                                      |                              |                            |
|----|--------------------------------------|------------------------------|----------------------------|
| 0  | Without SI Unit                      |                              |                            |
| Q  | DeviceNet™ (Negative common)         |                              |                            |
| N  | PROFIBUS DP (Negative common)        |                              |                            |
| V  | CC-Link (Positive common)            |                              |                            |
| TA | AS-Interface<br>(Negative<br>common) | 2 power<br>supply<br>systems | 8 in/8 out, 31 slave modes |
| TB |                                      |                              | 4 in/4 out, 31 slave modes |
| TC |                                      | 1 power<br>supply<br>systems | 8 in/8 out, 31 slave modes |
| TD |                                      |                              | 4 in/4 out, 31 slave modes |
| Y  | CANopen (Negative common)            |                              |                            |
| ZE | EtherNet/IP™ (Negative common)       |                              |                            |

\*: Ensure a match with the common specification of the valve to be used.

\*: Input block cannot be mounted without SI Unit.

\*: The supply current from the SI Unit of AS-Interface applicable 1 power supply system specification to the input block and valve is limited.

### 5 Input block type

|                     | PNP sensor input | NPN sensor input |
|---------------------|------------------|------------------|
| Without input block | —                | —                |
| M12, 2 inputs       | A                | D                |
| M12, 4 inputs       | B                | E                |
| M8, 4 inputs        | C                | F                |

\*: Without SI Unit, the symbol is —.

### 6 Valve stations

| Symbol | Stations    | Note                                                 |
|--------|-------------|------------------------------------------------------|
| 02     | 2 stations  | Double wiring*1                                      |
| ⋮      | ⋮           |                                                      |
| 16     | 16 stations | Specified layout*2<br>(Available up to 32 solenoids) |
| 02     | 2 stations  |                                                      |
| ⋮      | ⋮           |                                                      |
| 24     | 24 stations |                                                      |

\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

\*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.) When determining the number of valve stations, note that the maximum number of solenoids for the AS-Interface applicable SI Unit specification is as follows.

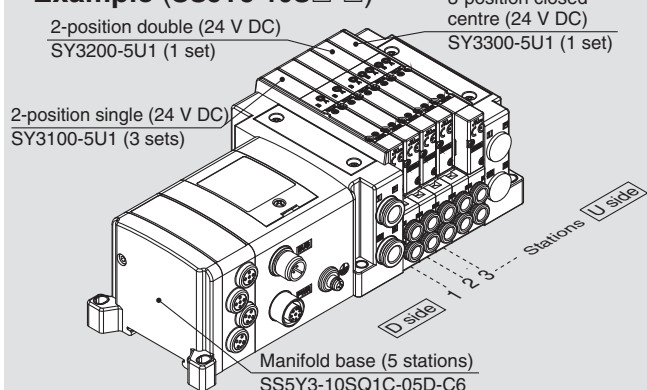
- 8 in/8 out specification: Max. 8 solenoids
- 4 in/4 out specification: Max. 4 solenoids

\*: This also includes the number of blanking plate assembly.

\*: For the product without the SI Unit (S0), note the maximum number of solenoids of the SI Unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

## How to Order Manifold Assembly

### Example (SS5Y3-10S□-□)



SS5Y3-10SQ1C-05D-C6 ... 1 set (Type 10 5-station manifold base part no.)  
 \*SY3100-5U1 ..... 3 sets (2-position single part no.)  
 \*SY3200-5U1 ..... 1 set (2-position double part no.)  
 \*SY3300-5U1 ..... 1 set (3-position closed centre part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

\*: When mixing top ported configurations, select from page 180.  
 In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

### 7 P, E port entry, SUP/EXH block assembly

| P, E port entry               | Internal pilot | Internal pilot, Built-in silencer | External pilot |
|-------------------------------|----------------|-----------------------------------|----------------|
| U side (2 to 10 stations)     | U              | C                                 | G              |
| D side (2 to 10 stations)     | D              | E                                 | H              |
| Both sides (2 to 24 stations) | B              | F                                 | J              |

\*: 3/5(E) port is plugged for the built-in silencer type.

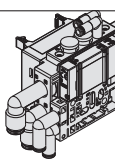
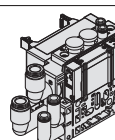
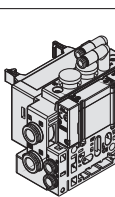
\*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

For details about the EX250 Integrated-type (For Input/Output) Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 239 in this catalogue. Please download the Operation Manual via SMC website, <http://www.smc.eu>



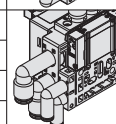
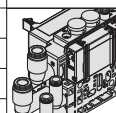
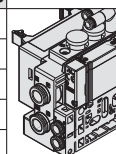
## 8 A, B port size (Metric/One-touch fitting)

| Symbol                              | A, B port                                                      | Type 10/Side ported |        |        | Type 11/Bottom ported |        |
|-------------------------------------|----------------------------------------------------------------|---------------------|--------|--------|-----------------------|--------|
|                                     |                                                                | SY3000              | SY5000 | SY7000 | SY5000                | SY7000 |
| C2                                  | Ø 2                                                            | ●                   | —      | —      | —                     | —      |
| C3                                  | Ø 3.2                                                          | ●                   | —      | —      | —                     | —      |
| C4                                  | Ø 4                                                            | ●                   | ●      | —      | ●                     | —      |
| C6                                  | Ø 6                                                            | ●                   | ●      | ●      | ●                     | ●      |
| C8                                  | Ø 8                                                            | —                   | ●      | ●      | ●                     | ●      |
| C10                                 | Ø 10                                                           | —                   | —      | ●      | —                     | ●      |
| C12                                 | Ø 12                                                           | —                   | —      | ●      | —                     | ●      |
| CM*1                                | Straight port, mixed sizes                                     | ●                   | ●      | ●      | ●                     | ●      |
| L4                                  | Ø 4                                                            | ●                   | ●      | —      | —                     | —      |
| L6                                  | Ø 6                                                            | ●                   | ●      | ●      | —                     | —      |
| L8                                  | Ø 8                                                            | —                   | ●      | ●      | —                     | —      |
| L10                                 | Ø 10                                                           | —                   | —      | ●      | —                     | —      |
| L12                                 | Ø 12                                                           | —                   | —      | ●      | —                     | —      |
| B4                                  | Ø 4                                                            | ●                   | ●      | —      | —                     | —      |
| B6                                  | Ø 6                                                            | ●                   | ●      | ●      | —                     | —      |
| B8                                  | Ø 8                                                            | —                   | ●      | ●      | —                     | —      |
| B10                                 | Ø 10                                                           | —                   | —      | ●      | —                     | —      |
| B12                                 | Ø 12                                                           | —                   | —      | ●      | —                     | —      |
| LM*1                                | Elbow port, mixed sizes (Including upward and downward piping) | ●                   | ●      | ●      | —                     | —      |
| P, E port size (One-touch fittings) |                                                                | Ø 8                 | Ø 10   | Ø 12   | Ø 10                  | Ø 12   |



## A, B port size (Inch/One-touch fitting)

| Symbol                              | A, B port                                                      | Type 10/Side ported |        |        | Type 11/Bottom ported |        |
|-------------------------------------|----------------------------------------------------------------|---------------------|--------|--------|-----------------------|--------|
|                                     |                                                                | SY3000              | SY5000 | SY7000 | SY5000                | SY7000 |
| N1                                  | Ø 1/8"                                                         | ●                   | —      | —      | —                     | —      |
| N3                                  | Ø 5/32"                                                        | ●                   | ●      | —      | ●                     | —      |
| N7                                  | Ø 1/4"                                                         | ●                   | ●      | ●      | ●                     | ●      |
| N9                                  | Ø 5/16"                                                        | —                   | ●      | ●      | ●                     | ●      |
| N11                                 | Ø 3/8"                                                         | —                   | —      | ●      | —                     | ●      |
| CM*1                                | Straight port, mixed sizes                                     | ●                   | ●      | ●      | ●                     | ●      |
| LN3                                 | Ø 5/32"                                                        | ●                   | —      | —      | —                     | —      |
| LN7                                 | Ø 1/4"                                                         | ●                   | ●      | —      | —                     | —      |
| LN9                                 | Ø 5/16"                                                        | —                   | ●      | —      | —                     | —      |
| LN11                                | Ø 3/8"                                                         | —                   | —      | ●      | —                     | —      |
| BN3                                 | Ø 5/32"                                                        | ●                   | —      | —      | —                     | —      |
| BN7                                 | Ø 1/4"                                                         | ●                   | ●      | —      | —                     | —      |
| BN9                                 | Ø 5/16"                                                        | —                   | ●      | —      | —                     | —      |
| BN11                                | Ø 3/8"                                                         | —                   | —      | ●      | —                     | —      |
| LM*1                                | Elbow port, mixed sizes (Including upward and downward piping) | ●                   | ●      | ●      | —                     | —      |
| P, E port size (One-touch fittings) |                                                                | Ø 5/16"             | Ø 3/8" | Ø 1/2" | Ø 3/8"                | Ø 1/2" |



\*1: Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

\*2: To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 250 to 252).

## 9 Mounting and Option

| Symbol | Mounting          | Option     |                |
|--------|-------------------|------------|----------------|
|        |                   | Name plate | Station number |
| —      | Direct mounting   | —          | —              |
| AA     |                   | ●          | ●              |
| BA     |                   | ●          | —              |
| D□     |                   | —          | —              |
| A□     | DIN rail mounting | ●          | ●              |
| B□     |                   | ●          | —              |

### DIN Rail Option

|    | Direct mounting                 |
|----|---------------------------------|
| 0  | Without DIN rail (with bracket) |
| 3  | For 3 stations                  |
| ⋮  | ⋮                               |
| 24 | For 24 stations                 |

\*: Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" above.)

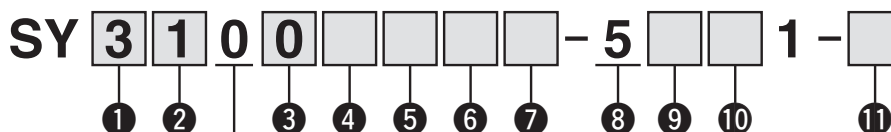
\*: Only direct mounting is available for Type 11 (Bottom ported).

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

\*: When it is necessary to mount a DIN rail without an SI Unit, select D0 and order DIN rail length separately, referring to L3 in the dimensions. (Refer to page 249 for part numbers of DIN rail.)

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



Base mounted

### 1 Series

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

### 2 Type of actuation

|     |                        |                 |
|-----|------------------------|-----------------|
| 1   | 2-position             | Single          |
| 2   |                        | Double          |
| 3   | 3-position             | Closed centre   |
| 4   |                        | Exhaust centre  |
| 5   |                        | Pressure centre |
| A*1 | 4-position dual 3-port | N.C./N.C.       |
| B*1 |                        | N.O./N.O.       |
| C*1 |                        | N.C./N.O.       |

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 5 Back pressure check valve (Built-in valve type)

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

|   |         |
|---|---------|
| 5 | 24 V DC |
|---|---------|

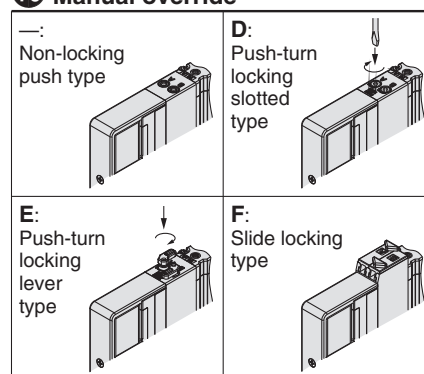
### 9 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| R      | —          |                          | Non-polar            |
| U      | ●          |                          |                      |
| S      | —          | ●                        | Positive common      |
| Z      | ●          |                          |                      |
| NS     | —          |                          | Negative common      |
| NZ     | ●          |                          |                      |

\*: "R" and "U" are applicable for every SI Unit. However, "S" and "Z" can be used only for CC-Link applicable Unit and "NS" and "NZ" are for Units which are not CC-Link applicable.

\*: Only "Z" and "NZ" types are available for with the power saving circuit.

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

## Dimensions: Series SY3000

## Plug-in Connector Connecting Base

Type 10/Side Ported  
EX250

SS5Y3-10S□□□-Stations  $\begin{matrix} \text{U} \\ \text{D} \end{matrix}$   $\begin{matrix} \text{C2} \\ \text{C3, N1} \\ \text{C4, N3} \\ \text{C6, N7} \end{matrix}$  (D)

Valve

Plug-in Sub-plate

Plug-in Metal Base

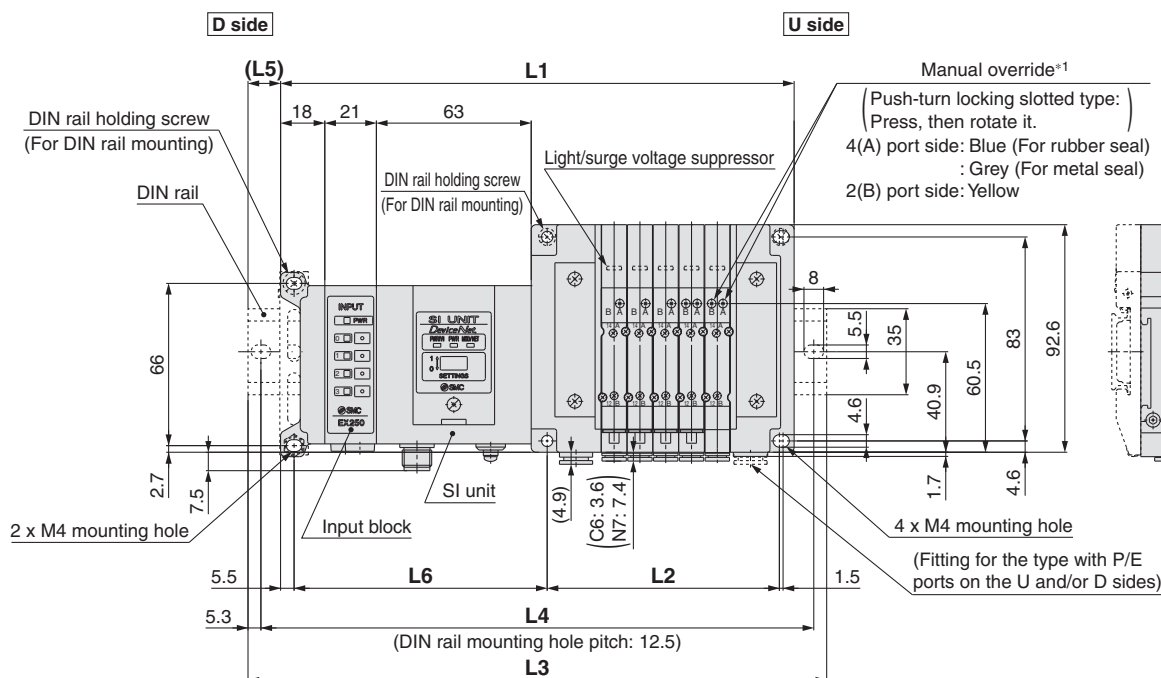
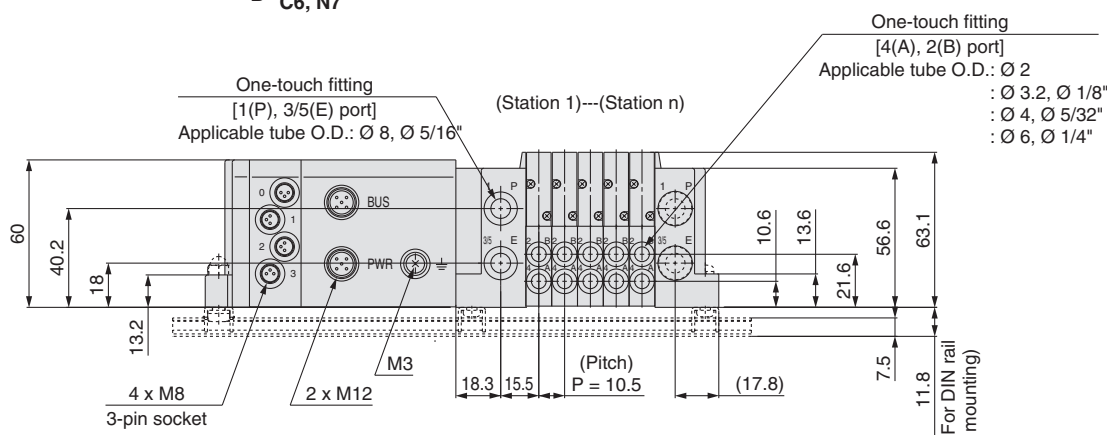
Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options



$$\begin{aligned} L1 &= 10.5 \times n1 + 135.5 + 21 \times n2 \\ L2 &= 10.5 \times n1 + 42 \\ L4 &= L3 - 10.5 \\ L5 &= (L3 - L1)/2 \\ L6 &= 21 \times n2 + 82 \end{aligned}$$

n1: Valve stations  
n2: Input block stations

### L3: DIN Rail Overall Length

| Valve stations (n1)<br>Input block stations (n2) | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|--------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0                                                | 185.5 | 198   | 210.5 | 223   | 223   | 235.5 | 248   | 260.5 | 273   | 285.5 | 285.5 | 298   | 310.5 | 323   | 335.5 | 348   | 348   | 360.5 | 373   | 385.5 | 398   | 410.5 | 423   |
| 1                                                | 210.5 | 223   | 223   | 235.5 | 248   | 260.5 | 273   | 285.5 | 285.5 | 298   | 310.5 | 323   | 335.5 | 348   | 348   | 360.5 | 373   | 385.5 | 398   | 410.5 | 423   | 423   | 435.5 |
| 2                                                | 223   | 235.5 | 248   | 260.5 | 273   | 285.5 | 285.5 | 298   | 310.5 | 323   | 335.5 | 348   | 348   | 360.5 | 373   | 385.5 | 398   | 410.5 | 423   | 423   | 435.5 | 448   | 460.5 |
| 3                                                | 248   | 260.5 | 273   | 285.5 | 285.5 | 298   | 310.5 | 323   | 335.5 | 348   | 348   | 360.5 | 373   | 385.5 | 398   | 410.5 | 423   | 423   | 435.5 | 448   | 460.5 | 473   | 485.5 |
| 4                                                | 273   | 285.5 | 285.5 | 298   | 310.5 | 323   | 335.5 | 348   | 348   | 360.5 | 373   | 385.5 | 398   | 410.5 | 423   | 423   | 435.5 | 448   | 460.5 | 473   | 485.5 | 485.5 | 498   |
| 5                                                | 285.5 | 298   | 310.5 | 323   | 335.5 | 348   | 348   | 360.5 | 373   | 385.5 | 398   | 410.5 | 423   | 423   | 435.5 | 448   | 460.5 | 473   | 485.5 | 485.5 | 498   | 510.5 | 523   |
| 6                                                | 310.5 | 323   | 335.5 | 348   | 348   | 360.5 | 373   | 385.5 | 398   | 410.5 | 423   | 423   | 435.5 | 448   | 460.5 | 473   | 485.5 | 485.5 | 498   | 510.5 | 523   | 535.5 | 548   |
| 7                                                | 335.5 | 348   | 348   | 360.5 | 373   | 385.5 | 398   | 410.5 | 423   | 423   | 435.5 | 448   | 460.5 | 473   | 485.5 | 485.5 | 498   | 510.5 | 523   | 535.5 | 548   | 548   | 560.5 |
| 8                                                | 348   | 360.5 | 373   | 385.5 | 398   | 410.5 | 423   | 423   | 435.5 | 448   | 460.5 | 473   | 485.5 | 485.5 | 498   | 510.5 | 523   | 535.5 | 548   | 548   | 560.5 | 573   | 585.5 |

# Series SY3000/5000/7000

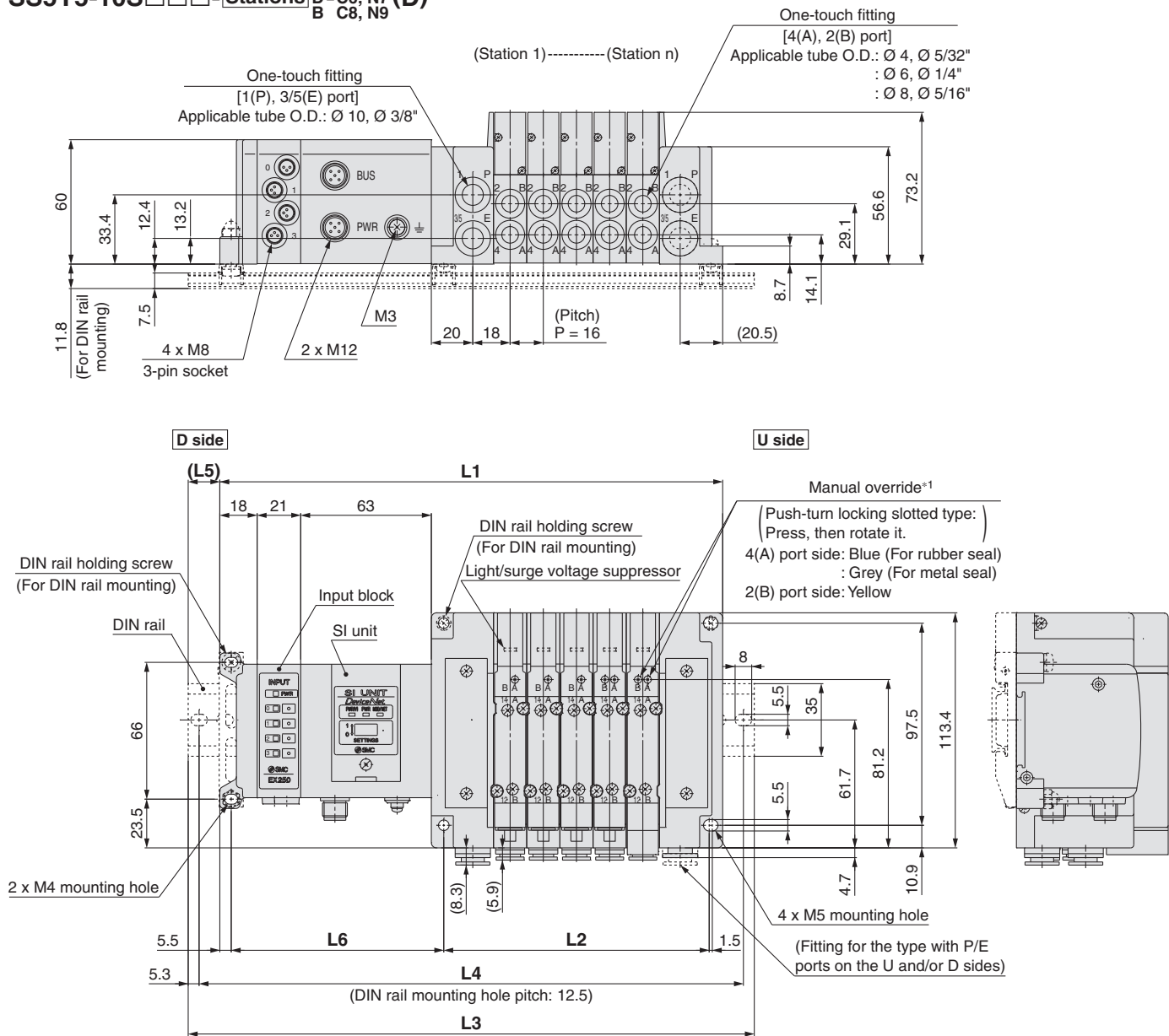
## Dimensions: Series SY5000

## Plug-in Connector Connecting Base

Type 10/Side Ported

EX250

SS5Y5-10S□□□-Stations  $\begin{matrix} U & C4, N3 \\ D & C6, N7 (D) \\ B & C8, N9 \end{matrix}$



$$\begin{aligned} L1 &= 16 \times n1 + 141.5 + 21 \times n2 \\ L2 &= 16 \times n1 + 48 \\ L4 &= L3 - 10.5 \\ L5 &= (L3 - L1)/2 \\ L6 &= 21 \times n2 + 81.5 \end{aligned}$$

n1: Valve stations  
n2: Input block stations

### L3: DIN Rail Overall Length

| Valve stations (n1)<br>Input block stations (n2) | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|--------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0                                                | 198   | 223   | 235.5 | 248   | 273   | 285.5 | 298   | 310.5 | 335.5 | 348   | 360.5 | 373   | 398   | 410.5 | 423   | 448   | 460.5 | 473   | 485.5 | 510.5 | 523   | 535.5 | 560.5 |
| 1                                                | 223   | 235.5 | 260.5 | 273   | 285.5 | 298   | 323   | 335.5 | 348   | 373   | 385.5 | 398   | 410.5 | 435.5 | 448   | 460.5 | 485.5 | 498   | 510.5 | 523   | 548   | 560.5 | 573   |
| 2                                                | 248   | 260.5 | 273   | 298   | 310.5 | 323   | 335.5 | 360.5 | 373   | 385.5 | 410.5 | 423   | 435.5 | 448   | 473   | 485.5 | 498   | 523   | 535.5 | 548   | 560.5 | 585.5 | 598   |
| 3                                                | 260.5 | 285.5 | 298   | 310.5 | 335.5 | 348   | 360.5 | 373   | 398   | 410.5 | 423   | 448   | 460.5 | 473   | 485.5 | 510.5 | 523   | 535.5 | 548   | 573   | 585.5 | 598   | 623   |
| 4                                                | 285.5 | 298   | 323   | 335.5 | 348   | 373   | 385.5 | 398   | 410.5 | 435.5 | 448   | 460.5 | 473   | 498   | 510.5 | 523   | 548   | 560.5 | 573   | 585.5 | 610.5 | 623   | 635.5 |
| 5                                                | 310.5 | 323   | 335.5 | 360.5 | 373   | 385.5 | 398   | 423   | 435.5 | 448   | 473   | 485.5 | 498   | 510.5 | 535.5 | 548   | 560.5 | 585.5 | 598   | 610.5 | 623   | 648   | 660.5 |
| 6                                                | 323   | 348   | 360.5 | 373   | 398   | 410.5 | 423   | 435.5 | 460.5 | 473   | 485.5 | 510.5 | 523   | 535.5 | 548   | 573   | 585.5 | 598   | 623   | 635.5 | 648   | 660.5 | 685.5 |
| 7                                                | 348   | 360.5 | 385.5 | 398   | 410.5 | 435.5 | 448   | 460.5 | 473   | 498   | 510.5 | 523   | 548   | 560.5 | 573   | 598   | 610.5 | 623   | 635.5 | 648   | 673   | 685.5 | 698   |
| 8                                                | 373   | 385.5 | 398   | 423   | 435.5 | 448   | 473   | 485.5 | 498   | 510.5 | 535.5 | 548   | 560.5 | 573   | 598   | 610.5 | 623   | 648   | 660.5 | 673   | 685.5 | 710.5 | 723   |

\*1: Refer to page 206 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y5-10SQ1A-05D-C8".

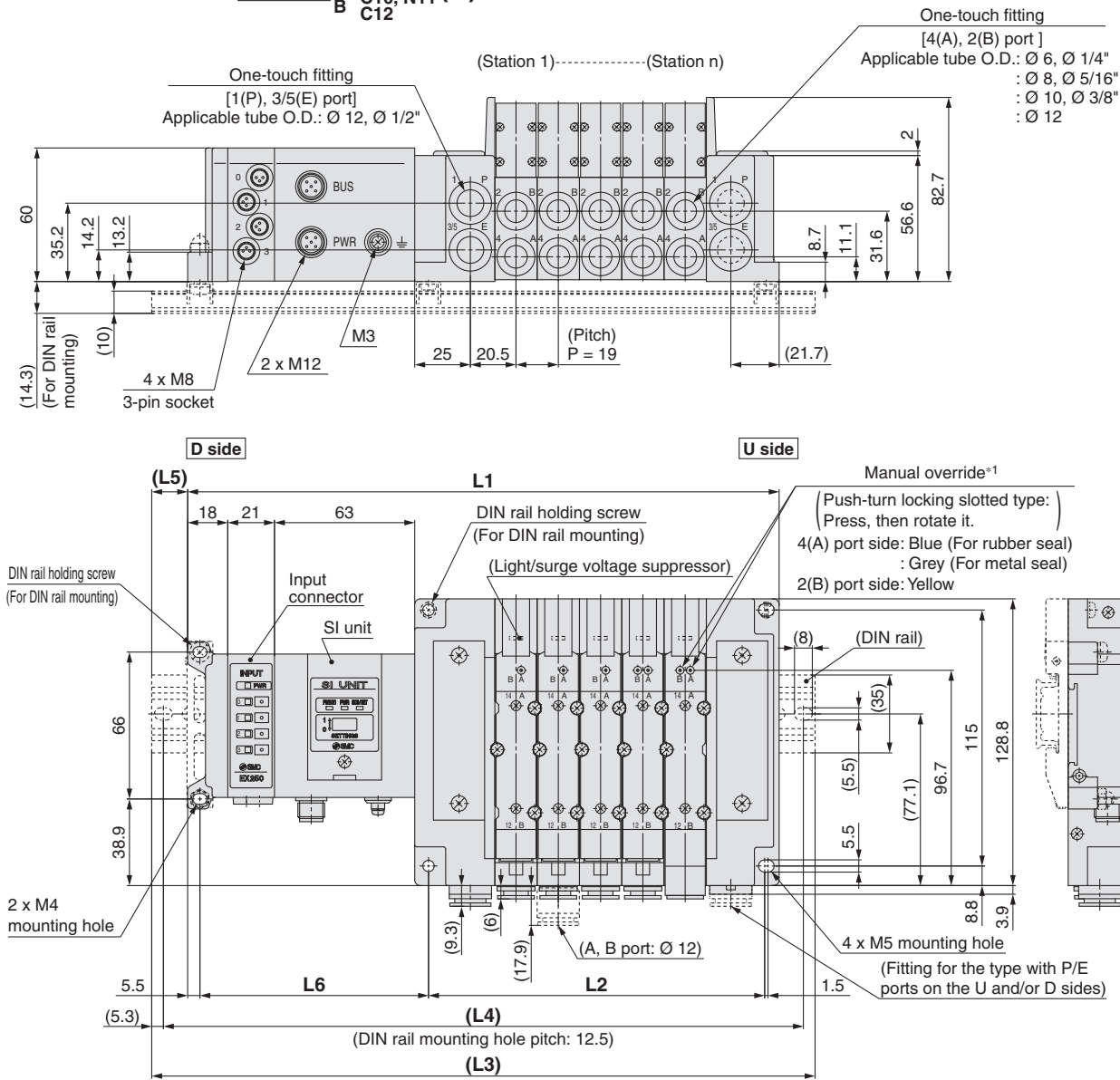
\*: Refer to page 211 for dimensions of A or B port top-ported type.

## Dimensions: Series SY7000

## Plug-in Connector Connecting Base

Type 10/Side Ported  
EX250

SS5Y7-10S□□□-Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix}$   $\begin{matrix} \text{C6, N7} \\ \text{C8, N9} \\ \text{C10, N11} \end{matrix}$  (D)  
C12



L1 = 19 x n1 + 149.7 + 21 x n2  
L2 = 19 x n1 + 56  
L4 = L3 - 10.5  
L5 = (L3 - L1)/2  
L6 = 21 x n2 + 81.7

n1: Valve stations  
n2: Input block stations

\*1: Refer to page 207 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y7-10SQ1A-05D-C10".  
\*: Refer to page 212 for dimensions of A or B port top-ported type.

### L3: DIN Rail Overall Length

| Valve stations (n1)<br>I/O Unit stations (n2) | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|-----------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0                                             | 223   | 235.5 | 260.5 | 273   | 298   | 310.5 | 335.5 | 348   | 373   | 385.5 | 410.5 | 423   | 448   | 460.5 | 485.5 | 498   | 523   | 535.5 | 560.5 | 573   | 598   | 610.5 | 635.5 |
| 1                                             | 235.5 | 260.5 | 273   | 298   | 310.5 | 335.5 | 348   | 373   | 385.5 | 410.5 | 423   | 448   | 460.5 | 485.5 | 498   | 523   | 548   | 560.5 | 585.5 | 598   | 623   | 635.5 | 660.5 |
| 2                                             | 260.5 | 273   | 298   | 310.5 | 335.5 | 348   | 373   | 398   | 410.5 | 435.5 | 448   | 473   | 485.5 | 510.5 | 523   | 548   | 560.5 | 585.5 | 598   | 623   | 635.5 | 660.5 | 673   |
| 3                                             | 285.5 | 298   | 323   | 335.5 | 360.5 | 373   | 398   | 410.5 | 435.5 | 448   | 473   | 485.5 | 510.5 | 523   | 548   | 560.5 | 585.5 | 598   | 623   | 635.5 | 660.5 | 673   | 698   |
| 4                                             | 298   | 323   | 335.5 | 360.5 | 373   | 398   | 410.5 | 435.5 | 448   | 473   | 485.5 | 510.5 | 523   | 548   | 573   | 585.5 | 610.5 | 623   | 648   | 660.5 | 685.5 | 698   | 723   |
| 5                                             | 323   | 335.5 | 360.5 | 373   | 398   | 423   | 435.5 | 460.5 | 473   | 498   | 510.5 | 535.5 | 548   | 573   | 585.5 | 610.5 | 623   | 648   | 660.5 | 685.5 | 698   | 723   | 735.5 |
| 6                                             | 348   | 360.5 | 385.5 | 398   | 423   | 435.5 | 460.5 | 473   | 498   | 510.5 | 535.5 | 548   | 573   | 585.5 | 610.5 | 623   | 648   | 660.5 | 685.5 | 698   | 723   | 748   | 760.5 |
| 7                                             | 360.5 | 385.5 | 398   | 423   | 435.5 | 460.5 | 473   | 498   | 510.5 | 535.5 | 548   | 573   | 598   | 610.5 | 635.5 | 648   | 673   | 685.5 | 710.5 | 723   | 748   | 760.5 | 785.5 |
| 8                                             | 385.5 | 398   | 423   | 448   | 460.5 | 485.5 | 498   | 523   | 535.5 | 560.5 | 573   | 598   | 610.5 | 635.5 | 648   | 673   | 685.5 | 710.5 | 723   | 748   | 760.5 | 785.5 | 798   |



# Plug-in Connector Connecting Base

EX250

Type 12  
Top Ported

# Series SY3000/5000/7000 C €

## How to Order Manifold

Refer to pages 210 to 212 for dimensions of Type 12/Top ported type.

SS5Y **3** - 12S **Q** **□** **□** - **05** **U** - **□** **□**

1 2 3 4 5 6 7 8

### 1 Series

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

### 3 Input block stations

|   |            |
|---|------------|
| — | None       |
| 1 | 1 station  |
| ⋮ | ⋮          |
| 8 | 8 stations |

\*: Without SI Unit, the symbol is —. The maximum number of stations is limited for the AS-Interface applicable SI Unit.

### 4 Input block type

|                     | PNP<br>sensor input | NPN<br>sensor input |
|---------------------|---------------------|---------------------|
| Without input block | —                   | —                   |
| M12, 2 inputs       | A                   | D                   |
| M12, 4 inputs       | B                   | E                   |
| M8, 4 inputs        | C                   | F                   |

\*: Without SI Unit, the symbol is —.

### 2 SI Unit

|    |                                      |                              |                            |
|----|--------------------------------------|------------------------------|----------------------------|
| 0  | Without SI Unit                      |                              |                            |
| Q  | DeviceNet™ (Negative common)         |                              |                            |
| N  | PROFIBUS DP (Negative common)        |                              |                            |
| V  | CC-Link (Positive common)            |                              |                            |
| TA | AS-Interface<br>(Negative<br>common) | 2 power<br>supply<br>systems | 8 in/8 out, 31 slave modes |
| TB |                                      |                              | 4 in/4 out, 31 slave modes |
| TC |                                      | 1 power<br>supply<br>systems | 8 in/8 out, 31 slave modes |
| TD |                                      |                              | 4 in/4 out, 31 slave modes |
| Y  | CANopen (Negative common)            |                              |                            |
| ZE | EtherNet/IP™ (Negative common)       |                              |                            |

\*: Ensure a match with the common specification of the valve to be used.

\*: Input block cannot be mounted without SI Unit.

\*: The supply current from the SI Unit of AS-Interface applicable 1 power supply system specification to the input block and valve is limited.

### 5 Valve stations

| Symbol | Stations    | Note                                                 |
|--------|-------------|------------------------------------------------------|
| 02     | 2 stations  | Double wiring*1                                      |
| ⋮      | ⋮           |                                                      |
| 16     | 16 stations | Specified layout*2<br>(Available up to 32 solenoids) |
| 02     | 2 stations  |                                                      |
| ⋮      | ⋮           |                                                      |
| 24     | 24 stations |                                                      |

\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

\*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.) When determining the number of valve stations, note that the maximum number of solenoids for the AS-Interface applicable SI Unit specification is as follows.

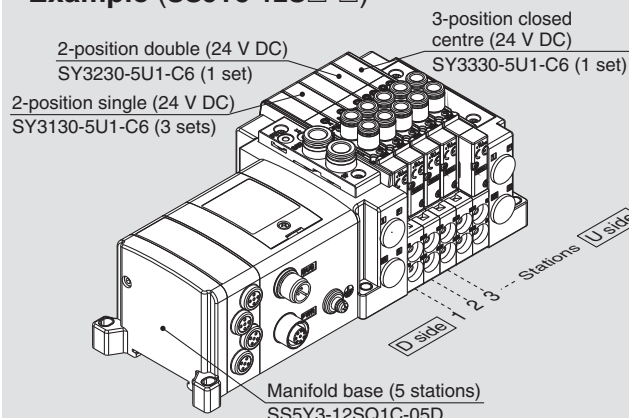
- 8 in/8 out specification: Max. 8 solenoids
- 4 in/4 out specification: Max. 4 solenoids

\*: This also includes the number of blanking plate assembly.

\*: For the product without the SI Unit (S0), note the maximum number of solenoids of the SI Unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

## How to Order Manifold Assembly

### Example (SS5Y3-12S□-□)



SS5Y3-12SQ1C-05D ... 1 set (Type 12 5-station manifold base part no.)

\*SY3130-5U1-C6 ..... 3 sets (2-position single part no.)

\*SY3230-5U1-C6 ..... 1 set (2-position double part no.)

\*SY3330-5U1-C6 ..... 1 set (3-position closed centre part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

### 6 P, E port entry, SUP/EXH block assembly

| P, E port entry               | Internal pilot | Internal pilot,<br>Built-in silencer | External pilot |
|-------------------------------|----------------|--------------------------------------|----------------|
| U side (2 to 10 stations)     | U              | C*1                                  | G              |
| D side (2 to 10 stations)     | D              | E*1                                  | H              |
| Both sides (2 to 24 stations) | B              | —                                    | J              |

\*1: For SUP/EXH block assembly specifications, built-in silencer types will have P port entry stipulated.

\*: For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)

\*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

### 7 P, E port size (One-touch fittings)

| Symbol | SY3000  | SY5000 | SY7000 |
|--------|---------|--------|--------|
| —      | Ø 8     | Ø 10   | Ø 12   |
| N      | Ø 5/16" | Ø 3/8" | Ø 1/2" |

\*: For N, sizes are in inches.

### 8 Mounting

|     |                                      |
|-----|--------------------------------------|
| —   | Direct mounting                      |
| D   | DIN rail mounting (With DIN rail)    |
| D0  | DIN rail mounting (Without DIN rail) |
| D3  | For 3 stations                       |
| ⋮   | ⋮                                    |
| D24 | For 24 stations                      |

\*: If the DIN rail must be mounted without an SI Unit, select D0. Then, refer to L3 of the dimensions for the DIN rail length and order separately. (Refer to page 249 for the DIN rail part number.)

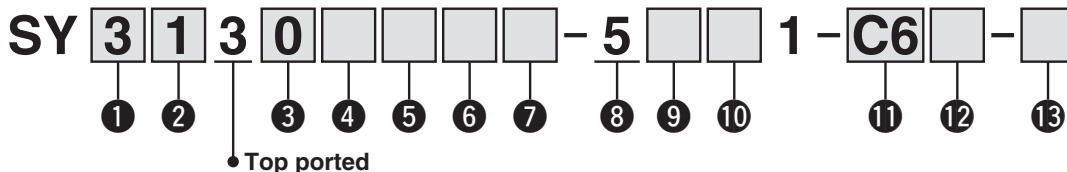
\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

For details about the EX250 Integrated-type (For Input/Output) Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 239 in this catalogue. Please download the Operation Manual via SMC website, <http://www.smc.eu>



## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



### 1 Series

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

### 2 Type of actuation

|     |             |                 |
|-----|-------------|-----------------|
| 1   | 2-position  | Single          |
| 2   |             | Double          |
| 3   | 3-position  | Closed centre   |
| 4   |             | Exhaust centre  |
| 5   |             | Pressure centre |
| A*1 | 4-position  | N.C./N.C.       |
| B*1 | dual 3-port | N.O./N.O.       |
| C*1 |             | N.C./N.O.       |

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 5 Back pressure check valve (Built-in valve type)

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

|   |         |
|---|---------|
| 5 | 24 V DC |
|---|---------|

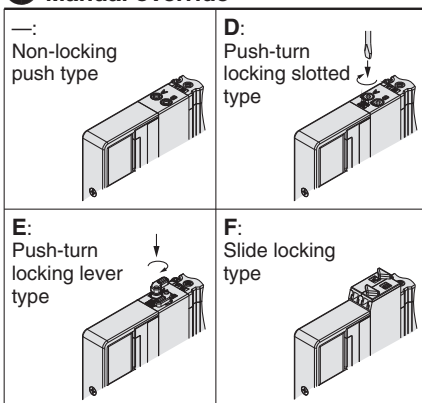
### 9 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| R      | —          |                          | Non-polar            |
| U      | ●          |                          |                      |
| S      | —          | ●                        | Positive common      |
| Z      | ●          |                          |                      |
| NS     | —          |                          | Negative common      |
| NZ     | ●          |                          |                      |

\*: "R" and "U" are applicable for every SI Unit. However, "S" and "Z" can be used only for CC-Link applicable Unit and "NS" and "NZ" are for Units which are not CC-Link applicable.

\*: Only "Z" and "NZ" types are available for with the power saving circuit.

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 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)

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| C2     | Ø 2       | ●      | —      | —      |
| C3     | Ø 3.2     | ●      | —      | —      |
| C4     | Ø 4       | ●      | ●      | —      |
| C6     | Ø 6       | ●      | ●      | ●      |
| C8     | Ø 8       | —      | ●      | ●      |
| C10    | Ø 10      | —      | —      | ●      |
| C12    | Ø 12      | —      | —      | ●      |

#### One-touch fitting (Inch)

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| N1     | Ø 1/8"    | ●      | —      | —      |
| N3     | Ø 5/32"   | ●      | ●      | —      |
| N7     | Ø 1/4"    | ●      | ●      | ●      |
| N9     | Ø 5/16"   | —      | ●      | ●      |
| N11    | Ø 3/8"    | —      | —      | ●      |

### 12 Thread type

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

\*: Only — is available for M5.

### 13 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.

Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

EX260

# Series SY3000/5000/7000



## How to Order Manifold

Refer to pages 208 (SY5000) and 209 (SY7000) for dimensions of Type 11/Bottom ported type.

SS5Y **3** - **10** S **NAN** - **05** **U** **□** - **C6** **□**

1 2 3 4 5 6 7 8

### 1 Series

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

### 2 Type

|    |                 |
|----|-----------------|
| 10 | Side ported     |
| 11 | Bottom ported*1 |

\*1: The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to "Plug-in Mixed Type Manifold" (from page 213).

### 3 SI Unit specifications

(output polarity, protocol, number of outputs, communication connector)

| Symbol (output polarity) | Protocol        | Number of outputs | Communication connector |
|--------------------------|-----------------|-------------------|-------------------------|
| Positive common (NPN)    |                 |                   |                         |
| Negative common (PNP)    |                 |                   |                         |
| 0*1                      | Without SI unit |                   |                         |
| QA QAN                   | DeviceNet™      | 32                | M12                     |
| QB QBN                   |                 | 16                |                         |
| NA NAN                   |                 | 32                | M12                     |
| NB NBN                   |                 | 16                |                         |
| NC NCN                   | PROFIBUS DP     | 32                | *4                      |
| ND NDN                   |                 | 16                | D-sub                   |
| VA VAN                   | CC-Link         | 32                | M12                     |
| VB VBN                   |                 | 16                |                         |
| DA DAN                   | EtherCAT        | 32                | M12                     |
| DB DBN                   |                 | 16                |                         |
| FA FAN                   | PROFINET        | 32                | M12                     |
| FB FBN                   |                 | 16                |                         |
| EA EAN                   | EtherNet/IP™    | 32                | M12                     |
| EB EBN                   |                 | 16                |                         |
| —*3 GAN                  | EtherNet        | 32                | M12                     |
| —*3 GBN                  | POWERLINK       | 16                |                         |

\*1 Without SI unit, the output polarity is decided by the SI unit used.

Ensure a match with the common specification of the valves to be used.

\*2 DIN rail cannot be mounted without SI Unit.

\*3 Positive common (NPN) type is not applicable.

\*4 IP40 for the D-sub applicable communication connector specification.

### 4 Valve stations

In the case of the 32-output SI Unit

| Symbol | Stations    | Note                                                 |
|--------|-------------|------------------------------------------------------|
| 02     | 2 stations  |                                                      |
| ⋮      | ⋮           | Double wiring*1                                      |
| 16     | 16 stations |                                                      |
| 02     | 2 stations  |                                                      |
| ⋮      | ⋮           | Specified layout*2<br>(Available up to 32 solenoids) |
| 24     | 24 stations |                                                      |

In the case of the 16-output SI Unit

| Symbol | Stations    | Note                                                 |
|--------|-------------|------------------------------------------------------|
| 02     | 2 stations  |                                                      |
| ⋮      | ⋮           | Double wiring*1                                      |
| 08     | 8 stations  |                                                      |
| 02     | 2 stations  |                                                      |
| ⋮      | ⋮           | Specified layout*2<br>(Available up to 16 solenoids) |
| 16     | 16 stations |                                                      |

\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout

\*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet.  
(Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

\*3: This also includes the number of blanking plate assembly.

\*4: For the model without the SI Unit (S0), note the maximum number of solenoids of the SI Unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

### 5 P, E port entry

|   |                               |
|---|-------------------------------|
| U | U side (2 to 10 stations)     |
| D | D side (2 to 10 stations)     |
| B | Both sides (2 to 24 stations) |

### 6 SUP/EXH block assembly

|   |                                   |
|---|-----------------------------------|
| — | Internal pilot                    |
| S | Internal pilot, Built-in silencer |
| R | External pilot                    |

\*: 3/5(E) port is plugged for the built-in silencer type.

\*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

Refer to the page on the right for 7.

### 8 Mounting and Option

| Symbol | Mounting          | Option                    |
|--------|-------------------|---------------------------|
|        |                   | Name plate Station number |
| —      |                   | — —                       |
| AA     | Direct mounting   | ● ●                       |
| BA     |                   | ● —                       |
| D□     |                   | — —                       |
| A□     | DIN rail mounting | ● ●                       |
| B□     |                   | ● —                       |

\*: Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" below.)

\*: Only direct mounting is available for Type 11 (Bottom ported).

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

#### DIN Rail Option

|    |                                 |
|----|---------------------------------|
| —  | Standard length                 |
| 0  | Without DIN rail (with bracket) |
| 3  | For 3 stations                  |
| ⋮  | ⋮                               |
| 24 | For 24 stations                 |

Specify a longer rail than the total length of specified stations.

\*: When it is necessary to mount a DIN rail without an SI Unit, select D0 and order DIN rail length separately, referring to L3 in the dimensions. (Refer to page 249 for part numbers of DIN rail.)

For details about the EX260 Integrated-type (For Output) Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 240 in this catalogue. Please download the Operation Manual via SMC website, <http://www.smc.eu>

## 8 A, B port size (Metric/One-touch fitting)

| Symbol                                 | A, B port                                                         | Type 10/Side ported |        |        | Type 11/Bottom ported |        |
|----------------------------------------|-------------------------------------------------------------------|---------------------|--------|--------|-----------------------|--------|
|                                        |                                                                   | SY3000              | SY5000 | SY7000 | SY5000                | SY7000 |
| C2                                     | Ø 2                                                               | ●                   | —      | —      | —                     | —      |
| C3                                     | Ø 3.2                                                             | ●                   | —      | —      | —                     | —      |
| C4                                     | Ø 4                                                               | ●                   | ●      | —      | ●                     | —      |
| C6                                     | Ø 6                                                               | ●                   | ●      | ●      | ●                     | ●      |
| C8                                     | Ø 8                                                               | —                   | ●      | ●      | ●                     | ●      |
| C10                                    | Ø 10                                                              | —                   | —      | ●      | —                     | ●      |
| C12                                    | Ø 12                                                              | —                   | —      | ●      | —                     | ●      |
| CM*1                                   | Straight port, mixed sizes                                        | ●                   | ●      | ●      | ●                     | ●      |
| L4                                     | Ø 4                                                               | ●                   | ●      | —      | —                     | —      |
| L6                                     | Ø 6                                                               | ●                   | ●      | ●      | —                     | —      |
| L8                                     | Ø 8                                                               | —                   | ●      | ●      | —                     | —      |
| L10                                    | Ø 10                                                              | —                   | —      | ●      | —                     | —      |
| L12                                    | Ø 12                                                              | —                   | —      | ●      | —                     | —      |
| B4                                     | Ø 4                                                               | ●                   | ●      | —      | —                     | —      |
| B6                                     | Ø 6                                                               | ●                   | ●      | ●      | —                     | —      |
| B8                                     | Ø 8                                                               | —                   | ●      | ●      | —                     | —      |
| B10                                    | Ø 10                                                              | —                   | —      | ●      | —                     | —      |
| B12                                    | Ø 12                                                              | —                   | —      | ●      | —                     | —      |
| LM*1                                   | Elbow port, mixed sizes<br>(Including upward and downward piping) | ●                   | ●      | ●      | —                     | —      |
| P, E port size<br>(One-touch fittings) |                                                                   | Ø 8                 | Ø 10   | Ø 12   | Ø 10                  | Ø 12   |

## A, B port size (Inch/One-touch fitting)

| Symbol                                 | A, B port                                                         | Type 10/Side ported |        |        | Type 11/Bottom ported |        |
|----------------------------------------|-------------------------------------------------------------------|---------------------|--------|--------|-----------------------|--------|
|                                        |                                                                   | SY3000              | SY5000 | SY7000 | SY5000                | SY7000 |
| N1                                     | Ø 1/8"                                                            | ●                   | —      | —      | —                     | —      |
| N3                                     | Ø 5/32"                                                           | ●                   | ●      | —      | ●                     | —      |
| N7                                     | Ø 1/4"                                                            | ●                   | ●      | ●      | ●                     | ●      |
| N9                                     | Ø 5/16"                                                           | —                   | ●      | ●      | ●                     | ●      |
| N11                                    | Ø 3/8"                                                            | —                   | —      | ●      | —                     | ●      |
| CM*1                                   | Straight port, mixed sizes                                        | ●                   | ●      | ●      | ●                     | ●      |
| LN3                                    | Ø 5/32"                                                           | ●                   | —      | —      | —                     | —      |
| LN7                                    | Ø 1/4"                                                            | ●                   | ●      | —      | —                     | —      |
| LN9                                    | Ø 5/16"                                                           | —                   | ●      | —      | —                     | —      |
| LN11                                   | Ø 3/8"                                                            | —                   | —      | ●      | —                     | —      |
| BN3                                    | Ø 5/32"                                                           | ●                   | —      | —      | —                     | —      |
| BN7                                    | Ø 1/4"                                                            | ●                   | ●      | —      | —                     | —      |
| BN9                                    | Ø 5/16"                                                           | —                   | ●      | —      | —                     | —      |
| BN11                                   | Ø 3/8"                                                            | —                   | —      | ●      | —                     | —      |
| LM*1                                   | Elbow port, mixed sizes<br>(Including upward and downward piping) | ●                   | ●      | ●      | —                     | —      |
| P, E port size<br>(One-touch fittings) |                                                                   | Ø 5/16"             | Ø 3/8" | Ø 1/2" | Ø 3/8"                | Ø 1/2" |

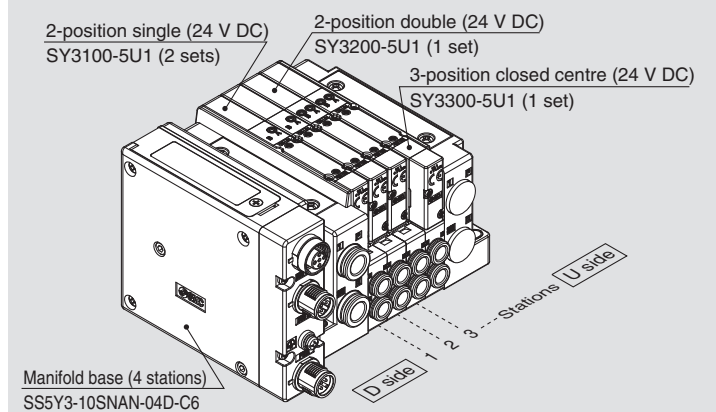
\*1: Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

\*2: To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 250 to 252).

## How to Order Manifold Assembly

### Example (SS5Y3-10SNAN-□)



SS5Y3-10SNAN-04D-C6...1 set (Type 10 4-station manifold base part no.)

\*SY3100-5U1.....2 sets (2-position single part no.)

\*SY3200-5U1.....1 set (2-position double part no.)

\*SY3300-5U1.....1 set (3-position closed centre part no.)

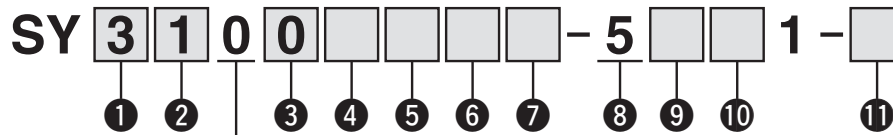
→ The asterisk denotes the symbol for assembly. Prefix it to the part numbers of the valve etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure on the left. If the arrangement becomes complicated, specify on a manifold specification sheet.

\*: When mixing top ported configurations, select from page 188. Specify on a manifold specification sheet if plugs are required on the A and B port on the manifold.

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



### 1 Series

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

### 2 Type of actuation

|     |                        |                 |
|-----|------------------------|-----------------|
| 1   | 2-position             | Single          |
| 2   |                        | Double          |
| 3   | 3-position             | Closed centre   |
| 4   |                        | Exhaust centre  |
| 5   |                        | Pressure centre |
| A*1 | 4-position dual 3-port | N.C./N.C.       |
| B*1 |                        | N.O./N.O.       |
| C*1 |                        | N.C./N.O.       |

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 5 Back pressure check valve (Built-in valve type)

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for details. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when a valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

|   |         |
|---|---------|
| 5 | 24 V DC |
|---|---------|

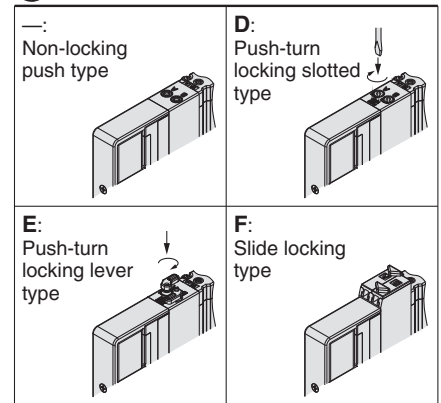
### 9 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| R      | —          |                          | Non-polar            |
| U      | ●          |                          |                      |
| S      | —          | ●                        | Positive common      |
| Z      | ●          |                          | Negative common      |
| NS     | —          |                          |                      |
| NZ     | ●          |                          |                      |

\*: Select a valve from R, U, S or Z when the SI Unit output polarity is — (positive common). Select a valve from R, U, NS or NZ when the SI Unit output polarity is N (negative common).

\*: Only "Z" and "NZ" types are available for with the power saving circuit.

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

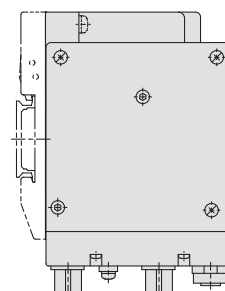
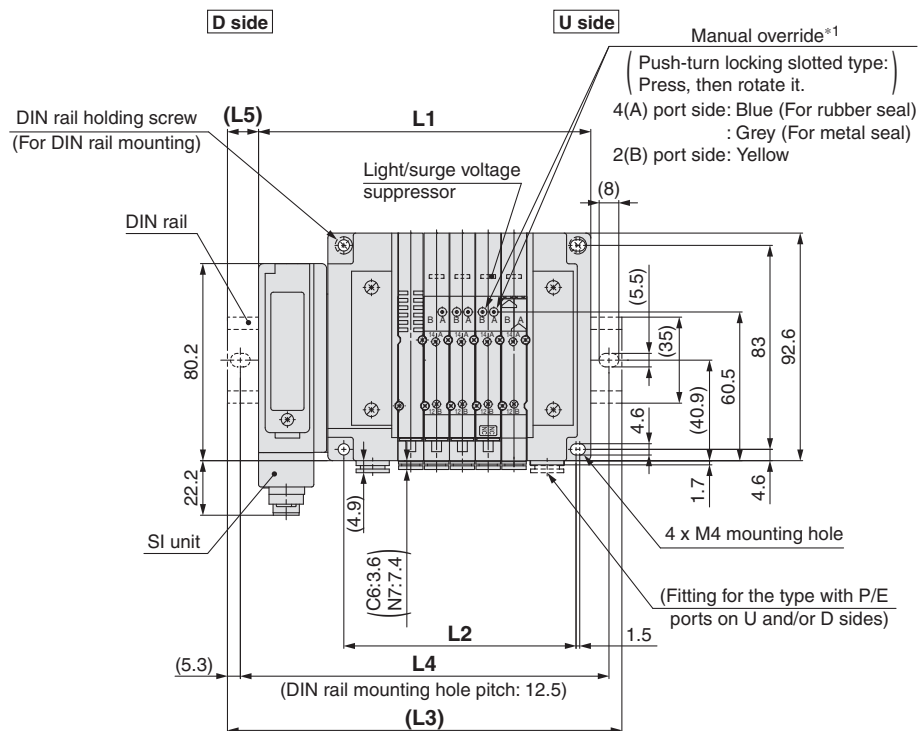
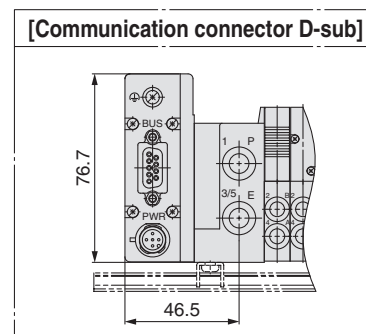
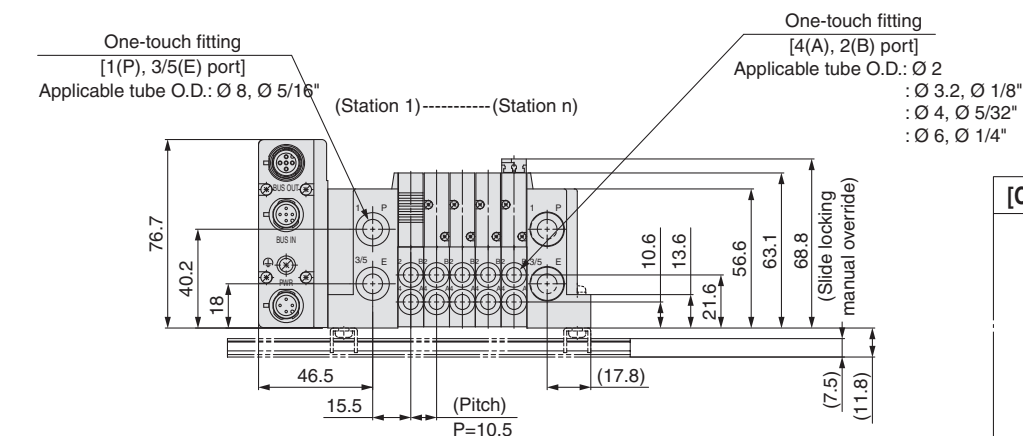
\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

# Dimensions: Series **SY3000**

## Plug-in Connector Connecting Base

Type 10/Side Ported  
EX260

SS5Y3-10S□□-Stations  $\begin{matrix} \text{U} \\ \text{D} \end{matrix}$  -  $\begin{matrix} \text{C2} \\ \text{C3} \\ \text{C4} \\ \text{C6} \end{matrix}$  -  $\begin{matrix} \text{N1} \\ \text{N3} \\ \text{N7} \end{matrix}$  (D)



\*1: Refer to page 205 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y3-10SQA-05D-C6".

\*: Refer to page 210 for dimensions of A or B port top-ported type.

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 103.7 | 114.2 | 124.7 | 135.2 | 145.7 | 156.2 | 166.7 | 177.2 | 187.7 | 198.2 | 208.7 | 219.2 | 229.7 | 240.2 | 250.7 | 261.2 |
| L2          | 63    | 73.5  | 84    | 94.5  | 105   | 115.5 | 126   | 136.5 | 147   | 157.5 | 168   | 178.5 | 189   | 199.5 | 210   | 220.5 |
| L3          | 135.5 | 148   | 148   | 160.5 | 173   | 185.5 | 198   | 210.5 | 223   | 223   | 235.5 | 248   | 260.5 | 273   | 285.5 | 285.5 |
| L4          | 125   | 137.5 | 137.5 | 150   | 162.5 | 175   | 187.5 | 200   | 212.5 | 212.5 | 225   | 237.5 | 250   | 262.5 | 275   | 275   |
| L5          | 16    | 17    | 11.5  | 12.5  | 13.5  | 14.5  | 15.5  | 16.5  | 17.5  | 12.5  | 13.5  | 14.5  | 15.5  | 16.5  | 17.5  | 12    |

| n: Stations | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|-------------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 271.7 | 282.2 | 292.7 | 303.2 | 313.7 | 324.2 | 334.7 |
| L2          | 231   | 241.5 | 252   | 262.5 | 273   | 283.5 | 294   |
| L3          | 298   | 310.5 | 323   | 335.5 | 348   | 348   | 360.5 |
| L4          | 287.5 | 300   | 312.5 | 325   | 337.5 | 337.5 | 350   |
| L5          | 13    | 14    | 15    | 16    | 17    | 12    | 13    |



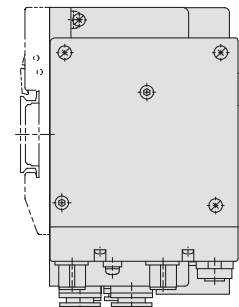
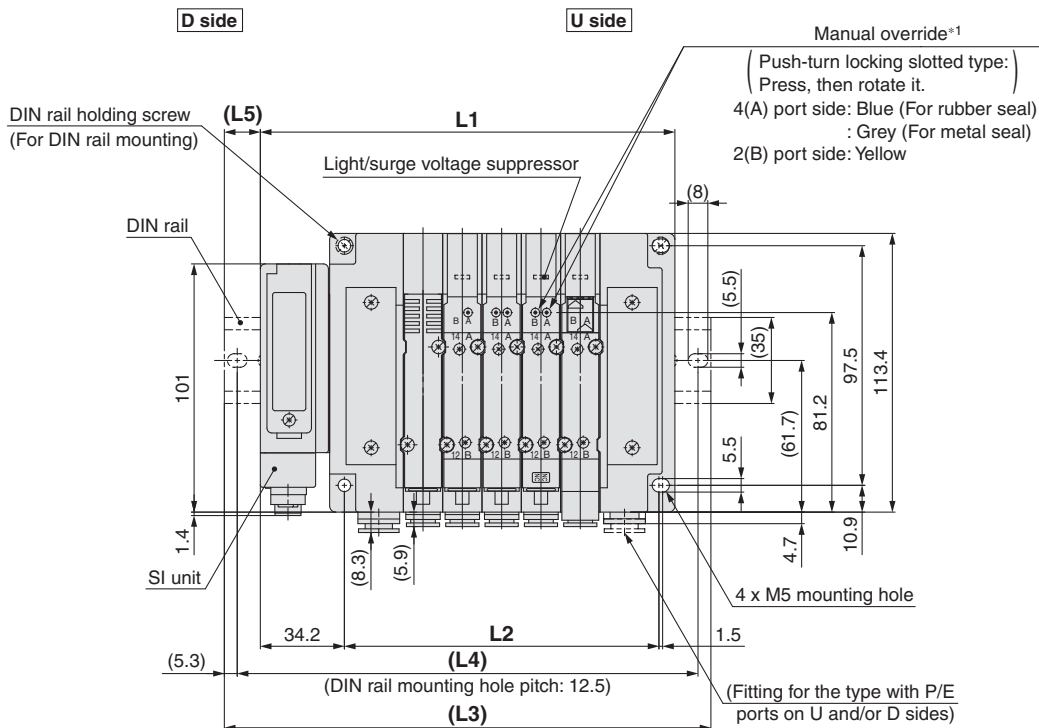
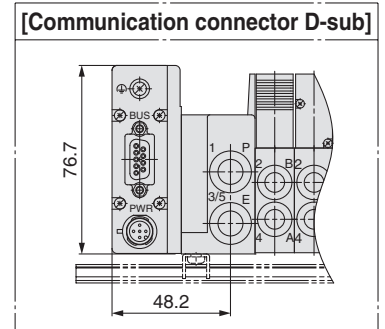
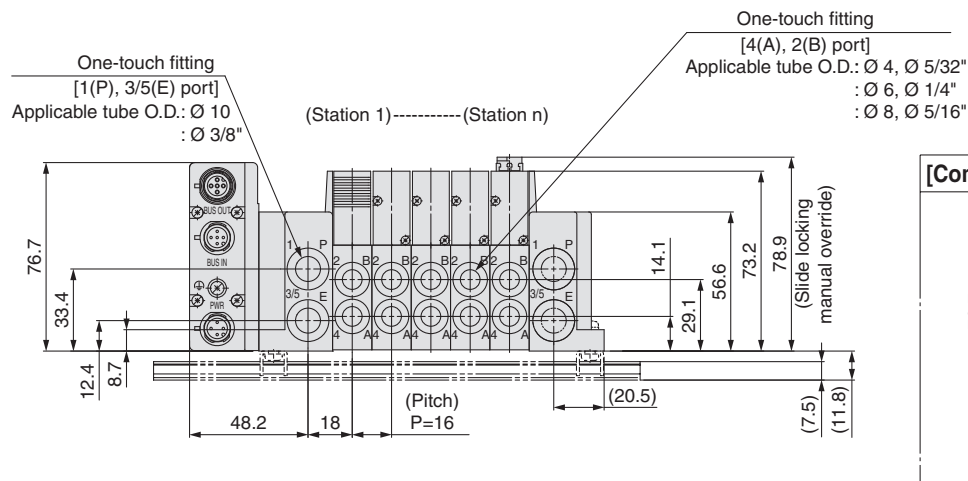
# Series SY3000/5000/7000

## Dimensions: Series SY5000

### Plug-in Connector Connecting Base

### Type 10/Side Ported EX260

SS5Y5-10S□□- Stations  $\begin{matrix} \text{U} & \text{C4, N3} \\ \text{D} & \text{C6, N7} \\ \text{B} & \text{C8, N9} \end{matrix}$  (D)



\*1: Refer to page 206 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y5-10SQA-05D-C8".

\*: Refer to page 211 for dimensions of A or B port top-ported type.

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 120.7 | 136.7 | 152.7 | 168.7 | 184.7 | 200.7 | 216.7 | 232.7 | 248.7 | 264.7 | 280.7 | 296.7 | 312.7 | 328.7 | 344.7 | 360.7 |
| L2          | 80    | 96    | 112   | 128   | 144   | 160   | 176   | 192   | 208   | 224   | 240   | 256   | 272   | 288   | 304   | 320   |
| L3          | 148   | 160.5 | 185.5 | 198   | 210.5 | 235.5 | 248   | 260.5 | 273   | 298   | 310.5 | 323   | 348   | 360.5 | 373   | 385.5 |
| L4          | 137.5 | 150   | 175   | 187.5 | 200   | 225   | 237.5 | 250   | 262.5 | 287.5 | 300   | 312.5 | 337.5 | 350   | 362.5 | 375   |
| L5          | 13.5  | 12    | 16.5  | 14.5  | 13    | 17.5  | 15.5  | 14    | 12    | 16.5  | 15    | 13    | 17.5  | 16    | 14    | 12.5  |

| n: Stations | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|-------------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 376.7 | 392.7 | 408.7 | 424.7 | 440.7 | 456.7 | 472.7 |
| L2          | 336   | 352   | 368   | 384   | 400   | 416   | 432   |
| L3          | 410.5 | 423   | 435.5 | 448   | 473   | 485.5 | 498   |
| L4          | 400   | 412.5 | 425   | 437.5 | 462.5 | 475   | 487.5 |
| L5          | 17    | 15    | 13.5  | 11.5  | 16    | 14.5  | 12.5  |

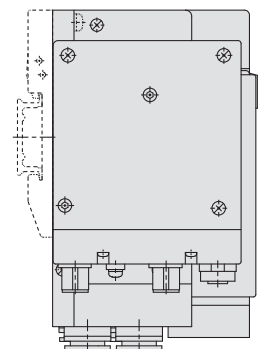
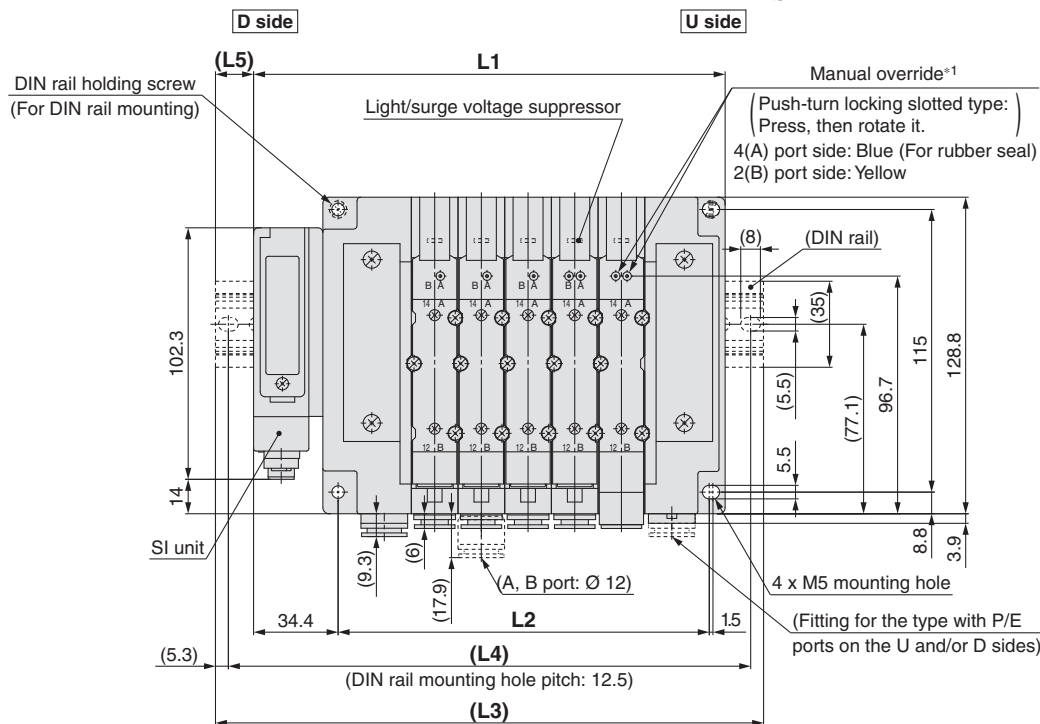
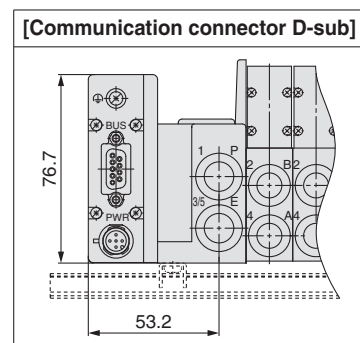
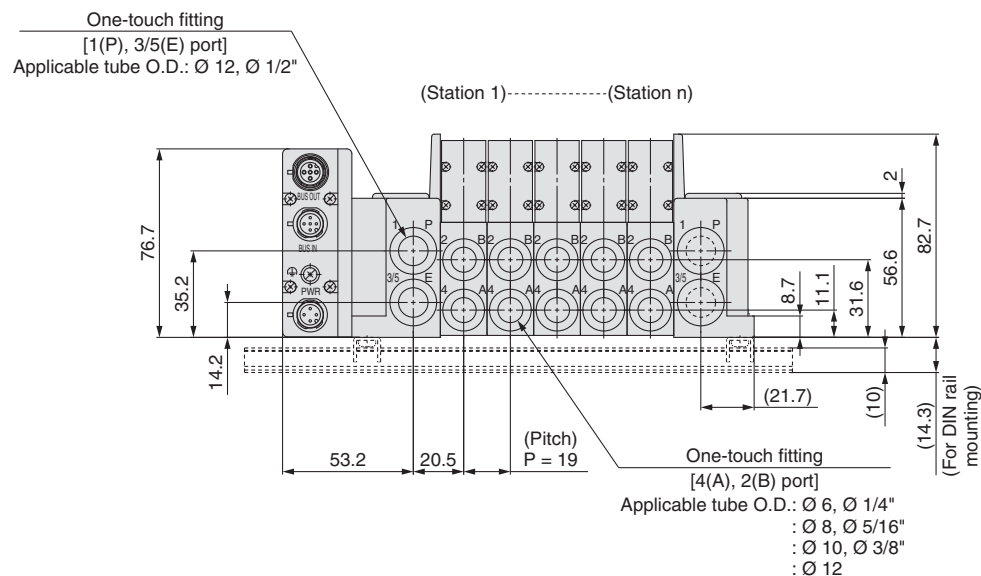


# Dimensions: Series SY7000

## Plug-in Connector Connecting Base

Type 10/Side Ported  
EX260

SS5Y7-10S□□-Stations  $\begin{matrix} \text{U} & \text{C6, N7} \\ \text{D} & \text{C8, N9} \\ \text{B} & \text{C10, N11 (D)} \\ & \text{C12} \end{matrix}$



\*1: Refer to page 207 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y7-10SQA-05D-C10".  
\*: Refer to page 212 for dimensions of A or B port top-ported type.

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 134.9 | 153.9 | 172.9 | 191.9 | 210.9 | 229.9 | 248.9 | 267.9 | 286.9 | 305.9 | 324.9 | 343.9 | 362.9 | 381.9 | 400.9 | 419.9 | 438.9 | 457.9 | 476.9 | 495.9 | 514.9 | 533.9 | 552.9 |
| L2          | 94    | 113   | 132   | 151   | 170   | 189   | 208   | 227   | 246   | 265   | 284   | 303   | 322   | 341   | 360   | 379   | 398   | 417   | 436   | 455   | 474   | 493   | 512   |
| L3          | 160.5 | 185.5 | 198   | 223   | 235.5 | 260.5 | 273   | 298   | 310.5 | 335.5 | 348   | 373   | 398   | 410.5 | 435.5 | 448   | 473   | 485.5 | 510.5 | 523   | 548   | 560.5 | 585.5 |
| L4          | 150   | 175   | 187.5 | 212.5 | 225   | 250   | 262.5 | 287.5 | 300   | 325   | 337.5 | 362.5 | 387.5 | 400   | 425   | 437.5 | 462.5 | 475   | 500   | 512.5 | 537.5 | 550   | 575   |
| L5          | 13    | 16    | 12.5  | 15.5  | 12.5  | 15.5  | 12    | 15    | 12    | 15    | 11.5  | 14.5  | 17.5  | 14.5  | 17.5  | 14    | 17    | 14    | 17    | 13.5  | 16.5  | 13.5  | 16.5  |

# Plug-in Connector Connecting Base

EX260

Type 12  
Top Ported

# Series SY3000/5000/7000 C €

RoHS

## How to Order Manifold

Refer to pages 210 to 212 for Type 12/Top ported dimensions.

**SS5Y** **3** - 12S **NAN** - **05** **U** - - -

1 2 3 4 5 6 7

### 1 Series

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

### 2 SI Unit specifications

(output polarity, protocol, number of outputs, communication connector)

| Symbol (output polarity)                      | Protocol        | Number of outputs | Communication connector |
|-----------------------------------------------|-----------------|-------------------|-------------------------|
| Positive common (NPN) / Negative common (PNP) |                 |                   |                         |
| 0*1                                           | Without SI unit |                   |                         |
| QA QAN                                        | DeviceNet™      | 32                | M12                     |
| QB QBN                                        |                 | 16                |                         |
| NA NAN                                        |                 | 32                | M12                     |
| NB NBN                                        | PROFIBUS        | 16                |                         |
| NC NCN                                        | DP              | 32                | *4                      |
| ND NDN                                        |                 | 16                | D-sub                   |
| VA VAN                                        | CC-Link         | 32                | M12                     |
| VB VBN                                        |                 | 16                |                         |
| DA DAN                                        | EtherCAT        | 32                | M12                     |
| DB DBN                                        |                 | 16                |                         |
| FA FAN                                        | PROFINET        | 32                | M12                     |
| FB FBN                                        |                 | 16                |                         |
| EA EAN                                        | EtherNet/IP™    | 32                | M12                     |
| EB EBN                                        |                 | 16                |                         |
| —*3 GAN                                       | EtherNet        | 32                | M12                     |
| —*3 GBN                                       | POWERLINK       | 16                |                         |

\*1 Without SI unit, the output polarity is decided by the SI unit used.

Ensure a match with the common specification of the valves to be used.

\*2 DIN rail cannot be mounted without SI Unit.

\*3 Positive common (NPN) type is not applicable.

\*4 IP40 for the D-sub applicable communication connector specification.

### 3 Valve stations

In the case of the 32-output SI Unit

| Symbol | Stations    | Note                                                 |
|--------|-------------|------------------------------------------------------|
| 02     | 2 stations  | Double wiring*1                                      |
| :      | :           |                                                      |
| 16     | 16 stations | Specified layout*2<br>(Available up to 32 solenoids) |
| 02     | 2 stations  |                                                      |
| :      | :           |                                                      |
| 24     | 24 stations |                                                      |

In the case of the 16-output SI Unit

| Symbol | Stations    | Note                                                 |
|--------|-------------|------------------------------------------------------|
| 02     | 2 stations  | Double wiring*1                                      |
| :      | :           |                                                      |
| 08     | 8 stations  | Specified layout*2<br>(Available up to 16 solenoids) |
| 02     | 2 stations  |                                                      |
| :      | :           |                                                      |
| 16     | 16 stations |                                                      |

\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

\*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

\*3: This also includes the number of blanking plate assembly.

\*4: For the model without the SI Unit (S0), note the maximum number of solenoids of the SI Unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

### 4 P, E port entry

|     |                               |
|-----|-------------------------------|
| U*1 | U side (2 to 10 stations)     |
| D*1 | D side (2 to 10 stations)     |
| B   | Both sides (2 to 24 stations) |

\*1: For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

### 5 SUP/EXH block assembly

|   |                                   |
|---|-----------------------------------|
| — | Internal pilot                    |
| S | Internal pilot, Built-in silencer |
| R | External pilot                    |

\*: For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)

\*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

### 6 P, E port size (One-touch fittings)

| Symbol | SY3000  | SY5000 | SY7000 |
|--------|---------|--------|--------|
| —      | Ø 8     | Ø 10   | Ø 12   |
| N      | Ø 5/16" | Ø 3/8" | Ø 1/2" |

\*: For N, sizes are in inches.

### 7 Mounting

|     |                                      |
|-----|--------------------------------------|
| —   | Direct mounting                      |
| D   | DIN rail mounting (With DIN rail)    |
| D0  | DIN rail mounting (Without DIN rail) |
| D3  | For 3 stations                       |
| :   | :                                    |
| D24 | For 24 stations                      |

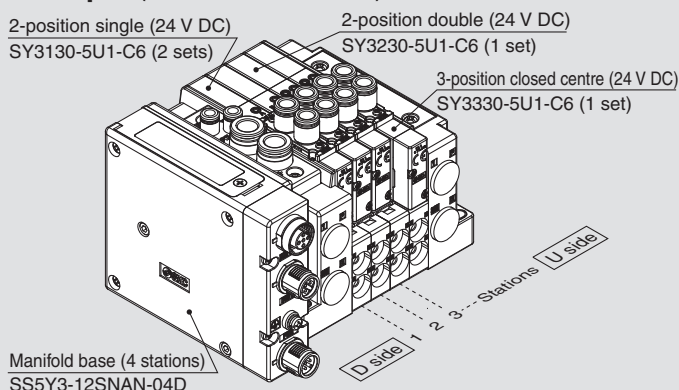
\*: When it is necessary to mount a DIN rail without an SI Unit, select D0 and order DIN rail length separately, referring to L3 in the dimensions. Refer to page 249 for part numbers of DIN rail.

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

For details about the EX260 Integrated-type (For Output) Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 240 in this catalogue. Please download the Operation Manual via SMC website, <http://www.smc.eu>

## How to Order Manifold Assembly

### Example (SS5Y3-12SNAN-□)



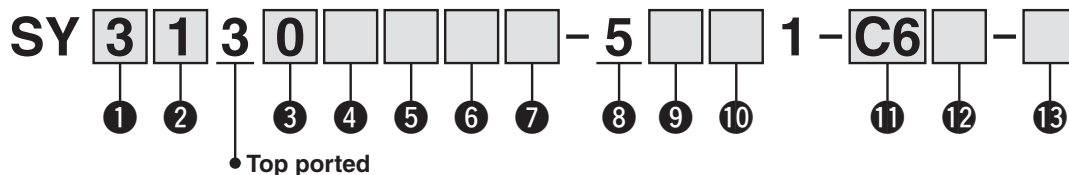
SS5Y3-12SNAN-04D ..... 1 set (Type 12 4-station manifold base part no.)  
 \*SY3130-5U1-C6 ..... 2 sets (2-position single part no.)  
 \*SY3230-5U1-C6 ..... 1 set (2-position double part no.)  
 \*SY3330-5U1-C6 ..... 1 set (3-position closed centre part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure on the left. If the arrangement becomes complicated, specify on a manifold specification sheet.

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



### 1 Series

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

### 2 Type of actuation

|     |             |                 |
|-----|-------------|-----------------|
| 1   | 2-position  | Single          |
| 2   |             | Double          |
| 3   | 3-position  | Closed centre   |
| 4   |             | Exhaust centre  |
| 5   |             | Pressure centre |
| A*1 | 4-position  | N.C./N.C.       |
| B*1 | dual 3-port | N.O./N.O.       |
| C*1 |             | N.C./N.O.       |

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 5 Back pressure check valve (Built-in valve type)

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for details. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when a valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

|   |         |
|---|---------|
| 5 | 24 V DC |
|---|---------|

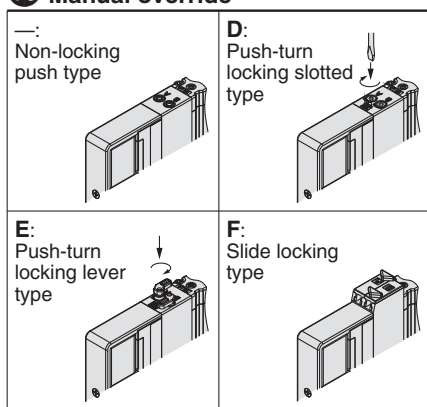
### 9 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| R      | —          | ●                        | Non-polar            |
| U      | ●          |                          |                      |
| S      | —          |                          | Positive common      |
| Z      | ●          |                          |                      |
| NS     | —          |                          |                      |
| NZ     | ●          |                          |                      |

\*: Select a valve from R, U, S or Z when the SI Unit output polarity is — (positive common). Select a valve from R, U, NS or NZ when the SI Unit output polarity is N (negative common).

\*: Only "Z" and "NZ" types are available for with the power saving circuit.

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 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)

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| C2     | Ø 2       | ●      | —      | —      |
| C3     | Ø 3.2     | ●      | —      | —      |
| C4     | Ø 4       | ●      | ●      | —      |
| C6     | Ø 6       | ●      | ●      | ●      |
| C8     | Ø 8       | —      | ●      | ●      |
| C10    | Ø 10      | —      | —      | ●      |
| C12    | Ø 12      | —      | —      | ●      |

#### One-touch fitting (Inch)

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| N1     | Ø 1/8"    | ●      | —      | —      |
| N3     | Ø 5/32"   | ●      | ●      | —      |
| N7     | Ø 1/4"    | ●      | ●      | ●      |
| N9     | Ø 5/16"   | —      | ●      | ●      |
| N11    | Ø 3/8"    | —      | —      | ●      |

### 12 Thread type

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

\*: Only — is available for M5.

### 13 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.

Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

EX126

# Series SY3000/5000/7000



## How to Order Manifold

Refer to pages 208 (SY5000) and 209 (SY7000) for dimensions of Type 11/Bottom ported type.

SS5Y **3** - **10** S4 **V** - **05** **U** - **C6**

1 2 3 4 5 6 7 8

### 1 Series

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

### 2 Type

|    |                 |
|----|-----------------|
| 10 | Side ported     |
| 11 | Bottom ported*1 |

\*1: The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to "Plug-in Mixed Mounting Type Manifold" (from page 213).

### 3 SI Unit

|   |                               |
|---|-------------------------------|
| 0 | Without SI Unit               |
| V | CC-Link (Positive common NPN) |

\*: Only a terminal block plate is mounted for the valve without SI Unit.

### 4 Valve stations

| Symbol | Stations    | Note                                                 |
|--------|-------------|------------------------------------------------------|
| 02     | 2 stations  | Double wiring*1                                      |
| ⋮      | ⋮           |                                                      |
| 08     | 8 stations  | Specified layout*2<br>(Available up to 16 solenoids) |
| 02     | 2 stations  |                                                      |
| ⋮      | ⋮           |                                                      |
| 16     | 16 stations |                                                      |

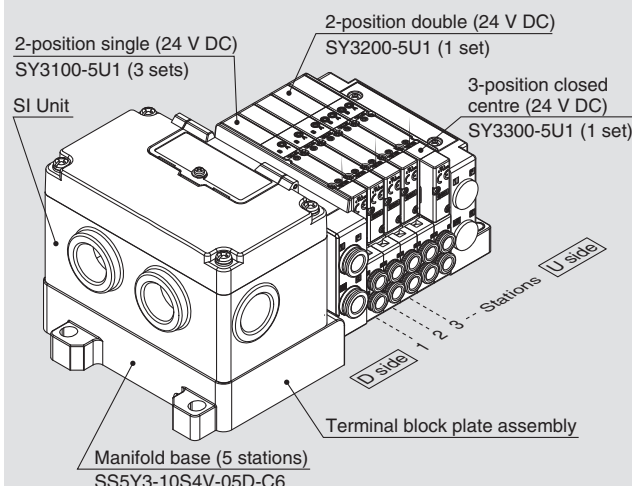
\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

\*2: Specified layout: Indicate the wiring specifications with the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

\*: This also includes the number of blanking plate assembly.

## How to Order Manifold Assembly

### Example (SS5Y3-10S4V-□-□)



SS5Y3-10S4V-05D-C6 ... 1 set (Type 10 5-station manifold base part no.)

\*SY3100-5U1 ..... 3 sets (2-position single part no.)

\*SY3200-5U1 ..... 1 set (2-position double part no.)

\*SY3300-5U1 ..... 1 set (3-position closed centre part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

\*: When mixing top ported configurations, select from page 196.

In this case, use caution as there is also output on the A and B port on base side.

Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

### 5 P, E port entry

|   |                               |
|---|-------------------------------|
| U | U side (2 to 10 stations)     |
| D | D side (2 to 10 stations)     |
| B | Both sides (2 to 16 stations) |

### 6 SUP/EXH block assembly

|   |                                   |
|---|-----------------------------------|
| — | Internal pilot                    |
| S | Internal pilot, Built-in silencer |
| R | External pilot                    |

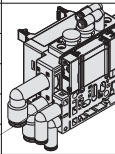
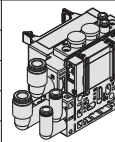
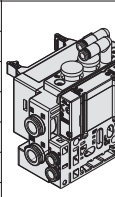
\*: 3/5(E) port is plugged for the built-in silencer type.

\*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

For details about the EX126 Integrated-type (For Output) Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 241 in this catalogue. Please download the Operation Manual via SMC website, <http://www.smc.eu>

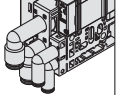
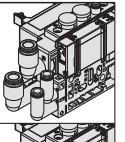
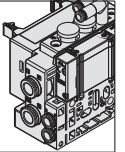
## 7 A, B port size (Metric/One-touch fitting)

| Symbol                                 | A, B port                                                         | Type 10/Side ported |        |        | Type 11/Bottom ported |        |
|----------------------------------------|-------------------------------------------------------------------|---------------------|--------|--------|-----------------------|--------|
|                                        |                                                                   | SY3000              | SY5000 | SY7000 | SY5000                | SY7000 |
| C2                                     | Ø 2                                                               | ●                   | —      | —      | —                     | —      |
| C3                                     | Ø 3.2                                                             | ●                   | —      | —      | —                     | —      |
| C4                                     | Ø 4                                                               | ●                   | ●      | —      | ●                     | —      |
| C6                                     | Ø 6                                                               | ●                   | ●      | ●      | ●                     | ●      |
| C8                                     | Ø 8                                                               | —                   | ●      | ●      | ●                     | ●      |
| C10                                    | Ø 10                                                              | —                   | —      | ●      | —                     | ●      |
| C12                                    | Ø 12                                                              | —                   | —      | ●      | —                     | ●      |
| CM*1                                   | Straight port, mixed sizes                                        | ●                   | ●      | ●      | ●                     | ●      |
| L4                                     | Ø 4                                                               | ●                   | ●      | —      | —                     | —      |
| L6                                     | Ø 6                                                               | ●                   | ●      | ●      | —                     | —      |
| L8                                     | Ø 8                                                               | —                   | ●      | ●      | —                     | —      |
| L10                                    | Ø 10                                                              | —                   | —      | ●      | —                     | —      |
| L12                                    | Ø 12                                                              | —                   | —      | ●      | —                     | —      |
| B4                                     | Ø 4                                                               | ●                   | ●      | —      | —                     | —      |
| B6                                     | Ø 6                                                               | ●                   | ●      | ●      | —                     | —      |
| B8                                     | Ø 8                                                               | —                   | ●      | ●      | —                     | —      |
| B10                                    | Ø 10                                                              | —                   | —      | ●      | —                     | —      |
| B12                                    | Ø 12                                                              | —                   | —      | ●      | —                     | —      |
| LM*1                                   | Elbow port, mixed sizes<br>(Including upward and downward piping) | ●                   | ●      | ●      | —                     | —      |
| P, E port size<br>(One-touch fittings) |                                                                   | Ø 8                 | Ø 10   | Ø 12   | Ø 10                  | Ø 12   |



## A, B port size (Inch/One-touch fitting)

| Symbol                                 | A, B port                                                         | Type 10/Side ported |        |        | Type 11/Bottom ported |        |
|----------------------------------------|-------------------------------------------------------------------|---------------------|--------|--------|-----------------------|--------|
|                                        |                                                                   | SY3000              | SY5000 | SY7000 | SY5000                | SY7000 |
| N1                                     | Ø 1/8"                                                            | ●                   | —      | —      | —                     | —      |
| N3                                     | Ø 5/32"                                                           | ●                   | ●      | —      | ●                     | —      |
| N7                                     | Ø 1/4"                                                            | ●                   | ●      | ●      | ●                     | ●      |
| N9                                     | Ø 5/16"                                                           | —                   | ●      | ●      | ●                     | ●      |
| N11                                    | Ø 3/8"                                                            | —                   | —      | ●      | —                     | ●      |
| CM*1                                   | Straight port, mixed sizes                                        | ●                   | ●      | ●      | ●                     | ●      |
| LN3                                    | Ø 5/32"                                                           | ●                   | —      | —      | —                     | —      |
| LN7                                    | Ø 1/4"                                                            | ●                   | ●      | —      | —                     | —      |
| LN9                                    | Ø 5/16"                                                           | —                   | ●      | —      | —                     | —      |
| LN11                                   | Ø 3/8"                                                            | —                   | —      | ●      | —                     | —      |
| BN3                                    | Ø 5/32"                                                           | ●                   | —      | —      | —                     | —      |
| BN7                                    | Ø 1/4"                                                            | ●                   | ●      | —      | —                     | —      |
| BN9                                    | Ø 5/16"                                                           | —                   | ●      | —      | —                     | —      |
| BN11                                   | Ø 3/8"                                                            | —                   | —      | ●      | —                     | —      |
| LM*1                                   | Elbow port, mixed sizes<br>(Including upward and downward piping) | ●                   | ●      | ●      | —                     | —      |
| P, E port size<br>(One-touch fittings) |                                                                   | Ø 5/16"             | Ø 3/8" | Ø 1/2" | Ø 3/8"                | Ø 1/2" |



\*1: Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

\*2: To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 250 to 252).

## 8 Mounting and Option

| Symbol | Mounting          | Option     |                |
|--------|-------------------|------------|----------------|
|        |                   | Name plate | Station number |
| —      | Direct mounting   | —          | —              |
| AA     |                   | ●          | ●              |
| BA     |                   | ●          | —              |
| D□     | DIN rail mounting | —          | —              |
| A□     |                   | ●          | ●              |
| B□     |                   | ●          | —              |

\*: Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" below.)

\*: Only direct mounting is available for Type 11 (Bottom ported).

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

### DIN Rail Option

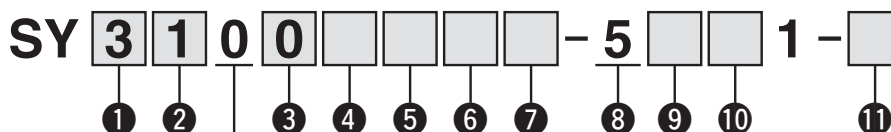
|    |                                 |
|----|---------------------------------|
| —  | Direct mounting                 |
| 0  | Without DIN rail (with bracket) |
| 3  | For 3 stations                  |
| ⋮  | ⋮                               |
| 16 | For 16 stations                 |

Specify a longer rail than the total length of specified stations.



## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



Base mounted

### 1 Series

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

### 2 Type of actuation

|     |             |                 |
|-----|-------------|-----------------|
| 1   | 2-position  | Single          |
| 2   |             | Double          |
| 3   | 3-position  | Closed centre   |
| 4   |             | Exhaust centre  |
| 5   |             | Pressure centre |
| A*1 | 4-position  | N.C./N.C.       |
| B*1 | dual 3-port | N.O./N.O.       |
| C*1 |             | N.C./N.O.       |

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 5 Back pressure check valve (Built-in valve type)

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

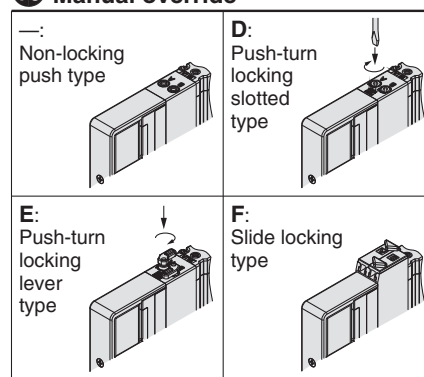
|   |         |
|---|---------|
| 5 | 24 V DC |
|---|---------|

### 9 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| R      | —          | —                        | Non-polar            |
| U      | ●          | ●                        | Non-polar            |
| S      | —          | —                        | Positive common      |
| Z      | ●          | —                        | Positive common      |

\*: Only "Z" type is available for with the power saving circuit.

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of base gasket and mounting screw.

\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

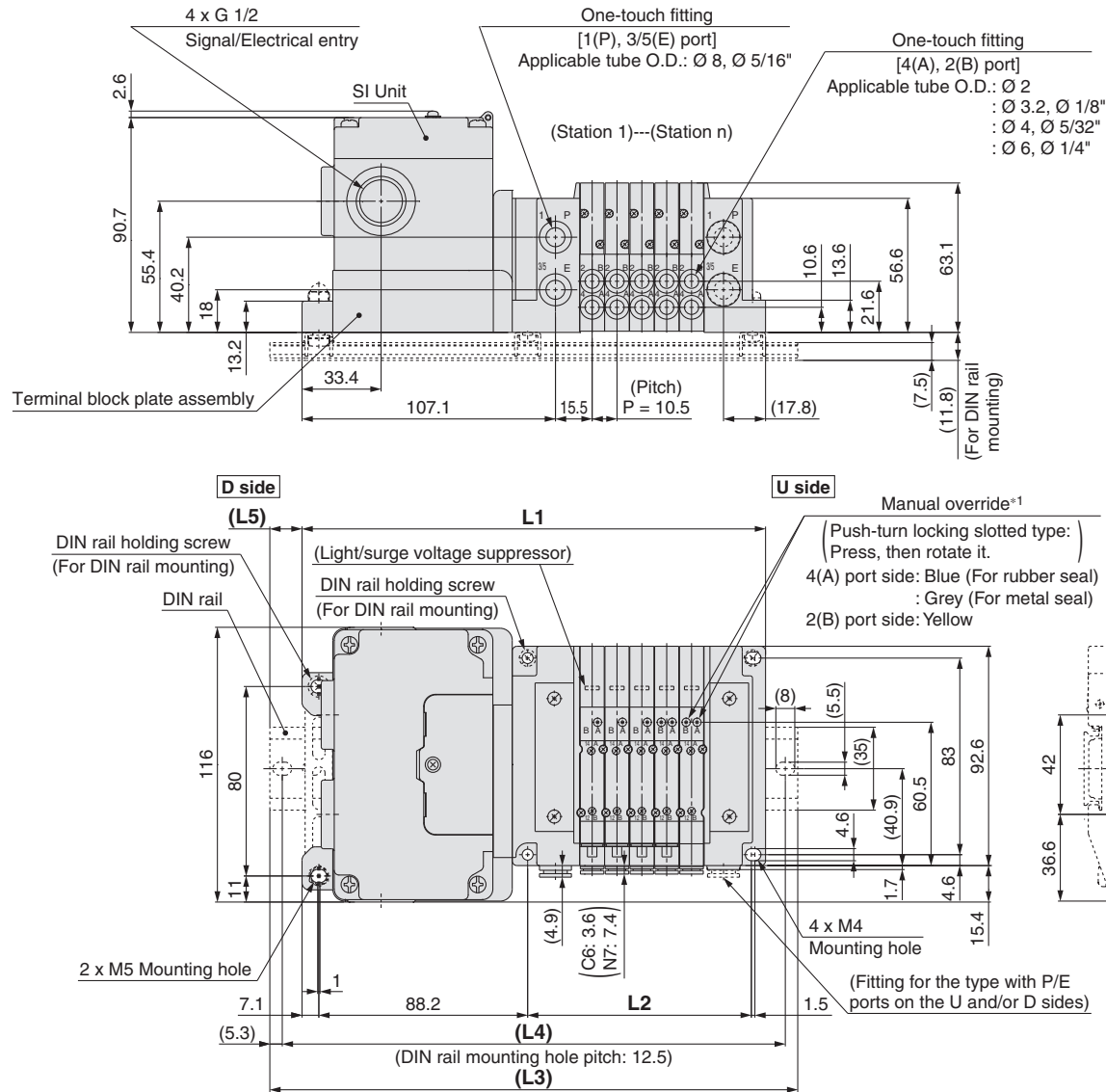


## Dimensions: Series SY3000

### Plug-in Connector Connecting Base

Type 10/Side Ported  
EX126

SS5Y3-10S4V - Stations  $\begin{matrix} \text{U} & \text{C2} \\ \text{D} & \text{C3, N1} \\ \text{B} & \text{C4, N3} \\ & \text{C6, N7} \end{matrix}$  (D)



\*1: Refer to page 205 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y3-10S4V-05D-C6".

\*: Refer to page 210 for dimensions of A or B port top-ported type.

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 164.3 | 174.8 | 185.3 | 195.8 | 206.3 | 216.8 | 227.3 | 237.8 | 248.3 | 258.8 | 269.3 | 279.8 | 290.3 | 300.8 | 311.3 |
| L2          | 63    | 73.5  | 84    | 94.5  | 105   | 115.5 | 126   | 136.5 | 147   | 157.5 | 168   | 178.5 | 189   | 199.5 | 210   |
| L3          | 198   | 198   | 210.5 | 223   | 235.5 | 248   | 260.5 | 273   | 273   | 285.5 | 298   | 310.5 | 323   | 335.5 | 335.5 |
| L4          | 187.5 | 187.5 | 200   | 212.5 | 225   | 237.5 | 250   | 262.5 | 262.5 | 275   | 287.5 | 300   | 312.5 | 325   | 325   |
| L5          | 17    | 11.5  | 12.5  | 13.5  | 14.5  | 15.5  | 16.5  | 17.5  | 12.5  | 13.5  | 14.5  | 15.5  | 16.5  | 17.5  | 12    |

# Series SY3000/5000/7000

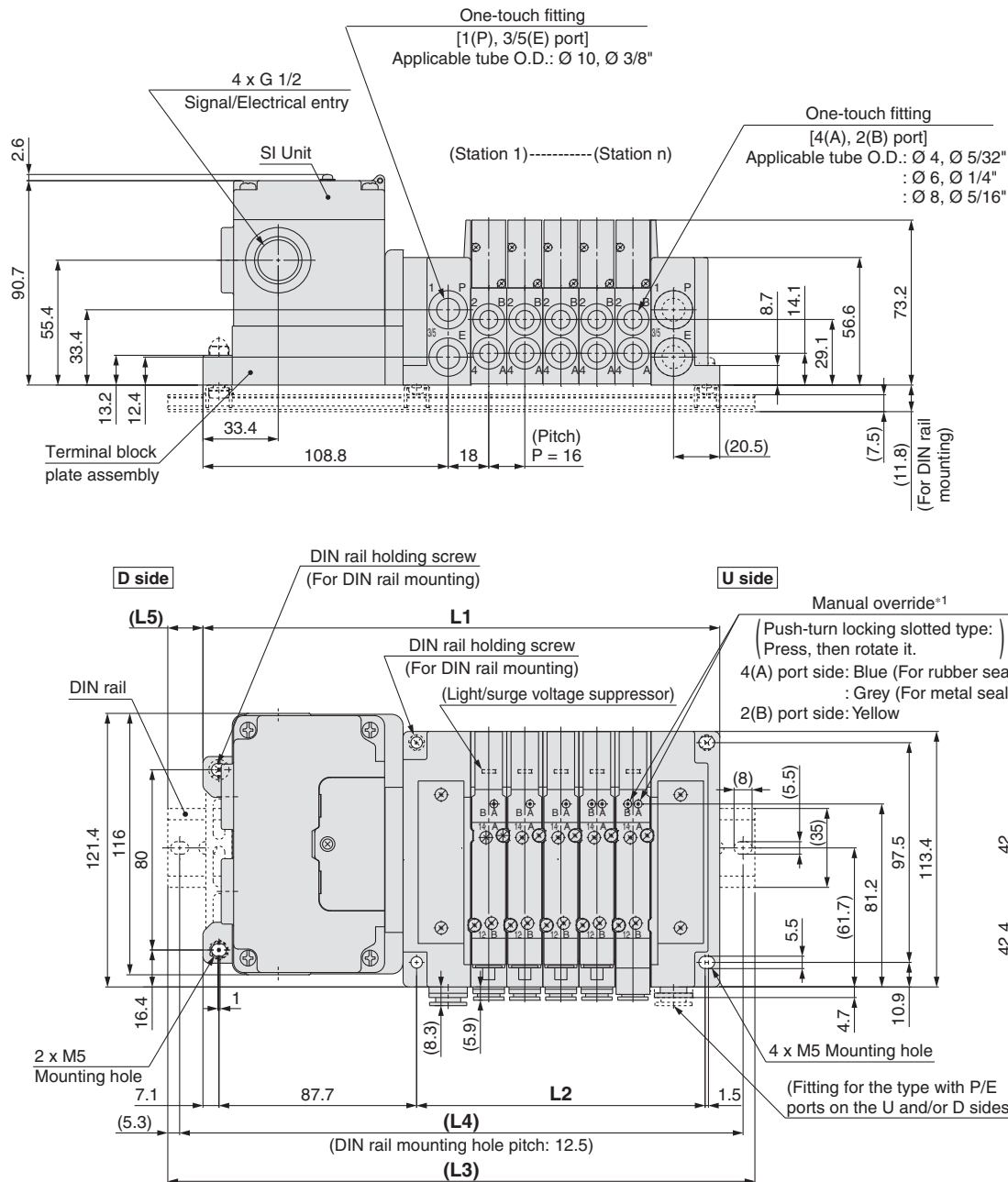
## Dimensions: Series SY5000

### Plug-in Connector Connecting Base

Type 10/Side Ported

EX126

SS5Y5-10S4V - Stations  $\begin{matrix} \text{U} & \text{C4, N3} \\ \text{D} & \text{C6, N7} \\ \text{B} & \text{C8, N9} \end{matrix}$  (D)



\*1: Refer to page 206 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y5-10S4V-05D-C8".

\*: Refer to page 211 for dimensions of A or B port top-ported type.

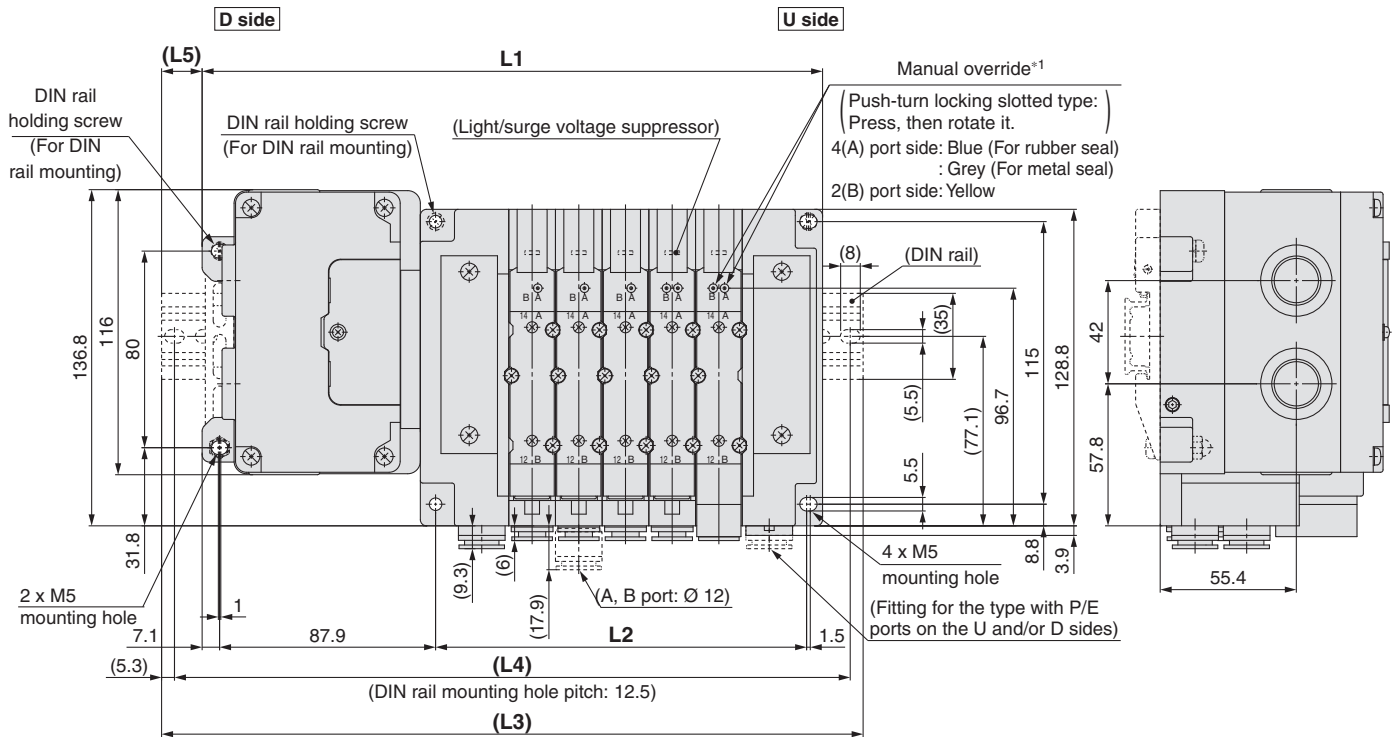
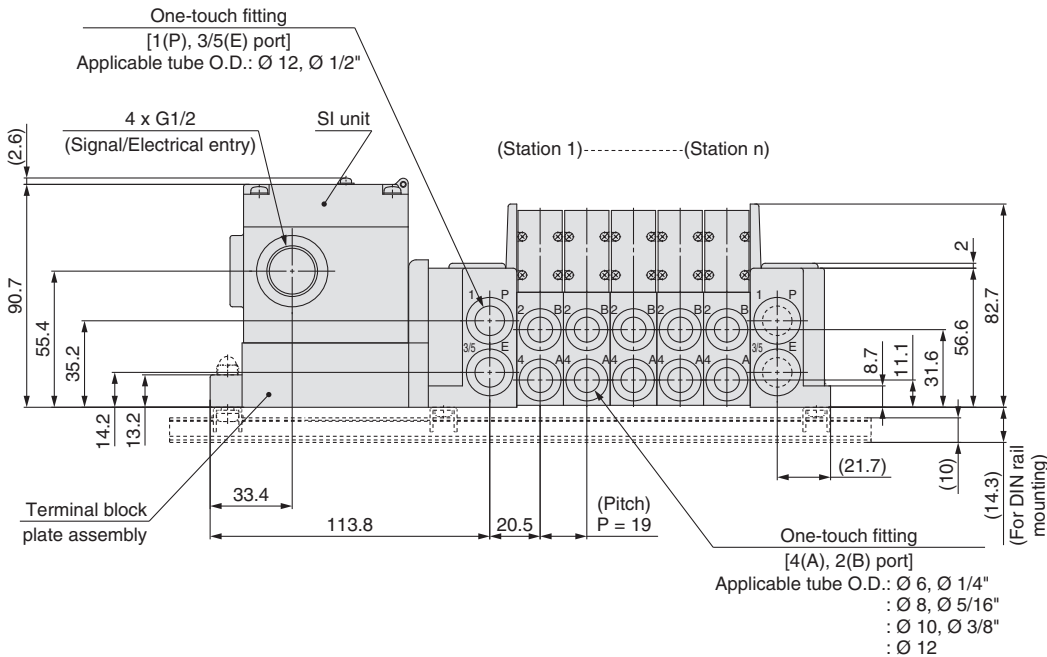
| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 181.3 | 197.3 | 213.3 | 229.3 | 245.3 | 261.3 | 277.3 | 293.3 | 309.3 | 325.3 | 341.3 | 357.3 | 373.3 | 389.3 | 405.3 |
| L2          | 80    | 96    | 112   | 128   | 144   | 160   | 176   | 192   | 208   | 224   | 240   | 256   | 272   | 288   | 304   |
| L3          | 210.5 | 223   | 248   | 260.5 | 273   | 285.5 | 310.5 | 323   | 335.5 | 360.5 | 373   | 385.5 | 398   | 423   | 435.5 |
| L4          | 200   | 212.5 | 237.5 | 250   | 262.5 | 275   | 300   | 312.5 | 325   | 350   | 362.5 | 375   | 387.5 | 412.5 | 425   |
| L5          | 14.5  | 13    | 17.5  | 15.5  | 14    | 12    | 16.5  | 15    | 13    | 17.5  | 16    | 14    | 12.5  | 17    | 15    |

# Dimensions: Series SY7000

## Plug-in Connector Connecting Base

Type 10/Side Ported  
EX126

SS5Y7-10S4□- Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix}$   $\begin{matrix} \text{C6, N7} \\ \text{C8, N9} \\ \text{C10, N11} \\ \text{C12} \end{matrix}$  (D)



\*1: Refer to page 207 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y7-10S4V-05D-C10".

\*: Refer to page 212 for dimensions of A or B port top-ported type.

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 195.5 | 214.5 | 233.5 | 252.5 | 271.5 | 290.5 | 309.5 | 328.5 | 347.5 | 366.5 | 385.5 | 404.5 | 423.5 | 442.5 | 461.5 |
| L2          | 94    | 113   | 132   | 151   | 170   | 189   | 208   | 227   | 246   | 265   | 284   | 303   | 322   | 341   | 360   |
| L3          | 223   | 248   | 260.5 | 285.5 | 298   | 323   | 335.5 | 360.5 | 373   | 398   | 410.5 | 435.5 | 448   | 473   | 485.5 |
| L4          | 212.5 | 237.5 | 250   | 275   | 287.5 | 312.5 | 325   | 350   | 362.5 | 387.5 | 400   | 425   | 437.5 | 462.5 | 475   |
| L5          | 14    | 17    | 13.5  | 16.5  | 13.5  | 16.5  | 13    | 16    | 13    | 16    | 12.5  | 15.5  | 12.5  | 15.5  | 12    |

# Plug-in Connector Connecting Base

EX126

Type 12  
Top Ported

# Series SY3000/5000/7000



## How to Order Manifold

Refer to pages 210 to 212 for dimensions of Type 12/Top ported type.

SS5Y **3** - 12S4 **V** - **05** **U** **□** - **□** **□**

1 2 3 4 5 6 7

### 1 Series

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

### 2 SI Unit

|   |                               |
|---|-------------------------------|
| 0 | Without SI Unit               |
| V | CC-Link (Positive common NPN) |

\*: Only a terminal block plate is mounted for the valve without SI Unit.

### 3 Valve stations

| Symbol | Stations    | Note                                                 |
|--------|-------------|------------------------------------------------------|
| 02     | 2 stations  | Double wiring*1                                      |
| ⋮      | ⋮           |                                                      |
| 08     | 8 stations  | Specified layout*2<br>(Available up to 16 solenoids) |
| 02     | 2 stations  |                                                      |
| ⋮      | ⋮           |                                                      |
| 16     | 16 stations |                                                      |

\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

\*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

\*: This also includes the number of blanking plate assembly.

### 4 P, E port entry

|     |                               |
|-----|-------------------------------|
| U*1 | U side (2 to 10 stations)     |
| D*1 | D side (2 to 10 stations)     |
| B   | Both sides (2 to 16 stations) |

\*1: For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

### 5 SUP/EXH block assembly

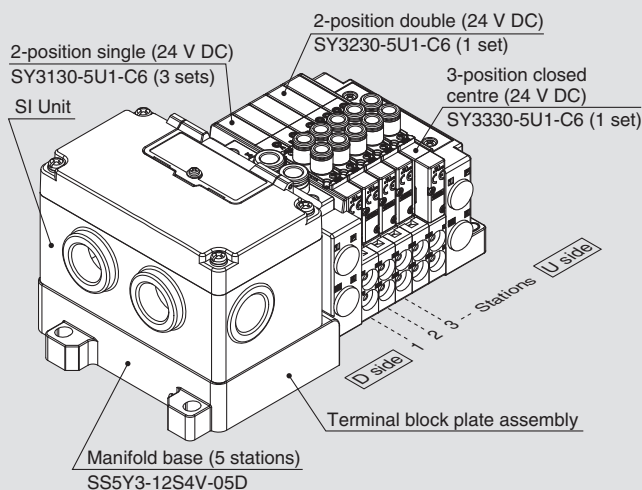
|   |                                   |
|---|-----------------------------------|
| — | Internal pilot                    |
| S | Internal pilot, Built-in silencer |
| R | External pilot                    |

\*: For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)

\*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

## How to Order Manifold Assembly

### Example (SS5Y3-12S4V-□-□)



SS5Y3-12S4V-05D ... 1 set (Type 12 5-station manifold base part no.)

\*SY3130-5U1-C6 ..... 3 sets (2-position single part no.)

\*SY3230-5U1-C6 ..... 1 set (2-position double part no.)

\*SY3330-5U1-C6 ..... 1 set (3-position closed centre part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

### 6 P, E port size (One-touch fittings)

| Symbol | SY3000  | SY5000 | SY7000 |
|--------|---------|--------|--------|
| —      | Ø 8     | Ø 10   | Ø 12   |
| N      | Ø 5/16" | Ø 3/8" | Ø 1/2" |

\*: For N, sizes are in inches.

### 7 Mounting

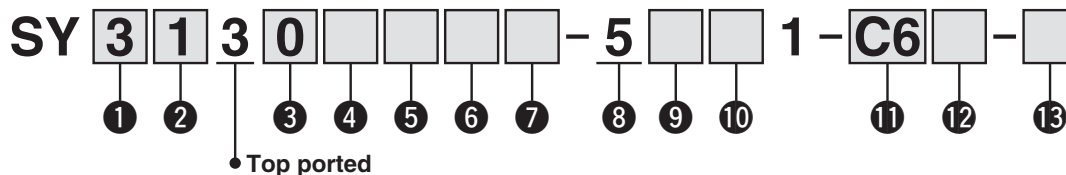
|     |                                      |
|-----|--------------------------------------|
| —   | Direct mounting                      |
| D   | DIN rail mounting (With DIN rail)    |
| D0  | DIN rail mounting (Without DIN rail) |
| D3  | For 3 stations                       |
| ⋮   | ⋮                                    |
| D16 | For 16 stations                      |

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

For details about the EX126 Integrated-type (For Output) Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 241 in this catalogue. Please download the Operation Manual via SMC website, <http://www.smc.eu>

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



### 1 Series

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

### 2 Type of actuation

|     |             |                 |
|-----|-------------|-----------------|
| 1   | 2-position  | Single          |
| 2   |             | Double          |
| 3   | 3-position  | Closed centre   |
| 4   |             | Exhaust centre  |
| 5   |             | Pressure centre |
| A*1 | 4-position  | N.C./N.C.       |
| B*1 | dual 3-port | N.O./N.O.       |
| C*1 |             | N.C./N.O.       |

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 5 Back pressure check valve (Built-in valve type)

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

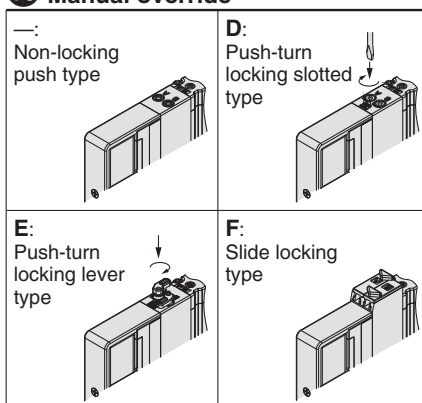
|   |         |
|---|---------|
| 5 | 24 V DC |
|---|---------|

### 9 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| R      | —          | •                        | Non-polar            |
| U      | •          | •                        | Non-polar            |
| S      | —          | •                        | Positive common      |
| Z      | •          | •                        | Positive common      |

\*: Only "Z" type is available for with the power saving circuit.

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 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)

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| C2     | Ø 2       | •      | —      | —      |
| C3     | Ø 3.2     | •      | —      | —      |
| C4     | Ø 4       | •      | •      | —      |
| C6     | Ø 6       | •      | •      | •      |
| C8     | Ø 8       | —      | •      | •      |
| C10    | Ø 10      | —      | —      | •      |
| C12    | Ø 12      | —      | —      | •      |

#### One-touch fitting (Inch)

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| N1     | Ø 1/8"    | •      | —      | —      |
| N3     | Ø 5/32"   | •      | •      | —      |
| N7     | Ø 1/4"    | •      | •      | •      |
| N9     | Ø 5/16"   | —      | •      | •      |
| N11    | Ø 3/8"    | —      | —      | •      |

### 12 Thread type

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

\*: Only — is available for M5.

### 13 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service. Refer to page 244 for part numbers of base gasket and mounting screw.

\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.



Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

EX120

# Series SY3000/5000/7000



## How to Order Manifold

Refer to pages 208 (SY5000) and 209 (SY7000) for dimensions of Type 11/Bottom ported type.

SS5Y **3** - **10** S3 **R1** - **05** **U** - **C6**

1 2 3 4 5 6 7 8

### 1 Series

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

### 2 Type

|    |                 |
|----|-----------------|
| 10 | Side ported     |
| 11 | Bottom ported*1 |

\*1: The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to "Plug-in Mixed Mounting Type Manifold" (from page 213).

### 3 SI Unit

|       |                                  |
|-------|----------------------------------|
| 0     | Without SI Unit                  |
| Q     | DeviceNet™ (Positive common NPN) |
| R1    | OMRON CompoBus/S 16 outputs      |
| R2    | (Positive common NPN) 8 outputs  |
| V     | CC-Link (Positive common NPN)    |
| ZB*1  | CompoNet™ Positive common NPN    |
| ZBN*1 | Negative common PNP              |

\*1: The communication connector (for the opposite side) is not provided. Please order it separately.

\*: Ensure a match with the common specification of the valve to be used.

### 4 Valve stations

| Symbol | Stations    | Note                                                 |
|--------|-------------|------------------------------------------------------|
| 02     | 2 stations  | Double wiring*1                                      |
| :      | :           |                                                      |
| 08     | 8 stations  | Specified layout*2<br>(Available up to 16 solenoids) |
| 02     | 2 stations  |                                                      |
| :      | :           |                                                      |
| 16     | 16 stations |                                                      |

\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

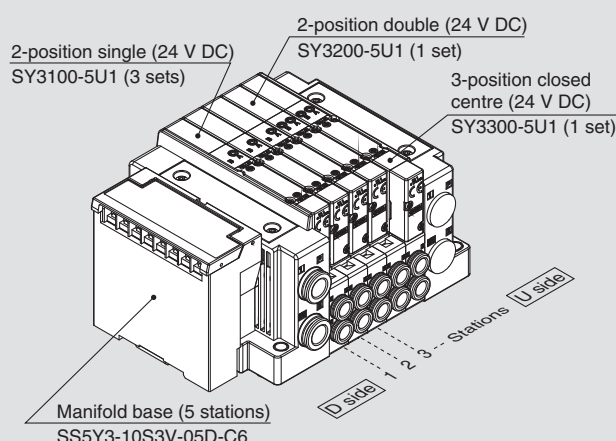
\*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

\*: This also includes the number of blanking plate assembly.

\*: Since R2 type SI Unit has 8 outputs, note that up to 8 solenoids can be accommodated.

## How to Order Manifold Assembly

### Example (SS5Y3-10S3V-□)



SS5Y3-10S3V-05D-C6 ... 1 set (Type 10 5-station manifold base part no.)  
 \*SY3100-5U1 ..... 3 sets (2-position single part no.)  
 \*SY3200-5U1 ..... 1 set (2-position double part no.)  
 \*SY3300-5U1 ..... 1 set (3-position closed centre part no.)

The asterisk denotes the symbol for assembly.  
 Prefix it to the part numbers of the valve etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

\*: When mixing top ported configurations, select from page 204.  
 In this case, use caution as there is also output on the A and B port on base side.  
 Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

### 5 P, E port entry

|   |                               |
|---|-------------------------------|
| U | U side (2 to 10 stations)     |
| D | D side (2 to 10 stations)     |
| B | Both sides (2 to 16 stations) |

### 6 SUP/EXH block assembly

|   |                                   |
|---|-----------------------------------|
| — | Internal pilot                    |
| S | Internal pilot, Built-in silencer |
| R | External pilot                    |

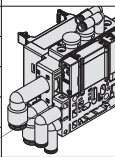
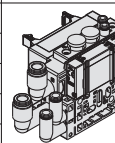
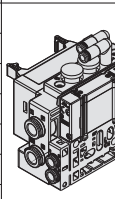
\*: 3/5(E) port is plugged for the built-in silencer type.

For details about the EX120 Integrated-type (For Output) Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 242 in this catalogue. Please download the Operation Manual via SMC website, <http://www.smc.eu>



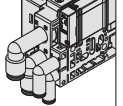
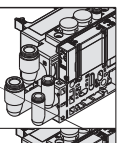
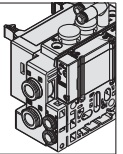
## 7 A, B port size (Metric/One-touch fitting)

| Symbol                                 | A, B port                                                         | Type 10/Side ported |        |        | Type 11/Bottom ported |        |
|----------------------------------------|-------------------------------------------------------------------|---------------------|--------|--------|-----------------------|--------|
|                                        |                                                                   | SY3000              | SY5000 | SY7000 | SY5000                | SY7000 |
| C2                                     | Ø 2                                                               | ●                   | —      | —      | —                     | —      |
| C3                                     | Ø 3.2                                                             | ●                   | —      | —      | —                     | —      |
| C4                                     | Ø 4                                                               | ●                   | ●      | —      | ●                     | —      |
| C6                                     | Ø 6                                                               | ●                   | ●      | ●      | ●                     | ●      |
| C8                                     | Ø 8                                                               | —                   | ●      | ●      | ●                     | ●      |
| C10                                    | Ø 10                                                              | —                   | —      | ●      | —                     | ●      |
| C12                                    | Ø 12                                                              | —                   | —      | ●      | —                     | ●      |
| CM*1                                   | Straight port, mixed sizes                                        | ●                   | ●      | ●      | ●                     | ●      |
| L4                                     | Ø 4                                                               | ●                   | ●      | —      | —                     | —      |
| L6                                     | Ø 6                                                               | ●                   | ●      | ●      | —                     | —      |
| L8                                     | Ø 8                                                               | —                   | ●      | ●      | —                     | —      |
| L10                                    | Ø 10                                                              | —                   | —      | ●      | —                     | —      |
| L12                                    | Ø 12                                                              | —                   | —      | ●      | —                     | —      |
| B4                                     | Ø 4                                                               | ●                   | ●      | —      | —                     | —      |
| B6                                     | Ø 6                                                               | ●                   | ●      | ●      | —                     | —      |
| B8                                     | Ø 8                                                               | —                   | ●      | ●      | —                     | —      |
| B10                                    | Ø 10                                                              | —                   | —      | ●      | —                     | —      |
| B12                                    | Ø 12                                                              | —                   | —      | ●      | —                     | —      |
| LM*1                                   | Elbow port, mixed sizes<br>(Including upward and downward piping) | ●                   | ●      | ●      | —                     | —      |
| P, E port size<br>(One-touch fittings) |                                                                   | Ø 8                 | Ø 10   | Ø 12   | Ø 10                  | Ø 12   |



## A, B port size (Inch/One-touch fitting)

| Symbol                                 | A, B port                                                         | Type 10/Side ported |        |        | Type 11/Bottom ported |        |
|----------------------------------------|-------------------------------------------------------------------|---------------------|--------|--------|-----------------------|--------|
|                                        |                                                                   | SY3000              | SY5000 | SY7000 | SY5000                | SY7000 |
| N1                                     | Ø 1/8"                                                            | ●                   | —      | —      | —                     | —      |
| N3                                     | Ø 5/32"                                                           | ●                   | ●      | —      | ●                     | —      |
| N7                                     | Ø 1/4"                                                            | ●                   | ●      | ●      | ●                     | ●      |
| N9                                     | Ø 5/16"                                                           | —                   | ●      | ●      | ●                     | ●      |
| N11                                    | Ø 3/8"                                                            | —                   | —      | ●      | —                     | ●      |
| CM*1                                   | Straight port, mixed sizes                                        | ●                   | ●      | ●      | ●                     | ●      |
| LN3                                    | Ø 5/32"                                                           | ●                   | —      | —      | —                     | —      |
| LN7                                    | Ø 1/4"                                                            | ●                   | ●      | —      | —                     | —      |
| LN9                                    | Ø 5/16"                                                           | —                   | ●      | —      | —                     | —      |
| LN11                                   | Ø 3/8"                                                            | —                   | —      | ●      | —                     | —      |
| BN3                                    | Ø 5/32"                                                           | ●                   | —      | —      | —                     | —      |
| BN7                                    | Ø 1/4"                                                            | ●                   | ●      | —      | —                     | —      |
| BN9                                    | Ø 5/16"                                                           | —                   | ●      | —      | —                     | —      |
| BN11                                   | Ø 3/8"                                                            | —                   | —      | ●      | —                     | —      |
| LM*1                                   | Elbow port, mixed sizes<br>(Including upward and downward piping) | ●                   | ●      | ●      | —                     | —      |
| P, E port size<br>(One-touch fittings) |                                                                   | Ø 5/16"             | Ø 3/8" | Ø 1/2" | Ø 3/8"                | Ø 1/2" |



\*1: Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

\*2: To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 250 to 252).

## 8 Mounting and Option

| Symbol | Mounting          | Option     |                |
|--------|-------------------|------------|----------------|
|        |                   | Name plate | Station number |
| —      | Direct mounting   | —          | —              |
| AA     |                   | ●          | ●              |
| BA     |                   | ●          | —              |
| D□     | DIN rail mounting | —          | —              |
| A□     |                   | ●          | ●              |
| B□     |                   | ●          | —              |

\*: Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" below.)

\*: Only direct mounting is available for Type 11 (Bottom ported).

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

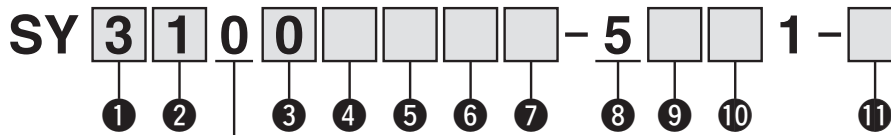
### DIN Rail Option

|    |                                 |
|----|---------------------------------|
| —  | Direct mounting                 |
| 0  | Without DIN rail (with bracket) |
| 3  | For 3 stations                  |
| ⋮  | ⋮                               |
| 16 | For 16 stations                 |

\*: When it is necessary to mount a DIN rail without an SI Unit, select D0 and order DIN rail length separately, referring to L3 in the dimensions. (Refer to page 249 for part numbers of DIN rail.)

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



### 1 Series

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

### 2 Type of actuation

|     |                        |                 |
|-----|------------------------|-----------------|
| 1   | 2-position             | Single          |
| 2   |                        | Double          |
| 3   | 3-position             | Closed centre   |
| 4   |                        | Exhaust centre  |
| 5   |                        | Pressure centre |
| A*1 | 4-position dual 3-port | N.C./N.C.       |
| B*1 |                        | N.O./N.O.       |
| C*1 |                        | N.C./N.O.       |

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 5 Back pressure check valve (Built-in valve type)

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

|   |         |
|---|---------|
| 5 | 24 V DC |
|---|---------|

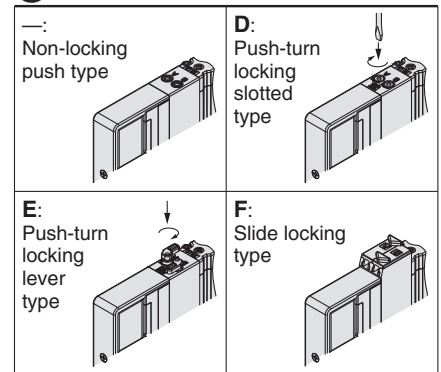
### 9 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| R      | —          |                          | Non-polar            |
| U      | ●          |                          |                      |
| S      | —          | ●                        | Positive common      |
| Z      | ●          |                          |                      |
| NS     | —          |                          | Negative common      |
| NZ     | ●          |                          |                      |

\*: Select a valve from R, U, S or Z when the SI Unit specification is positive common. Select a valve from R, U, NS or NZ when the SI Unit specification is ZBN (negative common).

\*: Only "Z" and "NZ" types are available for with the power saving circuit.

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

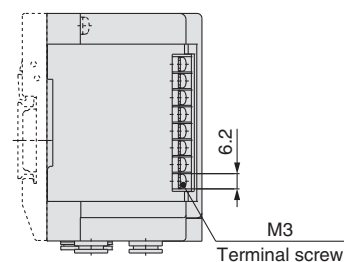
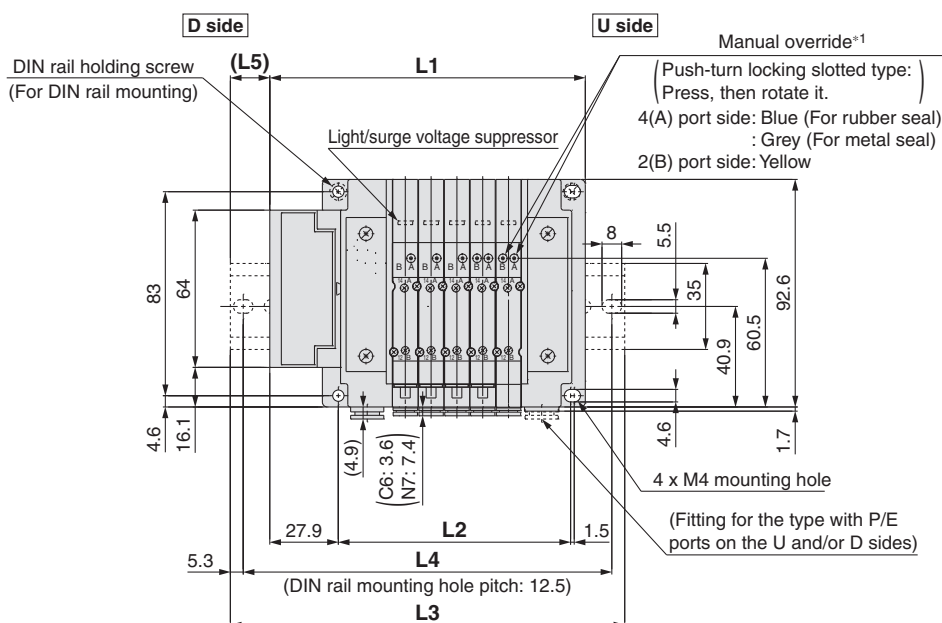
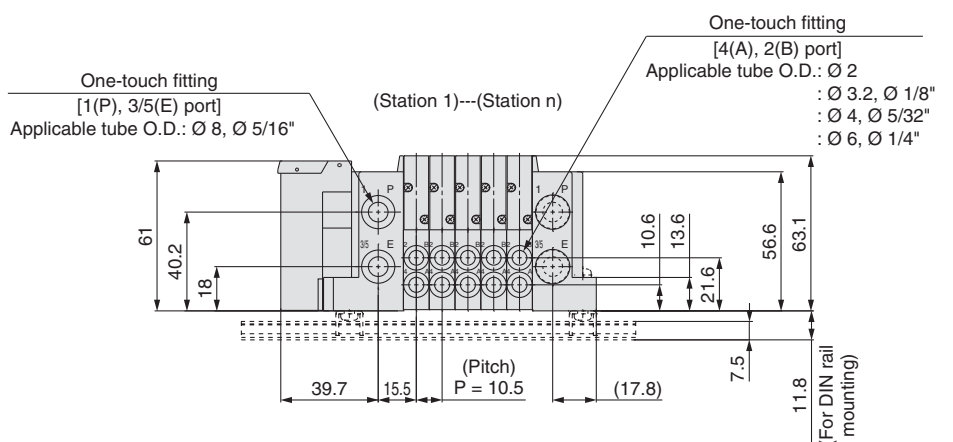
\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

## Dimensions: Series SY3000

### Plug-in Connector Connecting Base

Type 10/Side Ported  
EX120

SS5Y3-10S3□-Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix}$   $\begin{matrix} \text{C2} \\ \text{C3}, \text{N1} \\ \text{C4}, \text{N3} \\ \text{C6}, \text{N7} \end{matrix}$  (D)



\*1: Refer to page 205 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y3-10S3V-05D-C6".

\*: Refer to page 210 for dimensions of A or B port top-ported type.

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 96.9  | 107.4 | 117.9 | 128.4 | 138.9 | 149.4 | 159.9 | 170.4 | 180.9 | 191.4 | 201.9 | 212.4 | 222.9 | 233.4 | 243.9 |
| L2          | 63    | 73.5  | 84    | 94.5  | 105   | 115.5 | 126   | 136.5 | 147   | 157.5 | 168   | 178.5 | 189   | 199.5 | 210   |
| L3          | 123   | 135.5 | 148   | 160.5 | 173   | 173   | 185.5 | 198   | 210.5 | 223   | 235.5 | 235.5 | 248   | 260.5 | 273   |
| L4          | 112.5 | 125   | 137.5 | 150   | 162.5 | 162.5 | 175   | 187.5 | 200   | 212.5 | 225   | 225   | 237.5 | 250   | 262.5 |
| L5          | 13    | 14    | 15    | 16    | 17    | 12    | 13    | 14    | 15    | 16    | 17    | 11.5  | 12.5  | 13.5  | 14.5  |

# Series SY3000/5000/7000

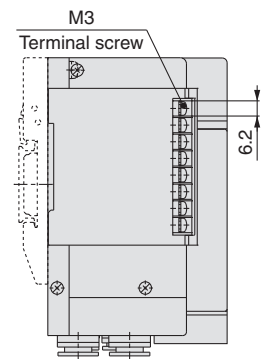
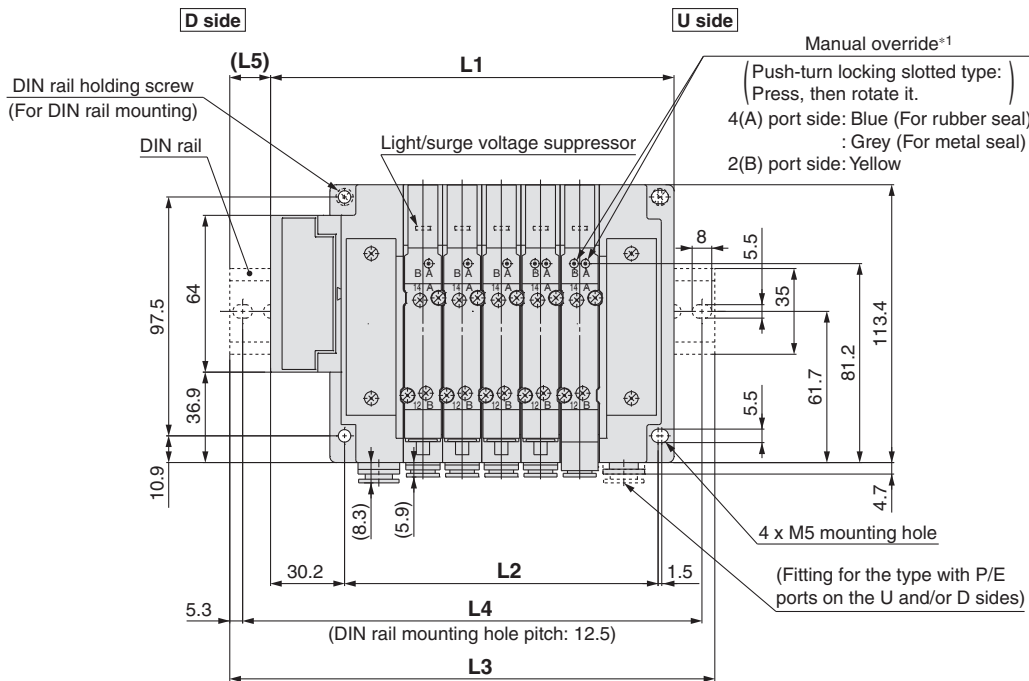
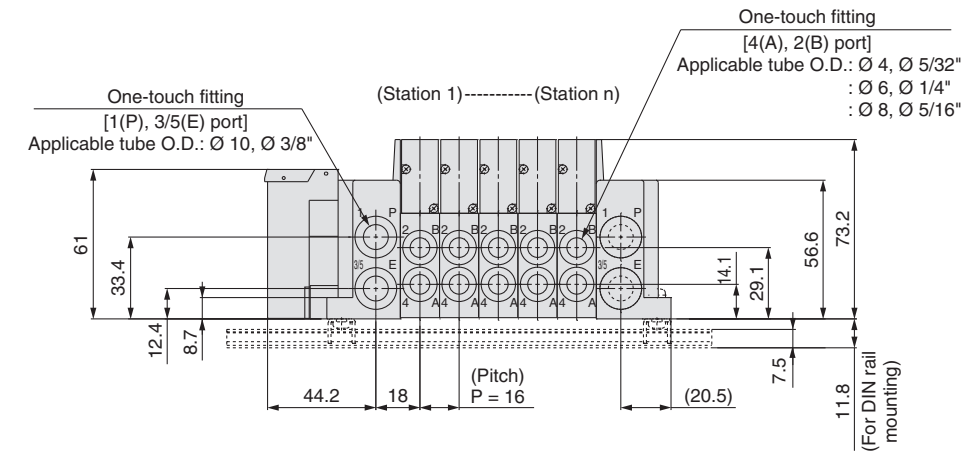
## Dimensions: Series SY5000

### Plug-in Connector Connecting Base

Type 10/Side Ported

EX120

SS5Y5-10S3□ - Stations  $\begin{matrix} \text{U} & \text{C4, N3} \\ \text{D} & \text{C6, N7} \\ \text{B} & \text{C8, N9} \end{matrix}$  (D)



\*1: Refer to page 206 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y5-10S3V-05D-C8".

\*: Refer to page 211 for dimensions of A or B port top-ported type.

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 116.7 | 132.7 | 148.7 | 164.7 | 180.7 | 196.7 | 212.7 | 228.7 | 244.7 | 260.7 | 276.7 | 292.7 | 308.7 | 324.7 | 340.7 |
| L2          | 80    | 96    | 112   | 128   | 144   | 160   | 176   | 192   | 208   | 224   | 240   | 256   | 272   | 288   | 304   |
| L3          | 148   | 160.5 | 173   | 198   | 210.5 | 223   | 248   | 260.5 | 273   | 285.5 | 310.5 | 323   | 335.5 | 348   | 373   |
| L4          | 137.5 | 150   | 162.5 | 187.5 | 200   | 212.5 | 237.5 | 250   | 262.5 | 275   | 300   | 312.5 | 325   | 337.5 | 362.5 |
| L5          | 15.5  | 14    | 12    | 16.5  | 15    | 13    | 17.5  | 16    | 14    | 12.5  | 17    | 15    | 13.5  | 11.5  | 16    |

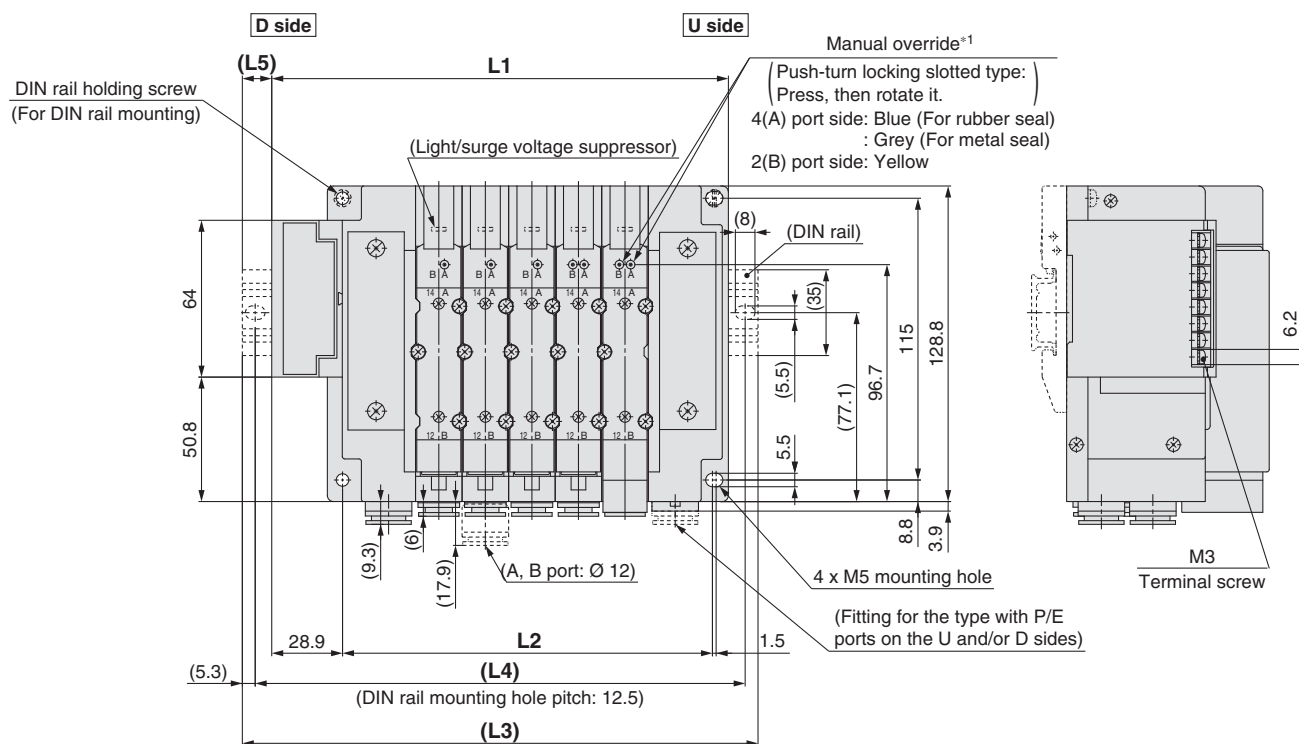
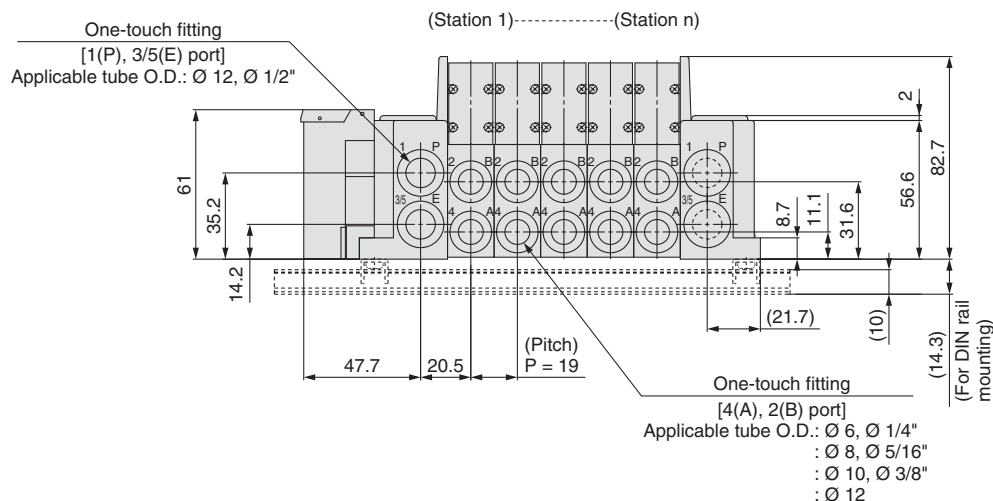
## Dimensions: Series SY7000

### Plug-in Connector Connecting Base

Type 10/Side Ported

EX120

SS5Y7-10S3□- Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix} \begin{matrix} \text{C6, N7} \\ \text{C8, N9} \\ \text{C10, N11} \end{matrix} \text{(D)}$



- \*1: Refer to page 207 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y7-10S3V-05D-C10".  
\*: Refer to page 212 for dimensions of A or B port top-ported type.

| n: Stations | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1          | 129.4 | 148.4 | 167.4 | 186.4 | 205.4 | 224.4 | 243.4 | 262.4 | 281.4 | 300.4 | 319.4 | 338.4 | 357.4 | 376.4 | 395.4 |
| L2          | 94    | 113   | 132   | 151   | 170   | 189   | 208   | 227   | 246   | 265   | 284   | 303   | 322   | 341   | 360   |
| L3          | 160.5 | 173   | 198   | 210.5 | 235.5 | 248   | 273   | 285.5 | 310.5 | 335.5 | 348   | 373   | 385.5 | 410.5 | 423   |
| L4          | 150   | 162.5 | 187.5 | 200   | 225   | 237.5 | 262.5 | 275   | 300   | 325   | 337.5 | 362.5 | 375   | 400   | 412.5 |
| L5          | 15.5  | 12.5  | 15.5  | 12    | 15    | 12    | 15    | 11.5  | 14.5  | 17.5  | 14.5  | 17.5  | 14    | 17    | 14    |

# Plug-in Connector Connecting Base

EX120

Type 12  
Top Ported

# Series SY3000/5000/7000



## How to Order Manifold

Refer to pages 210 to 212 for dimensions of Type 12/Top ported type.

SS5Y **3** - 12S3 **R1** - **05** **U** **□** - **□** **□**

1 2 3 4 5 6 7

### 1 Series

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

### 2 SI Unit

|       |                                  |                     |
|-------|----------------------------------|---------------------|
| 0     | Without SI Unit                  |                     |
| Q     | DeviceNet™ (Positive common NPN) |                     |
| R1    | OMRON CompoBus/S                 | 16 outputs          |
| R2    | (Positive common NPN)            | 8 outputs           |
| V     | CC-Link (Positive common NPN)    |                     |
| ZB*1  | CompoNet™                        | Positive common NPN |
| ZBN*1 |                                  | Negative common PNP |

\*1: The communication connector (for the opposite side) is not provided. Please order it separately.

\*: Ensure a match with the common specification of the valve to be used.

### 3 Valve stations

| Symbol | Stations    | Note                                                 |
|--------|-------------|------------------------------------------------------|
| 02     | 2 stations  | Double wiring*1                                      |
| ⋮      | ⋮           |                                                      |
| 08     | 8 stations  | Specified layout*2<br>(Available up to 16 solenoids) |
| 02     | 2 stations  |                                                      |
| ⋮      | ⋮           |                                                      |
| 16     | 16 stations |                                                      |

\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

\*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

\*: This also includes the number of blanking plate assembly.

\*: Since R2 type SI Unit has 8 outputs, note that up to 8 solenoids can be accommodated.

### 4 P, E port entry

|     |                               |
|-----|-------------------------------|
| U*1 | U side (2 to 10 stations)     |
| D*1 | D side (2 to 10 stations)     |
| B   | Both sides (2 to 16 stations) |

\*1: For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

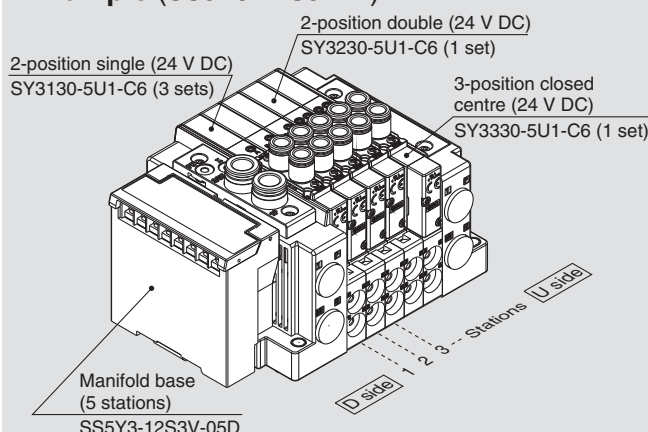
### 5 SUP/EXH block assembly

|   |                                   |
|---|-----------------------------------|
| — | Internal pilot                    |
| S | Internal pilot, Built-in silencer |
| R | External pilot                    |

\*: For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)

## How to Order Manifold Assembly

### Example (SS5Y3-12S3V-□)



SS5Y3-12S3V-05D ... 1 set (Type 12 5-station manifold base part no.)

\*SY3130-5U1-C6 ..... 3 sets (2-position single part no.)

\*SY3230-5U1-C6 ..... 1 set (2-position double part no.)

\*SY3330-5U1-C6 ..... 1 set (3-position closed centre part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

### 6 P, E port size (One-touch fittings)

| Symbol | SY3000  | SY5000 | SY7000 |
|--------|---------|--------|--------|
| —      | Ø 8     | Ø 10   | Ø 12   |
| N      | Ø 5/16" | Ø 3/8" | Ø 1/2" |

\*: For N, sizes are in inches.

### 7 Mounting

|     |                                      |                                                 |
|-----|--------------------------------------|-------------------------------------------------|
| —   | Direct mounting                      |                                                 |
| D   | DIN rail mounting (With DIN rail)    |                                                 |
| D0  | DIN rail mounting (Without DIN rail) |                                                 |
| D3  | For 3 stations                       | Specify a longer rail than the standard length. |
| ⋮   | ⋮                                    |                                                 |
| D16 | For 16 stations                      |                                                 |

\*: When mounted on the DIN rail without the SI Unit, please select D0 and refer to L3 of the dimensions for the DIN rail length, then order separately. (Refer to page 249 for the DIN rail part number.)

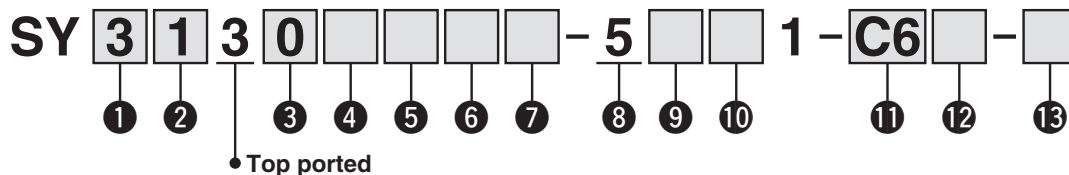
\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

For details about the EX120 Integrated-type (For Output) Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 242 in this catalogue. Please download the Operation Manual via SMC website, <http://www.smc.eu>



## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



### 1 Series

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

### 2 Type of actuation

|     |             |                 |
|-----|-------------|-----------------|
| 1   | 2-position  | Single          |
| 2   |             | Double          |
| 3   | 3-position  | Closed centre   |
| 4   |             | Exhaust centre  |
| 5   |             | Pressure centre |
| A*1 | 4-position  | N.C./N.C.       |
| B*1 | dual 3-port | N.O./N.O.       |
| C*1 |             | N.C./N.O.       |

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 5 Back pressure check valve (Built-in valve type)

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

|   |         |
|---|---------|
| 5 | 24 V DC |
|---|---------|

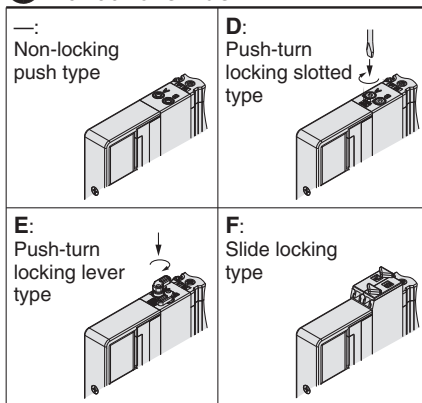
### 9 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| R      | —          |                          | Non-polar            |
| U      | ●          |                          |                      |
| S      | —          | ●                        | Positive common      |
| Z      | ●          |                          |                      |
| NS     | —          |                          | Negative common      |
| NZ     | ●          |                          |                      |

\*: Select a valve from R, U, S or Z when the SI Unit specification is positive common. Select a valve from R, U, NS or NZ when the SI Unit specification is ZBN (negative common).

\*: Only "Z" and "NZ" types are available for with the power saving circuit.

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 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)

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| C2     | Ø 2       | ●      | —      | —      |
| C3     | Ø 3.2     | ●      | —      | —      |
| C4     | Ø 4       | ●      | ●      | —      |
| C6     | Ø 6       | ●      | ●      | ●      |
| C8     | Ø 8       | —      | ●      | ●      |
| C10    | Ø 10      | —      | —      | ●      |
| C12    | Ø 12      | —      | —      | ●      |

#### One-touch fitting (Inch)

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| N1     | Ø 1/8"    | ●      | —      | —      |
| N3     | Ø 5/32"   | ●      | ●      | —      |
| N7     | Ø 1/4"    | ●      | ●      | ●      |
| N9     | Ø 5/16"   | —      | ●      | ●      |
| N11    | Ø 3/8"    | —      | —      | ●      |

### 12 Thread type

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

\*: Only — is available for M5.

### 13 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

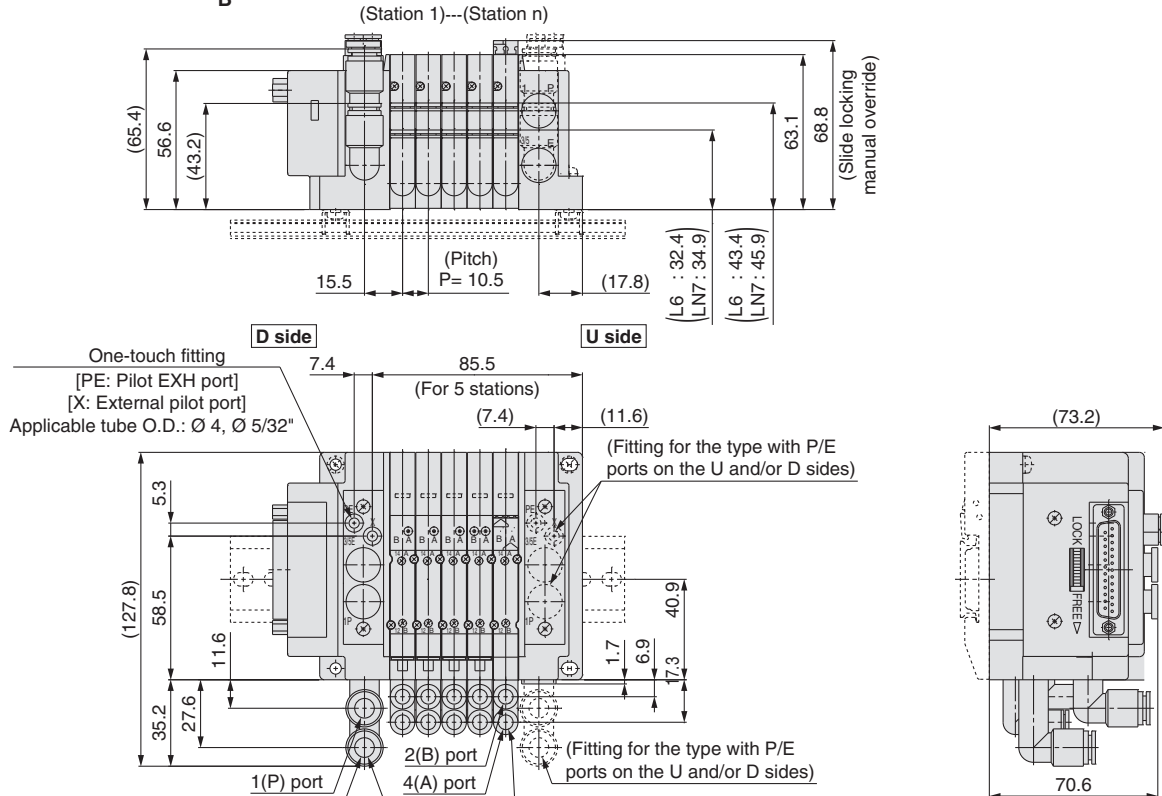
\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.

# Series SY3000/5000/7000

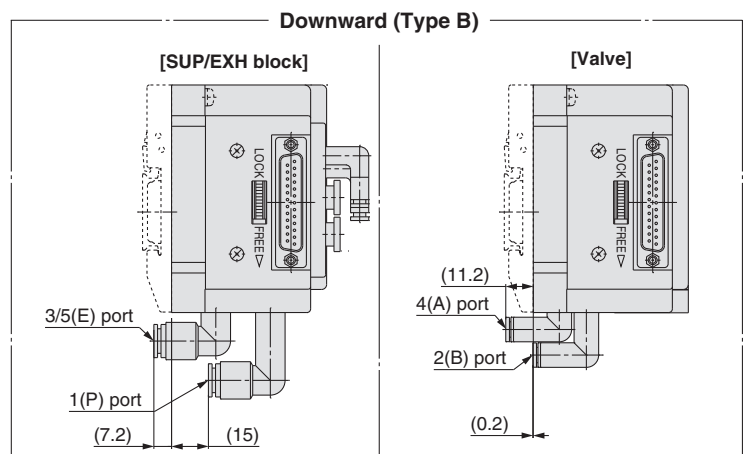
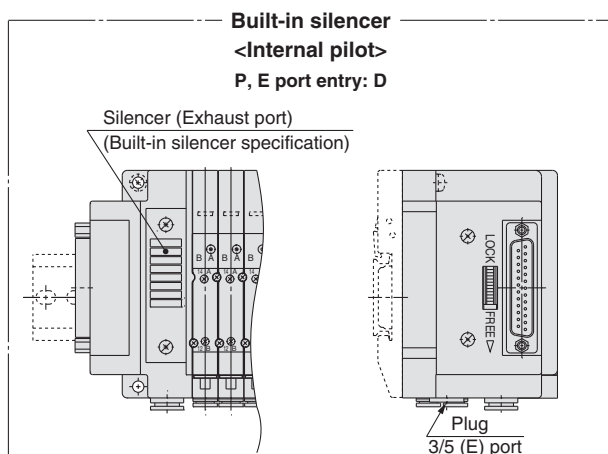
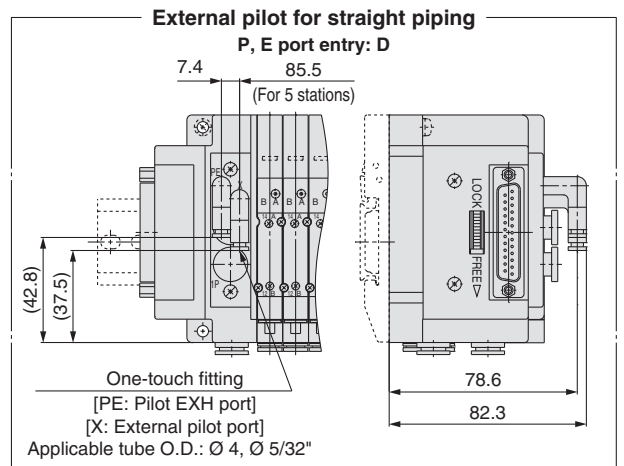
## Common Dimensions

| Series SY3000 | Plug-in Connector Connecting Base | Type 10/Side Ported |
|---------------|-----------------------------------|---------------------|
|               |                                   |                     |

SS5Y3-10□-Stations  $\frac{U}{D}$  (S, R)- $\frac{L}{B}$ □



\*: These figures show the "SS5Y3-10F2-05DR-L6".



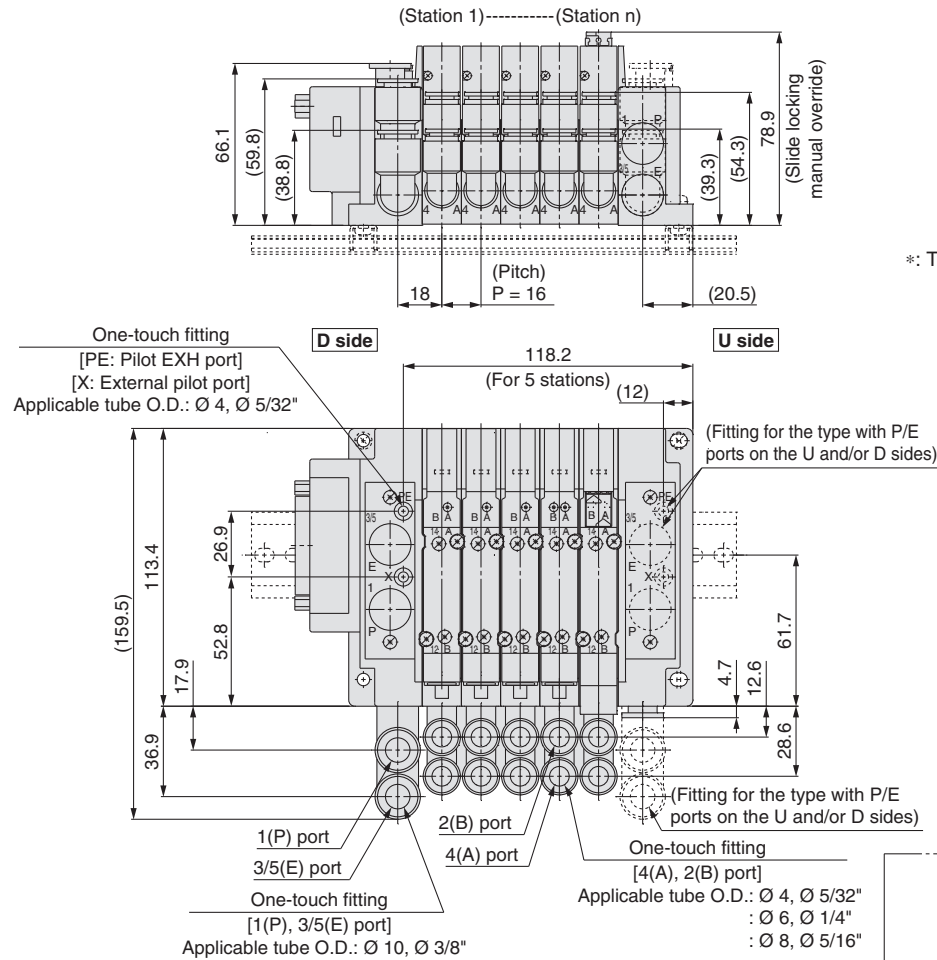
## Series SY5000

## Plug-in Connector Connecting Base

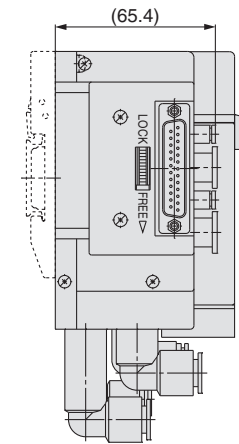
## Type 10/Side Ported

External Pilot, Silencer, Elbow Fittings, Slide Locking Manual Override

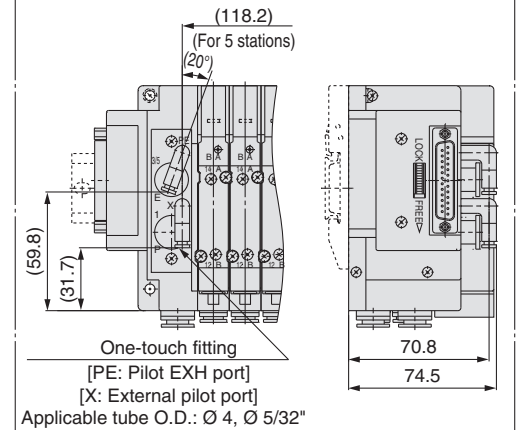
SS5Y5-10□-Stations  $\frac{U}{D}$  (S, R)-L□



\*: These figures show the "SS5Y5-10F2-05DR-L8".



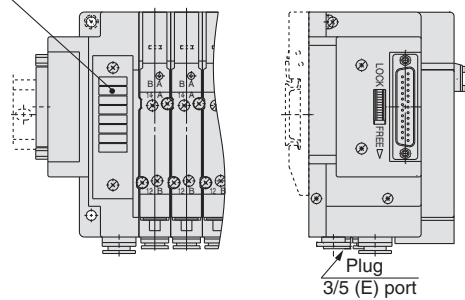
### External pilot for straight piping P, E port entry: D



### Built-in silencer

#### P, E port entry: D

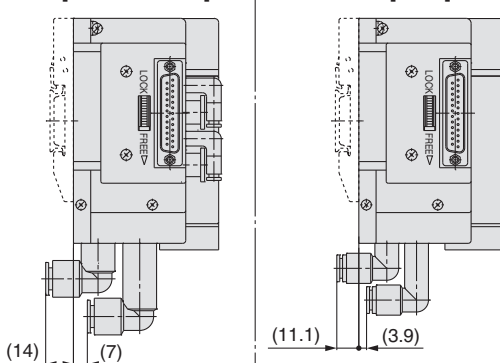
Silencer (Exhaust port)  
(Built-in silencer specification)



### Downward (Type B)

#### [SUP/EXH block]

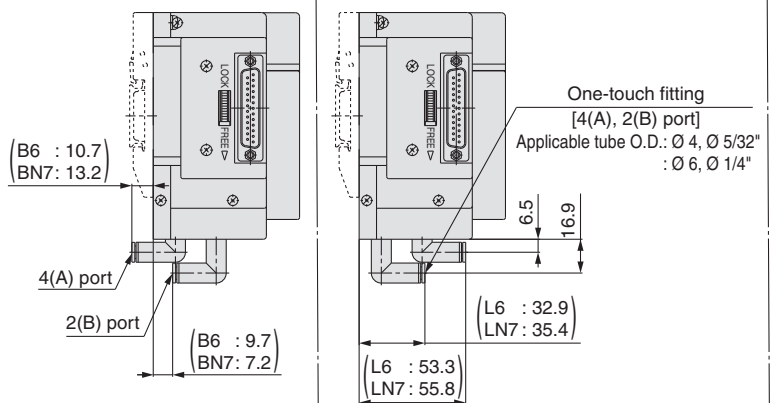
#### [Valve]



### Valve/Series SY3000 (Mixed Mounting)

#### Downward (Type B)

#### Upward (Type U)

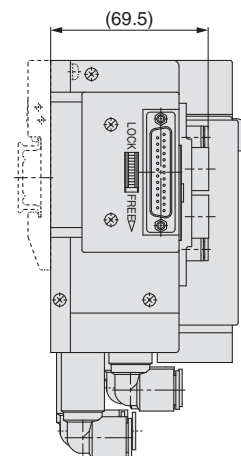
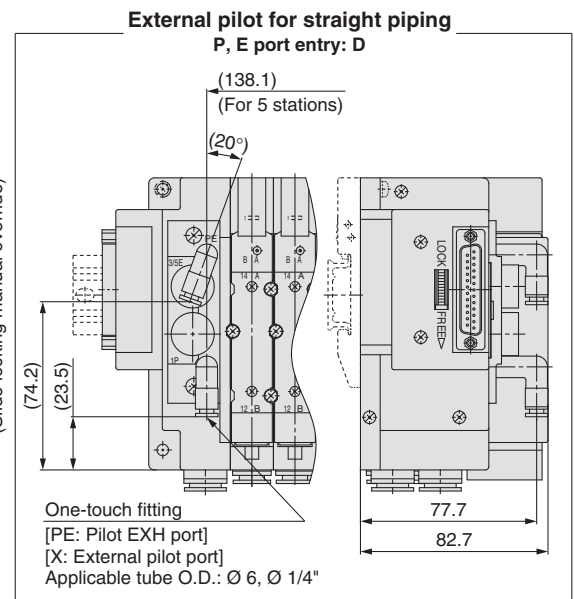
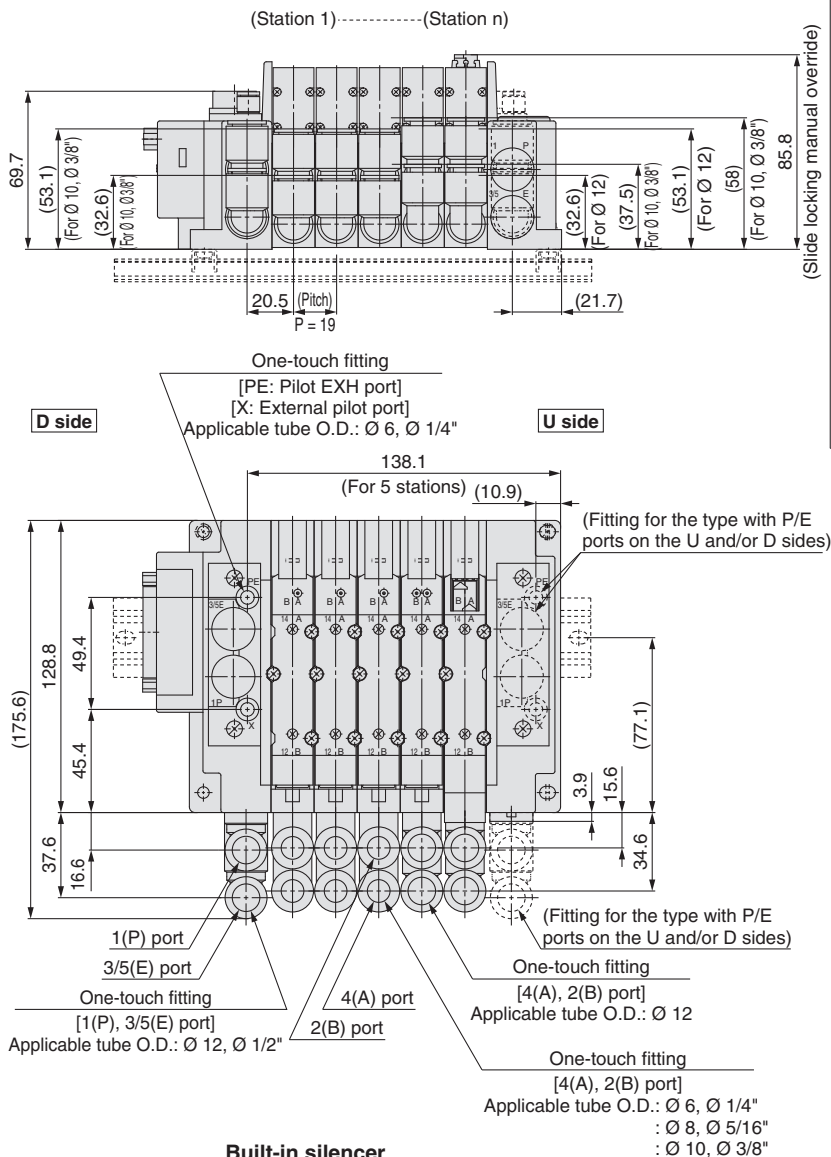


# Series SY3000/5000/7000

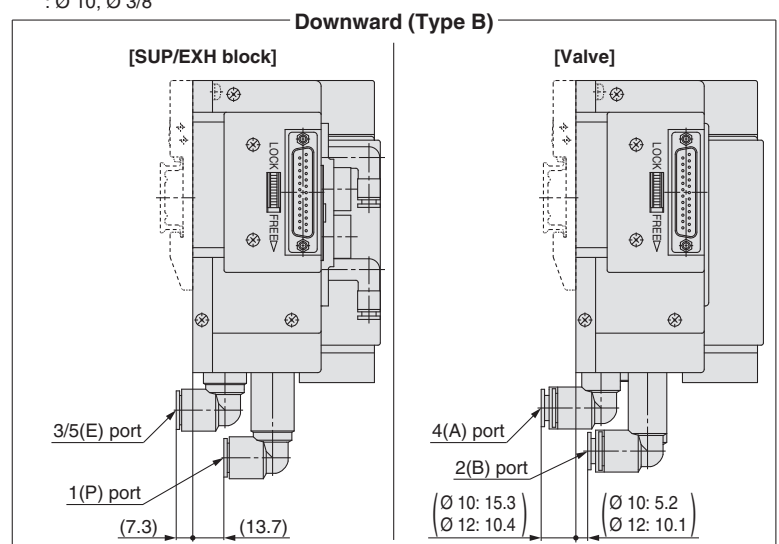
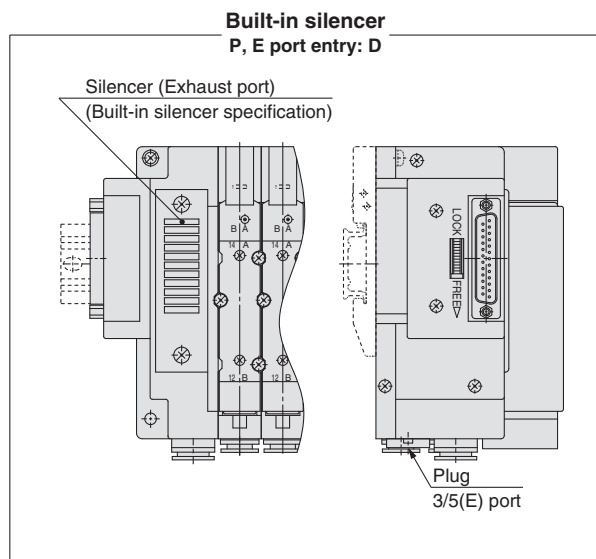
## Series SY7000 Plug-in Connector Connecting Base

## Type 10/Side Ported External Pilot, Silencer, Elbow Fittings, Slide Locking Manual Override

SS5Y7-10□-Stations  $\frac{U}{D}$  (S, R)- $\frac{L}{B}$ □



\*: These figures show the "SS5Y7-10F2-05DR-LM".



## Series SY5000

**SS5Y5-11** ☐ - **Stations** U  
D  
B

## Plug-in Connector Connecting Base

Type 11/Bottom Ported

## All Wirings

Valve

## Plug-in Sub-plate

## Plug-in Metal Base

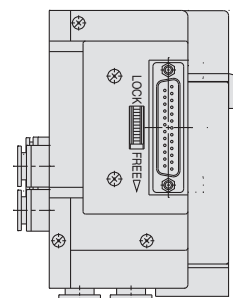
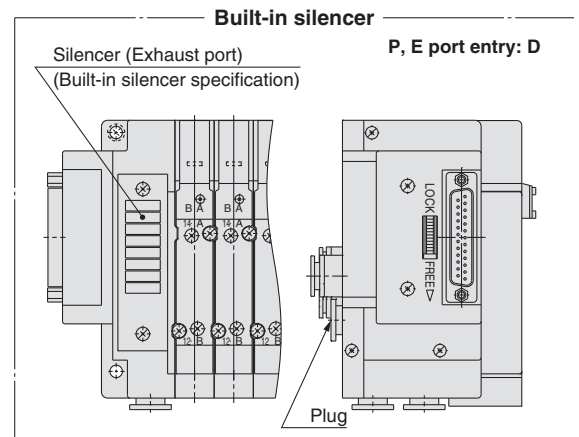
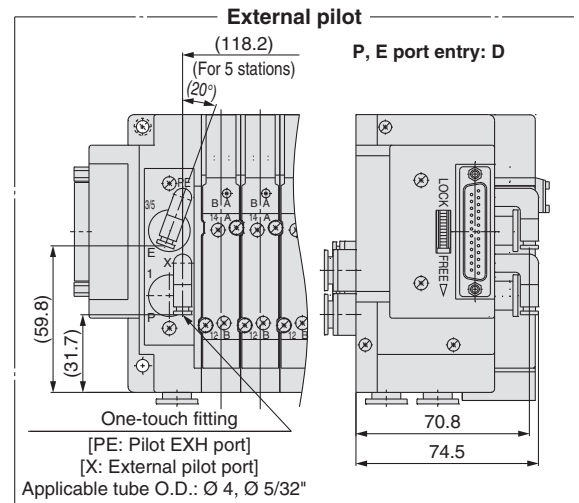
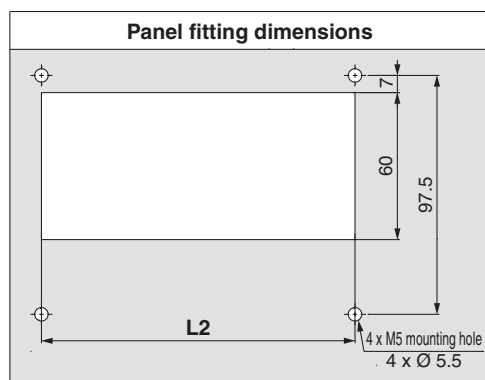
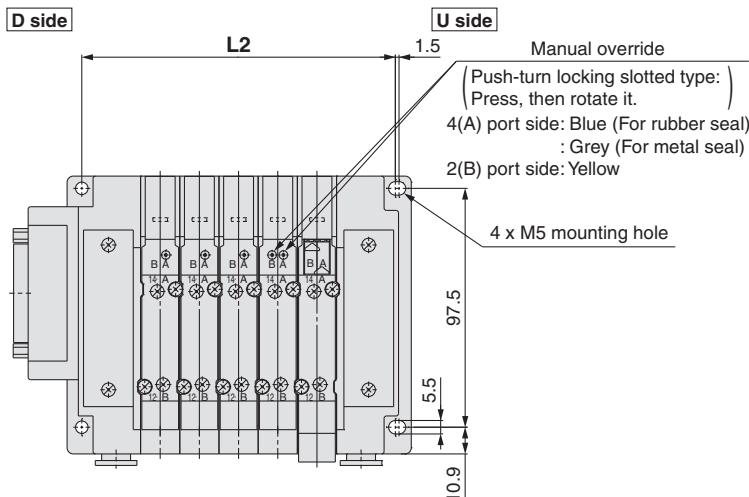
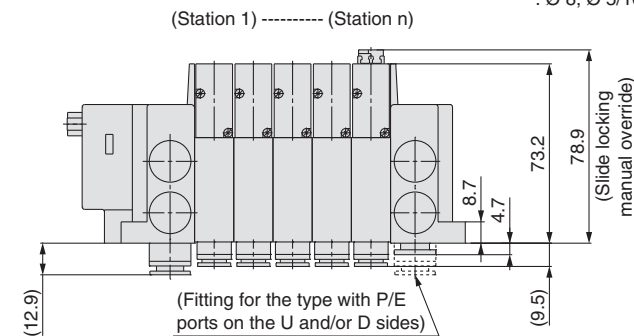
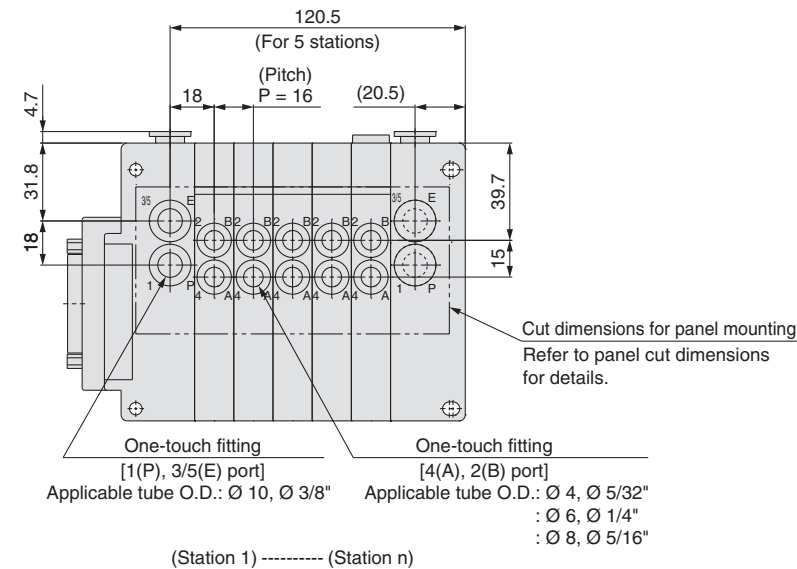
Type 50, 51, 52  
Manifold Exploded View

## Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

## Manifold Options



\*: These figures show the “SS5Y5-11F2-05D-C8”.

\*: Refer to the below pages for L2 dimensions and other dimensions that are not specified in each wiring specification.

|                         |               |
|-------------------------|---------------|
| D-sub connector <IP40>: | P. 101        |
| D-sub connector <IP67>: | P. 104        |
| Flat ribbon cable       | : P. 107      |
| Terminal block box      | : P. 119      |
| Lead wire               | : P. 129      |
| Circular connector      | : P. 139      |
| EX500 (128 points)      | : P. 149      |
| EX500 (64 points)       | : P. 155      |
| EX600                   | : P. 166, 167 |
| EX250                   | : P. 177      |
| EX260                   | : P. 185      |
| EX126                   | : P. 193      |
| EX120                   | : P. 201      |

# Series SY3000/5000/7000

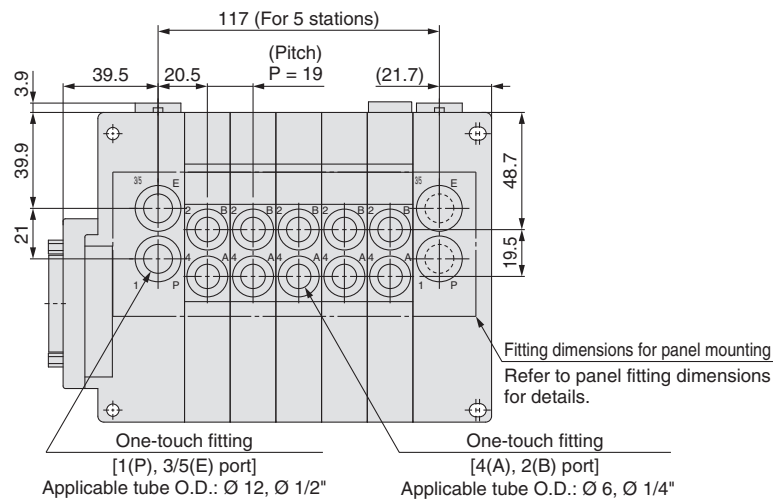
## Series SY7000

### Plug-in Connector Connecting Base

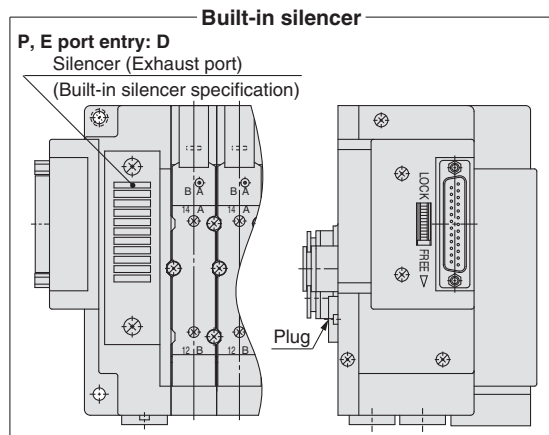
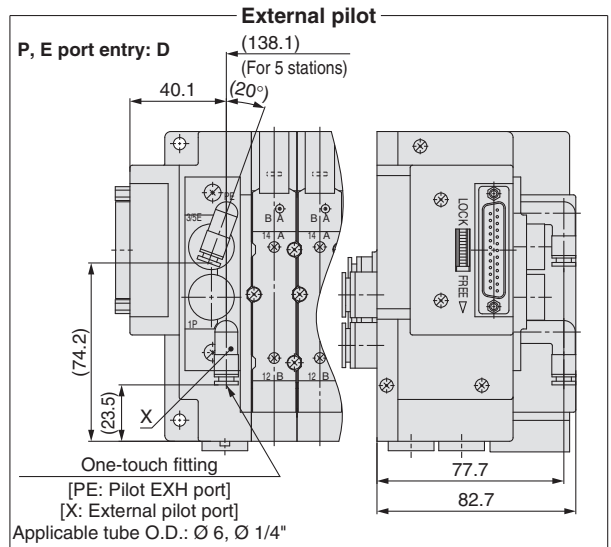
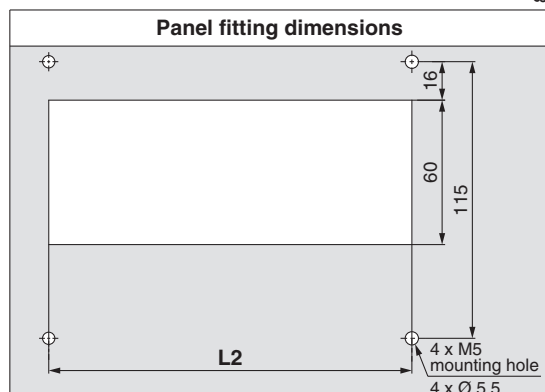
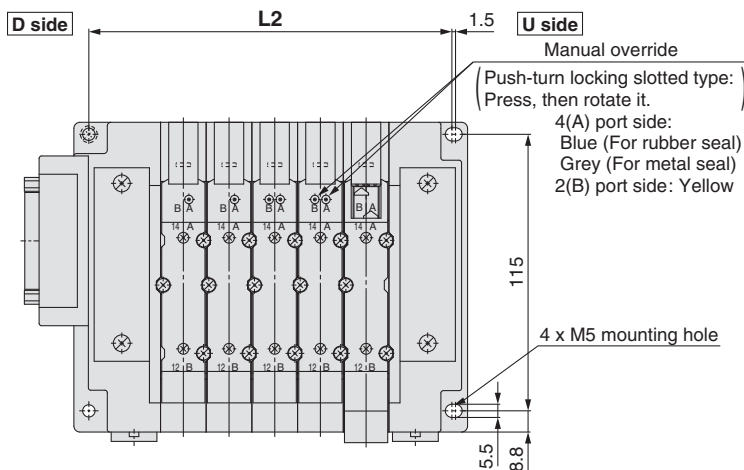
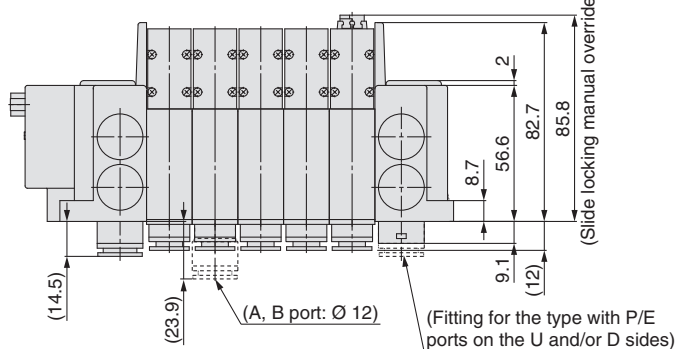
### Type 11/Bottom Ported

### All Wirings

#### SS5Y7-11 □ - Stations $\begin{matrix} U \\ D \\ B \end{matrix}$



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



- \*: These figures show the "SS5Y7-11F2-05D-C10".
- \*: Refer to the below pages for L2 dimensions and other dimensions that are not specified in each wiring specification.
- |                         |               |
|-------------------------|---------------|
| D-sub connector <IP40>: | P. 102        |
| D-sub connector <IP67>: | P. 105        |
| Flat ribbon cable       | : P. 108      |
| Terminal block box      | : P. 120      |
| Lead wire               | : P. 130      |
| Circular connector      | : P. 140      |
| EX500 (128 points)      | : P. 150      |
| EX500 (64 points)       | : P. 156      |
| EX600                   | : P. 168, 169 |
| EX250                   | : P. 178      |
| EX260                   | : P. 186      |
| EX126                   | : P. 194      |
| EX120                   | : P. 202      |



## Series SY3000

SS5Y3-12□ - Stations  $\begin{matrix} U \\ D \end{matrix}$  (R)

Plug-in  
Connector Connecting Base

Type 12/Top Ported  
All Wirings

Valve

Plug-in Sub-plate

Plug-in Metal Base

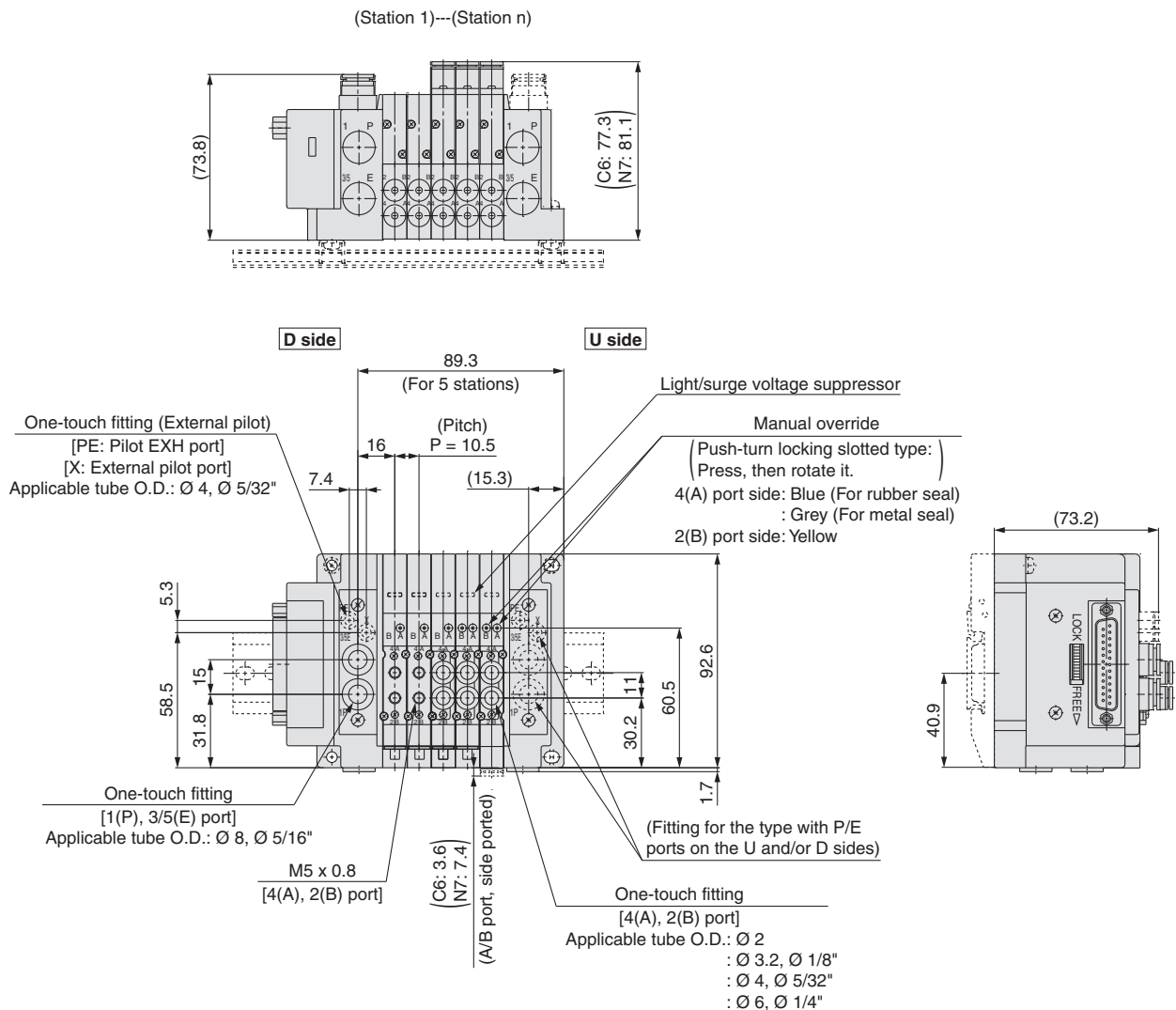
Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options



\*: These figures show the "SS5Y3-12F2-05D".

\*: For built-in silencer type, a silencer is mounted on the opposite side of U or D side with P or E port. Refer to page 205 for dimensions of silencer.

\*: Refer to the below pages for dimensions that are not specified in each wiring specification.

|                         |               |
|-------------------------|---------------|
| D-sub connector <IP40>: | P. 100        |
| D-sub connector <IP67>: | P. 103        |
| Flat ribbon cable       | : P. 106      |
| Terminal block box      | : P. 118      |
| Lead wire               | : P. 128      |
| Circular connector      | : P. 138      |
| EX500 (128 points)      | : P. 148      |
| EX500 (64 points)       | : P. 154      |
| EX600                   | : P. 164, 165 |
| EX250                   | : P. 176      |
| EX260                   | : P. 184      |
| EX126                   | : P. 192      |
| EX120                   | : P. 200      |

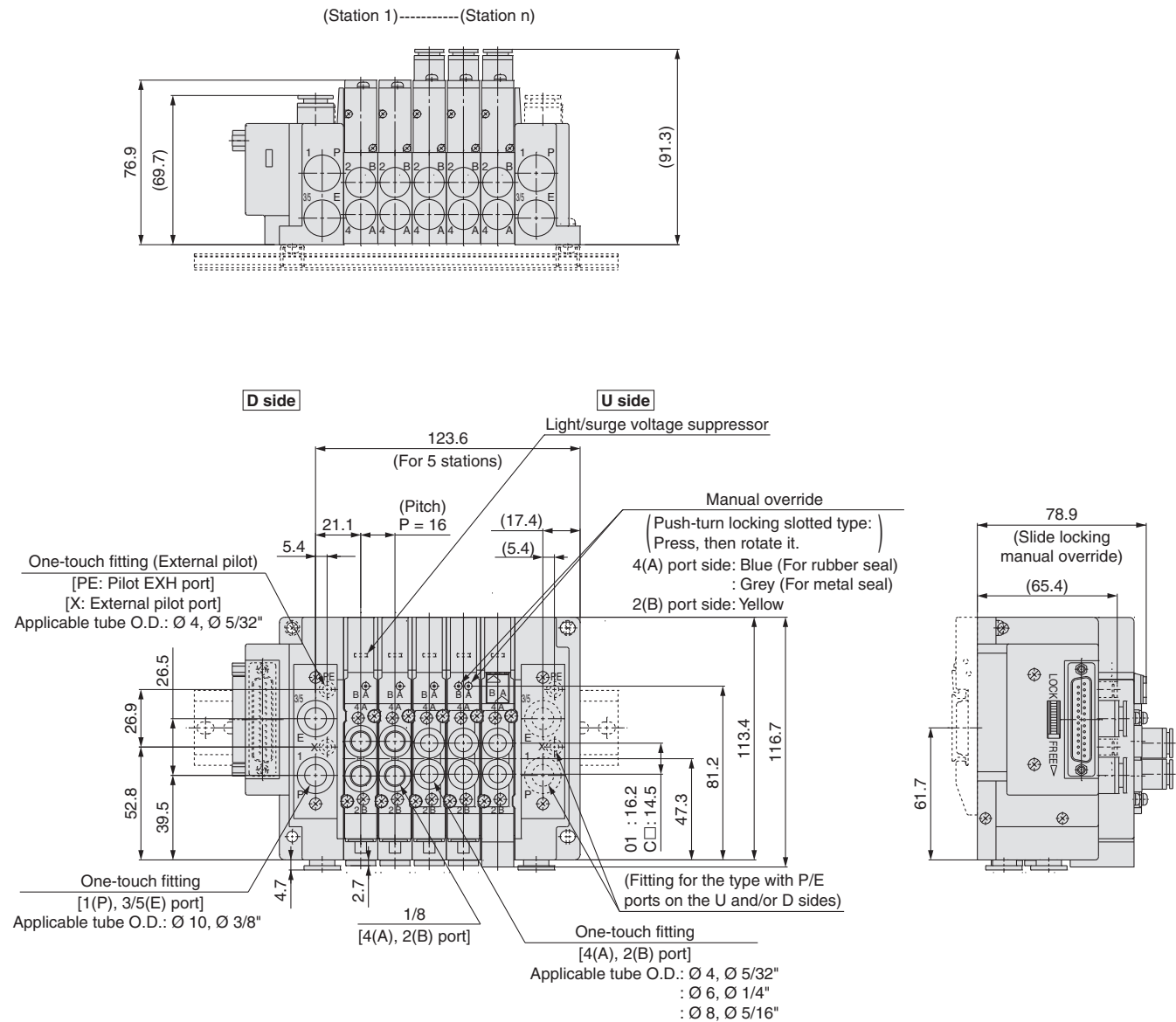
# Series SY3000/5000/7000

## Series SY5000

Plug-in  
Connector Connecting Base

Type 12/Top Ported  
All Wirings

SS5Y5-12□ - Stations  $\frac{U}{D}$  (R)



\*: These figures show the "SS5Y5-12F2-05D".

\*: For built-in silencer type, a silencer is mounted on the opposite side of U or D side with P or E port.  
Refer to page 206 for dimensions of silencer.

\*: Refer to the below pages for dimensions that are not specified in each wiring specification.

|                         |               |
|-------------------------|---------------|
| D-sub connector <IP40>: | P. 101        |
| D-sub connector <IP67>: | P. 104        |
| Flat ribbon cable       | : P. 107      |
| Terminal block box      | : P. 119      |
| Lead wire               | : P. 129      |
| Circular connector      | : P. 139      |
| EX500 (128 points)      | : P. 149      |
| EX500 (64 points)       | : P. 155      |
| EX600                   | : P. 166, 167 |
| EX250                   | : P. 177      |
| EX260                   | : P. 185      |
| EX126                   | : P. 193      |
| EX120                   | : P. 201      |

## Series SY7000

SS5Y7-12□ - Stations  $\begin{matrix} U \\ P \\ B \end{matrix}$  (R)

Plug-in  
Connector Connecting Base

Type 12/Top Ported  
All Wirings

Valve

Plug-in Sub-plate

Plug-in Metal Base

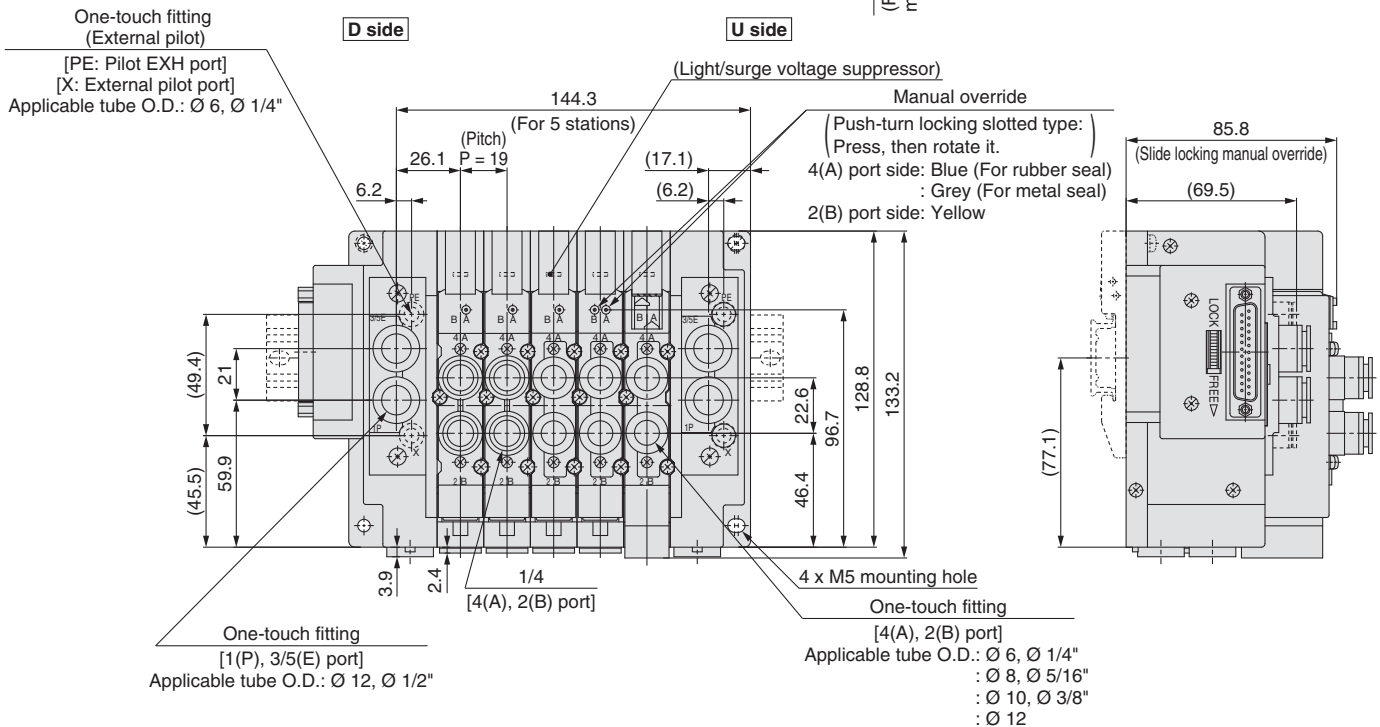
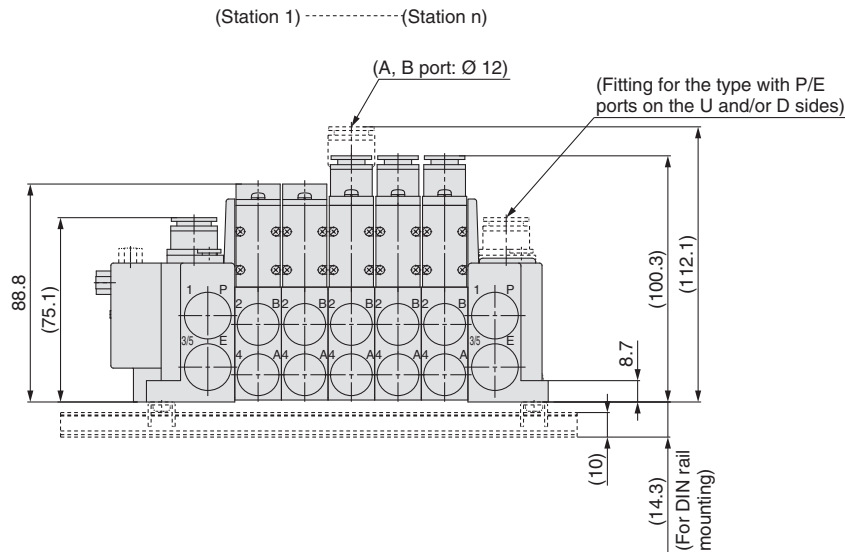
Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options



- \*: These figures show the "SS5Y7-12F2-05D".
- \*: For built-in silencer type, a silencer is mounted on the opposite side of U or D side with P or E port. Refer to page 207 for dimensions of silencer.
- \*: Refer to the below pages for dimensions that are not specified in each wiring specification.
- D-sub connector <IP40>: P. 102
- D-sub connector <IP67>: P. 105
- Flat ribbon cable : P. 108
- Terminal block box : P. 120
- Lead wire : P. 130
- Circular connector : P. 140
- EX500 (128 points) : P. 150
- EX500 (64 points) : P. 156
- EX600 : P. 168, 169
- EX250 : P. 178
- EX260 : P. 186
- EX126 : P. 194
- EX120 : P. 202

**Type 10**  
Side Ported

**Type 11**  
Bottom Ported

## Plug-in Connector Connecting Base: Plug-in Mixed Mounting Type Manifold

D-sub Connector (IP40/67) Flat Ribbon Cable PC Wiring Terminal Block Box (IP67)

Lead Wire (IP67) Circular Connector (IP67) EX500 (IP67) EX600 (IP67)

EX250 (IP67) EX260 (IP67) EX126 (IP67) EX120

# Series SY3000/5000



The SY3000 can be mounted onto the SY5000 size manifold.

## How to Order Manifold

Refer to page 222 for dimensions of Type 11/Bottom ported type.

**SS5Y5 - M 10 F 1 - 05 U - C 8 6**

### Mixed Mounting Type

It is possible to mount the SY3000 size valves on all stations. In this case, there is no need to fill in part ③ in the order code. However, the manifold block width should be 12.5 mm.

### ① Type

|           |               |
|-----------|---------------|
| <b>10</b> | Side ported   |
| <b>11</b> | Bottom ported |

### ② Connector type

| Symbol     | Type                                              | Page                       |
|------------|---------------------------------------------------|----------------------------|
| <b>F</b>   | D-sub connector                                   | IP40                       |
| <b>FW</b>  | (25 pins)                                         | IP67                       |
| <b>P</b>   | Flat ribbon cable                                 | 26 pins                    |
| <b>PG</b>  |                                                   | 20 pins                    |
| <b>PH</b>  |                                                   | 10 pins                    |
| <b>J</b>   | PC wiring                                         | —                          |
| <b>G</b>   | (20 pins)                                         | With power supply terminal |
| <b>T</b>   | Terminal block box                                | 115                        |
| <b>L1</b>  | Lead wire                                         | 34 cores                   |
| <b>L2</b>  |                                                   | 17 cores                   |
| <b>L3</b>  |                                                   | 9 cores                    |
| <b>M</b>   | Circular connector                                | 135                        |
| <b>S□</b>  | EX500 Gateway Decentralised System 2 (128 Points) | 145                        |
| <b>S□</b>  | EX500 Gateway Decentralised System (64 Points)    | 151                        |
| <b>S6□</b> | EX600                                             | 161                        |
| <b>S□</b>  | EX250                                             | 173                        |
| <b>S□</b>  | EX260                                             | 181                        |
| <b>S4□</b> | EX126                                             | 189                        |
| <b>S3□</b> | EX120                                             | 197                        |

\*: Refer to the pages shown in the table above for details.

### ③

#### • With Lead wire

#### Lead wire length

|          |       |
|----------|-------|
| <b>1</b> | 0.6 m |
| <b>2</b> | 1.5 m |
| <b>3</b> | 3 m   |

#### • With D-sub connector (IP40/67), Flat ribbon cable and PC wiring

#### Connector entry direction

|          |         |
|----------|---------|
| <b>1</b> | Upward  |
| <b>2</b> | Lateral |

\*: It is not necessary to select the items above for the valve with terminal block box or with circular connector or the serial transmission type.

### ④ Valve stations

| Symbol    | Stations    | Note                                                                                               |
|-----------|-------------|----------------------------------------------------------------------------------------------------|
| <b>02</b> | 2 stations  | Some connectors have a limitation on the number of stations. Refer to the pages shown in the table |
| <b>:</b>  | <b>:</b>    | "Connector type" for details.                                                                      |
| <b>24</b> | 24 stations |                                                                                                    |

### ⑤ P, E port entry

|          |                               |
|----------|-------------------------------|
| <b>U</b> | U side (2 to 10 stations)     |
| <b>D</b> | D side (2 to 10 stations)     |
| <b>B</b> | Both sides (2 to 24 stations) |

\*: Refer to page 161 for the EX600 and ⑦ on page 173 for the EX250.

### ⑥ SUP/EXH block assembly

|          |                                   |
|----------|-----------------------------------|
| <b>—</b> | Internal pilot                    |
| <b>S</b> | Internal pilot, Built-in silencer |
| <b>R</b> | External pilot                    |

\*: 3/5(E) port is plugged for the built-in silencer type.

\*: Refer to page 161 for the EX600 and ⑦ on page 173 for the EX250.

### ⑦ Fitting type: One-touch fitting

| Symbol                  | A, B port                                                  |
|-------------------------|------------------------------------------------------------|
| <b>C</b>                | Straight                                                   |
| <b>L</b>                | Metric size                                                |
| <b>B</b>                | Elbow                                                      |
| <b>N</b>                | Straight                                                   |
| <b>LN</b>               | Inch size                                                  |
| <b>BN</b>               | Elbow                                                      |
| <b>CM</b> <sup>*1</sup> | Mixed sizes                                                |
| <b>LM</b> <sup>*1</sup> | Elbow (Including upward and downward piping) <sup>*2</sup> |

\*1: Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

\*2: To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 250 to 252). Elbow fittings are not available for Type 11 (Bottom ported).

\*: Elbow fittings: Ø 2, Ø 3.2 and Ø 1.8" are not available for the SY3000 series. Ø 2, Ø 3.2, Ø 1.8" and Ø 5/32" are not available for the SY5000 series.

## 8 SY5000: A, B port size

### (Metric/One-touch fitting)

| Symbol | Port size                  |
|--------|----------------------------|
| 4      | Ø 4                        |
| 6      | Ø 6                        |
| 8      | Ø 8                        |
| —      | For all stations of SY3000 |

### (Inch/One-touch fitting)

| Symbol | Port size                  |
|--------|----------------------------|
| 3      | Ø 5/32"                    |
| 7      | Ø 1/4"                     |
| 9      | Ø 5/16"                    |
| —      | For all stations of SY3000 |

\*: No symbol needs to be specified when fitting type "CM", "LM" is selected.

## 9 SY3000: A, B port size

### (Metric/One-touch fitting)

| Symbol | Port size |
|--------|-----------|
| 2      | Ø 2       |
| 3      | Ø 3.2     |
| 4      | Ø 4       |
| 6      | Ø 6       |
| 8      | Ø 8*1     |

### (Inch/One-touch fitting)

| Symbol | Port size |
|--------|-----------|
| 1      | Ø 1/8"    |
| 3      | Ø 5/32"   |
| 7      | Ø 1/4"    |
| 9      | Ø 5/16"*1 |

\*1: The valve pitch is the same as the SY5000.

\*: No symbol needs to be specified when fitting type "CM", "LM" is selected.

## 10 Mounting

| —   | Direct mounting                                                                                                                                     |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| D   | DIN rail mounting (With DIN rail)                                                                                                                   |
| D0  | DIN rail mounting (Without DIN rail)                                                                                                                |
| D3  | For 3 stations Specify a longer rail than the standard length.<br>[The SY5000 valve is now at a mountable length (manifold block length of 16 mm).] |
| ⋮   | ⋮                                                                                                                                                   |
| D24 | For 24 stations                                                                                                                                     |

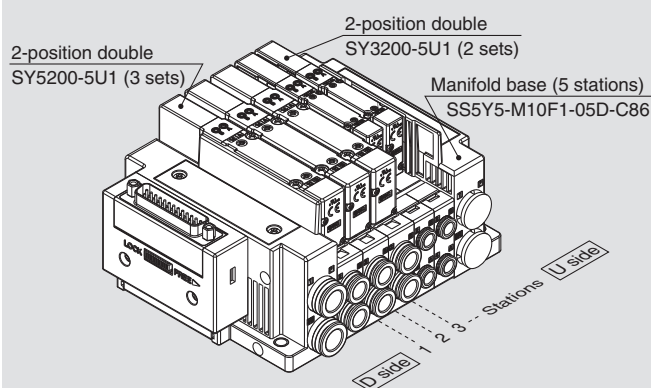
\*: Only direct mounting is available for Type 11 (Bottom ported).

\*: Refer to page 220 to determine the L3 using "Calculation formula" for the DIN rail length.

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

## How to Order Manifold Assembly

### Example (SS5Y5-M10F1-□)



SS5Y5-M10F1-05D-C86 ... 1 set (Type M10 5-station manifold base part no.)

\*SY5200-5U1 ..... 3 sets (2-position double part no.)

\*SY3200-5U1 ..... 2 sets (2-position double part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

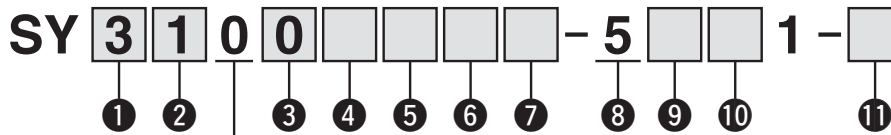
\*: When mixing top ported configurations, select from page 226.

In this case, use caution as there is also output on the A and B port on base side.

Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



Base mounted

### 1 Series

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

### 2 Type of actuation

|     |                        |                 |
|-----|------------------------|-----------------|
| 1   | 2-position             | Single          |
| 2   |                        | Double          |
| 3   | 3-position             | Closed centre   |
| 4   |                        | Exhaust centre  |
| 5   |                        | Pressure centre |
| A*1 | 4-position dual 3-port | N.C./N.C.       |
| B*1 |                        | N.O./N.O.       |
| C*1 |                        | N.C./N.O.       |

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

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

### 5 Back pressure check valve (Built-in valve type)

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type. Manifold installed type is available if back pressure check valve is required for the valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.  
\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

|   |         |
|---|---------|
| 5 | 24 V DC |
| 6 | 12 V DC |

\*: Only 24 V DC is available for the serial transmission type.

### 9 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| —      | —          | —                        | Non-polar            |
| R      | —          | —                        |                      |
| U      | ●          | —                        |                      |
| S      | —          | ●                        | Positive common      |
| Z      | ●          | —                        | Negative common      |
| NS     | —          | —                        |                      |
| NZ     | ●          | —                        |                      |

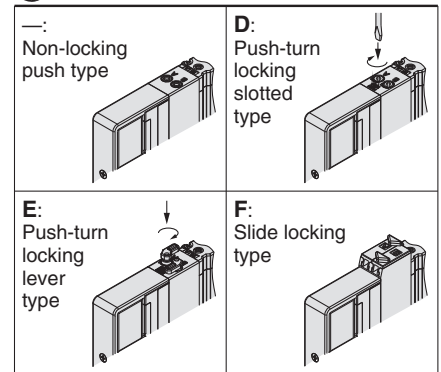
\*: "—" is not available for the SI Unit manifold.

\*: Only "Z" and "NZ" types are available for with the power saving circuit. Select a valve which is suited to the SI Unit output polarity or SI Unit specification when the SI Unit is selected.

Refer to the pages below for details.

EX500: P.147, 153 EX600: P.163  
EX250: P.175 EX260: P.183  
EX126: P.191 EX120: P.199

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.



Manifold Options

One-touch Fittings/  
Plug Assembly Part No.

Type 10, 11, 12  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Metal Base

Plug-in Sub-plate

Valve

**Type 10**  
Side Ported

**Type 11**  
Bottom Ported

## Plug-in Connector Connecting Base: Plug-in Mixed Mounting Type Manifold

D-sub Connector (IP40/67) Flat Ribbon Cable PC Wiring Terminal Block Box (IP67)

Lead Wire (IP67) Circular Connector (IP67) EX500 (IP67) EX600 (IP67)

EX250 (IP67) EX260 (IP67) EX126 (IP67) EX120

# Series SY5000/7000



The SY5000 can be mounted onto the SY7000 size manifold.

## How to Order Manifold

Refer to page 223 for dimensions of Type 11/Bottom ported type.

**SS5Y7 - M 10 F 1 - 05 U - C 10 8**

### Mixed Mounting Type

It is possible to mount the SY5000 size valves on all stations. In this case, there is no need to fill in part ③ in the order code. However, the manifold block width should be 19 mm.

### ① Type

|    |               |
|----|---------------|
| 10 | Side ported   |
| 11 | Bottom ported |

### ② Connector type

| Symbol | Type                                              | Page                       |
|--------|---------------------------------------------------|----------------------------|
| F      | D-sub connector                                   | IP40                       |
| FW     | (25 pins)                                         | IP67                       |
| P      | Flat ribbon cable                                 | 26 pins                    |
| PG     |                                                   | 20 pins                    |
| PH     |                                                   | 10 pins                    |
| J      | PC wiring                                         | —                          |
| G      | (20 pins)                                         | With power supply terminal |
| T      | Terminal block box                                | 115                        |
| L1     | Lead wire                                         | 34 cores                   |
| L2     |                                                   | 17 cores                   |
| L3     |                                                   | 9 cores                    |
| M      | Circular connector                                | 135                        |
| S□     | EX500 Gateway Decentralised System 2 (128 Points) | 145                        |
| S□     | EX500 Gateway Decentralised System (64 Points)    | 151                        |
| S6□    | EX600                                             | 161                        |
| S□     | EX250                                             | 173                        |
| S□     | EX260                                             | 181                        |
| S4□    | EX126                                             | 189                        |
| S3□    | EX120                                             | 197                        |

\*: Refer to the pages shown in the table above for details.

### ③

#### • With Lead wire

#### Lead wire length

|   |       |
|---|-------|
| 1 | 0.6 m |
| 2 | 1.5 m |
| 3 | 3 m   |

#### • With D-sub connector (IP40/67), Flat ribbon cable and PC wiring

#### Connector entry direction

|   |         |
|---|---------|
| 1 | Upward  |
| 2 | Lateral |

\*: It is not necessary to select the items above for the valve with terminal block box or with circular connector or the serial transmission type.

### ④ Valve stations

| Symbol | Stations    | Note                                                                                               |
|--------|-------------|----------------------------------------------------------------------------------------------------|
| 02     | 2 stations  | Some connectors have a limitation on the number of stations. Refer to the pages shown in the table |
| :      | :           | "Connector type" for details.                                                                      |
| 24     | 24 stations |                                                                                                    |

### ⑤ P, E port entry

|   |                               |
|---|-------------------------------|
| U | U side (2 to 10 stations)     |
| D | D side (2 to 10 stations)     |
| B | Both sides (2 to 24 stations) |

\*: Refer to page 161 for the EX600 and ⑦ on page 173 for the EX250.

### ⑦ Fitting type: One-touch fitting

| Symbol           | A, B port                                                  |
|------------------|------------------------------------------------------------|
| C                | Straight                                                   |
| L                | Metric size                                                |
| B                | Elbow                                                      |
| N                | Straight                                                   |
| LN               | Inch size                                                  |
| BN               | Elbow                                                      |
| CM <sup>*1</sup> | Mixed sizes                                                |
| LM <sup>*1</sup> | Elbow (Including upward and downward piping) <sup>*2</sup> |

\*1: Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

\*2: To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 250 to 252). Elbow fittings are not available for Type 11 (Bottom ported).

\*: Elbow fittings: Ø 1/4" and Ø 5/16" are not available.

## 8 SY7000: A, B port size

(Metric/One-touch fitting)

| Symbol | Port size                  |
|--------|----------------------------|
| 6      | Ø 6                        |
| 8      | Ø 8                        |
| 10     | Ø 10                       |
| 12     | Ø 12                       |
| —      | For all stations of SY5000 |

(Inch/One-touch fitting)

| Symbol | Port size                  |
|--------|----------------------------|
| 7      | Ø 1/4"                     |
| 9      | Ø 5/16"                    |
| 11     | Ø 3/8"                     |
| —      | For all stations of SY5000 |

\*: No symbol needs to be specified when fitting type "CM", "LM" is selected.

## 9 SY5000: A, B port size

(Metric/One-touch fitting)

| Symbol | Port size |
|--------|-----------|
| 6      | Ø 6       |
| 8      | Ø 8       |
| 10     | Ø 10      |
| 12     | Ø 12      |

(Inch/One-touch fitting)

| Symbol | Port size |
|--------|-----------|
| 7      | Ø 1/4"    |
| 9      | Ø 5/16"   |
| 11     | Ø 3/8"    |

\*: The valve pitch is 19 mm, the same as the SY7000.

\*: No symbol needs to be specified when fitting type "CM", "LM" is selected.

## 10 Mounting and Option

| Symbol | Mounting          | Option     |                |
|--------|-------------------|------------|----------------|
|        |                   | Name plate | Station number |
| —      |                   | —          | —              |
| AA     | Direct mounting   | ●          | ●              |
| BA     |                   | ●          | —              |
| D□     | DIN rail mounting | —          | —              |
| A□     |                   | ●          | ●              |
| B□     |                   | ●          | —              |

### DIN Rail Option

| —  | Direct mounting                 |
|----|---------------------------------|
| 0  | Without DIN rail (with bracket) |
| 3  | For 3 stations                  |
| ⋮  | ⋮                               |
| 24 | For 24 stations                 |

Specify a longer rail than the total length of specified stations.

\*: Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" above.)

\*: Only direct mounting is available for Type 11 (Bottom ported).

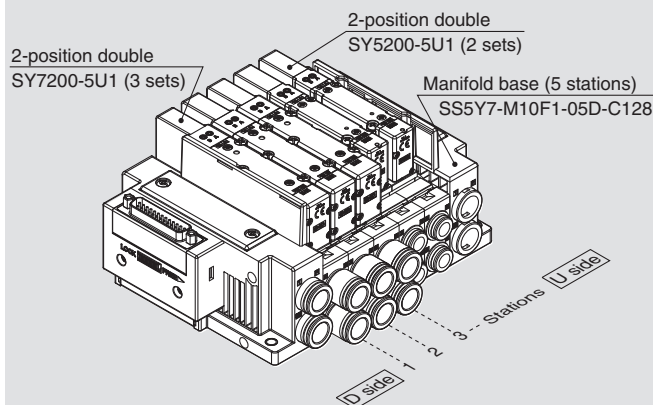
\*: Refer to page 220 to determine the L3 using "Calculation formula" for the DIN rail length. (For the SY3000 and SY5000 mixed mounting type)

\*: The manifold block width is 19 mm for both the SY5000 and SY7000 sizes.

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

## How to Order Manifold Assembly

### Example (SS5Y7-M10F1-□)



SS5Y7-M10F1-05D-C128.. 1 set (Type M10 5-station manifold base part no.)

\*SY7200-5U1 ..... 3 sets (2-position double part no.)

\*SY5200-5U1 ..... 2 sets (2-position double part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

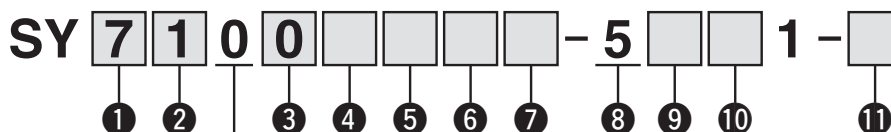
\*: When mixing top ported configurations, select from page 226.

In this case, use caution as there is also output on the A and B port on base side.

Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



### 1 Series

|   |        |
|---|--------|
| 5 | SY5000 |
| 7 | SY7000 |

### 2 Type of actuation

|     |                        |                 |
|-----|------------------------|-----------------|
| 1   | 2-position             | Single          |
| 2   |                        | Double          |
| 3   | 3-position             | Closed centre   |
| 4   |                        | Exhaust centre  |
| 5   |                        | Pressure centre |
| A*1 | 4-position dual 3-port | N.C./N.C.       |
| B*1 |                        | N.O./N.O.       |
| C*1 |                        | N.C./N.O.       |

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 5 Back pressure check valve (Built-in valve type)

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type. Manifold installed type is available if back pressure check valve is required for the valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

|   |         |
|---|---------|
| 5 | 24 V DC |
| 6 | 12 V DC |

\*: Only 24 V DC is available for the serial transmission type.

### 9 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| —      | —          | —                        | Non-polar            |
| R      | —          | —                        |                      |
| U      | ●          | —                        |                      |
| S      | —          | ●                        | Positive common      |
| Z      | ●          |                          | Negative common      |
| NS     | —          |                          |                      |
| NZ     | ●          |                          |                      |

\*: "—" is not available for the SI Unit manifold.

\*: Only "Z" and "NZ" types are available for with the power saving circuit. Select a valve which is suited to the SI Unit output polarity or SI Unit specification when the SI Unit is selected.

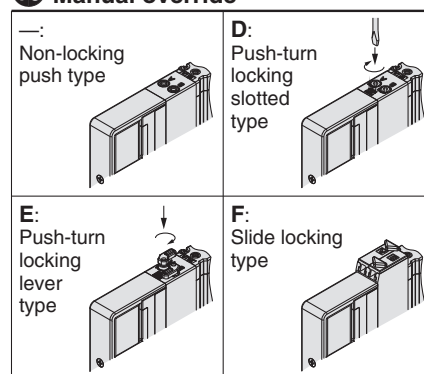
Refer to the pages below for details.

EX500: P.147, 153 EX600: P.163

EX250: P.175 EX260: P.183

EX126: P.191 EX120: P.199

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

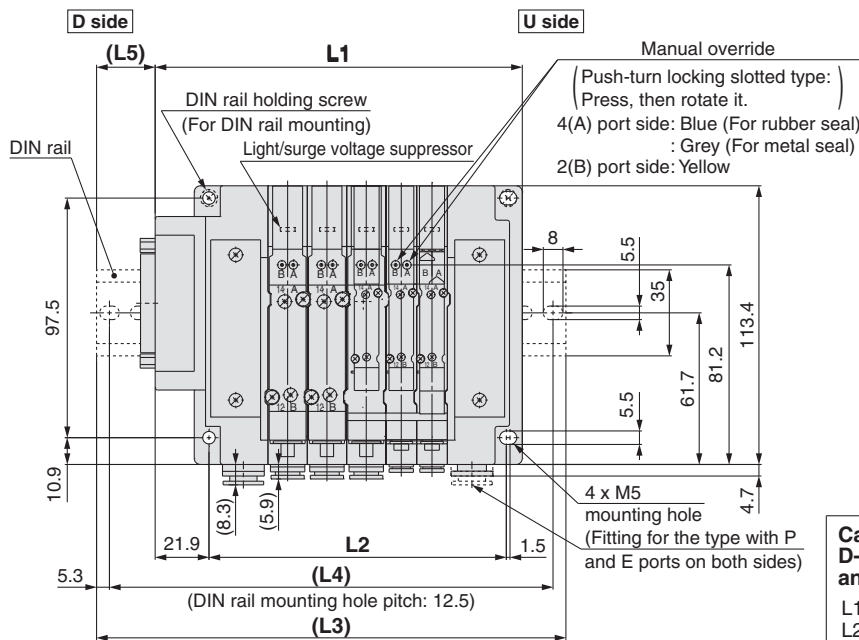
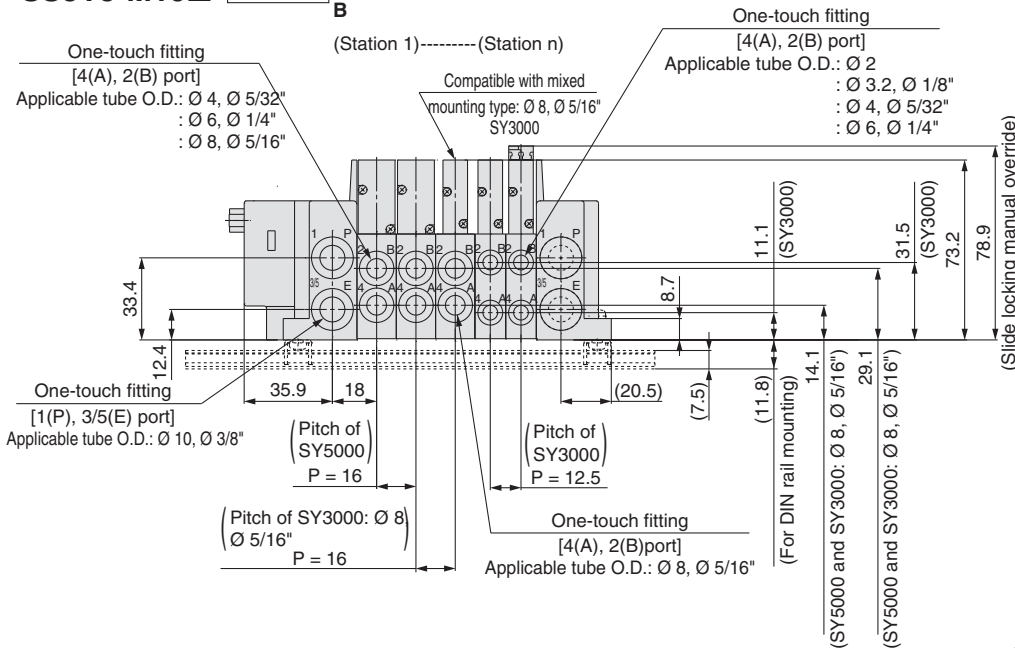
\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

# Dimensions: Series SY3000/5000

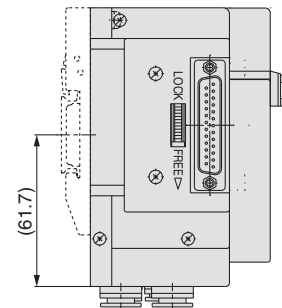
## Plug-in Connector Connecting Base

Type 10/Side Ported  
Mixed Mounting Type

SS5Y5-M10□ - Stations  $\frac{U}{D}$



\*: Refer to pages 205 and 206 for dimensions of external pilot, built-in silencer and elbow fittings.



### Calculation formula for dimensions with D-sub connector <IP40>, Flat ribbon cable and PC wiring

$$\begin{aligned} L1 &= 12.5 \times n1 + 16 \times n2 + 76.4 \\ L2 &= 12.5 \times n1 + 16 \times n2 + 48 \\ M &= (L1 + 6.1) / 12.5 + 1 \text{ Decimal fractions are truncated.} \\ L3 &= 12.5 \times M + 23 \\ L4 &= L3 - 10.5 \\ L5 &= (L3 - L1 + 6.1) / 2 \end{aligned}$$

n1: Number of valve stations of the SY3000  
n2: Number of valve stations of the SY5000  
(Including the stations of the SY3000:  $\varnothing 8, \varnothing 5/16"$ )

### Calculation formula for dimensions with D-sub connector <IP67>, Terminal block box, Lead wire, Circular connector, EX500/600/250/260/126/120 serial transmission

$$\begin{aligned} L1 &= 12.5 \times n1 + 16 \times n2 + a + b \times n3 \\ L2 &= 12.5 \times n1 + 16 \times n2 \times 48 \\ M &= L1 / 12.5 + 1 \text{ Decimal fractions are truncated.} \\ L3 &= 12.5 \times M + 23 \\ L4 &= L3 - 10.5 \\ L5 &= (L3 - L1) / 2 \\ L6 &= b \times n3 + c \end{aligned}$$

n1: Number of valve stations of the SY3000  
n2: Number of valve stations of the SY5000  
(Including the stations of the SY3000:  $\varnothing 8, \varnothing 5/16"$ )  
n3: Number of I/O units or input block stations

\*: Refer to pages 166 to 167 for dimensions of the EX600 serial transmission with I/O unit and page 177 for the EX250 serial transmission with input block when L6, b and c are used for the calculation formula.

|                                                   | Coefficient | a     | b  | c    |
|---------------------------------------------------|-------------|-------|----|------|
| D-sub connector <IP67>                            |             | 90.5  | —  | —    |
| Terminal block box or Serial transmission: EX126  |             | 149.3 | —  | —    |
| Lead wire or Circular connector                   |             | 97    | —  | —    |
| EX500 Gateway Decentralised System 2 (128 Points) |             | 88.7  | —  | —    |
| EX500 Gateway Decentralised System (64 Points)    |             | 88.5  | —  | —    |
| Serial transmission: EX600 (M12 connector)        |             | 141.5 | 47 | 81.5 |
| Serial transmission: EX600 (7/8 inch connector)   |             | 158   | 47 | 81.5 |
| Serial transmission: EX250                        |             | 141.5 | 21 | 81.5 |
| Serial transmission: EX260                        |             | 88.7  | —  | —    |
| Serial transmission: EX120                        |             | 84.7  | —  | —    |

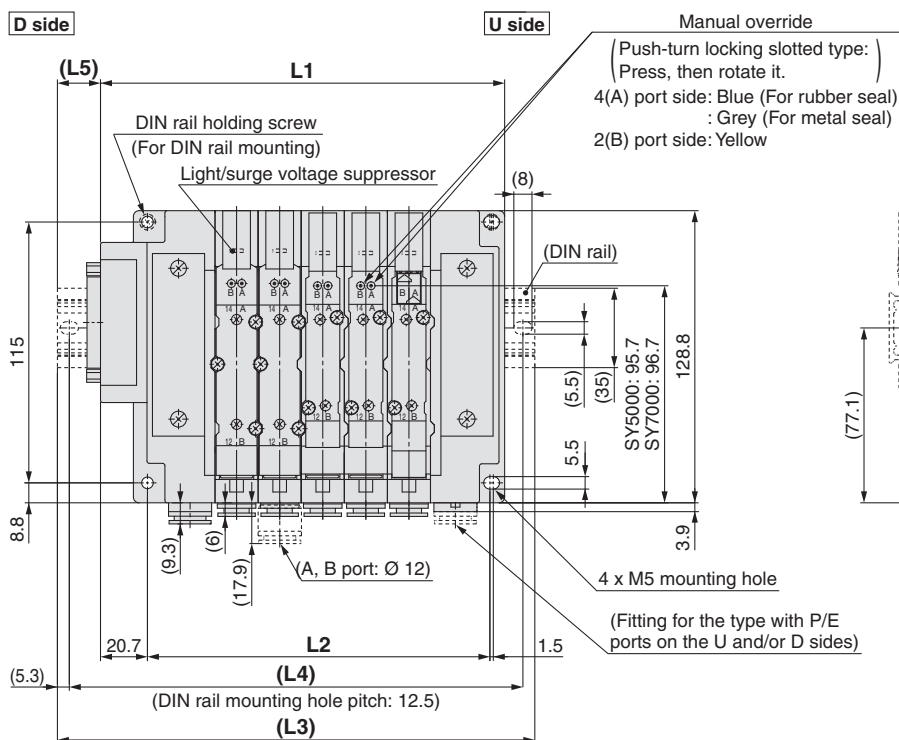
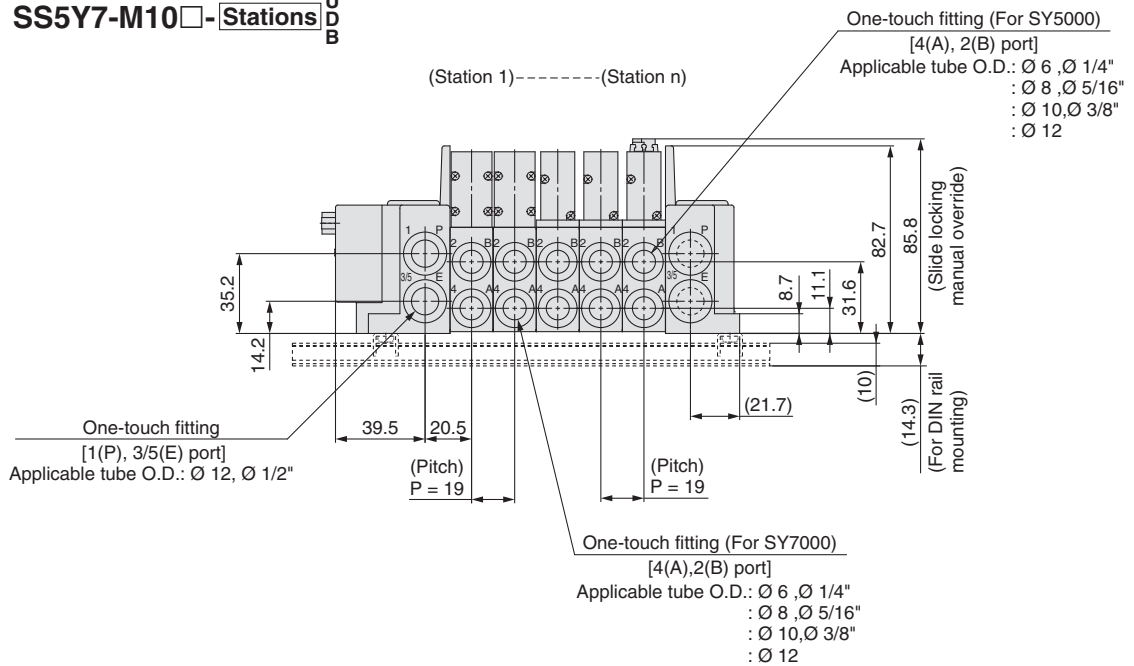
# Series SY3000/5000/7000

## Dimensions: Series SY5000/7000

### Plug-in Connector Connecting Base

### Type 10/Side Ported Mixed Mounting Type

SS5Y7-M10□ - Stations  $\begin{matrix} U \\ D \\ B \end{matrix}$



※: Refer to page 207 for dimensions of external pilots and built-in silencers.

※: Refer to the below pages for L1, L2, L3, L4 dimensions and other dimensions that are not specified in each wiring specification.

|                         |               |
|-------------------------|---------------|
| D-sub connector <IP40>: | P. 102        |
| D-sub connector <IP67>: | P. 105        |
| Flat ribbon cable       | : P. 108      |
| Terminal block box      | : P. 120      |
| Lead wire               | : P. 130      |
| Circular connector      | : P. 140      |
| EX500 (128 points)      | : P. 150      |
| EX500 (64 points)       | : P. 156      |
| EX600                   | : P. 168, 169 |
| EX250                   | : P. 178      |
| EX260                   | : P. 186      |
| EX126                   | : P. 194      |
| EX120                   | : P. 202      |



## Dimensions: Series SY3000/5000

## Plug-in Connector Connecting Base

Type 11/Bottom Ported

### Mixed Mounting Type

## Valve

## Plug-in Sub-plate

## Plug-in Metal Base

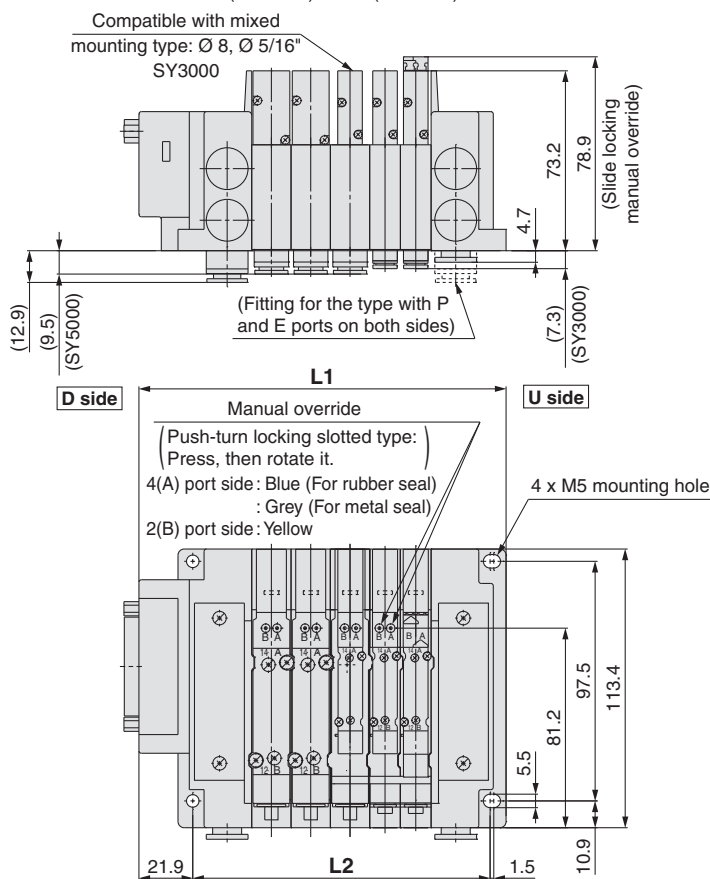
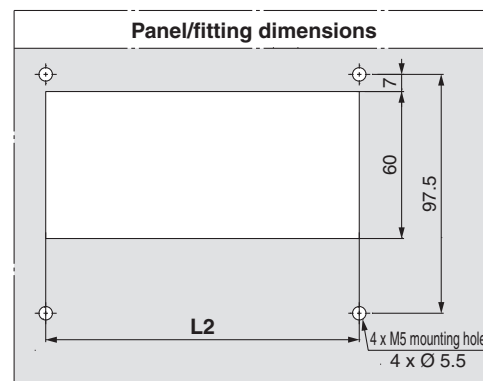
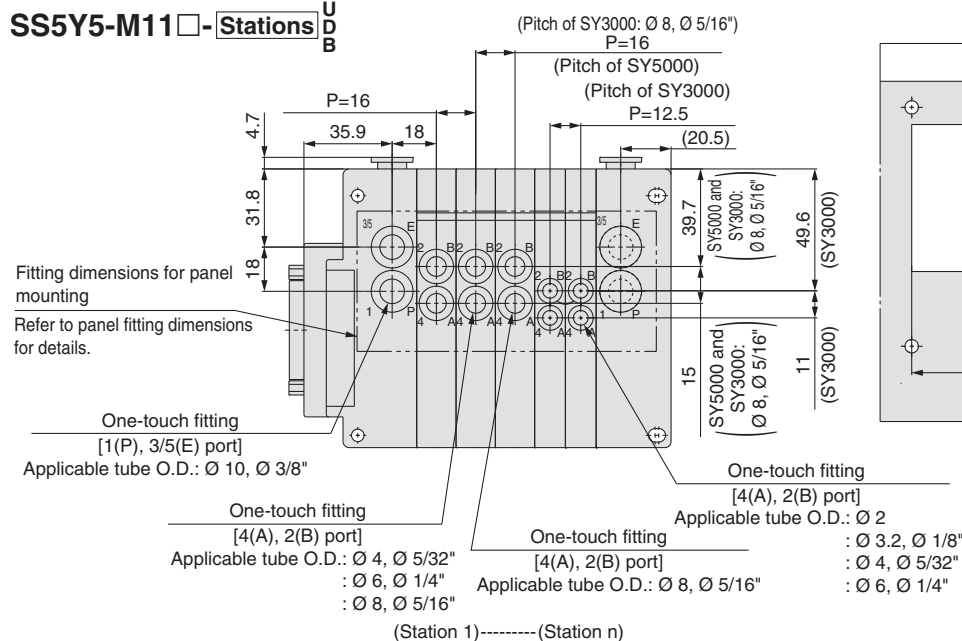
Type 50, 51, 52  
Manifold Exploded View

## Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

## Manifold Options

SS5Y5-M11 ☐ - Stations ☐ U  
D  
P

### Calculation formula for dimensions

$$L1 = 12.5 \times n1 + 16 \times n2 + a + b \times n3$$

$$L2 = 12.5 \times n1 + 16 \times n2 + 48$$

$$L6 = b \times n^3 + c$$

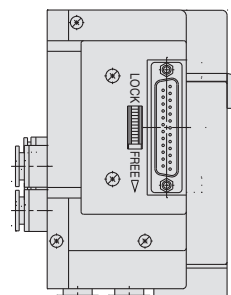
n1: Number of valve stations of the SY3000

n2: Number of valve stations of the SY5000

(Including the stations of the SY3000: Ø 8, Ø 5/16")

n3: Number of I/O units or input block stations

\*: Refer to pages 166 and 167 for dimensions of the EX600 serial transmission with I/O Unit and page 177 for the EX250 serial transmission with input block when L6, b and c are used for the calculation formula.



| Coefficient                                            | a     | b  | c    |
|--------------------------------------------------------|-------|----|------|
| D-sub connector <IP40>, Flat ribbon cable or PC wiring | 76.4  | —  | —    |
| D-sub connector <IP67>                                 | 90.5  | —  | —    |
| Terminal block box or Serial transmission: EX126       | 149.3 | —  | —    |
| Lead wire or Circular connector                        | 97    | —  | —    |
| EX500 Gateway Decentralised System 2 (128 Points)      | 88.7  | —  | —    |
| EX500 Gateway Decentralised System (64 Points)         | 88.5  | —  | —    |
| Serial transmission: EX600 (M12 connector)             | 141.5 | 47 | 81.5 |
| Serial transmission: EX600 (7/8 inch connector)        | 158   | 47 | 81.5 |
| Serial transmission: EX250                             | 141.5 | 21 | 81.5 |
| Serial transmission: EX260                             | 88.7  | —  | —    |
| Serial transmission: EX120                             | 84.7  | —  | —    |

\*: Refer to page 208 for dimensions of external pilots and built-in silencers.

## Series SY3000/5000/7000

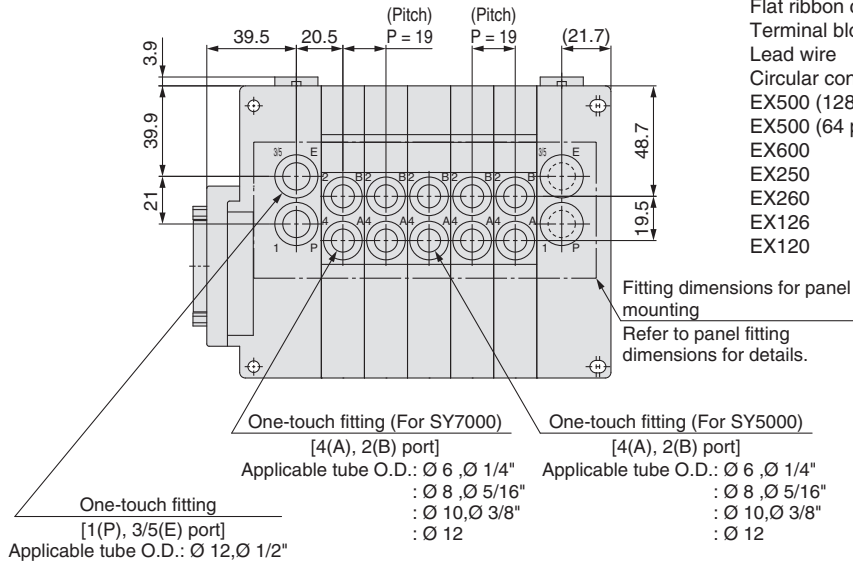
## Dimensions: Series SY5000/7000

**SS5Y7-M11** ☐ - **Stations** U  
D  
B

## Plug-in Connector Connecting Base

Type 11/Bottom Ported

## Mixed Mounting Type



- \*: Refer to page 209 for dimensions of external pilots and built-in silencers.
- \*: Refer to the below pages for L1, L2 dimensions and other dimensions that are not specified in each wiring specification.

Dimensions of Type 11/Bottom ported: P. 209

D-sub connector <IP40>

D-sub connector <IP67>

### Flat ribbon cable

### Terminal block box

Lead wire

## Circular connector

EX500 (128 points)

EX500 (64 points)

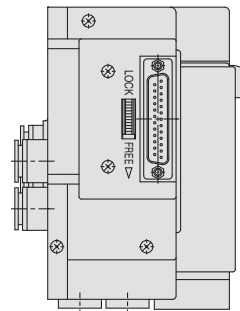
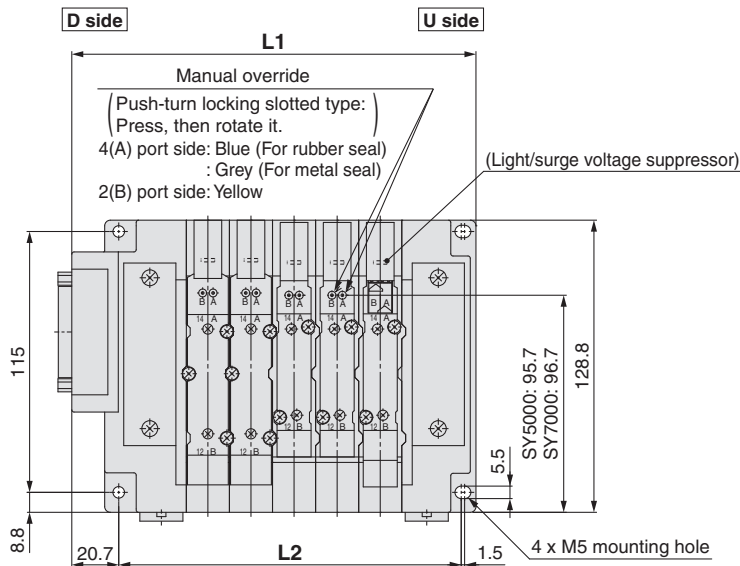
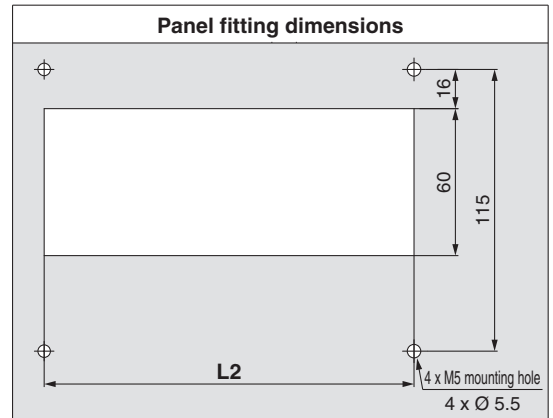
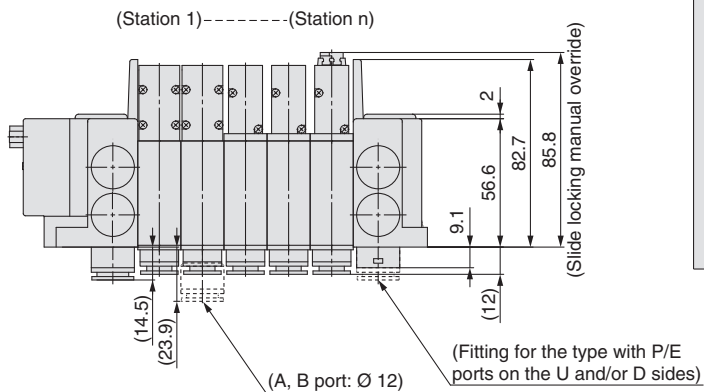
EX600

EX250

EX260

EX126

EX120



Manifold Options

One-touch Fittings/  
Plug Assembly Part No.

Type 10, 11, 12  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Metal Base

Plug-in Sub-plate

Valve

# Plug-in Connector Connecting Base: Plug-in Mixed Mounting Type Manifold

D-sub Connector (IP40/67) Flat Ribbon Cable PC Wiring Terminal Block Box (IP67)

Lead Wire (IP67) Circular Connector (IP67) EX500 (IP67) EX600 (IP67)

EX250 (IP67) EX260 (IP67) EX126 (IP67) EX120

**Type 12  
Top Ported**

# Series SY3000/5000/7000 C €

For the SY5000 series, the SY5000 and the SY3000 can be mounted on the same manifold.  
For the SY7000 series, the SY7000 and the SY5000 can be mounted on the same manifold.

## How to Order Manifold

Refer to pages 211 and 212 for dimensions of Type 12/Top ported type.

**SS5Y 5 - M 12 F 1 - 05 U** - - - -

1 2 3 4 5 6 7 8

### Mixed Mounting Type

For the SY5000 series, it is possible to mount the SY3000 size valves on all stations. However, the SY3000 manifold block width should be 12.5 mm. (16 mm for Ø 8 or Ø 5/16" One-touch fitting)  
Also, for the SY7000 series, it is possible to mount the SY5000 size valves on all stations. However, the SY3000 cannot be mounted onto the SY7000 series.

### 1 Series

|   |        |
|---|--------|
| 5 | SY5000 |
| 7 | SY7000 |

### 3

#### • With Lead wire

#### Lead wire length

|   |       |
|---|-------|
| 1 | 0.6 m |
| 2 | 1.5 m |
| 3 | 3 m   |

#### • With D-sub connector (IP40/67), Flat ribbon cable and PC wiring

#### Connector entry direction

|   |         |
|---|---------|
| 1 | Upward  |
| 2 | Lateral |

\*: It is not necessary to select the items above for the valve with terminal block box or with circular connector or the serial transmission type.

### 4 Valve stations

| Symbol | Stations    | Note                                                                                                                             |
|--------|-------------|----------------------------------------------------------------------------------------------------------------------------------|
| 02     | 2 stations  | Some connectors have a limitation on the number of stations. Refer to the pages shown in the table "Connector type" for details. |
| 24     | 24 stations |                                                                                                                                  |

### 7 P, E port size (One-touch fittings)

| Symbol | SY5000 | SY7000 | Note        |
|--------|--------|--------|-------------|
| —      | Ø 10   | Ø 12   | Metric size |
| N      | Ø 3/8" | Ø 1/2" | Inch size   |

### 2 Connector type

| Symbol | Type                                              | Page                       |
|--------|---------------------------------------------------|----------------------------|
| F      | D-sub connector (25 pins)                         | IP40                       |
| FW     |                                                   | IP67                       |
| P      | Flat ribbon cable                                 | 26 pins                    |
| PG     |                                                   | 20 pins                    |
| PH     |                                                   | 10 pins                    |
| J      | PC wiring (20 pins)                               | —                          |
| G      |                                                   | With power supply terminal |
| T      | Terminal block box                                | 121                        |
| L1     | Lead wire                                         | 34 cores                   |
| L2     |                                                   | 17 cores                   |
| L3     |                                                   | 9 cores                    |
| M      | Circular connector                                | 141                        |
| S□     | EX500 Gateway Decentralised System 2 (128 Points) | 157                        |
| S□     | EX500 Gateway Decentralised System (64 Points)    | 159                        |
| S6□    | EX600                                             | 171                        |
| S□     | EX250                                             | 179                        |
| S□     | EX260                                             | 187                        |
| S4□    | EX126                                             | 195                        |
| S3□    | EX120                                             | 203                        |

\*: Refer to the pages shown in the table above for details.

### 5 P, E port entry

|     |                               |
|-----|-------------------------------|
| U*1 | U side (2 to 10 stations)     |
| D*1 | D side (2 to 10 stations)     |
| B   | Both sides (2 to 24 stations) |

\*1: For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

\*: Refer to page 171 for the EX600 and 6 on

### 6 SUP/EXH block assembly

|   |                                   |
|---|-----------------------------------|
| — | Internal pilot                    |
| S | Internal pilot, Built-in silencer |
| R | External pilot                    |

\*: For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)

\*: Refer to page 171 for the EX600 and 6 on page 179 for the EX250.

### 8 Mounting

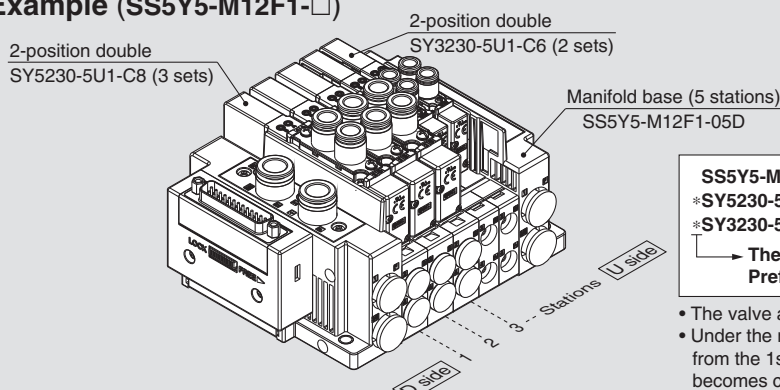
| —   | Direct mounting                                                                                      |
|-----|------------------------------------------------------------------------------------------------------|
| D   | DIN rail mounting (With DIN rail)                                                                    |
| D0  | DIN rail mounting (Without DIN rail)                                                                 |
| D3  | For 3 stations Specify a longer rail than the standard length.                                       |
| :   | [For the SS5Y5-M12, the SY5000 valve is now at a mountable length (manifold block length of 16 mm).] |
| D24 | For 24 stations                                                                                      |

\*: Refer to page 227 to determine the L3 using "Calculation formula" for the DIN rail length. (For the SY3000 and SY5000 mixed mounting type)

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

## How to Order Manifold Assembly

### Example (SS5Y5-M12F1-□)

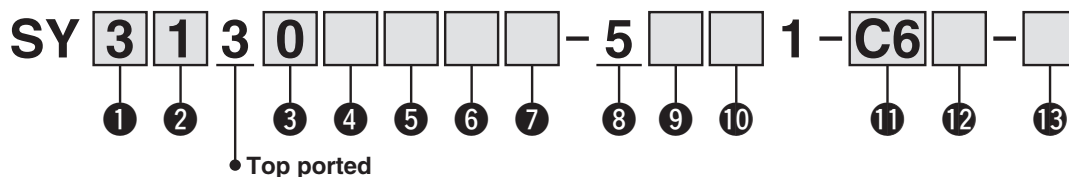


SS5Y5-M12F1-05D ... 1 set (Type M12 5-station manifold base part no.)  
 \*SY5230-5U1-C8 ..... 3 sets (2-position double part no.)  
 \*SY3230-5U1-C6 ..... 2 sets (2-position double part no.)  
 The asterisk denotes the symbol for assembly. Prefix it to the part numbers of the valve etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure on the left. If the arrangement becomes complicated, specify on a manifold specification sheet.

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



### 1 Series

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

### 2 Type of actuation

|     |             |                 |
|-----|-------------|-----------------|
| 1   | 2-position  | Single          |
| 2   |             | Double          |
| 3   | 3-position  | Closed centre   |
| 4   |             | Exhaust centre  |
| 5   |             | Pressure centre |
| A*1 | 4-position  | N.C./N.C.       |
| B*1 | dual 3-port | N.O./N.O.       |
| C*1 |             | N.C./N.O.       |

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

|   |             |
|---|-------------|
| 0 | Rubber seal |
| 1 | Metal seal  |

### 4 Pilot type

|   |                |
|---|----------------|
| — | Internal pilot |
| R | External pilot |

### 5 Back pressure check valve (Built-in valve type)

|   |          |
|---|----------|
| — | None     |
| H | Built-in |

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

|     |                               |
|-----|-------------------------------|
| —   | Standard (0.7 MPa)            |
| B   | Quick response type (0.7 MPa) |
| K*1 | High pressure type (1.0 MPa)  |

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

|   |                                                  |
|---|--------------------------------------------------|
| — | Standard                                         |
| T | With power saving circuit (Continuous duty type) |

\*: Be sure to select the power saving circuit type when a valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

|   |         |
|---|---------|
| 5 | 24 V DC |
| 6 | 12 V DC |

\*: Only 24 V DC is available for the serial transmission type.

### 9 Light/surge voltage suppressor and common specification

| Symbol | With light | Surge voltage suppressor | Common specification |
|--------|------------|--------------------------|----------------------|
| —      | —          | —                        | Non-polar            |
| R      | —          | —                        |                      |
| U      | ●          | —                        |                      |
| S      | —          | ●                        | Positive common      |
| Z      | ●          | —                        | Negative common      |
| NS     | —          | —                        |                      |
| NZ     | ●          | —                        |                      |

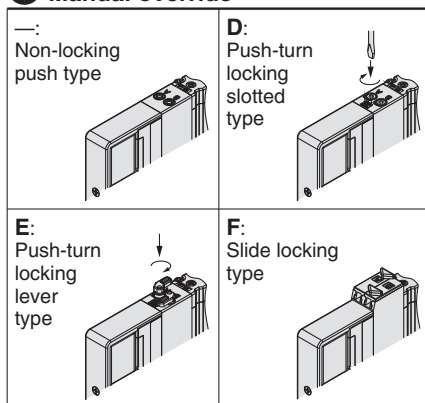
\*: "—" is not available for the SI Unit manifold.

\*: Only "Z" and "NZ" types are available for with the power saving circuit. Select a valve which is suited to the SI Unit output polarity or SI Unit specification when the SI Unit is selected.

Refer to the pages below for details.

EX500: P.158, 160 EX600: P.172  
EX250: P.180 EX260: P.188  
EX126: P.196 EX120: P.204

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 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)

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| C2     | Ø 2       | ●      | —      | —      |
| C3     | Ø 3.2     | ●      | —      | —      |
| C4     | Ø 4       | ●      | ●      | —      |
| C6     | Ø 6       | ●      | ●      | ●      |
| C8     | Ø 8       | —      | ●      | ●      |
| C10    | Ø 10      | —      | —      | ●      |
| C12    | Ø 12      | —      | —      | ●      |

#### One-touch fitting (Inch)

| Symbol | A, B port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| N1     | Ø 1/8"    | ●      | —      | —      |
| N3     | Ø 5/32"   | ●      | ●      | —      |
| N7     | Ø 1/4"    | ●      | ●      | ●      |
| N9     | Ø 5/16"   | —      | ●      | ●      |
| N11    | Ø 3/8"    | —      | —      | ●      |

### 12 Thread type

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

\*: Only — is available for M5.

### 13 Type of mounting screw

|   |                                                             |
|---|-------------------------------------------------------------|
| — | Round head combination screw                                |
| B | Hexagon socket head cap screw                               |
| K | Round head combination screw (Falling-out-prevention type)  |
| H | Hexagon socket head cap screw (Falling-out-prevention type) |

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.

# Series SY3000/5000/7000

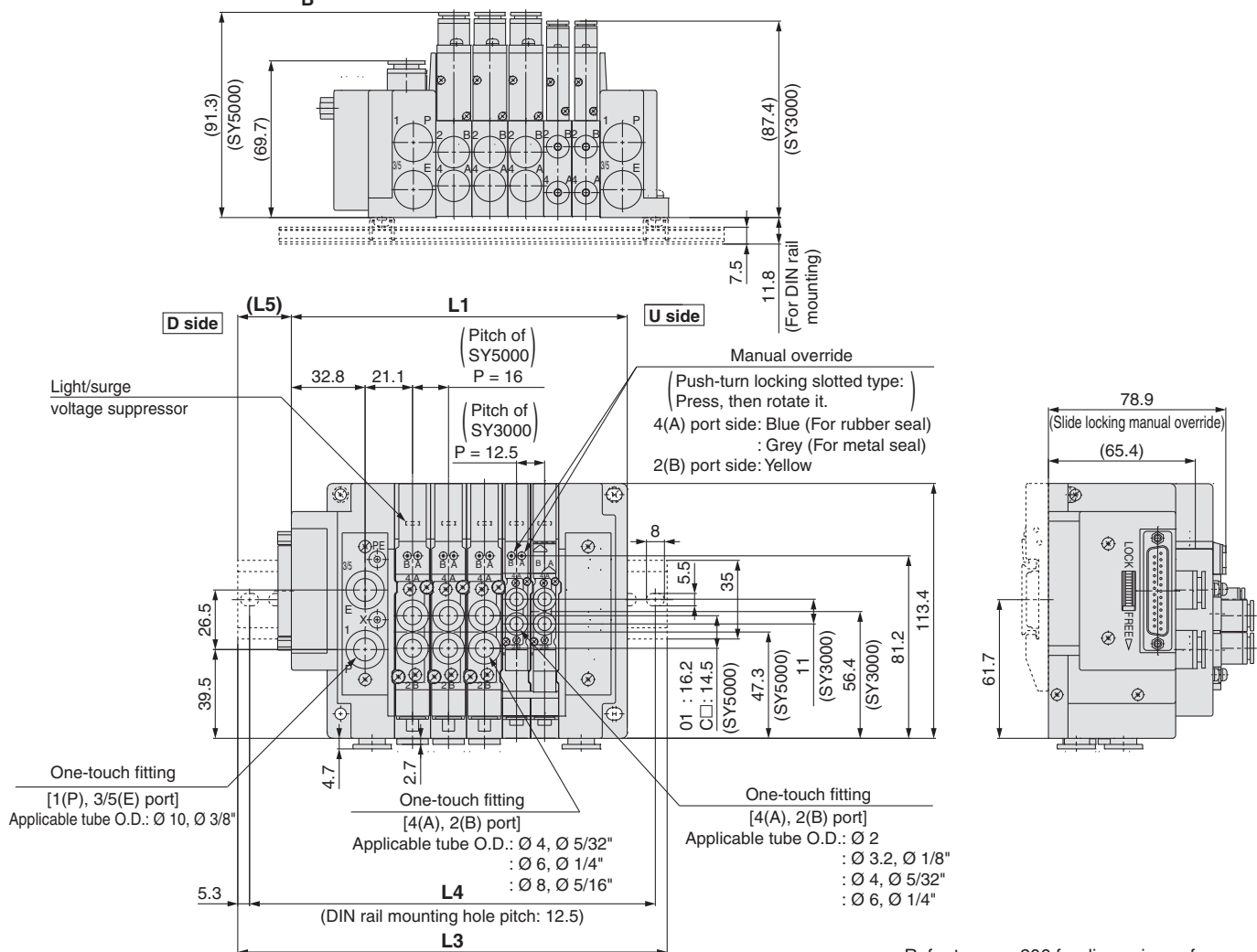
## Dimensions: Series SY5000

### Plug-in Connector Connecting Base

### Type 12/Top Ported Mixed Mounting Type

SS5Y5-M12□ - Stations  $\frac{U}{D}$

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



\*: Refer to page 206 for dimensions of external pilot and elbow fittings.

#### Calculation formula for dimensions with D-sub connector <IP40>, Flat ribbon cable and PC wiring

$$\begin{aligned}
 L1 &= 12.5 \times n1 + 16 \times n2 + 76.4 \\
 L2 &= 12.5 \times n1 + 16 \times n2 + 48 \\
 M &= (L1 + 6.1) / 12.5 + 1 \quad \text{Decimal fractions are truncated.} \\
 L3 &= 12.5 \times M + 23 \\
 L4 &= L3 - 10.5 \\
 L5 &= (L3 - L1 + 6.1) / 2
 \end{aligned}$$

n1: Number of valve stations of the SY3000  
n2: Number of valve stations of the SY5000

#### Calculation formula for dimensions with D-sub connector <IP67>, Terminal block box, Lead wire, Circular connector, EX500/600/250/260/126/120 serial transmission

$$\begin{aligned}
 L1 &= 12.5 \times n1 + 16 \times n2 + a + b \times n3 \\
 L2 &= 12.5 \times n1 + 16 \times n2 \times 48 \\
 M &= L1 / 12.5 + 1 \quad \text{Decimal fractions are truncated.} \\
 L3 &= 12.5 \times M + 23 \\
 L4 &= L3 - 10.5 \\
 L5 &= (L3 - L1) / 2 \\
 L6 &= b \times n3 + c
 \end{aligned}$$

n1: Number of valve stations of the SY3000  
n2: Number of valve stations of the SY5000  
n3: Number of I/O Units or input block stations

\*: Refer to pages 166 and 167 for dimensions of the EX600 serial transmission with I/O Unit and page 177 for the EX250 serial transmission with input block when L6, b and c are used for the calculation formula.

| Coefficient                                       | a     | b  | c    |
|---------------------------------------------------|-------|----|------|
| D-sub connector <IP67>                            | 90.5  | —  | —    |
| Terminal block box or Serial transmission: EX126  | 149.3 | —  | —    |
| Lead wire or Circular connector                   | 97    | —  | —    |
| EX500 Gateway Decentralized System 2 (128 Points) | 88.7  | —  | —    |
| EX500 Gateway Decentralized System (64 Points)    | 88.5  | —  | —    |
| Serial transmission: EX600 (M12 connector)        | 141.5 | 47 | 81.5 |
| Serial transmission: EX600 (7/8 inch connector)   | 158   | 47 | 81.5 |
| Serial transmission: EX250                        | 141.5 | 21 | 81.5 |
| Serial transmission: EX260                        | 88.7  | —  | —    |
| Serial transmission: EX120                        | 84.7  | —  | —    |

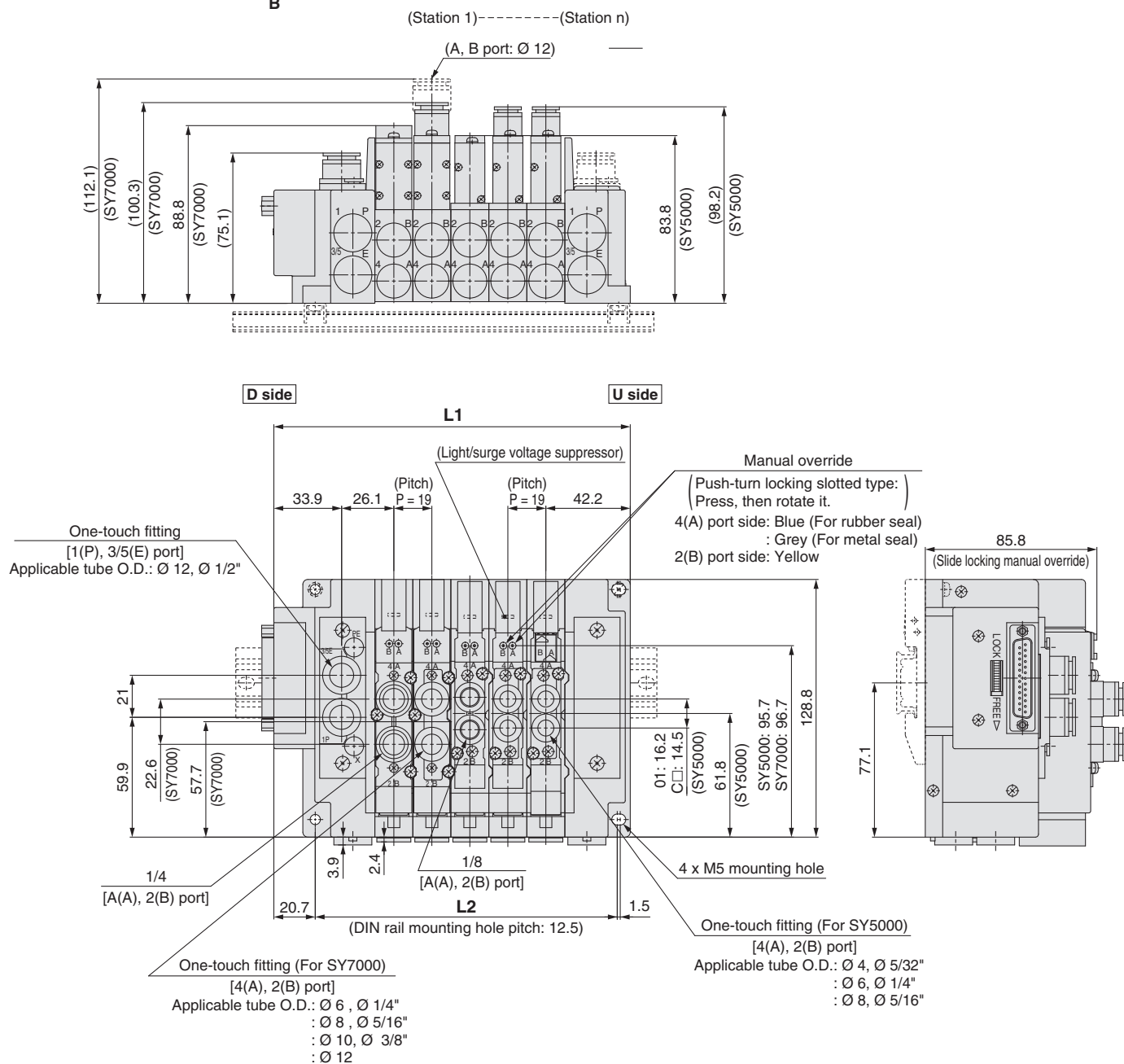


# Dimensions: Series SY7000

## Plug-in Connector Connecting Base

Type 12/Top Ported  
Mixed Mounting Type

SS5Y7-M12□ - Stations  $\frac{U}{D}$   
B



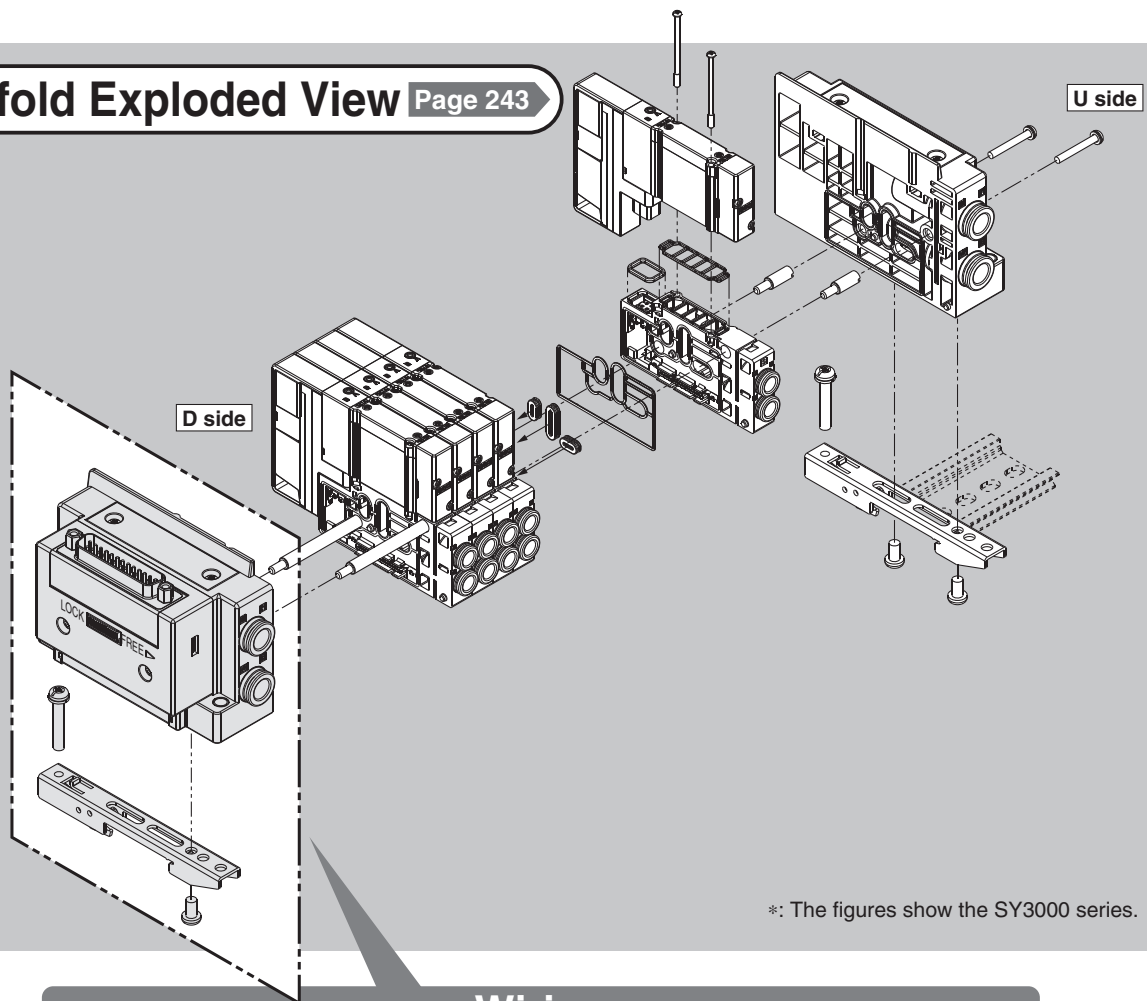
\*: Refer to page 207 for dimensions of external pilot and elbow fittings.

\*: Refer to the below pages for L1, L2, L3, L4 dimensions and other dimensions that are not specified in each wiring specification.

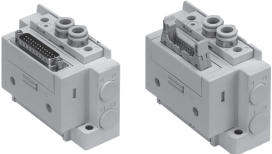






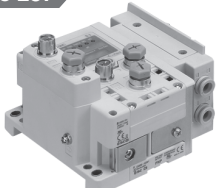




|                                          |               |
|------------------------------------------|---------------|
| Dimensions of Type 12/Top ported: P. 212 |               |
| D-sub connector <IP40>                   | : P. 102      |
| D-sub connector <IP67>                   | : P. 105      |
| Flat ribbon cable                        | : P. 108      |
| Terminal block box                       | : P. 120      |
| Lead wire                                | : P. 130      |
| Circular connector                       | : P. 140      |
| EX500 (128 points)                       | : P. 150      |
| EX500 (64 points)                        | : P. 156      |
| EX600                                    | : P. 168, 169 |
| EX250                                    | : P. 178      |
| EX260                                    | : P. 186      |
| EX126                                    | : P. 194      |
| EX120                                    | : P. 202      |

# Series **SY3000/5000/7000** Type 10, 11, 12 Connector Connecting Base Manifold Exploded View

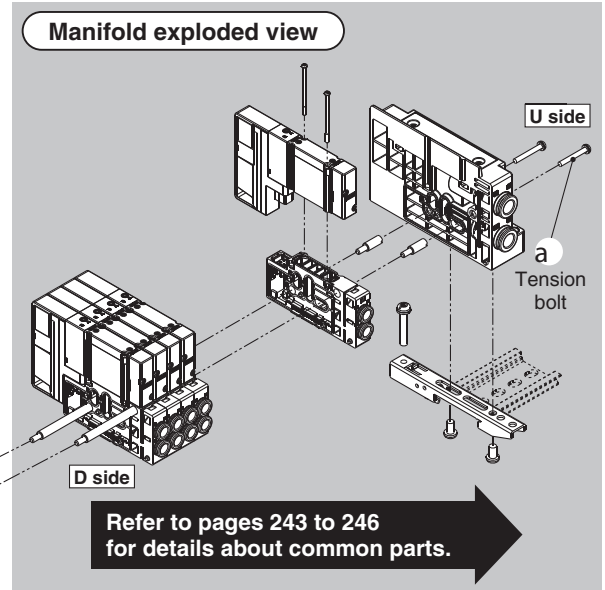
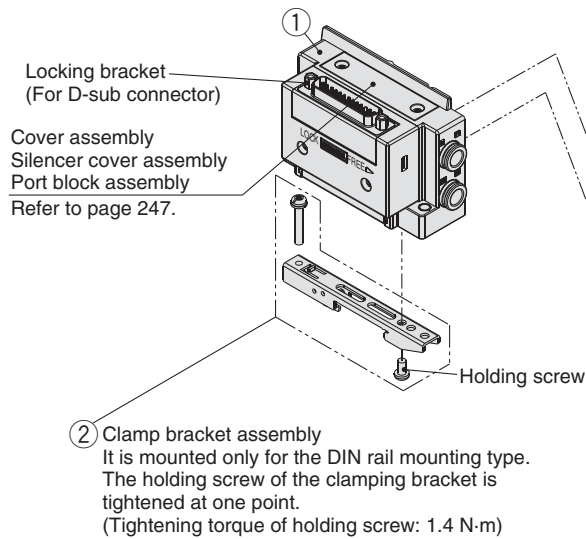
## Manifold Exploded View Page 243



## Wiring

|                                                                                                                                                                    |                                                                                                                                                                       |                                                                                                                                                                     |                                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>D-sub Connector &lt;IP40&gt;/Flat Ribbon Cable</b><br><span>Page 230</span>  | <b>D-sub Connector &lt;IP67&gt;</b><br><span>Page 231</span>                       | <b>Terminal Block Box</b><br><span>Page 232</span>                              | <b>Lead Wire</b><br><span>Page 233</span>  |
| <b>Circular Connector</b><br><span>Page 234</span>                              | <b>EX500 Gateway Decentralised System 2 (128 Points)</b><br><span>Page 235</span>  | <b>EX500 Gateway Decentralised System (64 Points)</b><br><span>Page 236</span>  | <b>EX600</b><br><span>Page 237</span>      |
| <b>EX250</b><br><span>Page 239</span>                                           | <b>EX260</b><br><span>Page 240</span>                                              | <b>EX126</b><br><span>Page 241</span>                                           | <b>EX120</b><br><span>Page 242</span>      |

## Wiring

**D-sub Connector <IP40>/Flat Ribbon Cable****Manifold Parts No.**

## ① SUP/EXH block assembly

SY 3 0M-1-11 A 1-C8-

## •Series

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

|    |                                      |
|----|--------------------------------------|
| —  | Direct mounting                      |
| D0 | DIN rail mounting (Without DIN rail) |

\*: For bottom ported, the symbol is —.

## •P, E port size (One-touch fittings)

| Symbol            | P, E port | SY3000 | SY5000 | SY7000 | Note                                     |
|-------------------|-----------|--------|--------|--------|------------------------------------------|
| C8                | Ø 8       | ●      | —      | —      | Side/Bottom/Top ported                   |
| C10               | Ø 10      | —      | ●      | —      | Metric size                              |
| C12               | Ø 12      | —      | —      | ●      |                                          |
| N9                | Ø 5/16"   | ●      | —      | —      | Side/Bottom/Top ported                   |
| N11               | Ø 3/8"    | —      | ●      | —      | Inch size                                |
| N13               | Ø 1/2"    | —      | —      | ●      |                                          |
| L8                | Ø 8       | ●      | —      | —      | Side ported                              |
| L10               | Ø 10      | —      | ●      | —      | Metric size                              |
| L12               | Ø 12      | —      | —      | ●      |                                          |
| LN9               | Ø 5/16"   | ●      | —      | —      | Side ported                              |
| LN11              | Ø 3/8"    | —      | ●      | —      | Inch size                                |
| LN13              | Ø 1/2"    | —      | —      | ●      |                                          |
| B8                | Ø 8       | ●      | —      | —      | Side ported                              |
| B10               | Ø 10      | —      | ●      | —      | Metric size                              |
| B12               | Ø 12      | —      | —      | ●      |                                          |
| BN9               | Ø 5/16"   | ●      | —      | —      | Side ported                              |
| BN11              | Ø 3/8"    | —      | ●      | —      | Inch size                                |
| BN13              | Ø 1/2"    | —      | —      | ●      |                                          |
| 00 <sup>*1</sup>  | Plug      | ●      | ●      | ●      | P/E port entry on one side or Top ported |
| 00U <sup>*2</sup> | Plug      | ●      | ●      | ●      |                                          |

\*1: It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

\*2: "00U" is available only for the D-sub connector type and it has an inch size locking bracket.

## •SUP/EXH block assembly

|    |                                                |
|----|------------------------------------------------|
| 11 | D-sub connector <IP40>                         |
| 12 | Flat ribbon cable (26 pins)                    |
| 13 | Flat ribbon cable (20 pins)                    |
| 14 | Flat ribbon cable (10 pins)                    |
| 15 | PC wiring (20 pins)                            |
| 35 | PC wiring (20 pins) with power supply terminal |

## •Connector entry direction

|   |         |
|---|---------|
| 1 | Upward  |
| 2 | Lateral |

## •Pilot, Silencer/Piping type

| Symbol | Pilot type | Built-in silencer | Piping direction |
|--------|------------|-------------------|------------------|
|        | Internal   | External          |                  |
| —      | ●          | —                 | —                |
| S      | ●          | —                 | ●                |
| R      | —          | ●                 | —                |
| V      | ●          | —                 | —                |
| RV     | —          | ●                 | —                |
| VP     | ●          | —                 | ● <sup>*1</sup>  |
| B      | ●          | —                 | —                |
| BS     | ●          | —                 | ●                |
| BR     | —          | ●                 | —                |

\*1: For silencer (supply side). E port is plugged.

\*: "B" for bottom ported can be selected for the SY5000/7000 series.

## SUP/EXH block assembly (D side)

## accessories and the number of accessories

| Accessories    | SY3000             | SY5000<br>SY7000 |
|----------------|--------------------|------------------|
| a Tension bolt | None <sup>*1</sup> | 3 pcs.           |

\*1: Since the nuts are embedded in the SUP/EXH block.

## ② Clamp bracket assembly

| Series      | Part no.    |
|-------------|-------------|
| SY3000      | SY30M-15-1A |
| SY5000/7000 | SY50M-15-1A |

\*: Part number is for one assembly.

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

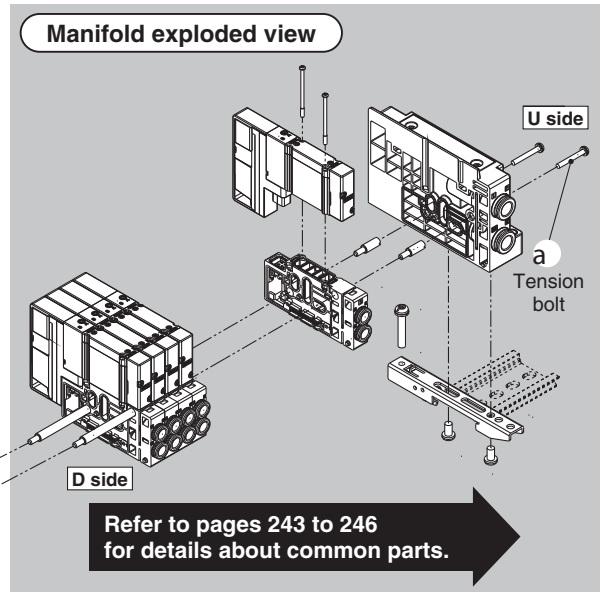
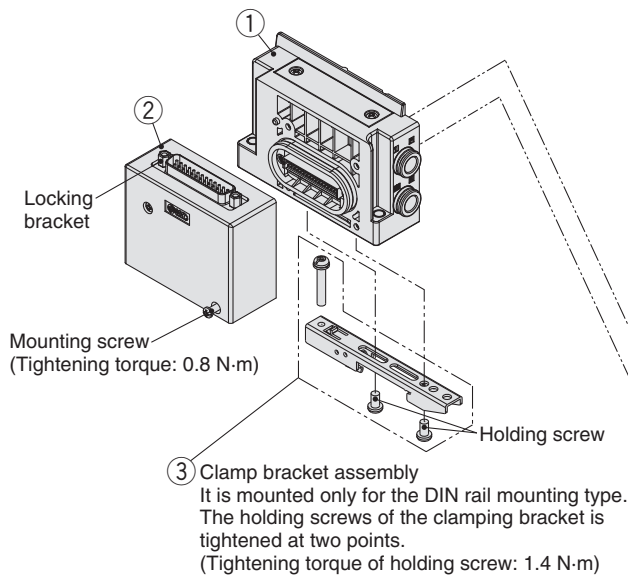
Type 10, 11, 12  
Manifold Exploded ViewOne-touch Fittings/  
Plug Assembly Part No.

Manifold Options

# Series SY3000/5000/7000

## Wiring

### D-sub Connector <IP67>



## Manifold Parts No.

### ① SUP/EXH block assembly

SY **3** 0M-1-1A **C8** - **Mounting**

#### • Series

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

|    |                                      |
|----|--------------------------------------|
| —  | Direct mounting                      |
| D0 | DIN rail mounting (Without DIN rail) |

※: For bottom ported, the symbol is —.

#### • P, E port size (One-touch fittings)

| Symbol | P, E port | SY3000 | SY5000 | SY7000 | Note                                     |
|--------|-----------|--------|--------|--------|------------------------------------------|
| C8     | Ø 8       | ●      | —      | —      | Side/Bottom/Top ported Metric size       |
| C10    | Ø 10      | —      | ●      | —      |                                          |
| C12    | Ø 12      | —      | —      | ●      |                                          |
| N9     | Ø 5/16"   | ●      | —      | —      | Side/Bottom/Top ported Inch size         |
| N11    | Ø 3/8"    | —      | ●      | —      |                                          |
| N13    | Ø 1/2"    | —      | —      | ●      |                                          |
| L8     | Ø 8       | ●      | —      | —      | Side ported Metric size                  |
| L10    | Ø 10      | —      | ●      | —      |                                          |
| L12    | Ø 12      | —      | —      | ●      |                                          |
| LN9    | Ø 5/16"   | ●      | —      | —      | Side ported Inch size                    |
| LN11   | Ø 3/8"    | —      | ●      | —      |                                          |
| LN13   | Ø 1/2"    | —      | —      | ●      |                                          |
| B8     | Ø 8       | ●      | —      | —      | Side ported Metric size                  |
| B10    | Ø 10      | —      | ●      | —      |                                          |
| B12    | Ø 12      | —      | —      | ●      |                                          |
| BN9    | Ø 5/16"   | ●      | —      | —      | Side ported Inch size                    |
| BN11   | Ø 3/8"    | —      | ●      | —      |                                          |
| BN13   | Ø 1/2"    | —      | —      | ●      |                                          |
| 00*1   | Plug      | ●      | ●      | ●      | P/E port entry on one side or Top ported |
| 00U*2  | Plug      | ●      | ●      | ●      |                                          |

#### • Pilot, Silencer/Piping type

| Symbol | Pilot type | Built-in silencer | Piping direction |
|--------|------------|-------------------|------------------|
| —      | Internal   | External          | —                |
| S      | ●          | —                 | Side             |
| R      | —          | ●                 | —                |
| V      | ●          | —                 | —                |
| RV     | —          | ●                 | Top              |
| VP     | ●          | —                 | —                |
| B      | ●          | —                 | Bottom           |
| BS     | ●          | —                 | —                |
| BR     | —          | ●                 | —                |

\*1: For silencer (supply side). E port is plugged.

\*2: "B" for bottom ported can be selected for the SY5000/7000 series.

### SUP/EXH block assembly (D side)

#### accessories and the number of accessories

| Accessories    | SY3000 | SY5000<br>SY7000 |
|----------------|--------|------------------|
| a Tension bolt | None*1 | 3 pcs.           |

\*1: Since the nuts are embedded in the SUP/EXH block.

### ② D-sub connector block assembly <IP67>

| Part no.      | Connector direction | Locking bracket |
|---------------|---------------------|-----------------|
| SY30M-14-9A1  | Top                 | Metric size     |
| SY30M-14-9A2  | Side                |                 |
| SY30M-14-9A1U | Top                 | Inch size       |
| SY30M-14-9A2U | Side                |                 |

### ③ Clamp bracket assembly

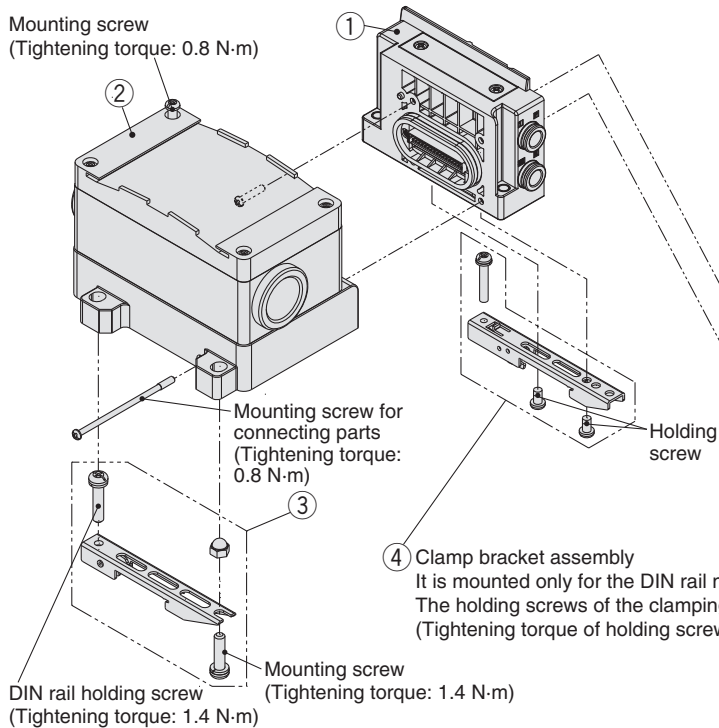
| Series      | Part no.    |
|-------------|-------------|
| SY3000      | SY30M-15-1A |
| SY5000/7000 | SY50M-15-1A |

\*: Part number is for one assembly.

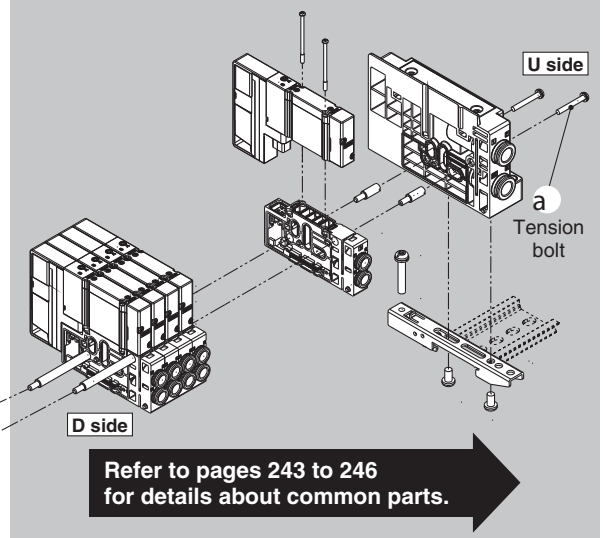
## Wiring

## Terminal Block Box

Mounting screw  
(Tightening torque: 0.8 N·m)



## Manifold exploded view



## Manifold Parts No.

## ① SUP/EXH block assembly

**SY 3 0M-1-1A** — **C8** — **Mounting**

## Series

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

|    |                                      |
|----|--------------------------------------|
| —  | Direct mounting                      |
| D0 | DIN rail mounting (Without DIN rail) |

※: For bottom ported, the symbol is —.

## P, E port size (One-touch fittings)

## Pilot, Silencer/Piping type

| Symbol | Pilot type<br>Internal External | Built-in<br>silencer | Piping<br>direction |
|--------|---------------------------------|----------------------|---------------------|
| —      | ●                               | —                    | —                   |
| S      | ●                               | —                    | Side                |
| R      | —                               | ●                    | —                   |
| V      | ●                               | —                    | —                   |
| RV     | —                               | ●                    | Top                 |
| VP     | ●                               | —                    | —                   |
| B      | ●                               | —                    | Bottom              |
| BS     | ●                               | ●                    | —                   |
| BR     | —                               | ●                    | —                   |

※1: For silencer (supply side). E port is plugged.

※: "B" for bottom ported can be selected for the SY5000/7000 series.

SUP/EXH block assembly (D side)  
accessories and the number of accessories

| Accessories    | SY3000 | SY5000<br>SY7000 |
|----------------|--------|------------------|
| a Tension bolt | None*1 | 3 pcs.           |

\*1: Since the nuts are embedded in the SUP/EXH block.

## ② Terminal block box housing assembly

**VVQC1000-T0-1**

## ③ Clamp bracket assembly for terminal block box

**SY30M-15-4A**

※: Part number is for one assembly.

## ④ Clamp bracket assembly

| Series      | Part no.    |
|-------------|-------------|
| SY3000      | SY30M-15-1A |
| SY5000/7000 | SY50M-15-1A |

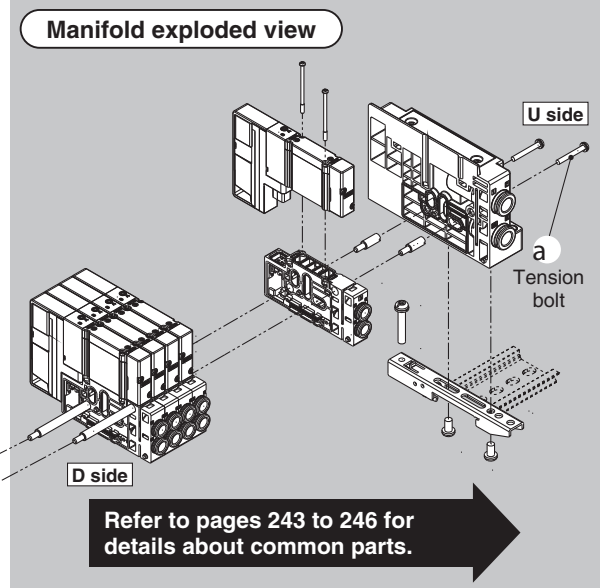
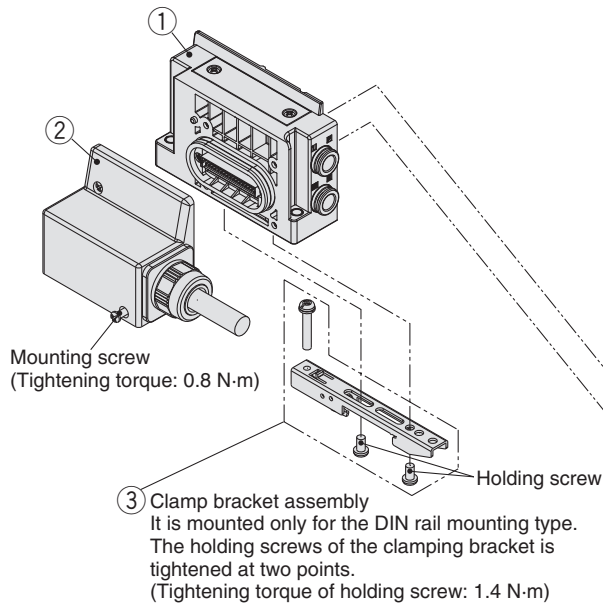
※: Part number is for one assembly.



# Series SY3000/5000/7000

## Wiring

### Lead Wire



## Manifold Parts No.

### ① SUP/EXH block assembly

SY 3 0M-1-1A - C8 -

#### •Series

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

| Mounting |                                      |
|----------|--------------------------------------|
| —        | Direct mounting                      |
| D0       | DIN rail mounting (Without DIN rail) |

\*: For bottom ported, the symbol is —.

#### •Pilot, Silencer/Piping type

| Symbol | Pilot type<br>Internal External | Built-in<br>silencer | Piping<br>direction |
|--------|---------------------------------|----------------------|---------------------|
| —      | ● —                             | —                    | —                   |
| S      | ● —                             | ●                    | Side                |
| R      | — ●                             | —                    | —                   |
| V      | ● —                             | —                    | Top                 |
| RV     | — ●                             | —                    | —                   |
| VP     | ● —                             | ● <sup>*1</sup>      | —                   |
| B      | ● —                             | —                    | Bottom              |
| BS     | ● —                             | ●                    | —                   |
| BR     | — ●                             | —                    | —                   |

\*1: For silencer (supply side). E port is plugged.

\*: "B" for bottom ported can be selected for the SY5000/7000 series.

#### •P, E port size (One-touch fittings)

| Symbol           | P, E port | SY3000 | SY5000 | SY7000 | Note                                     |
|------------------|-----------|--------|--------|--------|------------------------------------------|
| C8               | Ø 8       | ●      | —      | —      | Side/Bottom/Top ported Metric size       |
| C10              | Ø 10      | —      | ●      | —      | —                                        |
| C12              | Ø 12      | —      | —      | ●      | —                                        |
| N9               | Ø 5/16"   | ●      | —      | —      | Side/Bottom/Top ported Inch size         |
| N11              | Ø 3/8"    | —      | ●      | —      | —                                        |
| N13              | Ø 1/2"    | —      | —      | ●      | —                                        |
| L8               | Ø 8       | ●      | —      | —      | Side ported Metric size                  |
| L10              | Ø 10      | —      | ●      | —      | —                                        |
| L12              | Ø 12      | —      | —      | ●      | —                                        |
| LN9              | Ø 5/16"   | ●      | —      | —      | Side ported Inch size                    |
| LN11             | Ø 3/8"    | —      | ●      | —      | —                                        |
| LN13             | Ø 1/2"    | —      | —      | ●      | —                                        |
| B8               | Ø 8       | ●      | —      | —      | Side ported Metric size                  |
| B10              | Ø 10      | —      | ●      | —      | —                                        |
| B12              | Ø 12      | —      | —      | ●      | —                                        |
| BN9              | Ø 5/16"   | ●      | —      | —      | Side ported Inch size                    |
| BN11             | Ø 3/8"    | —      | ●      | —      | —                                        |
| BN13             | Ø 1/2"    | —      | —      | ●      | —                                        |
| 00 <sup>*1</sup> | Plug      | ●      | ●      | ●      | P/E port entry on one side or Top ported |

\*1: It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

### SUP/EXH block assembly (D side) accessories and the number of accessories

| Accessories    | SY3000             | SY5000<br>SY7000 |
|----------------|--------------------|------------------|
| a Tension bolt | None <sup>*1</sup> | 3 pcs.           |

\*1: Since the nuts are embedded in the SUP/EXH block.

### ② Lead wire connector block assembly

SY30M-14-4A -

#### Number of cores

|   |    |
|---|----|
| 1 | 34 |
| 2 | 17 |
| 3 | 9  |

#### Lead wire length [m]

|   |     |
|---|-----|
| 1 | 0.6 |
| 2 | 1.5 |
| 3 | 3   |

### ③ Clamp bracket assembly

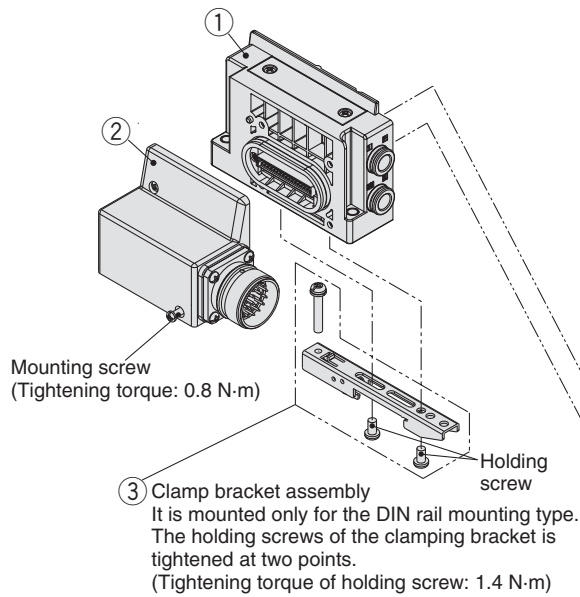
| Series      | Part no.    |
|-------------|-------------|
| SY3000      | SY30M-15-1A |
| SY5000/7000 | SY50M-15-1A |

\*: Part number is for one assembly.

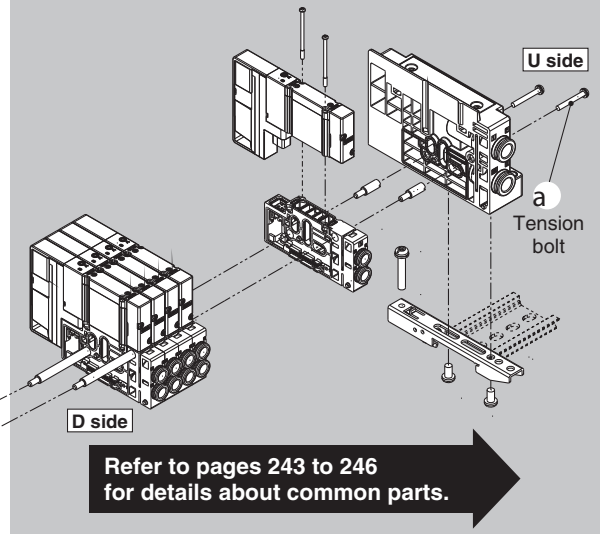


## Wiring

## Circular Connector



## Manifold exploded view



## Manifold Parts No.

## ① SUP/EXH block assembly

SY **3** 0M-1-1A **C8** - **Mounting**

## • Series

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

|    |                                      |
|----|--------------------------------------|
| —  | Direct mounting                      |
| D0 | DIN rail mounting (Without DIN rail) |

\*: For bottom ported, the symbol is —.

## • Pilot, Silencer/Piping type

| Symbol | Pilot type<br>Internal External | Built-in<br>silencer | Piping<br>direction |
|--------|---------------------------------|----------------------|---------------------|
| —      | ● —                             | —                    | —                   |
| S      | ● —                             | ●                    | Side                |
| R      | — ●                             | —                    | —                   |
| V      | ● —                             | —                    | —                   |
| RV     | — ●                             | —                    | Top                 |
| VP     | ● —                             | ●*1                  | —                   |
| B      | ● —                             | —                    | —                   |
| BS     | ● —                             | ●                    | Bottom              |
| BR     | — ●                             | —                    | —                   |

\*1: For silencer (supply side). E port is plugged.

\*: "B" for bottom ported can be selected for the SY5000/7000 series.

## • P, E port size (One-touch fittings)

| Symbol | P, E port | SY3000 | SY5000 | SY7000 | Note                                     |
|--------|-----------|--------|--------|--------|------------------------------------------|
| C8     | Ø 8       | ●      | —      | —      | Side/Bottom/Top ported Metric size       |
| C10    | Ø 10      | —      | ●      | —      | —                                        |
| C12    | Ø 12      | —      | —      | ●      | —                                        |
| N9     | Ø 5/16"   | ●      | —      | —      | Side/Bottom/Top ported Inch size         |
| N11    | Ø 3/8"    | —      | ●      | —      | —                                        |
| N13    | Ø 1/2"    | —      | —      | ●      | —                                        |
| L8     | Ø 8       | ●      | —      | —      | Side ported Metric size                  |
| L10    | Ø 10      | —      | ●      | —      | —                                        |
| L12    | Ø 12      | —      | —      | ●      | —                                        |
| LN9    | Ø 5/16"   | ●      | —      | —      | Side ported Inch size                    |
| LN11   | Ø 3/8"    | —      | ●      | —      | —                                        |
| LN13   | Ø 1/2"    | —      | —      | ●      | —                                        |
| B8     | Ø 8       | ●      | —      | —      | Side ported Metric size                  |
| B10    | Ø 10      | —      | ●      | —      | —                                        |
| B12    | Ø 12      | —      | —      | ●      | —                                        |
| BN9    | Ø 5/16"   | ●      | —      | —      | Side ported Inch size                    |
| BN11   | Ø 3/8"    | —      | ●      | —      | —                                        |
| BN13   | Ø 1/2"    | —      | —      | ●      | —                                        |
| 00*1   | Plug      | ●      | ●      | ●      | P/E port entry on one side or Top ported |

\*1: It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

## SUP/EXH block assembly (D side)

## accessories and the number of accessories

| Accessories    | SY3000 | SY5000<br>SY7000 |
|----------------|--------|------------------|
| a Tension bolt | None*1 | 3 pcs.           |

\*1: Since the nuts are embedded in the SUP/EXH block.

## ② Circular connector block assembly

SY30M-14-5A

\*: 26 pins

## ③ Clamp bracket assembly

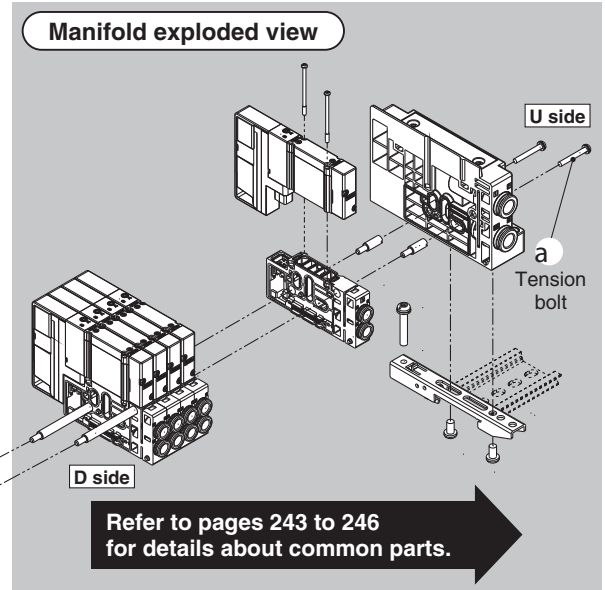
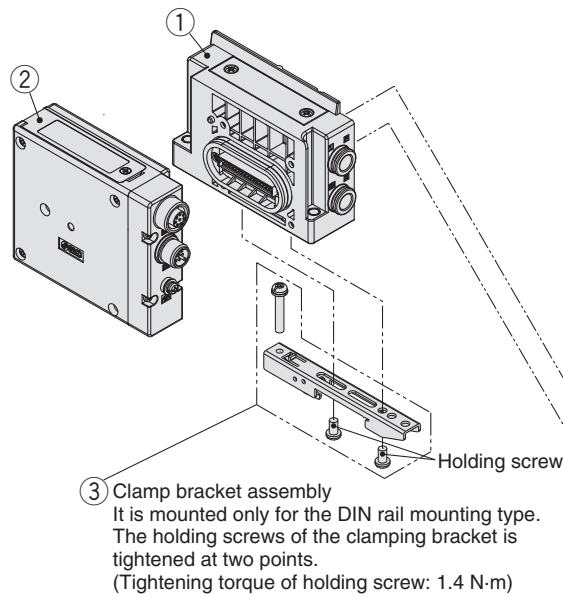
| Series      | Part no.    |
|-------------|-------------|
| SY3000      | SY30M-15-1A |
| SY5000/7000 | SY50M-15-1A |

\*: Part number is for one assembly.

# Series SY3000/5000/7000

## Wiring

### EX500: Gateway Decentralised System 2 (128 Points)



## Manifold Parts No.

### ① SUP/EXH block assembly

SY **3** 0M-1-1A **C8** - **Mounting**

#### Series

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

|    |                                      |
|----|--------------------------------------|
| —  | Direct mounting                      |
| D0 | DIN rail mounting (Without DIN rail) |

\*: For bottom ported, the symbol is —.

#### Pilot, Silencer/Piping type

| Symbol | Pilot type<br>Internal External | Built-in<br>silencer | Piping<br>direction |
|--------|---------------------------------|----------------------|---------------------|
| —      | ● —                             | —                    | —                   |
| S      | ● —                             | ●                    | Side                |
| R      | — ●                             | —                    | —                   |
| V      | ● —                             | —                    | —                   |
| RV     | — ●                             | —                    | Top                 |
| VP     | ● —                             | ●*1                  | —                   |
| B      | ● —                             | —                    | —                   |
| BS     | ● —                             | ●                    | Bottom              |
| BR     | — ●                             | —                    | —                   |

\*1: For silencer (supply side). E port is plugged.

\*: "B" for bottom ported can be selected for the SY5000/7000 series.

#### P, E port size (One-touch fittings)

| Symbol | P, E port | SY3000 | SY5000 | SY7000 | Note                                     |
|--------|-----------|--------|--------|--------|------------------------------------------|
| C8     | Ø 8       | ●      | —      | —      | Side/Bottom/Top ported Metric size       |
| C10    | Ø 10      | —      | ●      | —      | —                                        |
| C12    | Ø 12      | —      | —      | ●      | —                                        |
| N9     | Ø 5/16"   | ●      | —      | —      | Side/Bottom/Top ported Inch size         |
| N11    | Ø 3/8"    | —      | ●      | —      | —                                        |
| N13    | Ø 1/2"    | —      | —      | ●      | —                                        |
| L8     | Ø 8       | ●      | —      | —      | Side ported Metric size                  |
| L10    | Ø 10      | —      | ●      | —      | —                                        |
| L12    | Ø 12      | —      | —      | ●      | —                                        |
| LN9    | Ø 5/16"   | ●      | —      | —      | Side ported Inch size                    |
| LN11   | Ø 3/8"    | —      | ●      | —      | —                                        |
| LN13   | Ø 1/2"    | —      | —      | ●      | —                                        |
| B8     | Ø 8       | ●      | —      | —      | Side ported Metric size                  |
| B10    | Ø 10      | —      | ●      | —      | —                                        |
| B12    | Ø 12      | —      | —      | ●      | —                                        |
| BN9    | Ø 5/16"   | ●      | —      | —      | Side ported Inch size                    |
| BN11   | Ø 3/8"    | —      | ●      | —      | —                                        |
| BN13   | Ø 1/2"    | —      | —      | ●      | —                                        |
| 00*1   | Plug      | ●      | ●      | ●      | P/E port entry on one side or Top ported |

\*1: It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

#### SUP/EXH block assembly (D side)

#### accessories and the number of accessories

| Accessories    | SY3000 | SY5000<br>SY7000 |
|----------------|--------|------------------|
| a Tension bolt | None*1 | 3 pcs.           |

\*1: Since the nuts are embedded in the SUP/EXH block.

### ② EX500 SI Unit

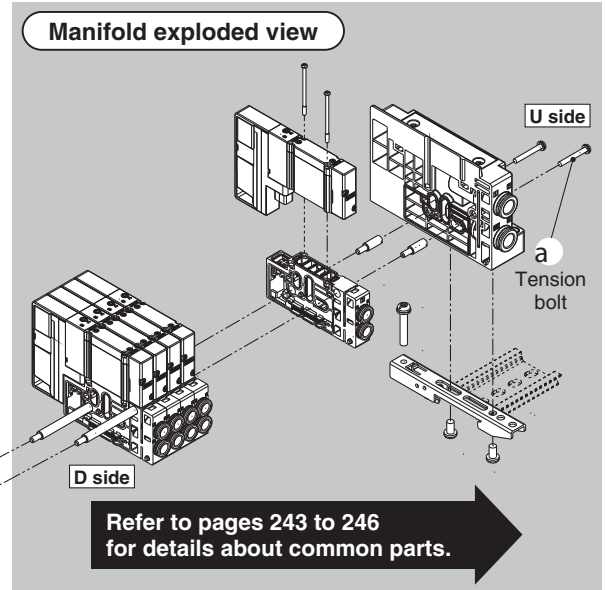
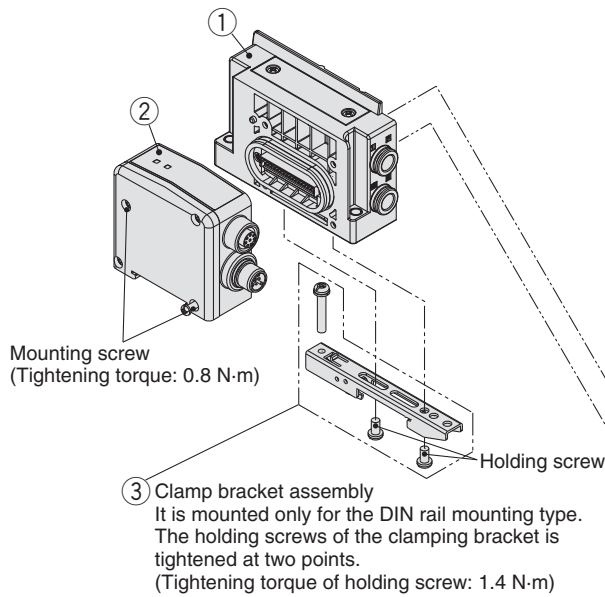
EX500-S103

### ③ Clamp bracket assembly

| Series      | Part no.    |
|-------------|-------------|
| SY3000      | SY30M-15-1A |
| SY5000/7000 | SY50M-15-1A |

\*: Part number is for one assembly.

## Wiring

**EX500: Gateway Decentralised System (64 Points)****Manifold Parts No.**

## ① SUP/EXH block assembly

SY **3** 0M-1-1A **C8** - **Mounting**

## • Series

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

|    |                                      |
|----|--------------------------------------|
| —  | Direct mounting                      |
| D0 | DIN rail mounting (Without DIN rail) |

\*: For bottom ported, the symbol is —.

## • Pilot, Silencer/Piping type

| Symbol | Pilot type<br>Internal External | Built-in<br>silencer | Piping<br>direction |
|--------|---------------------------------|----------------------|---------------------|
| —      | ●                               | —                    | —                   |
| S      | ●                               | —                    | Side                |
| R      | —                               | ●                    | —                   |
| V      | ●                               | —                    | —                   |
| RV     | —                               | ●                    | Top                 |
| VP     | ●                               | —                    | —                   |
| B      | ●                               | —                    | —                   |
| BS     | ●                               | —                    | Bottom              |
| BR     | —                               | ●                    | —                   |

\*1: For silencer (supply side). E port is plugged.

\*: "B" for bottom ported can be selected for the SY5000/7000 series.

## • P, E port size (One-touch fittings)

| Symbol | P, E port | SY3000 | SY5000 | SY7000 | Note                                     |
|--------|-----------|--------|--------|--------|------------------------------------------|
| C8     | Ø 8       | ●      | —      | —      | Side/Bottom/Top ported Metric size       |
| C10    | Ø 10      | —      | ●      | —      | —                                        |
| C12    | Ø 12      | —      | —      | ●      | —                                        |
| N9     | Ø 5/16"   | ●      | —      | —      | Side/Bottom/Top ported Inch size         |
| N11    | Ø 3/8"    | —      | ●      | —      | —                                        |
| N13    | Ø 1/2"    | —      | —      | ●      | —                                        |
| L8     | Ø 8       | ●      | —      | —      | Side ported Metric size                  |
| L10    | Ø 10      | —      | ●      | —      | —                                        |
| L12    | Ø 12      | —      | —      | ●      | —                                        |
| LN9    | Ø 5/16"   | ●      | —      | —      | Side ported Inch size                    |
| LN11   | Ø 3/8"    | —      | ●      | —      | —                                        |
| LN13   | Ø 1/2"    | —      | —      | ●      | —                                        |
| B8     | Ø 8       | ●      | —      | —      | Side ported Metric size                  |
| B10    | Ø 10      | —      | ●      | —      | —                                        |
| B12    | Ø 12      | —      | —      | ●      | —                                        |
| BN9    | Ø 5/16"   | ●      | —      | —      | Side ported Inch size                    |
| BN11   | Ø 3/8"    | —      | ●      | —      | —                                        |
| BN13   | Ø 1/2"    | —      | —      | ●      | —                                        |
| 00*1   | Plug      | ●      | ●      | ●      | P/E port entry on one side or Top ported |

\*1: It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

## SUP/EXH block assembly (D side)

## accessories and the number of accessories

| Accessories    | SY3000 | SY5000<br>SY7000 |
|----------------|--------|------------------|
| a Tension bolt | None*1 | 3 pcs.           |

\*1: Since the nuts are embedded in the SUP/EXH block.

## ② EX500 SI Unit

EX500-Q **0** 01

## • Output specifications

|   |                       |
|---|-----------------------|
| 0 | NPN (Positive common) |
| 1 | PNP (Negative common) |

## ③ Clamp bracket assembly

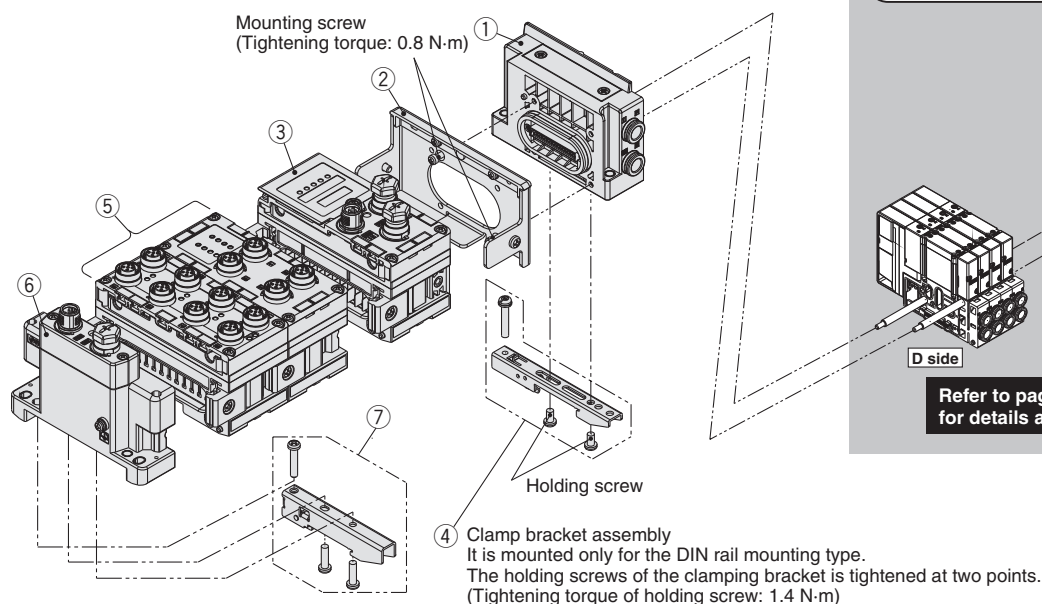
| Series      | Part no.    |
|-------------|-------------|
| SY3000      | SY30M-15-1A |
| SY5000/7000 | SY50M-15-1A |

\*: Part number is for one assembly.

# Series SY3000/5000/7000

## Wiring

### EX600



## Manifold Parts No.

### ① SUP/EXH block assembly

SY **3** 0M-1-1A **C8** - **Mounting**

#### Series

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

|    |                                      |
|----|--------------------------------------|
| —  | Direct mounting                      |
| D0 | DIN rail mounting (Without DIN rail) |

\*: For bottom ported, the symbol is —.

#### Pilot, Silencer/Piping type

| Symbol | Pilot type |          | Built-in silencer | Piping direction |
|--------|------------|----------|-------------------|------------------|
|        | Internal   | External |                   |                  |
| —      | ●          | —        | —                 | Side             |
| S      | ●          | —        | —                 |                  |
| R      | —          | ●        | —                 |                  |
| V      | ●          | —        | —                 |                  |
| RV     | —          | ●        | —                 | Top              |
| VP     | ●          | —        | ●*1               |                  |
| B      | ●          | —        | —                 |                  |
| BS     | ●          | —        | —                 |                  |
| BR     | —          | ●        | —                 | Bottom           |

\*1: For silencer (supply side). E port is plugged.

\*: "B" for bottom ported can be selected for the SY5000/7000 series.

#### SUP/EXH block assembly (D side) accessories and the number of accessories

| Accessories    | SY3000 | SY5000<br>SY7000 |
|----------------|--------|------------------|
| a Tension bolt | None*1 | 3 pcs.           |

\*1: Since the nuts are embedded in the SUP/EXH block.

#### P, E port size (One-touch fittings)

| Symbol | P, E port | SY3000 | SY5000 | SY7000 | Note                                     |
|--------|-----------|--------|--------|--------|------------------------------------------|
| C8     | Ø 8       | ●      | —      | —      | Side/Bottom/Top ported Metric size       |
| C10    | Ø 10      | —      | ●      | —      |                                          |
| C12    | Ø 12      | —      | —      | ●      |                                          |
| N9     | Ø 5/16"   | ●      | —      | —      | Side/Bottom/Top ported Inch size         |
| N11    | Ø 3/8"    | —      | ●      | —      |                                          |
| N13    | Ø 1/2"    | —      | —      | ●      |                                          |
| L8     | Ø 8       | ●      | —      | —      | Side ported Metric size                  |
| L10    | Ø 10      | —      | ●      | —      |                                          |
| L12    | Ø 12      | —      | —      | ●      |                                          |
| LN9    | Ø 5/16"   | ●      | —      | —      | Side ported Inch size                    |
| LN11   | Ø 3/8"    | —      | ●      | —      |                                          |
| LN13   | Ø 1/2"    | —      | —      | ●      |                                          |
| B8     | Ø 8       | ●      | —      | —      | Side ported Metric size                  |
| B10    | Ø 10      | —      | ●      | —      |                                          |
| B12    | Ø 12      | —      | —      | ●      |                                          |
| BN9    | Ø 5/16"   | ●      | —      | —      | Side ported Inch size                    |
| BN11   | Ø 3/8"    | —      | ●      | —      |                                          |
| BN13   | Ø 1/2"    | —      | —      | ●      |                                          |
| 00*1   | Plug      | ●      | ●      | ●      | P/E port entry on one side or Top ported |

### ② Valve plate

EX600-ZMV2

\*: With mounting screws (2 pcs. of M4 x 6 and 2 pcs. of M3 x 8)

### ④ Clamp bracket assembly

| Series      | Part no.    |
|-------------|-------------|
| SY3000      | SY30M-15-1A |
| SY5000/7000 | SY50M-15-1A |

\*: Part number is for one assembly.

### ③ EX600 SI Unit

EX600-S **PR** **1** **Version**

| Symbol | Description    |
|--------|----------------|
| PR     | PROFIBUS DP    |
| DN     | DeviceNet™     |
| MJ     | CC-Link        |
| EN     | EtherNet/IP™*1 |
| EC     | EtherCAT®*1    |
| PN     | PROFINET®*1    |

\*1: Cannot be communicated with the EX600-HT1-□.

#### Version

| Symbol | Description                       |
|--------|-----------------------------------|
| —      | When MJ, EN, EC or PN is selected |
| A      | When PR or DN is selected         |

#### Output type

| Symbol | Description                                 | Condition                          |
|--------|---------------------------------------------|------------------------------------|
| 1      | PNP (Negative common)                       | Can be selected by all protocols.  |
| 2      | NPN (Positive common)                       | Can be selected by all protocols.  |
| 3      | PNP (Negative common) EtherNet/IP (2 ports) | Can be selected in the case of EN. |
| 4      | NPN (Positive common) EtherNet/IP (2 ports) | Can be selected in the case of EN. |

### ③ EX600 SI Unit (Wireless compatible)

EX600-W **EN** **1** **Output type**

| Symbol | Description           |
|--------|-----------------------|
| 1      | PNP (Negative common) |
| 2      | NPN (Positive common) |

#### Protocol

| Symbol | SI Unit type         | Description    |
|--------|----------------------|----------------|
| EN     | Wireless master unit | EtherNet/IP™*1 |
| PN     | Wireless master unit | PROFINET®*1    |
| SV     | Wireless slave unit  | —*1, *2        |

\*1: Cannot be communicated with the EX600-HT1-□.

\*2: The wireless system is suitable for use only in a country where it is in accordance with the Radio Act and regulations of that country.

## Manifold Parts No.

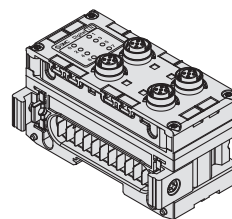
## ⑤ EX600 Digital Input Unit

EX600-DX **P** **B**

| Input type |             |
|------------|-------------|
| Symbol     | Description |
| <b>P</b>   | PNP         |
| <b>N</b>   | NPN         |

## ● Number of inputs, open circuit detection, and connector

| Symbol    | Number of inputs | Open circuit detection | Connector                                |
|-----------|------------------|------------------------|------------------------------------------|
| <b>B</b>  | 8                | No                     | M12 connector (5 pins) 4 pcs.            |
| <b>C</b>  | 8                | No                     | M8 connector (3 pins) 8 pcs.             |
| <b>C1</b> | 8                | Yes                    | M8 connector (3 pins) 8 pcs.             |
| <b>D</b>  | 16               | No                     | M12 connector (5 pins) 8 pcs.            |
| <b>E</b>  | 16               | No                     | D-sub connector (25 pins)*1*2            |
| <b>F</b>  | 16               | No                     | Spring type terminal block (32 pins)*1*2 |



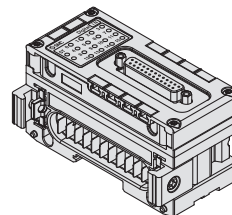
## ⑤ EX600 Digital Output Unit

EX600-DY **P** **B**

| Output type |             |
|-------------|-------------|
| Symbol      | Description |
| <b>P</b>    | PNP         |
| <b>N</b>    | NPN         |

## ● Number of outputs and connector

| Symbol   | Number of outputs | Connector                                |
|----------|-------------------|------------------------------------------|
| <b>B</b> | 8                 | M12 connector (5 pins) 4 pcs.            |
| <b>E</b> | 16                | D-sub connector (25 pins)*1*2            |
| <b>F</b> | 16                | Spring type terminal block (32 pins)*1*2 |



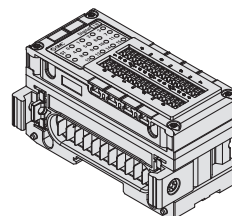
## ⑤ EX600 Digital Input/Output Unit

EX600-DM **P** **E**

| Input/Output type |             |
|-------------------|-------------|
| Symbol            | Description |
| <b>P</b>          | PNP         |
| <b>N</b>          | NPN         |

## ● Number of inputs/outputs and connector

| Symbol   | Number of inputs | Number of outputs | Connector                                |
|----------|------------------|-------------------|------------------------------------------|
| <b>E</b> | 8                | 8                 | D-sub connector (25 pins)*1*2            |
| <b>F</b> | 8                | 8                 | Spring type terminal block (32 pins)*1*2 |



## ⑤ EX600 Analog Input/Output Unit

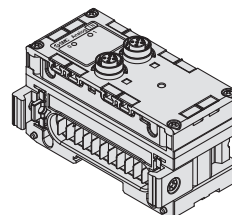
EX600-AX **A**

| Analog input/output |               |
|---------------------|---------------|
| Symbol              | Description   |
| <b>AX</b>           | Analog input  |
| <b>AY</b>           | Analog output |

## ● Number of input channels and connector

| Symbol   | Number of input channels | Connector                       |
|----------|--------------------------|---------------------------------|
| <b>A</b> | 2 channels               | M12 connector (5 pins) 2 pcs.*3 |

\*3: Refer to \*1 and \*2 below for AY.



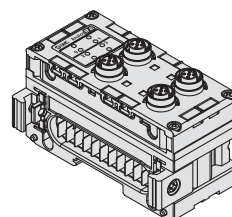
## ⑤ EX600 Analog Input/Output Unit

EX600-AM **B**

## Analog input/output

## ● Number of input/output channels and connector

| Symbol   | Number of input channels | Number of output channels | Connector                         |
|----------|--------------------------|---------------------------|-----------------------------------|
| <b>B</b> | 2 channels               | 2 channels                | M12 connector (5 pins) 4 pcs.*1*2 |



## ⑥ EX600 end plate

EX600-ED **2** - **□**

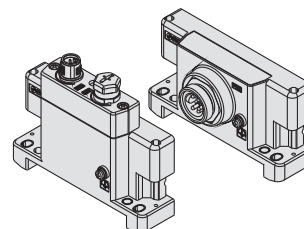
## Power connector

| Symbol   | Connector           |
|----------|---------------------|
| <b>2</b> | M12 (5 pins)        |
| <b>3</b> | 7/8 inch (5 pins)   |
| <b>4</b> | M12 (4 pins/5 pins) |
| <b>5</b> | M12 (4 pins/5 pins) |

## ● Mounting

| Symbol   | Description                       |
|----------|-----------------------------------|
| <b>—</b> | Without DIN rail mounting bracket |
| <b>3</b> | With DIN rail mounting bracket    |

\*: The pin layout for "4" and "5" pin connector is different.



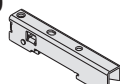
## ⑦ Clamp bracket for EX600

## EX600-ZMA3

## Enclosed parts

Round head screw with washer (M4 x 20) 1 pc.

P-tight screw (4 x 14) 2 pcs.



\*1: Cannot be communicated with the EX600-HT1-□ (Old version of the Handheld Terminal).

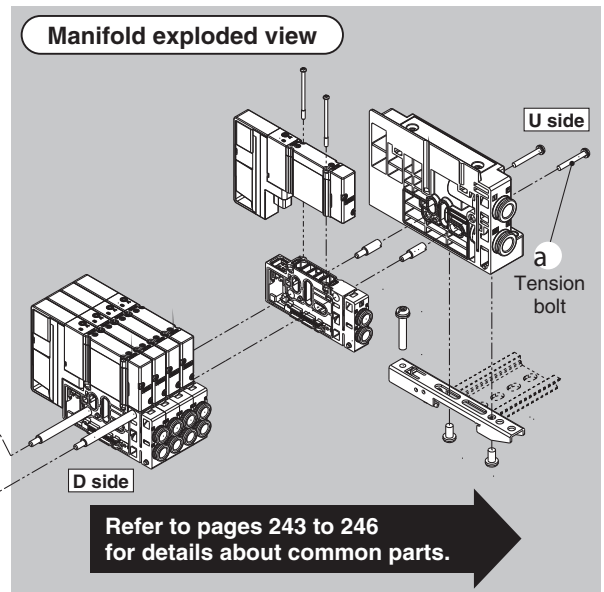
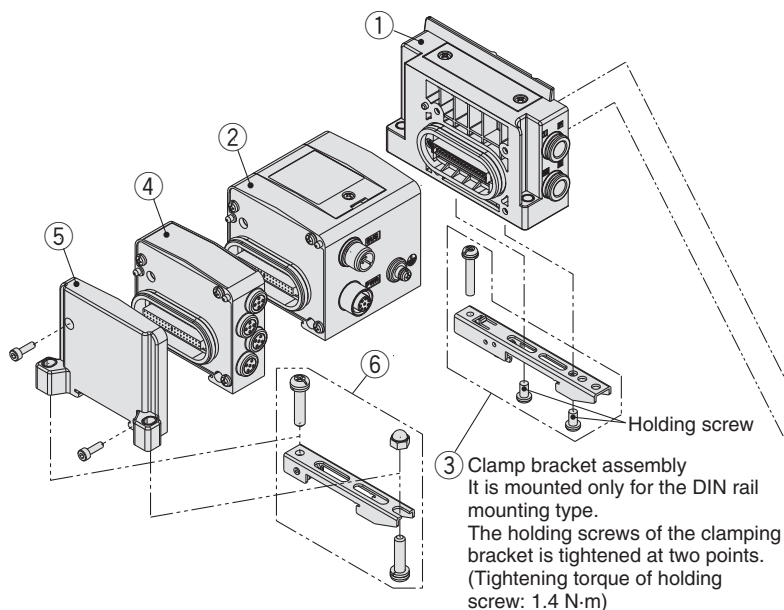
\*2: Cannot be connected with the EX600-SPR1, EX600-SPR2, EX600-SDN1, or EX600-SDN2.



# Series SY3000/5000/7000

## Wiring

### EX250



## Manifold Parts No.

### ① SUP/EXH block assembly

SY **3** 0M-1-1A **C8** - **Mounting**

#### •Series

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

|    |                                      |
|----|--------------------------------------|
| —  | Direct mounting                      |
| D0 | DIN rail mounting (Without DIN rail) |

※: For bottom ported, the symbol is —.

#### •Pilot, Silencer/Piping type

| Symbol | Pilot type<br>Internal External | Built-in<br>silencer | Piping<br>direction |
|--------|---------------------------------|----------------------|---------------------|
| —      | ●                               | —                    | —                   |
| S      | ●                               | —                    | Side                |
| R      | —                               | ●                    | —                   |
| V      | ●                               | —                    | —                   |
| RV     | —                               | —                    | Top                 |
| VP     | ●                               | —                    | —                   |
| B      | ●                               | —                    | Bottom              |
| BS     | ●                               | —                    | —                   |
| BR     | —                               | ●                    | —                   |

※1: For silencer (supply side). E port is plugged.

※: "B" for bottom ported can be selected for the SY5000/7000 series.

#### •P, E port size (One-touch fittings)

| Symbol | P, E port | SY3000 | SY5000 | SY7000 | Note                                     |
|--------|-----------|--------|--------|--------|------------------------------------------|
| C8     | Ø 8       | ●      | —      | —      | Side/Bottom/Top ported Metric size       |
| C10    | Ø 10      | —      | ●      | —      | —                                        |
| C12    | Ø 12      | —      | —      | ●      | —                                        |
| N9     | Ø 5/16"   | ●      | —      | —      | Side/Bottom/Top ported Inch size         |
| N11    | Ø 3/8"    | —      | ●      | —      | —                                        |
| N13    | Ø 1/2"    | —      | —      | ●      | —                                        |
| L8     | Ø 8       | ●      | —      | —      | Side ported Metric size                  |
| L10    | Ø 10      | —      | ●      | —      | —                                        |
| L12    | Ø 12      | —      | —      | ●      | —                                        |
| LN9    | Ø 5/16"   | ●      | —      | —      | Side ported Inch size                    |
| LN11   | Ø 3/8"    | —      | ●      | —      | —                                        |
| LN13   | Ø 1/2"    | —      | —      | ●      | —                                        |
| B8     | Ø 8       | ●      | —      | —      | Side ported Metric size                  |
| B10    | Ø 10      | —      | ●      | —      | —                                        |
| B12    | Ø 12      | —      | —      | ●      | —                                        |
| BN9    | Ø 5/16"   | ●      | —      | —      | Side ported Inch size                    |
| BN11   | Ø 3/8"    | —      | ●      | —      | —                                        |
| BN13   | Ø 1/2"    | —      | —      | ●      | —                                        |
| 00※1   | Plug      | ●      | ●      | ●      | P/E port entry on one side or Top ported |

※1: It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

#### SUP/EXH block assembly (D side)

#### accessories and the number of accessories

| Accessories    | SY3000 | SY5000<br>SY7000 |
|----------------|--------|------------------|
| a Tension bolt | None※1 | 3 pcs.           |

※1: Since the nuts are embedded in the SUP/EXH block.

### ② EX250 SI Unit

EX250-S **DN1**

#### •Communication protocol

|      |                                                                                     |
|------|-------------------------------------------------------------------------------------|
| DN1  | DeviceNet™ (Negative common)                                                        |
| PR1  | PROFIBUS DP (Negative common)                                                       |
| MJ2  | CC-Link (Positive common)                                                           |
| AS3  | AS-Interface (8 in/8 out, 31 slave modes, 2 isolated common type) (Negative common) |
| AS5  | AS-Interface (4 in/4 out, 31 slave modes, 2 isolated common type) (Negative common) |
| AS7  | AS-Interface (8 in/8 out, 31 slave modes, 1 common type) (Negative common)          |
| AS9  | AS-Interface (4 in/4 out, 31 slave modes, 1 common type) (Negative common)          |
| CA1A | CANopen (Negative common)                                                           |
| EN1  | EtherNet/IP™ (Negative common)                                                      |

### ③ Clamp bracket assembly

| Series      | Part no.    |
|-------------|-------------|
| SY3000      | SY30M-15-1A |
| SY5000/7000 | SY50M-15-1A |

※: Part number is for one assembly.

### ④ Input block

EX250-IE **1**

#### •Block type

|   |                         |
|---|-------------------------|
| 1 | M12 connector, 2 inputs |
| 2 | M12 connector, 4 inputs |
| 3 | M8 connector, 4 inputs  |

### ⑤ EX250 end plate assembly

EX250-EA1

※: With mounting screws (2 pcs. of M3 x 10)

### ⑥ Clamp bracket assembly for EX250 SI Unit

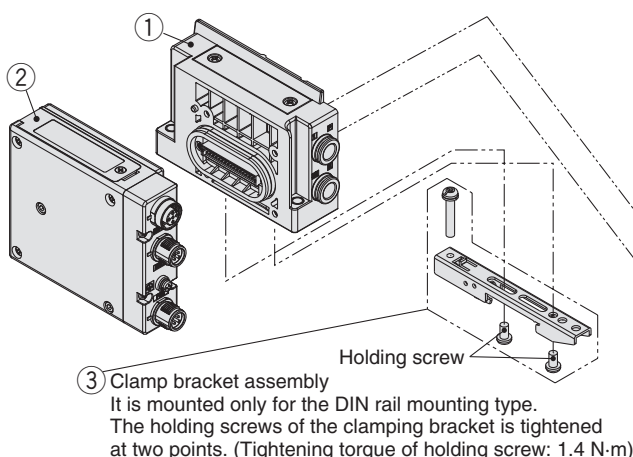
SY30M-15-3A

※: Part number is for one assembly.

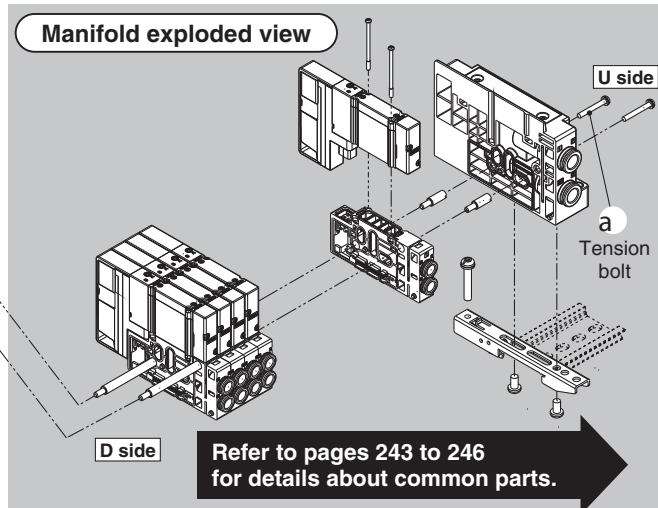


## Wiring

## EX260



## Manifold exploded view



## Manifold Parts No.

## ① SUP/EXH block assembly

SY **3** 0M-1-1A — **C8** — **Mounting**

## Series

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

|    |                                      |
|----|--------------------------------------|
| —  | Direct mounting                      |
| D0 | DIN rail mounting (Without DIN rail) |

\*: For bottom ported, the symbol is —.

## Pilot, Silencer/Piping type

| Symbol | Pilot type | Built-in silencer | Piping direction |
|--------|------------|-------------------|------------------|
|        | Internal   | External          |                  |
| —      | ●          | —                 | —                |
| S      | ●          | —                 | Side             |
| R      | —          | ●                 | —                |
| V      | ●          | —                 | —                |
| RV     | —          | ●                 | Top              |
| VP     | ●          | —                 | ●*1              |
| B      | ●          | —                 | —                |
| BS     | ●          | —                 | Bottom           |
| BR     | —          | ●                 | —                |

\*1: For silencer (supply side). E port is plugged.

\*: "B" for bottom ported can be selected for the SY5000/7000 series.

## P, E port size (One-touch fittings)

| Symbol | P, E port | SY3000 | SY5000 | SY7000 | Note                                     |
|--------|-----------|--------|--------|--------|------------------------------------------|
| C8     | Ø 8       | ●      | —      | —      | Side/Bottom/Top ported Metric size       |
| C10    | Ø 10      | —      | ●      | —      | —                                        |
| C12    | Ø 12      | —      | —      | ●      | —                                        |
| N9     | Ø 5/16"   | ●      | —      | —      | Side/Bottom/Top ported Inch size         |
| N11    | Ø 3/8"    | —      | ●      | —      | —                                        |
| N13    | Ø 1/2"    | —      | —      | ●      | —                                        |
| L8     | Ø 8       | ●      | —      | —      | Side ported Metric size                  |
| L10    | Ø 10      | —      | ●      | —      | —                                        |
| L12    | Ø 12      | —      | —      | ●      | —                                        |
| LN9    | Ø 5/16"   | ●      | —      | —      | Side ported Inch size                    |
| LN11   | Ø 3/8"    | —      | ●      | —      | —                                        |
| LN13   | Ø 1/2"    | —      | —      | ●      | —                                        |
| B8     | Ø 8       | ●      | —      | —      | Side ported Metric size                  |
| B10    | Ø 10      | —      | ●      | —      | —                                        |
| B12    | Ø 12      | —      | —      | ●      | —                                        |
| BN9    | Ø 5/16"   | ●      | —      | —      | Side ported Inch size                    |
| BN11   | Ø 3/8"    | —      | ●      | —      | —                                        |
| BN13   | Ø 1/2"    | —      | —      | ●      | —                                        |
| 00*1   | Plug      | ●      | ●      | ●      | P/E port entry on one side or Top ported |

\*1: It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

## SUP/EXH block assembly (D side)

## accessories and the number of accessories

| Accessories    | SY3000 | SY5000<br>SY7000 |
|----------------|--------|------------------|
| a Tension bolt | None*1 | 3 pcs.           |

\*1: Since the nuts are embedded in the SUP/EXH block.

## ② EX260 SI Unit

EX260-S **PR1**

## Communication protocol

| Symbol | Protocol    | Number of outputs | SI Unit output polarity      | Communication connector | Manifold symbol | Symbol | Protocol           | Number of outputs | SI Unit output polarity      | Communication connector | Manifold symbol |
|--------|-------------|-------------------|------------------------------|-------------------------|-----------------|--------|--------------------|-------------------|------------------------------|-------------------------|-----------------|
| DN1    | DeviceNet™  | 32                | Source/PNP (Negative common) | M12                     | QAN             | EC1    | EtherCAT®          | 32                | Source/PNP (Negative common) | M12                     | DAN             |
| DN2    |             |                   | Sink/NPN (Positive common)   |                         | QA              | EC2    |                    |                   | Sink/NPN (Positive common)   |                         | DA              |
| DN3    |             |                   | Source/PNP (Negative common) |                         | QBN             | EC3    |                    |                   | Source/PNP (Negative common) |                         | DBN             |
| DN4    |             |                   | Sink/NPN (Positive common)   |                         | QB              | EC4    |                    |                   | Sink/NPN (Positive common)   |                         | DB              |
| PR1    | PROFIBUS DP | 32                | Source/PNP (Negative common) | M12                     | NAN             | PN1    | PROFINET           | 32                | Source/PNP (Negative common) | M12                     | FAN             |
| PR2    |             |                   | Sink/NPN (Positive common)   |                         | NA              | PN2    |                    |                   | Sink/NPN (Positive common)   |                         | FA              |
| PR3    |             |                   | Source/PNP (Negative common) |                         | NBN             | PN3    |                    |                   | Source/PNP (Negative common) |                         | FBN             |
| PR4    |             |                   | Sink/NPN (Positive common)   |                         | NB              | PN4    |                    |                   | Sink/NPN (Positive common)   |                         | FB              |
| PR5    |             | 16                | Source/PNP (Negative common) | D-sub*1                 | NCN             | EN1    | EtherNet/IP™       | 32                | Source/PNP (Negative common) | M12                     | EAN             |
| PR6    |             |                   | Sink/NPN (Positive common)   |                         | NC              | EN2    |                    |                   | Sink/NPN (Positive common)   |                         | EA              |
| PR7    |             |                   | Source/PNP (Negative common) |                         | NDN             | EN3    |                    |                   | Source/PNP (Negative common) |                         | EBN             |
| PR8    |             |                   | Sink/NPN (Positive common)   |                         | ND              | EN4    |                    |                   | Sink/NPN (Positive common)   |                         | EB              |
| MJ1    | CC-Link     | 32                | Source/PNP (Negative common) | M12                     | VAN             | PL1    | EtherNet POWERLINK | 32                | Source/PNP (Negative common) | M12                     | GAN             |
| MJ2    |             |                   | Sink/NPN (Positive common)   |                         | VA              | PL3    |                    |                   |                              |                         | GBN             |
| MJ3    |             | 16                | Source/PNP (Negative common) |                         | VBN             |        |                    |                   |                              |                         |                 |
| MJ4    |             |                   | Sink/NPN (Positive common)   |                         | VB              |        |                    |                   |                              |                         |                 |

\*1: Enclosure is IP40 when the communication connector is D-sub.

## ③ Clamp bracket assembly

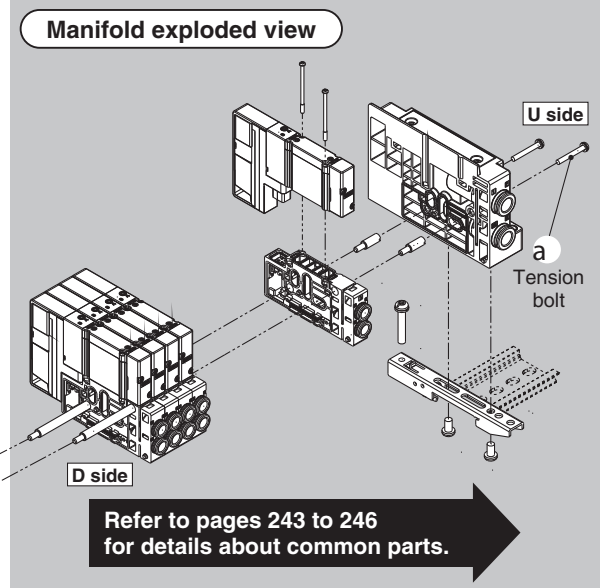
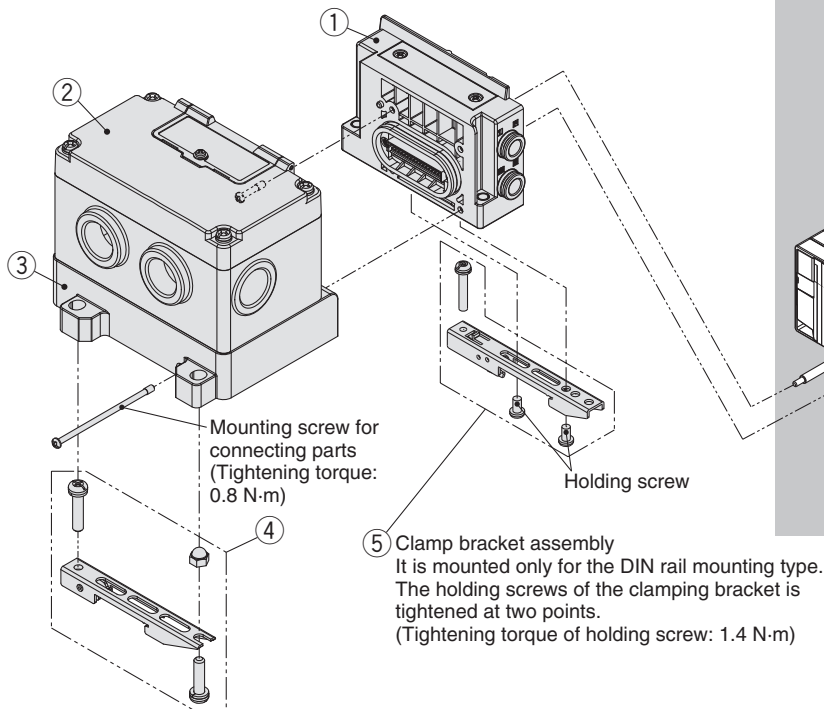
| Series      | Part no.    |
|-------------|-------------|
| SY3000      | SY30M-15-1A |
| SY5000/7000 | SY50M-15-1A |

\*: Part number is for one assembly.

# Series SY3000/5000/7000

## Wiring

### EX126



## Manifold Parts No.

### ① SUP/EXH block assembly

SY **3** 0M-1-1A **C8** - **Mounting**

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

| Mounting |                                      |
|----------|--------------------------------------|
| —        | Direct mounting                      |
| D0       | DIN rail mounting (Without DIN rail) |

※: For bottom ported, the symbol is —.

#### ● Pilot, Silencer/Piping type

| Symbol | Pilot type<br>Internal External | Built-in<br>silencer | Piping<br>direction |
|--------|---------------------------------|----------------------|---------------------|
| —      | ●                               | —                    | —                   |
| S      | ●                               | —                    | Side                |
| R      | —                               | ●                    | —                   |
| V      | ●                               | —                    | —                   |
| RV     | —                               | ●                    | Top                 |
| VP     | ●                               | —                    | —                   |
| B      | ●                               | —                    | Bottom              |
| BS     | —                               | ●                    | —                   |
| BR     | —                               | ●                    | —                   |

※1: For silencer (supply side). E port is plugged.  
※: "B" for bottom ported can be selected for the SY5000/7000 series.

#### ● P, E port size (One-touch fittings)

| Symbol | P, E port | SY3000 | SY5000 | SY7000 | Note                                     |
|--------|-----------|--------|--------|--------|------------------------------------------|
| C8     | Ø 8       | ●      | —      | —      | Side/Bottom/Top ported                   |
| C10    | Ø 10      | —      | ●      | —      | Metric size                              |
| C12    | Ø 12      | —      | —      | ●      | —                                        |
| N9     | Ø 5/16"   | ●      | —      | —      | Side/Bottom/Top ported                   |
| N11    | Ø 3/8"    | —      | ●      | —      | Inch size                                |
| N13    | Ø 1/2"    | —      | —      | ●      | —                                        |
| L8     | Ø 8       | ●      | —      | —      | Side ported                              |
| L10    | Ø 10      | —      | ●      | —      | Metric size                              |
| L12    | Ø 12      | —      | —      | ●      | —                                        |
| LN9    | Ø 5/16"   | ●      | —      | —      | Side ported                              |
| LN11   | Ø 3/8"    | —      | ●      | —      | Inch size                                |
| LN13   | Ø 1/2"    | —      | —      | ●      | —                                        |
| B8     | Ø 8       | ●      | —      | —      | Side ported                              |
| B10    | Ø 10      | —      | ●      | —      | Metric size                              |
| B12    | Ø 12      | —      | —      | ●      | —                                        |
| BN9    | Ø 5/16"   | ●      | —      | —      | Side ported                              |
| BN11   | Ø 3/8"    | —      | ●      | —      | Inch size                                |
| BN13   | Ø 1/2"    | —      | —      | ●      | —                                        |
| 00*1   | Plug      | ●      | ●      | ●      | P/E port entry on one side or Top ported |

※1: It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

#### SUP/EXH block assembly (D side)

#### accessories and the number of accessories

| Accessories    | SY3000 | SY5000<br>SY7000 |
|----------------|--------|------------------|
| a Tension bolt | None*1 | 3 pcs.           |

※1: Since the nuts are embedded in the SUP/EXH block.

### ② EX126 SI Unit

**EX126D-SMJ1**

※: CC-Link (Positive common)

### ③ Terminal block plate assembly

**VVQC1000-74A-2**

### ④ Clamp bracket assembly for EX126 SI Unit

**SY30M-15-4A**

※: Part number is for one assembly.

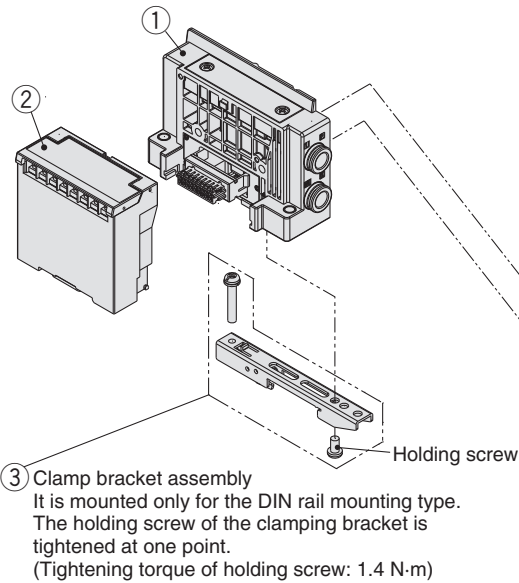
### ⑤ Clamp bracket assembly

| Series      | Part no.    |
|-------------|-------------|
| SY3000      | SY30M-15-1A |
| SY5000/7000 | SY50M-15-1A |

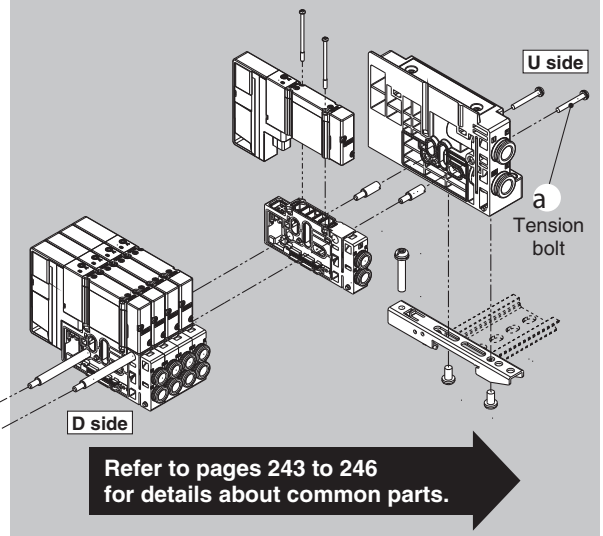
※: Part number is for one assembly.

## Wiring

## EX120



## Manifold exploded view



## Manifold Parts No.

## ① SUP/EXH block assembly

SY **3** 0M-1-16A **C8** - **Mounting**

## • Series

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

|    |                                      |
|----|--------------------------------------|
| —  | Direct mounting                      |
| D0 | DIN rail mounting (Without DIN rail) |

\*: For bottom ported, the symbol is —.

## • Pilot, Silencer/Piping type

| Symbol | Pilot type<br>Internal External | Built-in<br>silencer | Piping<br>direction |
|--------|---------------------------------|----------------------|---------------------|
| —      | ● —                             | —                    | —                   |
| S      | ● —                             | —                    | Side                |
| R      | — ●                             | —                    | —                   |
| V      | ● —                             | —                    | Top                 |
| RV     | — ●                             | —                    | —                   |
| VP     | ● —                             | ●*1                  | —                   |
| B      | ● —                             | —                    | Bottom              |
| BS     | ● —                             | ●                    | —                   |
| BR     | — ●                             | —                    | —                   |

\*1: For silencer (supply side). E port is plugged.

\*: "B" for bottom ported can be selected for the SY5000/7000 series.

SUP/EXH block assembly (D side)  
accessories and the number of accessories

| Accessories    | SY3000 | SY5000<br>SY7000 |
|----------------|--------|------------------|
| a Tension bolt | None*1 | 3 pcs.           |

\*1: Since the nuts are embedded in the SUP/EXH block.

## • P, E port size (One-touch fittings)

| Symbol | P, E port | SY3000 | SY5000 | SY7000 | Note                                        |
|--------|-----------|--------|--------|--------|---------------------------------------------|
| C8     | Ø 8       | ●      | —      | —      | Side/Bottom/<br>Top ported<br>Metric size   |
| C10    | Ø 10      | —      | ●      | —      | —                                           |
| C12    | Ø 12      | —      | —      | ●      | —                                           |
| N9     | Ø 5/16"   | ●      | —      | —      | Side/Bottom/<br>Top ported<br>Inch size     |
| N11    | Ø 3/8"    | —      | ●      | —      | —                                           |
| N13    | Ø 1/2"    | —      | —      | ●      | —                                           |
| L8     | Ø 8       | ●      | —      | —      | Side ported<br>Metric size                  |
| L10    | Ø 10      | —      | ●      | —      | —                                           |
| L12    | Ø 12      | —      | —      | ●      | —                                           |
| LN9    | Ø 5/16"   | ●      | —      | —      | Side ported<br>Inch size                    |
| LN11   | Ø 3/8"    | —      | ●      | —      | —                                           |
| LN13   | Ø 1/2"    | —      | —      | ●      | —                                           |
| B8     | Ø 8       | ●      | —      | —      | Side ported<br>Metric size                  |
| B10    | Ø 10      | —      | ●      | —      | —                                           |
| B12    | Ø 12      | —      | —      | ●      | —                                           |
| BN9    | Ø 5/16"   | ●      | —      | —      | Side ported<br>Inch size                    |
| BN11   | Ø 3/8"    | —      | ●      | —      | —                                           |
| BN13   | Ø 1/2"    | —      | —      | ●      | —                                           |
| 00*1   | Plug      | ●      | ●      | ●      | P/E port entry on one<br>side or Top ported |

\*1: It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

## ② EX120 SI Unit

EX120-S **DN1**

## • Communication protocol

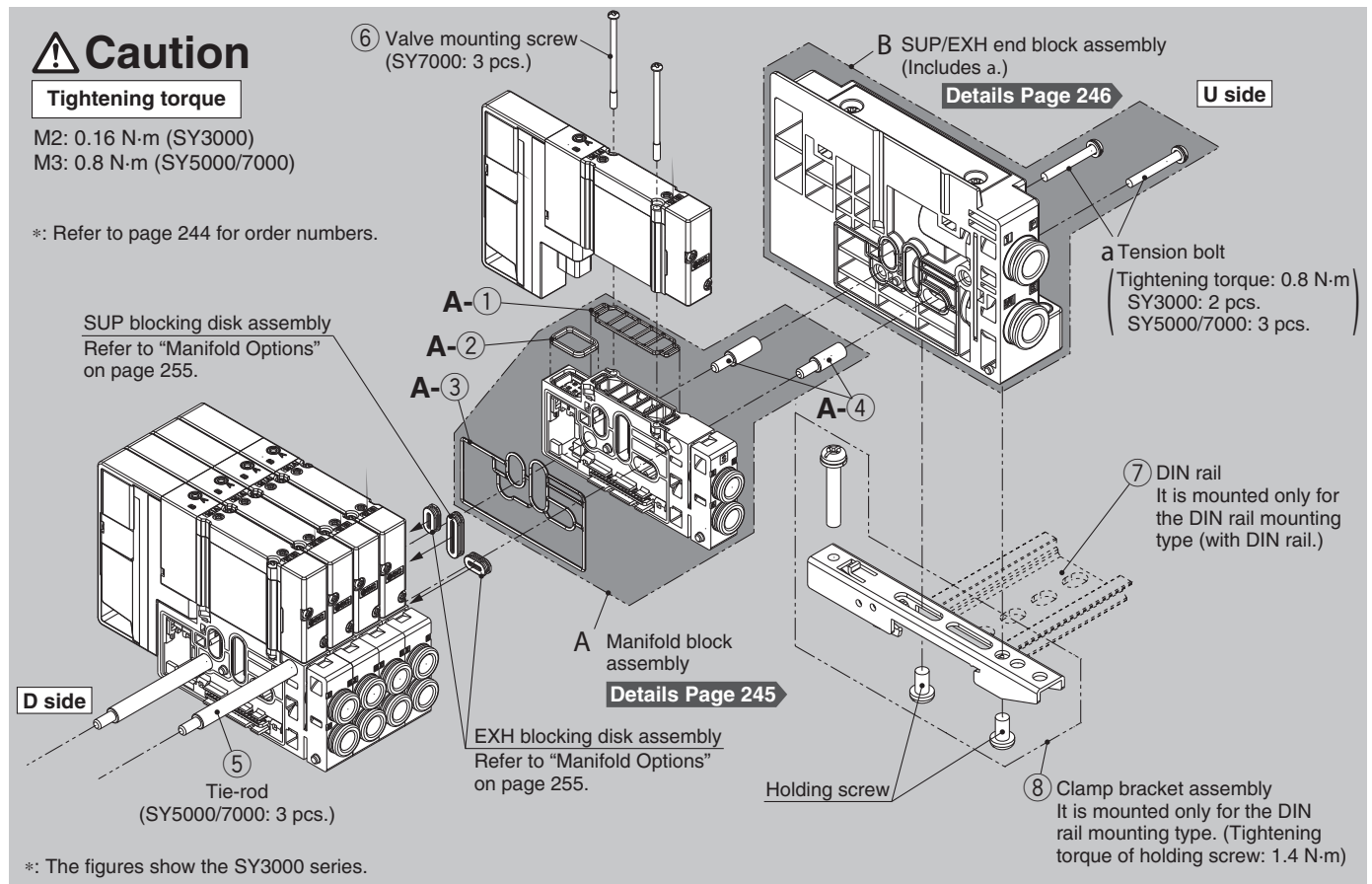
|     |                                                        |
|-----|--------------------------------------------------------|
| DN1 | DeviceNet™ (Positive common)                           |
| CS1 | OMRON Corp.: CompoBus/S (16 outputs) (Positive common) |
| CS2 | OMRON Corp.: CompoBus/S (8 outputs) (Positive common)  |
| MJ1 | CC-Link (Positive common)                              |
| CM1 | CompoNet™ NPN (Positive common)                        |
| CM3 | CompoNet™ PNP (Negative common)                        |

## ③ Clamp bracket assembly

| Series      | Part no.    |
|-------------|-------------|
| SY3000      | SY30M-15-1A |
| SY5000/7000 | SY50M-15-1A |

\*: Part number is for one assembly.

## Manifold Exploded View (Common Parts)



## Type 10, 11, 12: How to Increase Connector Type Manifold

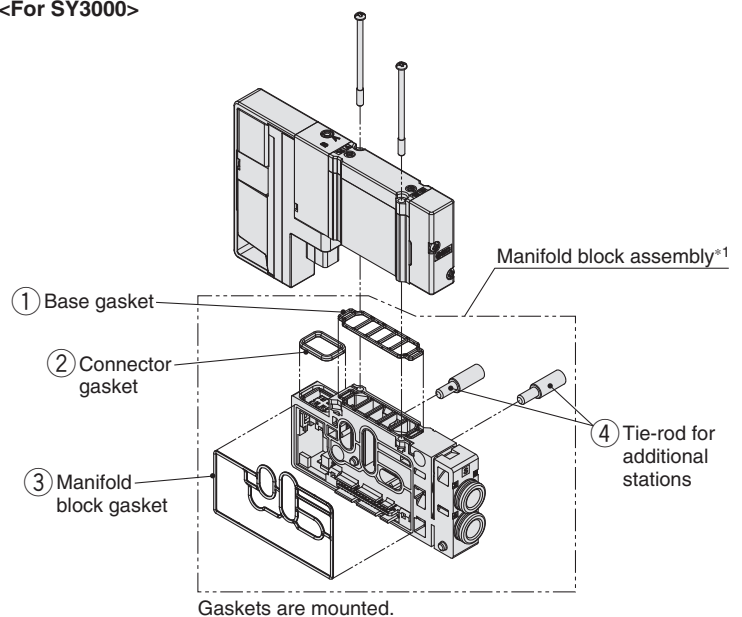
- 1 Loosen the U-side tension bolt (a), and remove the B SUP/EXH end block assembly.
- 2 Screw in (4) tie-rods for additional stations to the (5) tie-rod of the manifold.  
(Screw them in until there is no gap between the tie-rods.)
- 3 Connect the A manifold block assembly and B SUP/EXH end block assembly to be added, and tighten the tension bolt (a).

Tightening torque for tension bolt (a) (M3): 0.8 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 the tightening of the tension bolt is inadequate.

<For SY3000>



\*1: Manifold block assembly

| No. | Description                     | Quantity                                        | Note                                   |
|-----|---------------------------------|-------------------------------------------------|----------------------------------------|
| ①②③ | Gasket                          | 3                                               | For base, connector and manifold block |
| ④   | Tie-rod for additional stations | SY3000 2 pcs.<br>SY5000 3 pcs.<br>SY7000 3 pcs. |                                        |

Refer to page 244 for ordering single unit.

**For SS5Y3-10/11/12, SS5Y5-(M)10/11/12, SS5Y7-(M)10/11/12**

| No. | Description                                            |                                                                                               | SY3000                           | SY5000                                            | SY7000                                        | Note                                                                                                                                              |
|-----|--------------------------------------------------------|-----------------------------------------------------------------------------------------------|----------------------------------|---------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| A-① | Manifold block assembly                                | Base gasket<br>(for connector connecting base)                                                | SY30M-9-1A                       | SY50M-9-1A                                        | SY70M-9-1A                                    | Part numbers shown on the left are for 10 valves. (10 pcs.)                                                                                       |
| A-② |                                                        | Connector gasket                                                                              | SX3000-146-2                     |                                                   |                                               | Supplied individually.                                                                                                                            |
| A-③ |                                                        | Manifold block gasket                                                                         | SY30M-9-2                        | SY50M-9-2                                         | SY70M-9-2                                     | Supplied individually.                                                                                                                            |
| A-④ | Tie-rod for additional stations <sup>*1</sup>          | SY3000/5000/7000                                                                              | SY30M-49-2-A<br>(10.5 mm pitch)  | SV2000-55-2A-A<br>(16 mm pitch)                   | SY70M-49-2-A <sup>*2</sup><br>(19 mm pitch)   | 2 pcs. supplied (SY3000),<br>3 pcs. supplied (SY5000/7000)                                                                                        |
|     |                                                        | For mixed mounting of SY3000/5000:<br>SY3000 A, B port size Ø 8, Ø 5/16"                      | SV2000-55-2A-A<br>(16 mm pitch)  |                                                   | —                                             | 3 pcs. supplied.                                                                                                                                  |
|     |                                                        | For mixed mounting of SY3000/5000:<br>SY3000 except A, B port size Ø 8, Ø 5/16" <sup>*4</sup> | SY50M-49-2-A<br>(12.5 mm pitch)  |                                                   | —                                             | 3 pcs. supplied.                                                                                                                                  |
| ⑤   | Tie-rod                                                | SY3000/5000/7000                                                                              | VVQC1000-TR-□<br>(10.5 mm pitch) | SV2000-55-1-□-A<br>(16 mm pitch)                  | SY70M-49-1-□-A <sup>*2</sup><br>(19 mm pitch) | □: Manifold stations (2 stations to 24 stations) 2 pcs. supplied (SY3000),<br>3 pcs. supplied (SY5000/7000)                                       |
|     |                                                        | Mixed mounting<br>type manifold                                                               | SS5Y5-M <sup>**</sup>            | SY50M-49-1-□-A <sup>*3*4</sup><br>(12.5 mm pitch) | —                                             | □: Manifold stations<br>(2 stations to 24 stations)<br>3 pcs. supplied.                                                                           |
|     |                                                        |                                                                                               |                                  | SV2000-55-1-□-A <sup>*5</sup><br>(16 mm pitch)    | —                                             |                                                                                                                                                   |
|     |                                                        |                                                                                               | SS5Y7-M <sup>**</sup>            | —                                                 | SY70M-49-1-□-A <sup>*2</sup><br>(19 mm pitch) |                                                                                                                                                   |
| ⑥   | Valve<br>mounting<br>screw                             | Round head combination screw                                                                  | SY3000-23-24A<br>(M2 x 32)       | SY5000-221-1A<br>(M3 x 32.5)                      | SY7000-221-1A<br>(M3 x 36.5)                  | Part numbers shown on the left are as follows.<br>SY3000/5000:<br>for 10 valves (20 pcs. included)<br>SY7000:<br>for 10 valves (30 pcs. included) |
|     |                                                        | Hexagon socket head cap screw                                                                 | SY3000-222-1A<br>(M2 x 32)       | SY5000-222-1A<br>(M3 x 32.5)                      | SY7000-222-1A<br>(M3 x 36.5)                  |                                                                                                                                                   |
| ⑦   | DIN rail                                               |                                                                                               | VZ1000-11-1-□                    |                                                   | VZ1000-11-4-□                                 | Refer to page 249.                                                                                                                                |
| ⑧   | Clamp bracket assembly (for connector connecting base) |                                                                                               | SY30M-15-1A                      | SY50M-15-1A                                       |                                               | Supplied individually.                                                                                                                            |

\*1: The manifold of the SY3000 (SS5Y3-10/11/12) can be assembled by connecting the tie-rods for additional stations for the number of manifold stations. However, the manifold of the SY5000 or SY7000 (SS5Y5/7-10/11/12 including mixed mounting) cannot be assembled by connecting the tie-rods for additional stations for the number of manifold stations.

\*2: When mounting with the SY5000.

\*3: When mounting only the SY3000 (12.5 mm pitch except A, B port size Ø 8, Ø 5/16").

\*4: The port sizes except A, B port size Ø 8, Ø 5/16" are the following: Ø 2, Ø 3.2, Ø 4, Ø 6, Ø 1/8", Ø 5/32", Ø 1/4".

\*5: When mounting only the SY3000 (16 mm pitch A, B port size Ø 8, Ø 5/16").

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded ViewOne-touch Fittings/  
Plug Assembly Part No.

Manifold Options



# Series SY3000/5000/7000

## Manifold Parts No.

### ① Manifold block assembly

SY **3** OM-2-**1** D A-C**6**

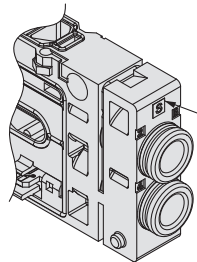
#### Series

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

#### Piping direction

|   |                 |
|---|-----------------|
| 1 | Side/Top ported |
| 2 | Bottom ported   |

\*: "2" for bottom ported can be selected for the SY5000/7000 series.



Single wiring  
Marked with [S]

#### Wiring type

|   |               |
|---|---------------|
| S | Single wiring |
| D | Double wiring |

#### A, B port size (One-touch fittings)

| Symbol | A, B port | SY3000 | SY5000 | SY7000 | Note                           |
|--------|-----------|--------|--------|--------|--------------------------------|
| C2     | Ø 2       | ●      | —      | —      |                                |
| C3     | Ø 3.2     | ●      | —      | —      |                                |
| C4     | Ø 4       | ●      | ●      | —      | Side/Bottom ported Metric size |
| C6     | Ø 6       | ●      | ●      | ●      |                                |
| C8     | Ø 8       | —*1    | ●      | ●      |                                |
| C10    | Ø 10      | —      | —      | ●      |                                |
| C12    | Ø 12      | —      | —      | ●      |                                |
| N1     | Ø 1/8"    | ●      | —      | —      | Side/Bottom ported Inch size   |
| N3     | Ø 5/32"   | ●      | ●      | —      |                                |
| N7     | Ø 1/4"    | ●      | ●      | ●      |                                |
| N9     | Ø 5/16"   | —*1    | ●      | ●      |                                |
| N11    | Ø 3/8"    | —      | —      | ●      |                                |

\*1: Refer to mixed mounting type for Ø 8, Ø 5/16".

| Symbol | A, B port | SY3000 | SY5000 | SY7000 | Note                    |
|--------|-----------|--------|--------|--------|-------------------------|
| L4     | Ø 4       | ●      | ●      | —      | Side ported Metric size |
| L6     | Ø 6       | ●      | ●      | —      |                         |
| L8     | Ø 8       | —*1    | ●      | ●      |                         |
| L10    | Ø 10      | —      | —      | ●      |                         |
| L12    | Ø 12      | —      | —      | ●      | Side ported Inch size   |
| LN3    | Ø 5/32"   | ●      | —      | —      |                         |
| LN7    | Ø 1/4"    | ●      | ●      | —      |                         |
| LN9    | Ø 5/16"   | —*1    | ●      | —      |                         |
| LN11   | Ø 3/8"    | —      | —      | ●      | Side ported Metric size |
| B4     | Ø 4       | ●      | ●      | —      |                         |
| B6     | Ø 6       | ●      | ●      | ●      |                         |
| B8     | Ø 8       | —*1    | ●      | ●      |                         |
| B10    | Ø 10      | —      | —      | ●      | Side ported Inch size   |
| B12    | Ø 12      | —      | —      | ●      |                         |
| BN3    | Ø 5/32"   | ●      | —      | —      |                         |
| BN7    | Ø 1/4"    | ●      | ●      | —      |                         |
| BN9    | Ø 5/16"   | —*1    | ●      | —      | Top ported              |
| BN11   | Ø 3/8"    | —      | —      | ●      |                         |
| 00     | Plug      | ●      | ●      | ●      |                         |

### A Mixed mounting of the SY3000/5000 Manifold block assembly for mounting the SY3000

SY50M-2-**3** D A-C**6**

#### Piping direction

|   |                 |
|---|-----------------|
| 3 | Side/Top ported |
| 4 | Bottom ported   |

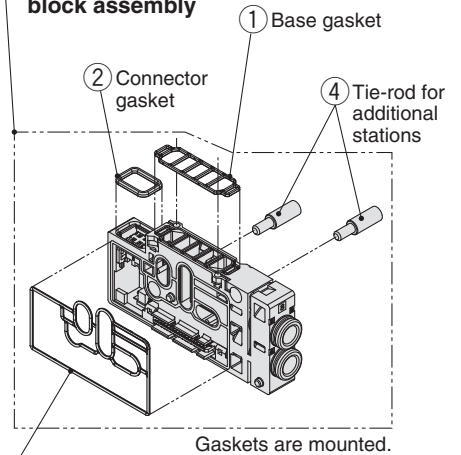
#### Wiring type

|   |               |
|---|---------------|
| S | Single wiring |
| D | Double wiring |

#### A, B port size (One-touch fittings)

| Symbol | A, B port | Note                           | Symbol | A, B port | Note                    |
|--------|-----------|--------------------------------|--------|-----------|-------------------------|
| C2     | Ø 2       | Side/Bottom ported Metric size | L4     | Ø 4       | Side ported Metric size |
| C3     | Ø 3.2     |                                | L6     | Ø 6       | Side ported Metric size |
| C4     | Ø 4       |                                | LN3    | Ø 5/32"   | Side ported Inch size   |
| C6     | Ø 6       |                                | LN7    | Ø 1/4"    | Side ported Inch size   |
| N1     | Ø 1/8"    | Side/Bottom ported Inch size   | B4     | Ø 4       | Side ported Metric size |
| N3     | Ø 5/32"   |                                | B6     | Ø 6       | Side ported Metric size |
| N7     | Ø 1/4"    |                                | BN3    | Ø 5/32"   | Side ported Inch size   |
|        |           |                                | BN7    | Ø 1/4"    | Side ported Inch size   |
|        |           |                                | 00     | Plug      | Top ported              |

### ② Manifold (All parts inside ----- are included.) block assembly



### A Mixed mounting of the SY3000/5000 Manifold block assembly for mounting the SY3000 for Ø 8, Ø 5/16" (A manifold block assembly for mounting the SY3000 valves on the SY5000 manifolds at A, B port size: Ø 8, Ø 5/16")

SY50M-2-**5** D A-C**8**

#### Piping direction

|   |               |
|---|---------------|
| 5 | Side ported   |
| 6 | Bottom ported |

#### Wiring type

|   |               |
|---|---------------|
| S | Single wiring |
| D | Double wiring |

#### A, B port size (One-touch fittings)

| Symbol | A, B port              | Note                           |
|--------|------------------------|--------------------------------|
| C8     | Ø 8                    | Side/Bottom ported Metric size |
| N9     | Ø 5/16"                | Side/Bottom ported Inch size   |
| L8     | Upward elbow Ø 8       | Side ported Metric size        |
| LN9    | Upward elbow Ø 5/16"   | Side ported Inch size          |
| B8     | Downward elbow Ø 8     | Side ported Metric size        |
| BN9    | Downward elbow Ø 5/16" | Side ported Inch size          |

### Manifold block assembly accessories and the number of accessories

| Accessories                                | SY3000 | SY5000 SY7000*1 |
|--------------------------------------------|--------|-----------------|
| ① Base gasket                              | 1 pc.  |                 |
| ② Connector gasket                         | 1 pc.  |                 |
| ③ Manifold block gasket                    | 1 pc.  |                 |
| ④ Tie-rod assembly for additional stations | 2 pcs. | 3 pcs.          |

\*1: Including mixed mounting type

### A Mixed mounting of the SY5000/7000 Manifold block assembly for mounting the SY5000

SY70M-2-**3** D A-C**10**

#### Piping direction

|   |                    |
|---|--------------------|
| 3 | Side/Bottom ported |
| 4 | Bottom ported      |

#### Wiring type

|   |               |
|---|---------------|
| S | Single wiring |
| D | Double wiring |

#### A, B port size (One-touch fittings)

| Symbol     | A, B port | Note                           | Symbol      | A, B port           | Note                    | Symbol      | A, B port | Note                    |
|------------|-----------|--------------------------------|-------------|---------------------|-------------------------|-------------|-----------|-------------------------|
| <b>C6</b>  | Ø 6       | Side/Bottom ported Metric size | <b>L6</b>   | Ø 6                 | Side ported Metric size | <b>B6</b>   | Ø 6       | Side ported Metric size |
| <b>C8</b>  | Ø 8       |                                | <b>L8</b>   | Ø 8                 |                         | <b>B8</b>   | Ø 8       |                         |
| <b>C10</b> | Ø 10      |                                | <b>L10</b>  | Ø 10                |                         | <b>B10</b>  | Ø 10      |                         |
| <b>C12</b> | Ø 12      |                                | <b>L12</b>  | Ø 12                |                         | <b>B12</b>  | Ø 12      |                         |
| <b>N7</b>  | Ø 1/4"    | Side/Bottom ported Inch size   | <b>LN11</b> | Upward elbow Ø 3/8" | Side ported Inch size   | <b>BN11</b> | Ø 3/8"    | Side ported Inch size   |
| <b>N9</b>  | Ø 5/16"   |                                |             |                     |                         |             |           |                         |
| <b>N11</b> | Ø 3/8"    |                                |             |                     |                         |             |           |                         |
|            |           |                                |             |                     |                         | <b>00</b>   | Plug      | Top ported              |



## Manifold Parts No.

## ② SUP/EXH end block assembly

SY **3** 0M-3-1A **C8** -

## ● Series

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

## ● Mounting

|    |                                      |
|----|--------------------------------------|
| —  | Direct mounting                      |
| D0 | DIN rail mounting (Without DIN rail) |

\*: For bottom ported, the symbol is —.

## ● Pilot, Silencer/Piping type

| Symbol | Pilot type |          | Built-in silencer | Piping direction |
|--------|------------|----------|-------------------|------------------|
|        | Internal   | External |                   |                  |
| —      | ●          | —        | —                 | Side             |
| S      | ●          | —        | ●                 |                  |
| R      | —          | ●        | —                 |                  |
| V      | ●          | —        | —                 | Top              |
| RV     | —          | ●        | —                 |                  |
| VP     | ●          | —        | ●*1               |                  |
| B      | ●          | —        | —                 | Bottom           |
| BS     | ●          | —        | ●                 |                  |
| BR     | —          | ●        | —                 |                  |

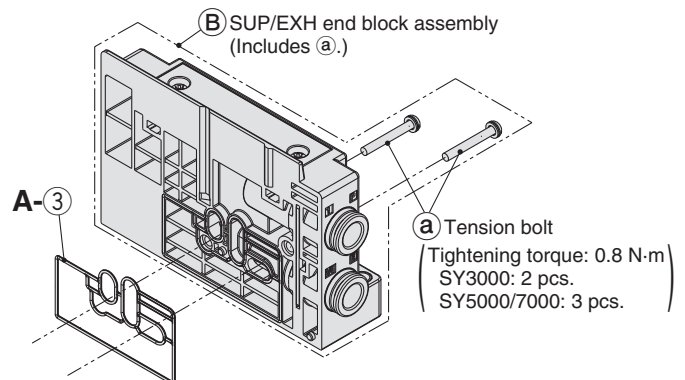
\*1: For silencer (supply side). E port is plugged.

\*: "B" for bottom ported can be selected for the SY5000/7000 series.

## P, E port size (One-touch fittings) ●

| Symbol | P, E port                 | SY3000 | SY5000 | SY7000 | Note                                        |
|--------|---------------------------|--------|--------|--------|---------------------------------------------|
| C8     | Ø 8                       | ●      | —      | —      | Side/Bottom/Top ported<br>Metric size       |
| C10    | Ø 10                      | —      | ●      | —      |                                             |
| C12    | Ø 12                      | —      | —      | ●      |                                             |
| N9     | Ø 5/16"                   | ●      | —      | —      | Side/Bottom/Top ported<br>Inch size         |
| N11    | Ø 3/8"                    | —      | ●      | —      |                                             |
| N13    | Ø 1/2"                    | —      | —      | ●      |                                             |
| L8     | Upward elbow<br>Ø 8       | ●      | —      | —      | Side ported<br>Metric size                  |
| L10    |                           | —      | ●      | —      |                                             |
| L12    |                           | —      | —      | ●      |                                             |
| LN9    | Upward elbow<br>Ø 5/16"   | ●      | —      | —      | Side ported<br>Inch size                    |
| LN11   |                           | —      | ●      | —      |                                             |
| LN13   |                           | —      | —      | ●      |                                             |
| B8     | Downward elbow<br>Ø 8     | ●      | —      | —      | Side ported<br>Metric size                  |
| B10    |                           | —      | ●      | —      |                                             |
| B12    |                           | —      | —      | ●      |                                             |
| BN9    | Downward elbow<br>Ø 5/16" | ●      | —      | —      | Side ported<br>Inch size                    |
| BN11   |                           | —      | ●      | —      |                                             |
| BN13   |                           | —      | —      | ●      |                                             |
| 00*1   | Plug                      | ●      | ●      | ●      | P/E port entry on one side<br>or Top ported |

\*1: It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.



## SUP/EXH end block assembly accessories and the number of accessories

| Accessories               | SY3000 | SY5000/7000 |
|---------------------------|--------|-------------|
| ① Tension bolt            | 2 pcs. | 3 pcs.      |
| A-③ Manifold block gasket | 1 pc.  |             |

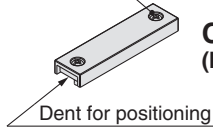
Gasket is mounted.

# Series SY3000/5000/7000

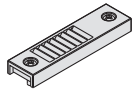
## Manifold Parts No.

### ■ Cover assembly/Silencer cover assembly/Port block assembly for SUP/EXH (end) block assembly

Mounting screw (M3)

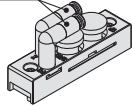


**Cover assembly**  
(Internal pilot)

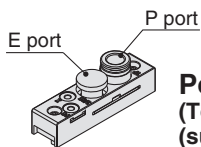


**Silencer cover assembly**  
(Internal pilot, Built-in silencer)

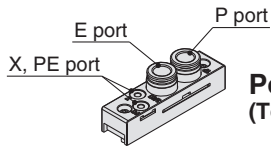
X, PE port



**Port block assembly**  
(Side/Bottom ported, External pilot)



**Port block assembly**  
(Top ported, Internal pilot, for silencer  
(supply side))



**Port block assembly**  
(Top ported, Internal/External pilot)

※: Cover assembly, silencer cover assembly and port block assembly are included in the SUP/EXH (end) block assembly, but they need to be ordered for piping direction change.

**Tightening torque for mounting screw**  
SY3000/5000 (M3): 0.8 N·m  
SY7000 (M4): 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 the tightening of the cover and port block assemblies are inadequate.

SY **3** 0M-4- 1A

SY **3** 0M-5- 1A

SY **3** 0M-6- 1AR - 00  

X, PE port One-touch fitting type

| Symbol | X, PE port  | SY3000  | SY5000 | SY7000 |
|--------|-------------|---------|--------|--------|
| —      | Metric size | Ø 4     | ●      | —      |
|        |             | Ø 6     | —      | ●      |
| U      | Inch size   | Ø 5/32" | ●      | —      |
|        |             | Ø 1/4"  | —      | ●      |

SY **3** 0M-6- 3AV - C8

SY **3** 0M-6- 1A   V - C8

Series

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

Pilot type

|          |                |
|----------|----------------|
| —        | Internal pilot |
| <b>R</b> | External pilot |

P, E port size (One-touch fittings)

| Symbol       | P, E port | SY3000 | SY5000 | SY7000 |
|--------------|-----------|--------|--------|--------|
| <b>C8</b>    | Ø 8       | ●      | —      | —      |
| <b>C10</b>   | Ø 10      | —      | ●      | —      |
| <b>C12</b>   | Ø 12      | —      | —      | ●      |
| <b>N9</b>    | Ø 5/16"   | ●      | —      | —      |
| <b>N11</b>   | Ø 3/8"    | —      | ●      | —      |
| <b>N13</b>   | Ø 1/2"    | —      | —      | ●      |
| <b>00</b> *1 | Plug      | ●      | ●      | ●      |

\*1: Cannot be selected for the SY□0M-6-3AV-□ and SY□0M-6-1ARV-□.

# Series SY3000/5000/7000

## One-touch Fittings and Plug Assembly/Part No.

Refer to "Changing One-touch Fittings" on page 272 for replacement method.

### One-touch fittings

| Port size               |             |         |                 | SY3000          | SY5000           | SY7000           |
|-------------------------|-------------|---------|-----------------|-----------------|------------------|------------------|
| A, B port <sup>*1</sup> | Metric size | Ø 2     | Straight type   | VVQ1000-50A-C2  | —                | —                |
|                         |             | Ø 3.2   |                 | VVQ1000-50A-C3  | —                | —                |
|                         |             | Ø 4     |                 | VVQ1000-50A-C4  | VVQ1000-51A-C4   | —                |
|                         |             | Ø 6     |                 | VVQ1000-50A-C6  | VVQ1000-51A-C6   | VVQ2000-51A-C6   |
|                         |             | Ø 8     |                 | —               | VVQ1000-51A-C8   | VVQ2000-51A-C8   |
|                         |             | Ø 10    |                 | —               | —                | VVQ2000-51A-C10  |
|                         |             | Ø 12    |                 | —               | —                | KQ2H12-17-X224   |
|                         |             | Ø 4     | Elbow type      | SZ3000-73-1A-L4 | SZ3000-74-1A-L4  | —                |
|                         |             | Ø 6     |                 | SZ3000-73-1A-L6 | SZ3000-74-1A-L6  | SZ3000-83-1A-L6  |
|                         |             | Ø 8     |                 | —               | SZ3000-74-1A-L8  | SZ3000-83-1A-L8  |
|                         |             | Ø 10    |                 | —               | —                | SZ3000-83-1A-L10 |
|                         |             | Ø 12    |                 | —               | —                | KQ2L12-17N-X224  |
|                         |             | Ø 4     | Long elbow type | SZ3000-73-2A-L4 | SZ3000-74-2A-L4  | —                |
|                         |             | Ø 6     |                 | SZ3000-73-2A-L6 | SZ3000-74-2A-L6  | SZ3000-83-2A-L6  |
|                         |             | Ø 8     |                 | —               | SZ3000-74-2A-L8  | SZ3000-83-2A-L8  |
|                         |             | Ø 10    |                 | —               | —                | SZ3000-83-2A-L10 |
|                         |             | Ø 12    |                 | —               | —                | KQ2W12-17N-X224  |
|                         | Inch size   | Ø 1/8"  | Straight type   | VVQ1000-50A-N1  | —                | —                |
|                         |             | Ø 5/32" |                 | VVQ1000-50A-N3  | VVQ1000-51A-N3   | —                |
|                         |             | Ø 1/4"  |                 | VVQ1000-50A-N7  | VVQ1000-51A-N7   | VVQ2000-51A-N7   |
|                         |             | Ø 5/16" |                 | —               | VVQ1000-51A-N9   | VVQ2000-51A-N9   |
|                         |             | Ø 3/8"  |                 | —               | —                | VVQ2000-51A-N11  |
|                         |             | Ø 5/32" | Elbow type      | KJL03-95-X224   | —                | —                |
|                         |             | Ø 1/4"  |                 | KJL07-95-X224   | KQ2L07-14-X224   | —                |
|                         |             | Ø 5/16" |                 | —               | KQ2L09-14-X224   | —                |
|                         |             | Ø 3/8"  |                 | —               | —                | KQ2L11-14-X224   |
|                         |             | Ø 5/32" | Long elbow type | KJL03-95-X225   | —                | —                |
|                         |             | Ø 1/4"  |                 | KJL07-95-X225   | KQ2L07-14-X225   | —                |
|                         |             | Ø 5/16" |                 | —               | KQ2L09-14-X225   | —                |
|                         |             | Ø 3/8"  |                 | —               | —                | KQ2L11-14-X225   |
| P, E port               | Metric size | Ø 8     | Straight type   | VVQ1000-51A-C8  | —                | —                |
|                         |             | Ø 10    |                 | —               | VVQ2000-51A-C10  | —                |
|                         |             | Ø 12    |                 | —               | —                | VVQ4000-50B-C12  |
|                         |             | Ø 8     | Elbow type      | SZ3000-74-1A-L8 | —                | —                |
|                         |             | Ø 10    |                 | —               | SZ3000-83-1A-L10 | —                |
|                         |             | Ø 12    |                 | —               | —                | KQ2L12-19N-X224  |
|                         |             | Ø 8     | Long elbow type | SZ3000-74-2A-L8 | —                | —                |
|                         |             | Ø 10    |                 | —               | SZ3000-83-2A-L10 | —                |
|                         |             | Ø 12    |                 | —               | —                | KQ2W12-19N-X224  |
|                         | Inch size   | Ø 5/16" | Straight type   | VVQ1000-51A-N9  | —                | —                |
|                         |             | Ø 3/8"  |                 | —               | VVQ2000-51A-N11  | —                |
|                         |             | Ø 1/2"  |                 | —               | —                | VVQ4000-50B-N13  |
|                         |             | Ø 5/16" | Elbow type      | KQ2L09-14-X224  | —                | —                |
|                         |             | Ø 3/8"  |                 | —               | KQ2L11-14-X224   | —                |
|                         |             | Ø 1/2"  |                 | —               | —                | KQ2L13-19N-X224  |
|                         |             | Ø 5/16" | Long elbow type | KQ2L09-14-X225  | —                | —                |
|                         |             | Ø 3/8"  |                 | —               | KQ2L11-14-X225   | —                |
|                         |             | Ø 1/2"  |                 | —               | —                | KQ2W13-19N-X224  |

\*1: A and B ports (Ø 8 and Ø 5/16") of the SY3000 and 5000 mixed mounting type are the same as those of the SY5000.

\*: Purchasing order is available in units of 10 pieces. Additionally, when performing the piping in the same orientation using the elbow type, please order "elbow type" or "long elbow type" appropriately.

### Plug assembly

|           | SY3000      | SY5000      | SY7000       |
|-----------|-------------|-------------|--------------|
| A, B port | VVQ0000-58A | VVQ1000-58A | VVQ2000-58A  |
| P, E port | VVQ1000-58A | VVQ2000-58A | SY9000-62-1A |

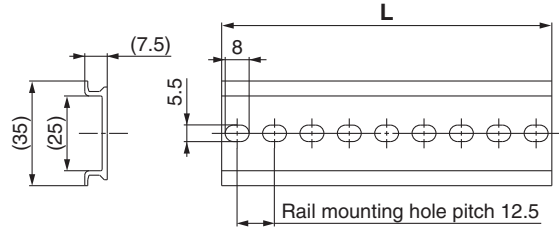
\*: Purchasing order is available in units of 10 pieces.

# Series SY3000/5000/7000 Manifold Options

## ■ DIN rail dimensions/weight for the SY3000 **Plug-in** metal base and the SY3000/5000 **Plug-in** connector connecting base

### VZ1000-11-1-□

※: After confirming the L3 dimension in the dimensions table of each series, refer to the DIN rail dimensions table below and specify the number in the box □.

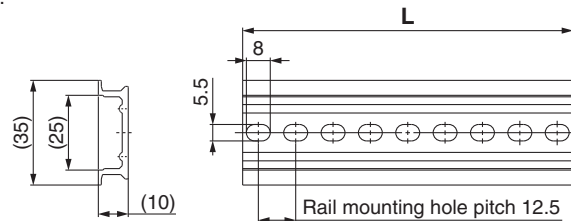


| No.         | 0     | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L dimension | 98    | 110.5 | 123   | 135.5 | 148   | 160.5 | 173   | 185.5 | 198   | 210.5 | 223   | 235.5 | 248   | 260.5 | 273   | 285.5 | 298   | 310.5 | 323   |
| Weight [g]  | 17.6  | 19.9  | 22.1  | 24.4  | 26.6  | 28.9  | 31.1  | 33.4  | 35.6  | 37.9  | 40.1  | 42.4  | 44.6  | 46.9  | 49.1  | 51.4  | 53.6  | 55.9  | 58.1  |
| No.         | 19    | 20    | 21    | 22    | 23    | 24    | 25    | 26    | 27    | 28    | 29    | 30    | 31    | 32    | 33    | 34    | 35    | 36    | 37    |
| L dimension | 335.5 | 348   | 360.5 | 373   | 385.5 | 398   | 410.5 | 423   | 435.5 | 448   | 460.5 | 473   | 485.5 | 498   | 510.5 | 523   | 535.5 | 548   | 560.5 |
| Weight [g]  | 60.4  | 62.5  | 64.9  | 67.1  | 69.4  | 71.6  | 73.9  | 76.1  | 78.4  | 80.6  | 82.9  | 85.1  | 87.4  | 89.6  | 91.9  | 94.1  | 96.4  | 98.6  | 100.9 |
| No.         | 38    | 39    | 40    | 41    | 42    | 43    | 44    | 45    | 46    | 47    | 48    | 49    | 50    | 51    | 52    | 53    | 54    | 55    | 56    |
| L dimension | 573   | 585.5 | 598   | 610.5 | 623   | 635.5 | 648   | 660.5 | 673   | 685.5 | 698   | 710.5 | 723   | 735.5 | 748   | 760.5 | 773   | 785.5 | 798   |
| Weight [g]  | 103.1 | 105.4 | 107.6 | 109.9 | 112.1 | 114.4 | 116.6 | 118.9 | 121.1 | 123.4 | 125.6 | 127.9 | 130.1 | 132.4 | 134.6 | 136.9 | 139.1 | 141.4 | 143.6 |
| No.         | 57    | 58    | 59    | 60    | 61    | 62    | 63    | 64    | 65    | 66    | 67    | 68    | 69    | 70    | 71    |       |       |       |       |
| L dimension | 810.5 | 823   | 835.5 | 848   | 860.5 | 873   | 885.5 | 898   | 910.5 | 923   | 935.5 | 948   | 960.5 | 973   | 985.5 |       |       |       |       |
| Weight [g]  | 145.9 | 148.1 | 150.4 | 152.6 | 154.9 | 157.1 | 159.4 | 161.6 | 163.9 | 166.1 | 168.4 | 170.6 | 172.9 | 175.1 | 177.4 |       |       |       |       |

## ■ DIN rail dimensions/weight for the SY5000/7000 **Plug-in** metal base and the SY7000 **Plug-in** connector connecting base

### VZ1000-11-4-□

※: After confirming the L3 dimension in the dimensions table of each series, refer to the DIN rail dimensions table below and specify the number in the box □.



| No.         | 0     | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L dimension | 98    | 110.5 | 123   | 135.5 | 148   | 160.5 | 173   | 185.5 | 198   | 210.5 | 223   | 235.5 | 248   | 260.5 | 273   | 285.5 | 298   | 310.5 | 323   |
| Weight [g]  | 24.8  | 28    | 31.1  | 34.3  | 37.4  | 40.6  | 43.8  | 46.9  | 50.1  | 53.3  | 56.4  | 59.6  | 62.7  | 65.9  | 69.1  | 72.2  | 75.4  | 78.6  | 81.7  |
| No.         | 19    | 20    | 21    | 22    | 23    | 24    | 25    | 26    | 27    | 28    | 29    | 30    | 31    | 32    | 33    | 34    | 35    | 36    | 37    |
| L dimension | 335.5 | 348   | 360.5 | 373   | 385.5 | 398   | 410.5 | 423   | 435.5 | 448   | 460.5 | 473   | 485.5 | 498   | 510.5 | 523   | 535.5 | 548   | 560.5 |
| Weight [g]  | 84.9  | 88    | 91.2  | 94.4  | 97.5  | 100.7 | 103.9 | 107   | 110.2 | 113.3 | 116.5 | 119.7 | 122.8 | 126   | 129.2 | 132.3 | 135.5 | 138.6 | 141.8 |
| No.         | 38    | 39    | 40    | 41    | 42    | 43    | 44    | 45    | 46    | 47    | 48    | 49    | 50    | 51    | 52    | 53    | 54    | 55    | 56    |
| L dimension | 573   | 585.5 | 598   | 610.5 | 623   | 635.5 | 648   | 660.5 | 673   | 685.5 | 698   | 710.5 | 723   | 735.5 | 748   | 760.5 | 773   | 785.5 | 798   |
| Weight [g]  | 145   | 148.1 | 151.3 | 154.5 | 157.6 | 160.8 | 163.9 | 167.1 | 170.3 | 173.4 | 176.6 | 179.8 | 182.9 | 186.1 | 189.2 | 192.4 | 195.6 | 198.7 | 201.9 |
| No.         | 57    | 58    | 59    | 60    | 61    | 62    | 63    | 64    | 65    | 66    | 67    | 68    | 69    | 70    | 71    |       |       |       |       |
| L dimension | 810.5 | 823   | 835.5 | 848   | 860.5 | 873   | 885.5 | 898   | 910.5 | 923   | 935.5 | 948   | 960.5 | 973   | 985.5 |       |       |       |       |
| Weight [g]  | 205.1 | 208.2 | 211.4 | 214.5 | 217.7 | 220.9 | 224   | 227.2 | 230.4 | 233.5 | 236.7 | 239.8 | 243   | 246.2 | 249.3 |       |       |       |       |

## ⚠ Caution

|                                      |
|--------------------------------------|
| Tightening torque for mounting screw |
| M2: 0.16 N·m (SY3000)                |
| M3: 0.8 N·m (SY5000/7000)            |

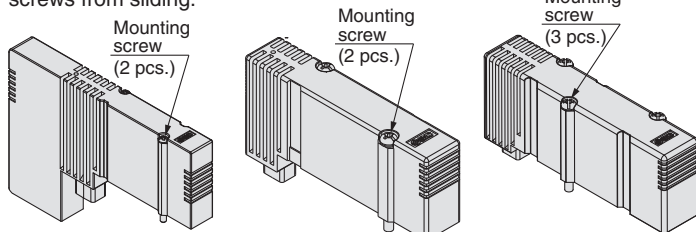
## Manifold Options

\*: Refer to pages 260, 262, 264 for dimensions.

### ■ Blanking plate assembly

[With two mounting screws (3 pcs. for the SY7000)]

Used when valve additions are expected or for maintenance. A structure is in place on the blanking plate to prevent the mounting screws from sliding.



SY30M-26-□A (-B)

SY50M-26-□A (-B)

SY70M-26-□A (-B)

### How to Order Blanking Plate Assembly

SY **3** OM-26-**1** A-□

#### ● Series

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

|      |     |
|------|-----|
| (A)  | (B) |
| 4    | 2   |
| 5    | 1   |
| (EA) | (P) |
| (EB) |     |

#### ● Option for mounting

|   |                                                        |
|---|--------------------------------------------------------|
| — | With mounting screw<br>(Round head combination screw)  |
| B | With mounting screw<br>(Hexagon socket head cap screw) |

#### ● Base type

|   |                                       |
|---|---------------------------------------|
| 1 | For plug-in connector connecting base |
| 2 | For plug-in metal base                |

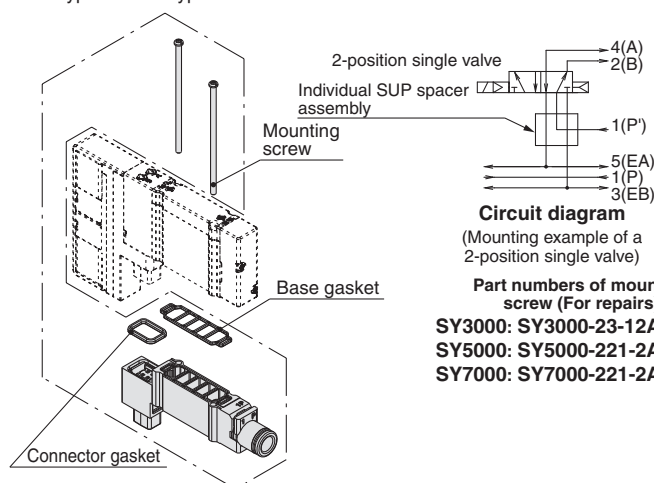
#### Circuit diagram

### ■ Individual SUP spacer assembly

[With a connector gasket, a base gasket, and two mounting screws (3 pcs. for the SY7000)]

When the same manifold is used for different pressures, an individual SUP spacer assembly is used as a supply port for different pressures.

\*: When selecting a One-touch fitting elbow type for a spacer assembly, use it faced upward, since it interferes with A and B port piping in Type 50 and Type 10 manifolds.



#### Circuit diagram

(Mounting example of a 2-position single valve)

#### Part numbers of mounting screw (For repairs)

SY3000: SY3000-23-12A (2 pcs.)  
SY5000: SY5000-221-2A (2 pcs.)  
SY7000: SY7000-221-2A (3 pcs.)

### How to Order Individual SUP/EXH Spacer Assembly

One-touch fitting  
Straight type

SY **3** OM-**38**-**1** A-**C6**

One-touch fitting  
Elbow type

SY **3** OM-**38**-**2** A-**L6**

#### ● Series

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

#### ● Spacer type

|    |                       |
|----|-----------------------|
| 38 | Individual SUP spacer |
| 39 | Individual EXH spacer |

#### Individual SUP/EXH spacer assembly

|   |                  |
|---|------------------|
| 2 | Short elbow type |
| 3 | Long elbow type  |

\*: Select the long elbow type for a 3-position valve when using Type 11 and Type 12 downward. However, Type 11 of the SY3000 series for the mixed mounting of connector connecting bases cannot be used downward.

#### Port size (Metric/One-touch fittings)

| Symbol | P, E port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| L4     | Ø 4       | ●      | ●      | —      |
| L6     | Ø 6       | ●      | ●      | ●      |
| L8     | Ø 8       | —      | ●      | ●      |
| L10    | Ø 10      | —      | —      | ●      |
| L12    | Ø 12      | —      | —      | ●      |

#### Port size (Inch/One-touch fittings)

| Symbol | P, E port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| LN3    | Ø 5/32"   | ●      | —      | —      |
| LN7    | Ø 1/4"    | ●      | ●      | —      |
| LN9    | Ø 5/16"   | —      | ●      | —      |
| LN11   | Ø 3/8"    | —      | —      | ●      |

#### Port size (Metric/One-touch fittings)

| Symbol | P, E port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| C2     | Ø 2       | ●      | —      | —      |
| C3     | Ø 3       | ●      | —      | —      |
| C4     | Ø 4       | ●      | ●      | —      |
| C6     | Ø 6       | ●      | ●      | ●      |
| C8     | Ø 8       | —      | ●      | ●      |
| C10    | Ø 10      | —      | —      | ●      |
| C12    | Ø 12      | —      | —      | ●      |

#### Port size (Inch/One-touch fittings)

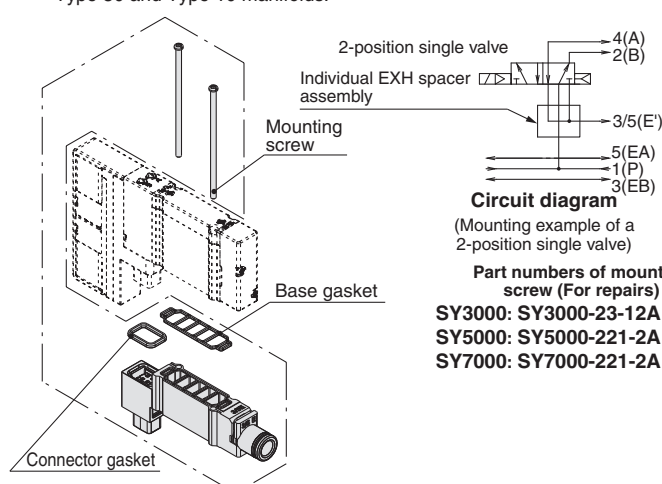
| Symbol | P, E port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| N1     | Ø 1/8"    | ●      | —      | —      |
| N3     | Ø 5/32"   | ●      | ●      | —      |
| N7     | Ø 1/4"    | ●      | ●      | ●      |
| N9     | Ø 5/16"   | —      | ●      | ●      |
| N11    | Ø 3/8"    | —      | —      | ●      |

### ■ Individual EXH spacer assembly

[With a connector gasket, a base gasket, and two mounting screws (3 pcs. for the SY7000)]

When valve exhaust affects other stations due to the circuit configuration, this spacer assembly is used for individual valve exhaust.

\*: When selecting a One-touch fitting elbow type for a spacer assembly, use it faced upward, since it interferes with A and B port piping in Type 50 and Type 10 manifolds.



#### Circuit diagram

(Mounting example of a 2-position single valve)

#### Part numbers of mounting screw (For repairs)

SY3000: SY3000-23-12A (2 pcs.)  
SY5000: SY5000-221-2A (2 pcs.)  
SY7000: SY7000-221-2A (3 pcs.)

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options



## Caution

|                                      |
|--------------------------------------|
| Tightening torque for mounting screw |
| M2: 0.16 N·m (SY3000)                |
| M3: 0.8 N·m (SY5000/7000)            |

## Manifold Options

\*: Refer to pages 260 to 265 for dimensions.

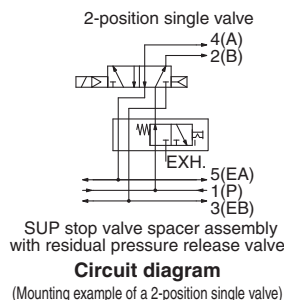
### ■ SUP stop valve spacer assembly with residual pressure release valve

[With a connector gasket, a base gasket, and two mounting screws (3 pcs. for the SY7000)]

It is used to shut off the supply air to valves individually.

\*: Cannot be selected when the elbows are facing upward in A and B ports in Type 10 manifolds, since they will interfere with the piping for the spacer assembly.

| Series                     | Manual override                       |
|----------------------------|---------------------------------------|
| <b>SY 3 0M - 50 - 1A E</b> |                                       |
| <b>3</b> SY3000            | — Push-turn locking slotted type      |
| <b>5</b> SY5000            |                                       |
| <b>7</b> SY7000            | <b>E</b> Push-turn locking lever type |



### [How to mount SUP stop valve spacer assembly with residual pressure release valve]

Insert the SUP stop valve mounting screw from the side of the spacer assembly, and mount it to the manifold.

Tighten the SUP stop valve mounting screw to the specified tightening torque. Mount the valve and tighten the valve mounting screws to the specified tightening torque after mounting the SUP stop valve spacer assembly with residual pressure exhaust valve.

- \*: Install the plate type nut to the spacer assembly as shown in the figure if it comes off. The SUP stop valve mounting screws can be tightened with a hexagon wrench without removing the plate type nut.
- \*: When the elbows are facing upward in A and B ports in Type 10 manifolds, they will interfere with the piping for the spacer assembly. Therefore, combine the A and B ports with straight types or elbows facing downward.
- \*: This product is only for internal pilot specifications, as the external pilot air cannot be shut off.

\*: For lever type

When locking the lever type manual override, push the lever down in the PUSH position with your fingers until it stops, then turn the lever 90° clockwise. (PUSH → LOCK)  
Turning the lever without pushing it down until it stops can cause damage to the manual override and other problems such as air leakages.  
To unlock the manual override, turn the lever counterclockwise. (LOCK → PUSH)

### Part numbers of mounting screw (For repairs)

**SY3000: SY30M-56-1A (2 pcs.)**  
**SY5000: SY50M-56-1A (2 pcs.)**  
**SY7000: SY70M-56-1A (3 pcs.)**

### Valve mounting screw

Tightening torque:

Series SY3000: 0.16 N·m

Series SY5000/7000: 0.8 N·m

For Hexagon socket head cap screws

Nominal wrench size:

Series SY3000: 1.5

Series SY5000/7000: 2.5

SUP stop valve spacer assembly with residual pressure

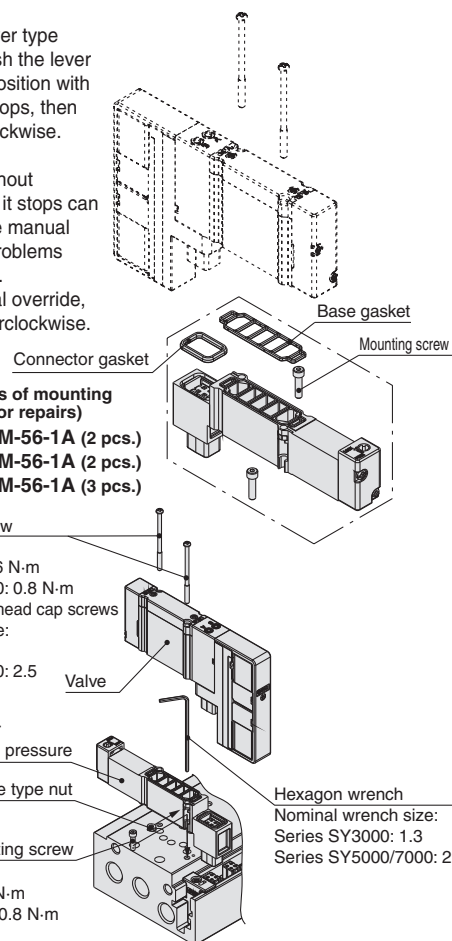
Plate type nut

SUP stop valve mounting screw

Tightening torque:

Series SY3000: 0.16 N·m

Series SY5000/7000: 0.8 N·m



### ■ Double check spacer assembly with residual pressure release valve (Side/Bottom ported)

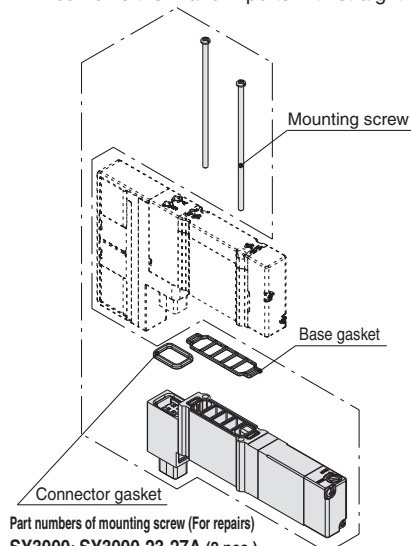
[With a connector gasket, a base gasket, and two mounting screws (3 pcs. for the SY7000)]

It is used to hold the intermediate position of the cylinder for a long period of time. Use a 3-position exhaust centre valve when the double check spacer assembly with residual exhaust valve is used.

It can also be used for drop prevention at the cylinder stroke end when supply residual pressure is released by using a 2-position single/double valve.

Operating pressure range: 0.1 to 1.0 MPa

\*: When the elbows are facing upward in A and B ports in Type 10 manifolds, they will interfere with the piping for the spacer assembly. Therefore, combine the A and B ports with straight types or elbows facing downward.



Part numbers of mounting screw (For repairs)

**SY3000: SY3000-23-27A (2 pcs.)**

**SY5000: SY5000-221-4A (2 pcs.)**

**SY7000: SY7000-221-4A (3 pcs.)**

| Series        | Part no.    |
|---------------|-------------|
| <b>SY3000</b> | SY30M-60-1A |
| <b>SY5000</b> | SY50M-60-1A |
| <b>SY7000</b> | SY70M-60-1A |

|                  | Intermediate stop                                         | Drop prevention                                           |
|------------------|-----------------------------------------------------------|-----------------------------------------------------------|
| Applicable valve | SY <sup>3</sup> <sub>7</sub> 40 <sup>0</sup> <sub>1</sub> | SY <sup>3</sup> <sub>7</sub> 20 <sup>0</sup> <sub>1</sub> |

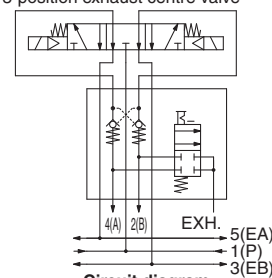
## Caution

- Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for a long period of time. Check the leakage using neutral household detergent, such as dish washing soap. Also, check the cylinder's tube gasket, piston packing and rod packing for air leakage.
- Combining with 3-position closed centre or pressure centre valve will not work.
- If the exhaust of the double check spacer is restricted too much, the cylinder may not operate properly and may not stop intermediately.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.

### <Example>

#### Double check spacer assembly with residual pressure release valve

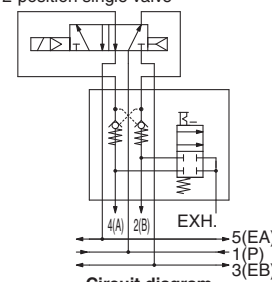
##### 3-position exhaust centre valve



(Intermediate stop: When 3-position exhaust centre valve is mounted)

#### Double check spacer assembly with residual pressure release valve

##### 2-position single valve



(Drop prevention: When 2-position single valve is mounted)



## ⚠ Caution

|                                      |
|--------------------------------------|
| Tightening torque for mounting screw |
| M2: 0.16 N·m (SY3000)                |
| M3: 0.8 N·m (SY5000/7000)            |

## Manifold Options

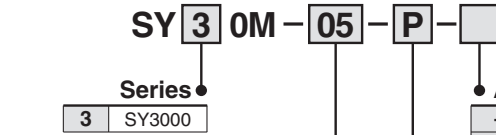
\*: Refer to pages 261, 263, 265 for dimensions.

### ■ Interface regulator

[With a connector gasket, a base gasket, and two mounting screws (3 pcs. for the SY7000)]

Used when the supply pressure for each valve on the same manifold must be individually set (reduced pressure).

### How to Order



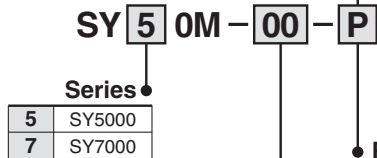
|    |                                                             |
|----|-------------------------------------------------------------|
| M1 | No pressure gauge                                           |
| 05 | Pressure gauge with MPa display (For odd number station)    |
| 06 | Pressure gauge with MPa display (For even number station)   |
| N5 | Pressure gauge with psi display (For odd number station)*2  |
| N6 | Pressure gauge with psi display (For even number station)*2 |

\*1: In the case of the SY3000 series 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 prevent the pressure gauges from interfering with each other.

If using a connector connecting base M10/11/12 (mixed mounting type) or laminating two or more types of spacer type manifold options for the neighboring stations, you can use only the model without a pressure gauge (M1).

\*2: As per the new Measurement Law, gauges with a psi display will only be sold to overseas customers.

\*3: In the case of the SY3000 series, use caution that the part numbers will differ depending on the one for single/double and 4- and 3-position due to the different length of solenoid valves. Also, if you have selected a model with a pressure gauge, and if at least the one for 3-position is included in the same manifold, use all the ones for 3-position to prevent the pressure gauges from interfering with each other.



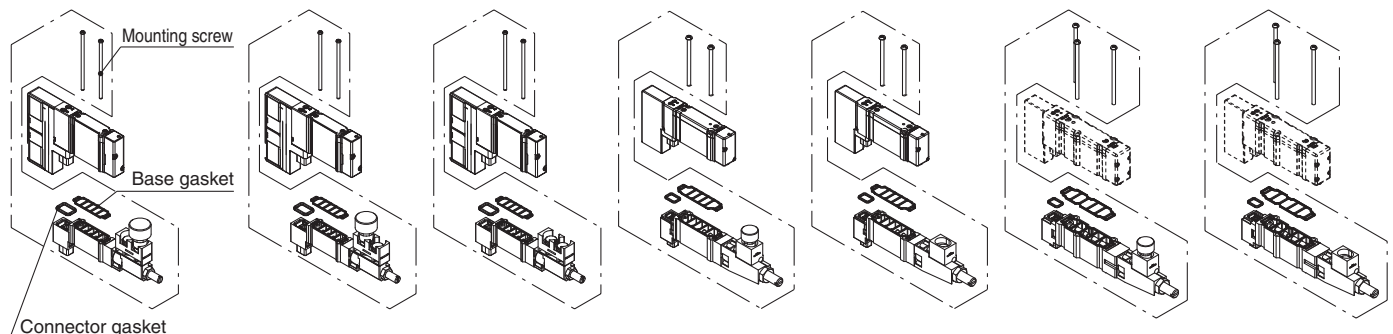
|    |                                   |
|----|-----------------------------------|
| M1 | No pressure gauge                 |
| 00 | Pressure gauge with MPa display   |
| N0 | Pressure gauge with psi display*2 |

### Part numbers of mounting screw (For repairs)

SY3000: SY3000-23-12A (2 pcs.)

SY5000: SY5000-221-6A (2 pcs.)

SY7000: SY7000-221-6A (3 pcs.)



SY30M-05/N5-□ (With pressure gauge/ For odd number station)   SY30M-06/N6-□ (With pressure gauge/ For even number station)   SY30M-M1-□ (Without pressure gauge)   SY50M-00/N0-□ (With pressure gauge)   SY50M-M1-□ (Without pressure gauge)   SY70M-00/N0-□ (With pressure gauge)   SY70M-M1-□ (Without pressure gauge)

### Specifications

|                               |                            |           |           |
|-------------------------------|----------------------------|-----------|-----------|
| Interface regulator model     | SY30M-□-□-□                | SY50M-□-□ | SY70M-□-□ |
| Applicable valve model*1      | SY3□□□(R)                  | SY5□□□(R) | SY7□□□(R) |
| Regulating port               | 1(P), 4(A), 2(B)           |           |           |
| Set pressure range            | 0.1 to 0.7 MPa             |           |           |
| Maximum operating pressure    | 1.0 MPa                    |           |           |
| Fluid                         | Air                        |           |           |
| Ambient and fluid temperature | -10 to 50 °C (No freezing) |           |           |
| Weight [g]*2                  | With pressure gauge        | 33(35)*3  | 75        |
|                               | Without pressure gauge     | 27(29)*3  | 69        |
|                               |                            |           | 93        |
|                               |                            |           | 87        |

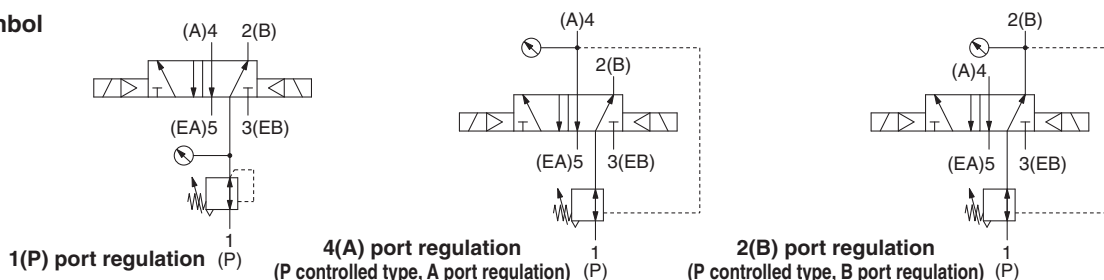
\*1: 3-position closed centre and pressure centre, and 4-position dual 3-port valves are only available for 1(P) port pressure regulation.

\*2: Gasket and mounting screws are included in the weight.

\*3: ( ): Denotes the values of SY30M-□-□-3.

\*: Always apply pressure from 1(P) port in the base for interface regulator.

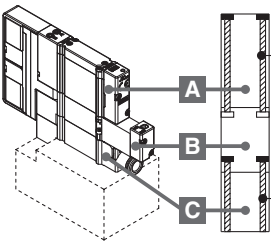
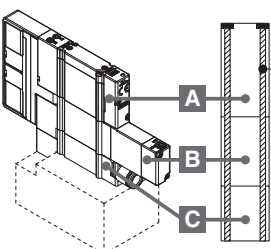
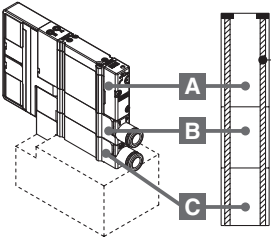
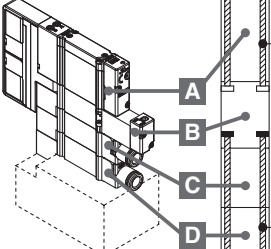
### Symbol



## ⚠ Caution

|                                      |
|--------------------------------------|
| Tightening torque for mounting screw |
| M2: 0.16 N·m (SY3000)                |
| M3: 0.8 N·m (SY5000/7000)            |

## Spacer Combinations and Screw List ①

| Combination                                                                                                                                                                                                                                                                                                                                                            |                                                                       | ① SY3000 (M2)                                 |                                               | ② SY5000 (M3)                                 |                                               | ③ SY7000 (M3)                                 |                                               |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                        |                                                                       | Round head combination screw                  | Hexagon socket head cap screw                 | Round head combination screw                  | Hexagon socket head cap screw                 | Round head combination screw                  | Hexagon socket head cap screw                 |
|  <p>&lt;Round head combination screw&gt;<br/>①: SY3000-23-24A<br/>②: SY5000-221-1A<br/>③: SY7000-221-1A</p> <p>&lt;Hexagon socket head cap screw&gt;<br/>①: SY3000-222-1A<br/>②: SY5000-222-1A<br/>③: SY7000-221-1A</p> <p>①: SY30M-56-2A<br/>②: SY50M-56-2A<br/>③: SY70M-56-2A</p>   | A Valve                                                               | SY3000-23-24A<br>[for 10 valves<br>(20 pcs.)] | SY3000-222-1A<br>[for 10 valves<br>(20 pcs.)] | SY5000-221-1A<br>[for 10 valves<br>(20 pcs.)] | SY5000-222-1A<br>[for 10 valves<br>(20 pcs.)] | SY7000-221-1A<br>[for 10 valves<br>(30 pcs.)] | SY7000-222-1A<br>[for 10 valves<br>(30 pcs.)] |
|                                                                                                                                                                                                                                                                                                                                                                        | B SUP stop valve spacer assembly with residual pressure release valve | SY30M-56-2A<br>(2 pcs.)                       |                                               | SY50M-56-2A<br>(2 pcs.)                       |                                               | SY70M-56-2A<br>(3 pcs.)                       |                                               |
|                                                                                                                                                                                                                                                                                                                                                                        | C Individual SUP (EXH) spacer assembly                                |                                               |                                               |                                               |                                               |                                               |                                               |
|  <p>&lt;Round head combination screw&gt;<br/>①: SY3000-23-33A<br/>②: SY5000-221-5A<br/>③: SY7000-221-5A</p>                                                                                                                                                                          | A Valve                                                               | SY3000-23-33A<br>(2 pcs.)                     | —                                             | SY5000-221-5A<br>(2 pcs.)                     | —                                             | SY7000-221-5A<br>(3 pcs.)                     | —                                             |
|                                                                                                                                                                                                                                                                                                                                                                        | B Double check spacer assembly with residual pressure release valve   |                                               |                                               |                                               |                                               |                                               |                                               |
|                                                                                                                                                                                                                                                                                                                                                                        | C Individual SUP (EXH) spacer assembly                                |                                               |                                               |                                               |                                               |                                               |                                               |
|  <p>&lt;Round head combination screw&gt;<br/>①: SY3000-23-32A<br/>②: SY5000-221-3A<br/>③: SY7000-221-3A</p>                                                                                                                                                                         | A Valve                                                               | SY3000-23-32A<br>(2 pcs.)                     | —                                             | SY5000-221-3A<br>(2 pcs.)                     | —                                             | SY7000-221-3A<br>(3 pcs.)                     | —                                             |
|                                                                                                                                                                                                                                                                                                                                                                        | B Individual SUP (EXH) spacer assembly                                |                                               |                                               |                                               |                                               |                                               |                                               |
|                                                                                                                                                                                                                                                                                                                                                                        | C Individual EXH (SUP) spacer assembly                                |                                               |                                               |                                               |                                               |                                               |                                               |
|  <p>&lt;Round head combination screw&gt;<br/>①: SY3000-23-24A<br/>②: SY5000-221-1A<br/>③: SY7000-221-1A</p> <p>&lt;Hexagon socket head cap screw&gt;<br/>①: SY3000-222-1A<br/>②: SY5000-222-1A<br/>③: SY7000-222-1A</p> <p>①: SY30M-56-4A<br/>②: SY50M-56-4A<br/>③: SY70M-56-4A</p> | A Valve                                                               | SY3000-23-24A<br>[for 10 valves<br>(20 pcs.)] | SY3000-222-1A<br>[for 10 valves<br>(20 pcs.)] | SY5000-221-1A<br>[for 10 valves<br>(20 pcs.)] | SY5000-222-1A<br>[for 10 valves<br>(20 pcs.)] | SY7000-221-1A<br>[for 10 valves<br>(30 pcs.)] | SY7000-222-1A<br>[for 10 valves<br>(30 pcs.)] |
|                                                                                                                                                                                                                                                                                                                                                                        | B SUP stop valve spacer assembly with residual pressure release valve | SY30M-56-4A<br>(2 pcs.)                       |                                               | SY50M-56-4A<br>(2 pcs.)                       |                                               | SY70M-56-4A<br>(3 pcs.)                       |                                               |
|                                                                                                                                                                                                                                                                                                                                                                        | C Individual SUP (EXH) spacer assembly                                |                                               |                                               |                                               |                                               |                                               |                                               |
|                                                                                                                                                                                                                                                                                                                                                                        | D Individual EXH (SUP) spacer assembly                                |                                               |                                               |                                               |                                               |                                               |                                               |

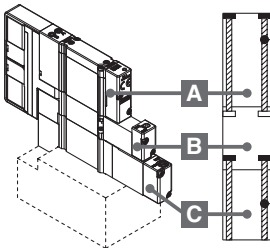
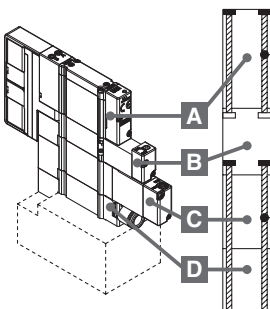
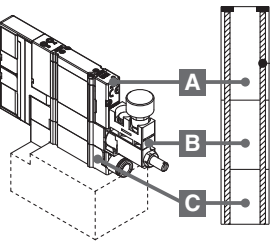
\*: Mounting onto a manifold follows the order explained above.

\*: The fitting for individual SUP/EXH spacers comes in a straight type only, since an elbow type would interfere with each spacer assembly when laminated.

## ⚠ Caution

|                                      |
|--------------------------------------|
| Tightening torque for mounting screw |
| M2: 0.16 N·m (SY3000)                |
| M3: 0.8 N·m (SY5000/7000)            |

## Spacer Combinations and Screw List ②

| Combination                                                                         |   | ① SY3000 (M2)                                                       |                                               | ② SY5000 (M3)                                 |                                               | ③ SY7000 (M3)                                 |                                               |                                               |
|-------------------------------------------------------------------------------------|---|---------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
|                                                                                     |   | Round head combination screw                                        | Hexagon socket head cap screw                 | Round head combination screw                  | Hexagon socket head cap screw                 | Round head combination screw                  | Hexagon socket head cap screw                 |                                               |
|    | A | Valve                                                               | SY3000-23-24A<br>[for 10 valves<br>(20 pcs.)] | SY3000-222-1A<br>[for 10 valves<br>(20 pcs.)] | SY5000-221-1A<br>[for 10 valves<br>(20 pcs.)] | SY5000-222-1A<br>[for 10 valves<br>(20 pcs.)] | SY7000-221-1A<br>[for 10 valves<br>(30 pcs.)] | SY7000-222-1A<br>[for 10 valves<br>(30 pcs.)] |
|                                                                                     | B | SUP stop valve spacer assembly with residual pressure release valve | SY30M-56-3A<br>(2 pcs.)                       |                                               | SY50M-56-3A<br>(2 pcs.)                       |                                               | SY70M-56-3A<br>(3 pcs.)                       |                                               |
|                                                                                     | C | Double check spacer assembly with residual pressure release valve   |                                               |                                               |                                               |                                               |                                               |                                               |
|   | A | Valve                                                               | SY3000-23-24A<br>[for 10 valves<br>(20 pcs.)] | SY3000-222-1A<br>[for 10 valves<br>(20 pcs.)] | SY5000-221-1A<br>[for 10 valves<br>(20 pcs.)] | SY5000-222-1A<br>[for 10 valves<br>(20 pcs.)] | SY7000-221-1A<br>[for 10 valves<br>(30 pcs.)] | SY7000-222-1A<br>[for 10 valves<br>(30 pcs.)] |
|                                                                                     | B | SUP stop valve spacer assembly with residual pressure release valve | SY30M-56-5A<br>(2 pcs.)                       |                                               | SY50M-56-5A<br>(2 pcs.)                       |                                               | SY70M-56-5A<br>(3 pcs.)                       |                                               |
|                                                                                     | C | Double check spacer assembly with residual pressure release valve   |                                               |                                               |                                               |                                               |                                               |                                               |
|                                                                                     | D | Individual EXH (SUP) spacer assembly                                |                                               |                                               |                                               |                                               |                                               |                                               |
|  | A | Valve                                                               | SY3000-23-32A<br>(2 pcs.)                     | —                                             | SY5000-221-7A<br>(2 pcs.)                     | —                                             | SY7000-221-7A<br>(3 pcs.)                     | —                                             |
|                                                                                     | B | Interface regulator                                                 |                                               |                                               |                                               |                                               |                                               |                                               |
|                                                                                     | C | Individual SUP (EXH) spacer assembly                                |                                               |                                               |                                               |                                               |                                               |                                               |

\*: Mounting onto a manifold follows the order explained above.

\*: The fitting for individual SUP/EXH spacers comes in a straight type only, since an elbow type would interfere with each spacer assembly when laminated.

\*: When laminating an interface regulator with other options, only the combinations in the table above are possible.

## ⚠ Caution

|                                      |
|--------------------------------------|
| Tightening torque for mounting screw |
| M2: 0.16 N·m (SY3000)                |
| M3: 0.8 N·m (SY5000/7000)            |

## Manifold Options

\*: Refer to pages 261, 263, 265 for dimensions.

### ■ Individual SUP block assembly

On the circuit of the plug-in connector connection base, an individual SUP block assembly can be used to supply air to a series of valves if a separate air supply is required, or if additional air is required for additional air flow.

Individual SUP block assembly occupies 1 station.

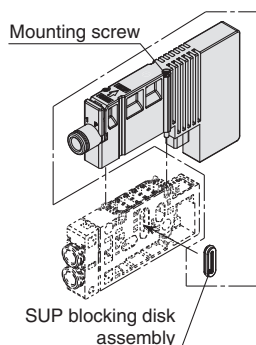
Blocking disks also supplied (2 pieces). Can be used to block both sides of the number of stations being isolated for individual air supply (as shown in example).

\*: Specify the mounting position of the block as well as the position where the SUP passage is to be blocked on the manifold specification sheet. Blocking is required for 1 or 2 positions for 1 set. (2 SUP blocking disks to block SUP is attached to individual SUP block.)

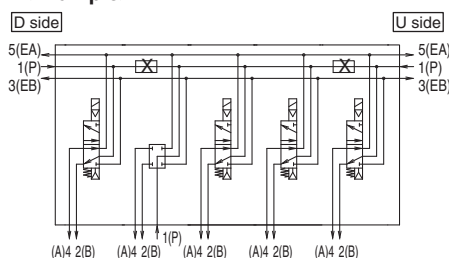
\*: Electrical wiring is connected to a number of stations in the individual SUP block manifold.

\*: When used in M10/11/12 (mixed mounting type), select the SY50M type for SS5Y5 and the SY70M type for SS5Y7.

\*: A structure to prevent screws falling out is in place on the individual SUP block, making it much harder for the mounting screws to fall out.



<Example>



### How to Order Individual SUP/EXH Block Assembly

One-touch fitting Straight type SY 3 0M - 78 - 1 A - C6

One-touch fitting Elbow type SY 3 0M - 78 - 2 A - L6

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

#### Block type

|    |                      |
|----|----------------------|
| 78 | Individual SUP block |
| 79 | Individual EXH block |

#### Individual SUP/EXH block assembly

|   |                            |
|---|----------------------------|
| 2 | Short elbow type (Type 12) |
| 3 | Long elbow type (Type 11)  |

\*: Long elbow type is for the SY5000/7000 only.

#### Port size (Metric/One-touch fittings)

| Symbol | P, E port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| L4     | Ø 4       | ●      | ●      | —      |
| L6     | Ø 6       | ●      | ●      | ●      |
| L8     | Ø 8       | —      | ●      | ●      |
| L10    | Ø 10      | —      | —      | ●      |
| L12    | Ø 12      | —      | —      | ●      |

#### Port size (Inch/One-touch fittings)

| Symbol | P, E port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| LN3    | Ø 5/32"   | ●      | —      | —      |
| LN7    | Ø 1/4"    | ●      | ●      | —      |
| LN9    | Ø 5/16"   | —      | ●      | —      |
| LN11   | Ø 3/8"    | —      | —      | ●      |

#### Port size (Metric/One-touch fittings)

| Symbol | P, E port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| C2     | Ø 2       | ●      | —      | —      |
| C3     | Ø 3       | ●      | —      | —      |
| C4     | Ø 4       | ●      | ●      | —      |
| C6     | Ø 6       | ●      | ●      | ●      |
| C8     | Ø 8       | —      | ●      | ●      |
| C10    | Ø 10      | —      | —      | ●      |
| C12    | Ø 12      | —      | —      | ●      |

#### Port size (Inch/One-touch fittings)

| Symbol | P, E port | SY3000 | SY5000 | SY7000 |
|--------|-----------|--------|--------|--------|
| N1     | Ø 1/8"    | ●      | —      | —      |
| N3     | Ø 5/32"   | ●      | ●      | —      |
| N7     | Ø 1/4"    | ●      | ●      | ●      |
| N9     | Ø 5/16"   | —      | ●      | ●      |
| N11    | Ø 3/8"    | —      | —      | ●      |

### ■ Individual EXH block assembly

On the circuit of the plug-in connector connection base, individual EXH block assembly can be used to individually exhaust series of valves when the exhaust from the valves would affect a number of other stations.

Individual EXH block assembly occupies 1 station.

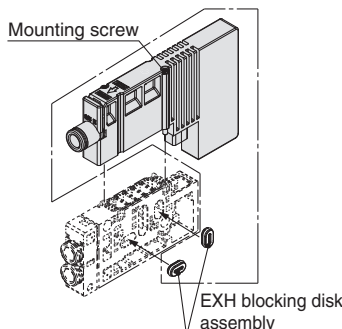
Blocking disks also supplied (4 pieces). Can be used to block both sides of the number of stations being isolated for individual exhaust. (as shown in example).

\*: Specify the mounting position of the block as well as the position where the EXH passage is to be blocked on the manifold specification sheet. Blocking is required for 1 or 2 positions for 1 set. (2 sets of EXH blocking disks (4 pcs.) to block EXH is attached to individual EXH block.)

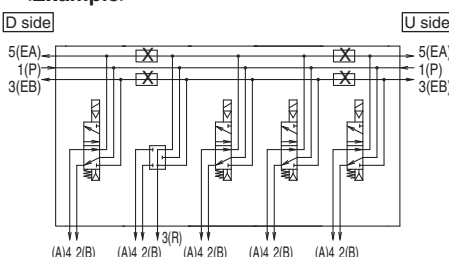
\*: Electrical wiring is connected to a number of stations in the individual EXH block manifold.

\*: When used in M10/11/12 (mixed mounting type), select the SY50M type for SS5Y5 and the SY70M type for SS5Y7.

\*: A structure to prevent screws falling out is in place on the individual EXH block, making it much harder for the mounting screws to fall out.



<Example>



## Manifold Options

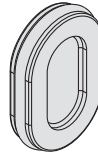
### ■ SUP/EXH blocking disk assembly (for connector type manifold, Type 10, 11, 12)

#### [SUP blocking disk]

By inserting the SUP blocking disk in the pressure supply passage of the manifold valve, can provide two different high and low pressure in one manifold.

#### [EXH blocking disk]

By inserting the EXH blocking disk in the exhaust passage of the manifold valve, can separate the exhaust from the valve so it does not affect the other valves. It can also be used for the manifold for the positive pressure and vacuum mixed manifold. (2 pcs. are required to block FA/EB both sides of the EXH.)

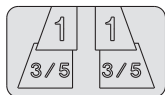


| Series        | SUP blocking disk assembly | EXH blocking disk assembly |
|---------------|----------------------------|----------------------------|
| <b>SY3000</b> | SY30M-40-1A                | SY30M-40-2A                |
| <b>SY5000</b> | SY50M-40-1A                | SY50M-40-1A                |
| <b>SY7000</b> | SY70M-40-1A                | SY70M-40-1A                |

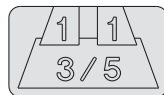
### ■ Label for blocking disk

Label to indicate and confirm on the manifold where the SUP/EXH blocking disk assemblies were inserted. (3 sheets each)

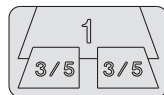
SUP/EXH blocking disk label



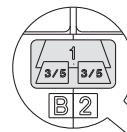
SUP blocking disk label



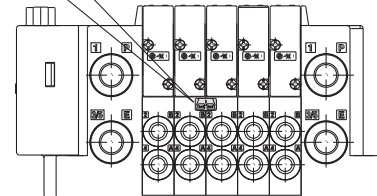
EXH blocking disk label



| Series        | Part no.      |
|---------------|---------------|
| <b>SY3000</b> | SJ3000-155-1A |
| <b>SY5000</b> |               |
| <b>SY7000</b> |               |



\*: If the blocking disk assembly is ordered using the manifold specification sheet and ordered at the same time as the manifold, the position where the blocking disk assembly is inserted will be labeled and shipped out.



### ■ Back pressure check valve assembly (Retrofit or pre-installed type)

It prevents cylinder malfunction caused by other valve exhaust entry. Insert it into EA/EB port (valve mounting side) on the manifold side of a valve which is affected. It is effective when a single-acting cylinder is used.

\*: When ordering assemblies incorporated with a manifold, refer to the Ordering Example below (when installed in all stations.)

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

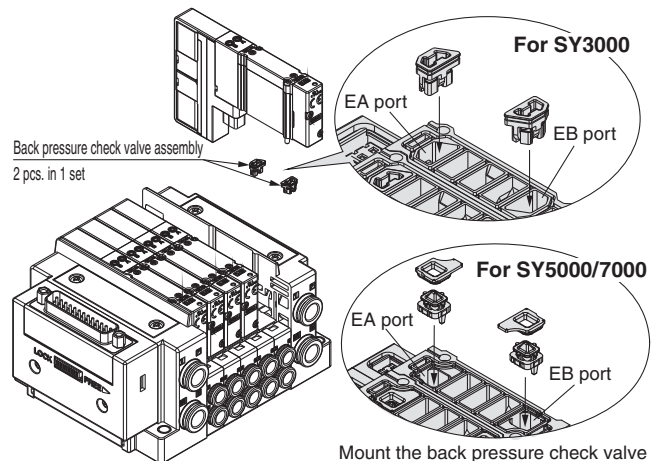
#### <Precautions>

1. The manifold installed type back pressure check valve assembly is assembly parts with a check valve structure. However, since slight air leakage against the back pressure is allowed due to its structure, adverse effects of the back pressure due to increase in exhaust resistance cannot be prevented if the manifold exhaust port and other exhaust ports are put together for piping or if the piping diameter is narrowed. As a result, this may cause the actuator and air operated equipment to malfunction. So, be careful not to restrict the exhaust air. If the exhaust resistance becomes large, select a built-in valve type with rubber seal.
2. When the back pressure check valve assembly is mounted, please contact SMC for valve flow rate characteristics.

#### Ordering Example

**SS5Y3-10F1-05B-C6.....1 set (Type 10 5-station manifold base part no.)**  
**\*SY3201-5U1.....5 sets (2-position double part no.)**  
**\*SY30M-24-1A.....5 sets (Back pressure check valve assembly part no.)**

The asterisk denotes the symbol for assembly.



Mount the back pressure check valve assemblies on the EA and EB ports in the order shown in the figure above.

| Series        | Part no.    |
|---------------|-------------|
| <b>SY3000</b> | SY30M-24-1A |
| <b>SY5000</b> | SY50M-24-1A |
| <b>SY7000</b> | SY70M-24-1A |

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options



# Series SY3000/5000/7000

## Manifold Options

### ■ Dual flow fitting (for connector connecting base, Type 10, side ported)

This is a fitting for cylinder ports which enables simultaneous actuation and increase in flow rate of valves for 2 stations.

※: When ordering assemblies incorporated into a manifold, refer to the Ordering Example below and specify on the manifold specification sheet.

### How to Order Dual Flow Fitting

SY **3** 0M-120-1A-**C8**

Series

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

A, B port size (One-touch fittings)

| Symbol | A, B port   | SY3000 | SY5000 |
|--------|-------------|--------|--------|
| C8     | Metric size | ●      | —      |
| C10    | Metric size | —      | ●      |
| N9     | Inch size   | ●      | —      |
| N11    | Inch size   | —      | ●      |

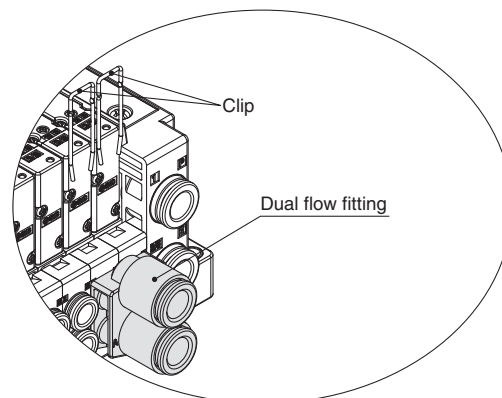
### Ordering Example

SS5Y3-10F1-08B-CM

\*SY3100-5U1

\*SY30M-120-1A-C8

The asterisk denotes the symbol for assembly.

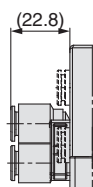


※: Specifically for side porting for a connector connecting base. Cannot be attached to bottom or top ported, or mixed mounting types that are metal or connector connecting bases.

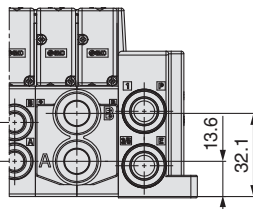
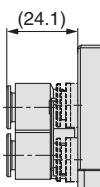
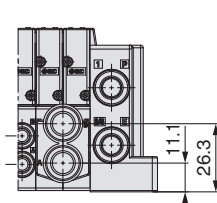
※: When adding or changing clips, push them into the very end of the manifold for each station. Also, make sure to use the clip that was packed together, as the clip and the fitting for one station differ among products that can be used with the SY5000.

※: Not available for the SY7000 series.

SY3000



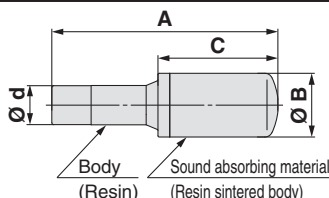
SY5000



### ■ Silencer (One-touch fitting connection type)

This silencer can be mounted to the 3/5 (E: EXH) port of the manifold in one step.

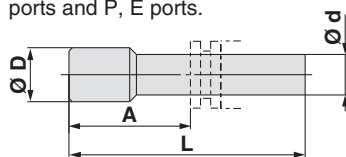
※: Shipped together with the product.



| Series            | Model           | Effective area     | A    | B    | C    |
|-------------------|-----------------|--------------------|------|------|------|
| For SY3000 (Ø 8)  | <b>AN15-C08</b> | 20 mm <sup>2</sup> | 45   | 13   | 20   |
| For SY5000 (Ø 10) | <b>AN20-C10</b> | 30 mm <sup>2</sup> | 57.5 | 16.5 | 30.5 |
| For SY7000 (Ø 12) | <b>AN30-C12</b> | 41 mm <sup>2</sup> | 71.5 | 20   | 43.5 |

### ■ Plug (White)

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



※: Shipped together with the product.

### Dimensions

| Applicable fitting size<br>Ø d (Metric size) | Model          | A    | L    | Ø D |
|----------------------------------------------|----------------|------|------|-----|
| 2                                            | <b>KJP-02</b>  | 8.2  | 17   | 3   |
| 3.2                                          | <b>KQ2P-23</b> | 16   | 31.5 | 5   |
| 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  |

| Applicable fitting size<br>Ø d (Inch size) | Model          | A    | L    | Ø D  |
|--------------------------------------------|----------------|------|------|------|
| 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 |
| 1/2"                                       | <b>KQ2P-13</b> | 24   | 46   | 15   |



## Manifold Options

A transparent plastic plate to put a label with the name of the function of the solenoid valve.

### ■ Name plate (For connector connecting base)

[ SY3000: For SS5Y3-10 (Side ported)  
SY5000: For SS5Y5-10/11 (Side/Bottom ported)  
SY7000: For SS5Y7-(M)10/11 (Side/Bottom ported) ]

**Name plate bracket assembly and name plate mounting instructions**  
Insert it into the groove on the name plate bracket onto which a SUP/EXH (end) block is mounted, as shown in Figure 2.

\*: When ordering assemblies incorporated with a manifold, refer to the Ordering Example below.

SS5Y3-10 ☐ ☐ ☐ - ☐ ☐ ☐ - ☐ ☐  
SS5Y5-10 ☐ ☐ ☐ - ☐ ☐ ☐ - ☐ ☐  
SS5Y7-(M)10 ☐ ☐ ☐ - ☐ ☐ ☐ - ☐ ☐

### Mounting and Option

| Symbol | Mounting option |    |          |         |                  |                 |
|--------|-----------------|----|----------|---------|------------------|-----------------|
|        | Printing        |    | DIN rail |         |                  | Direct mounting |
|        | Yes             | No | With     | Without | Specified length |                 |
| AA     | ●               | —  | —        | —       | —                | ●               |
| A      | ●               | —  | ●        | —       | —                | —               |
| A0     | ●               | —  | —        | ●       | —                | —               |
| A3     | ●               | —  | —        | —       | For 3 stations   | —               |
| ⋮      | ⋮               | ⋮  | ⋮        | ⋮       | ⋮                | —               |
| A24    | ●               | —  | —        | —       | For 24 stations  | —               |
| BA     | —               | ●  | —        | —       | —                | ●               |
| B      | —               | ●  | ●        | —       | —                | —               |
| B0     | —               | ●  | —        | ●       | —                | —               |
| B3     | —               | ●  | —        | —       | For 3 stations   | —               |
| ⋮      | ⋮               | ⋮  | ⋮        | ⋮       | ⋮                | —               |
| B24    | —               | ●  | —        | —       | For 24 stations  | —               |

\*: Name plates cannot be mounted onto Type 12 (Top ported) and Type 10 (Side ported) mixed mounting types with top ported valves, nor onto manifolds with optional laminated spacers.

\*: No name plate settings are available for the SY3000/SY5000 mixed mounting types. However, they are available for the SY5000/SY7000 mixed mounting types.

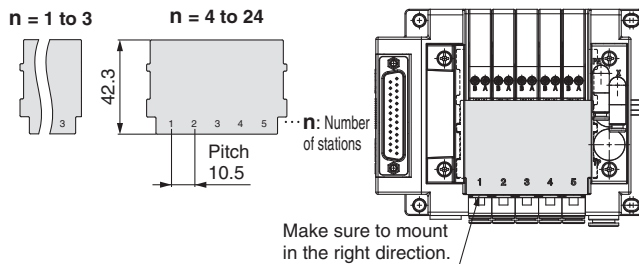
### Ordering Example

SS5Y3-10F1-05UR-C6AA ..... 1 set

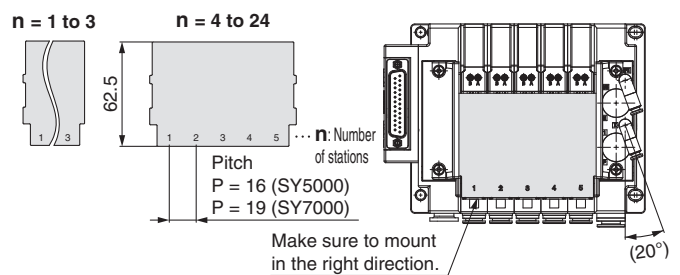
\* SY3200R-5U1 ..... 5 sets

The asterisk denotes the symbol for assembly.

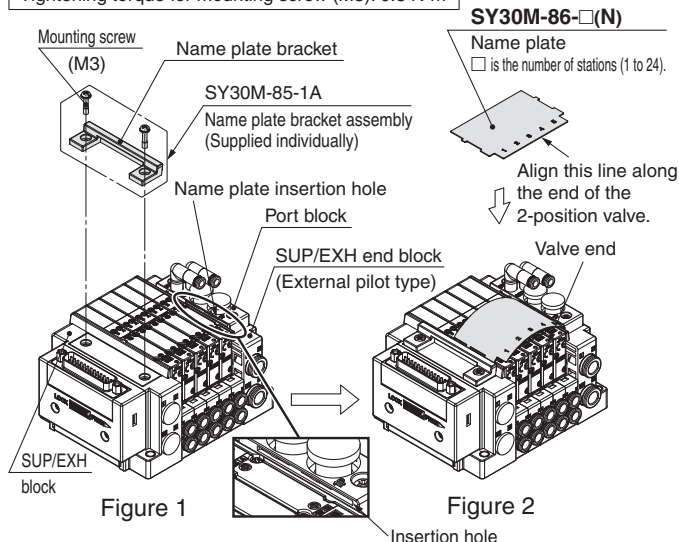
### <SY3000>



### <SY5000/7000>



Tightening torque for mounting screw (M3): 0.8 N·m



Tightening torque for mounting screw (M3): 0.8 N·m

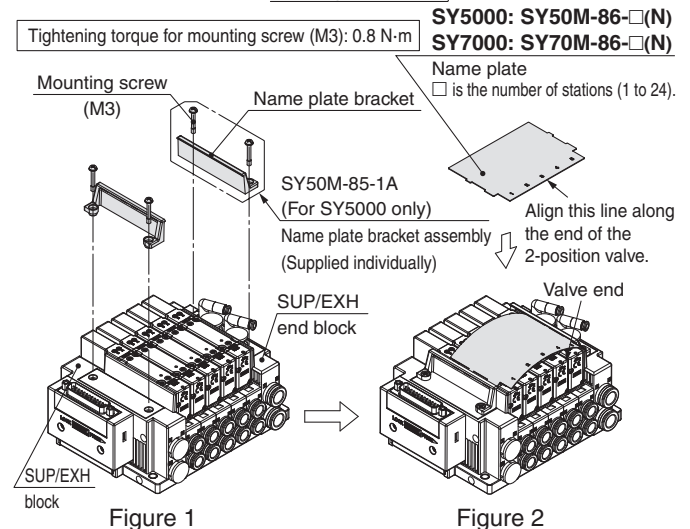


Figure 1

Figure 2

# Series SY3000/5000/7000

## Manifold Options

A transparent plastic plate to put a label with the name of the function of the solenoid valve.

### ■ If adding a name plate

If adding a name plate to a manifold in use, order a name plate bracket assembly, in addition to ordering a name plate.  
Refer to the table below for the part number and the amount.

### Name plate part number

| Model      |             | SS5Y3-10    | SS5Y5-10/11 | SS5Y7-(M)10/11 | Note                  |
|------------|-------------|-------------|-------------|----------------|-----------------------|
| Name plate | Printed     | SY30M-86-□N | SY50M-86-□N | SY70M-86-□N    | □: Number of stations |
|            | No printing | SY30M-86-□  | SY50M-86-□  | SY70M-86-□     | (1 to 24)             |

### Name plate bracket assembly part number and number of items ordered

| Model                                                             |                                    | SS5Y3-10       | SS5Y5-10/11 |
|-------------------------------------------------------------------|------------------------------------|----------------|-------------|
| Name plate assembly part number                                   |                                    | SY30M-85-1A    | SY50M-85-1A |
| Manifold SUP/EXH block assembly<br>Pilot type and P, E port entry | Internal pilot U/D piping          | 2 pcs.         | 2 pcs.      |
|                                                                   | Internal pilot double sided piping | 2 pcs.         |             |
|                                                                   | External pilot U/D piping          | 1 pc.*1        |             |
|                                                                   | External pilot double sided piping | Not required*1 |             |

\*1: If the manifold is an external pilot, an insertion slot for name plates is on the port block of the SUP/EXH block assembly. Thus, a bracket assembly is no longer required on the port piping side.

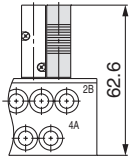
\*: Name plate bracket assembly is not required for the SY7000.

### Caution

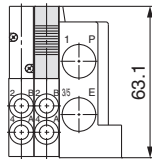
1. Be sure to shut off the power and air supplies before mounting the name plate bracket assembly. Furthermore, since air may remain inside the actuator, piping and manifold, confirm that the air is completely exhausted before performing any work.
2. When disassembly and assembly are performed, air leakage may result if the tightening of the bracket mounting screws is inadequate.

## Dimensions: Manifold Options/Series SY3000

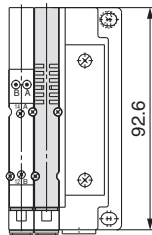
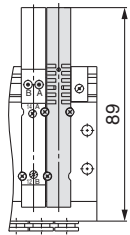
### ■ Blanking plate assembly



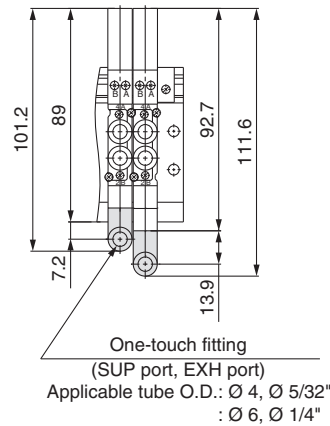
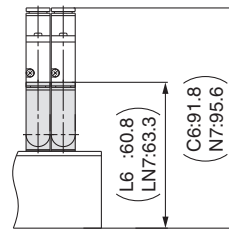
<Type 50, 51, 52>



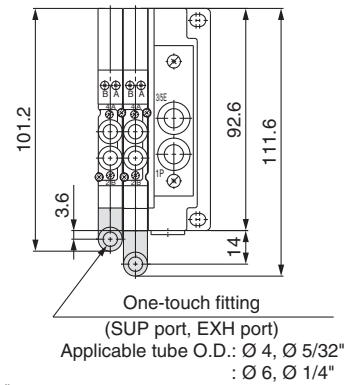
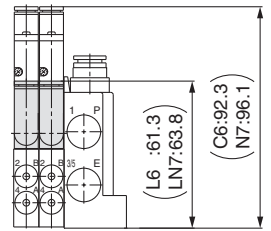
<Type 10, 12>



### ■ Individual SUP/EXH spacer assembly (Top/Bottom ported)

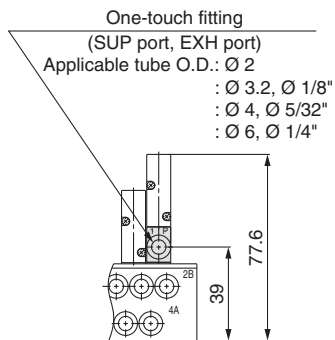


<Type 51, 52>

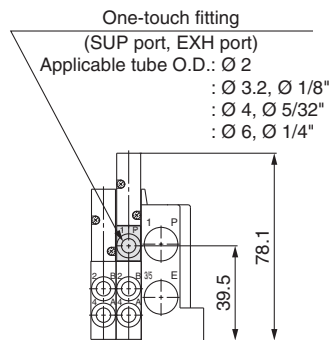


<Type 12>

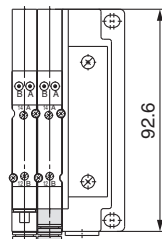
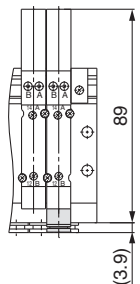
### ■ Individual SUP/EXH spacer assembly (Side ported)



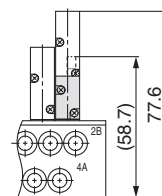
<Type 50>



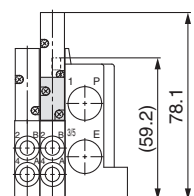
<Type 10>



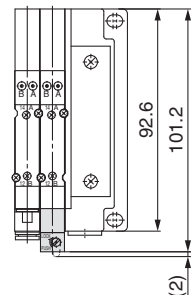
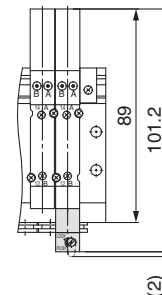
### ■ SUP stop valve spacer assembly with residual pressure release valve



<Type 50, 51, 52>



<Type 10, 12>



\*: The dimensions within ( ) applies to the SY30-50-1AE.

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

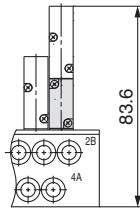
One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

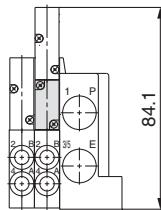
# Series SY3000/5000/7000

## Dimensions: Manifold Options/Series SY3000

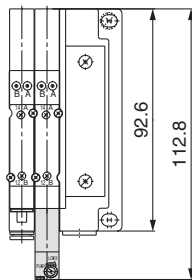
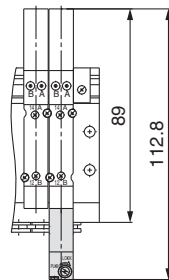
### Double check spacer assembly with residual pressure release valve



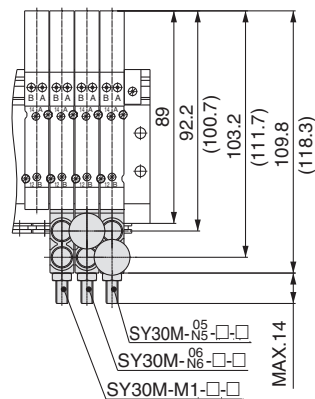
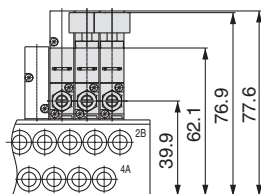
<Type 50, 51>



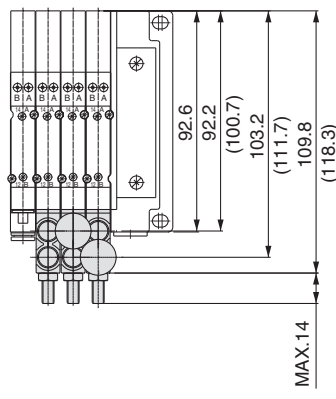
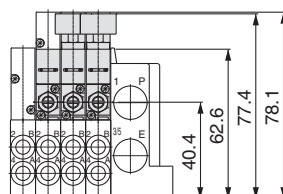
<Type 10>



### Interface regulator



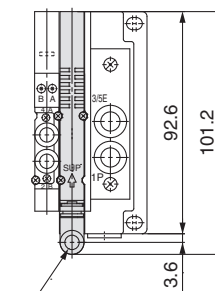
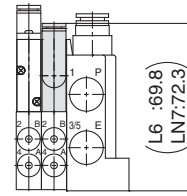
<Type 50, 51, 52>



<Type 10, 12>

\*The dimensions within ( ) applies to the SY30M-□-□-3.

### Individual SUP/EXH block assembly (Top ported)

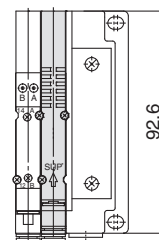
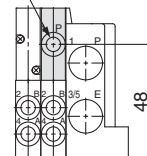


One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.: Ø 4, Ø 5/32"  
: Ø 6, Ø 1/4"

<Type 12>

### Individual SUP/EXH block assembly (Side ported)

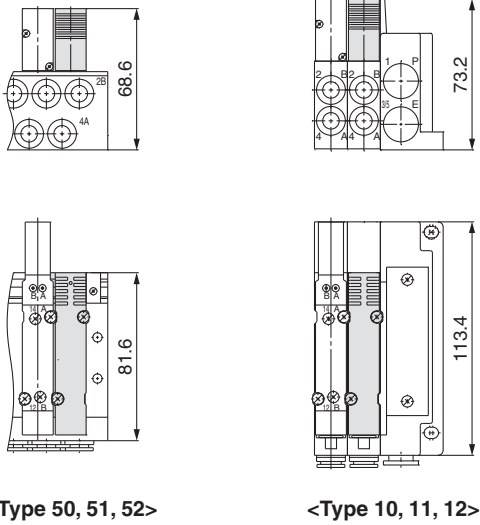
One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.: Ø 2  
: Ø 3.2, Ø 1/8"  
: Ø 4, Ø 5/32"  
: Ø 6, Ø 1/4"



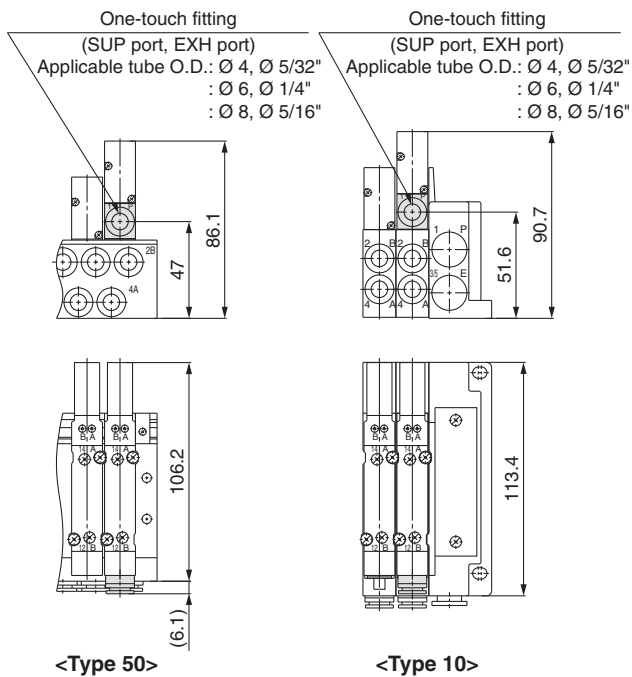
<Type 10>

## Dimensions: Manifold Options/Series SY5000

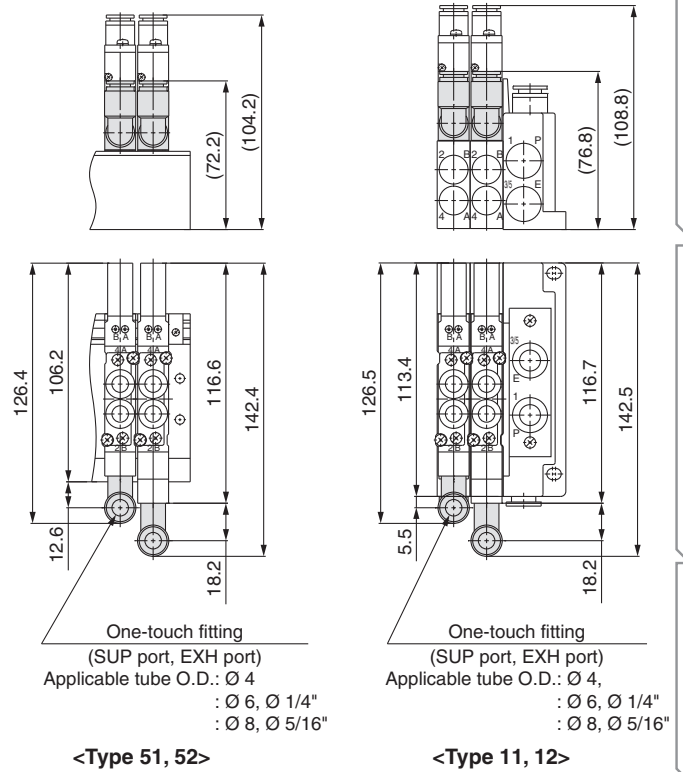
### ■ Blanking plate assembly



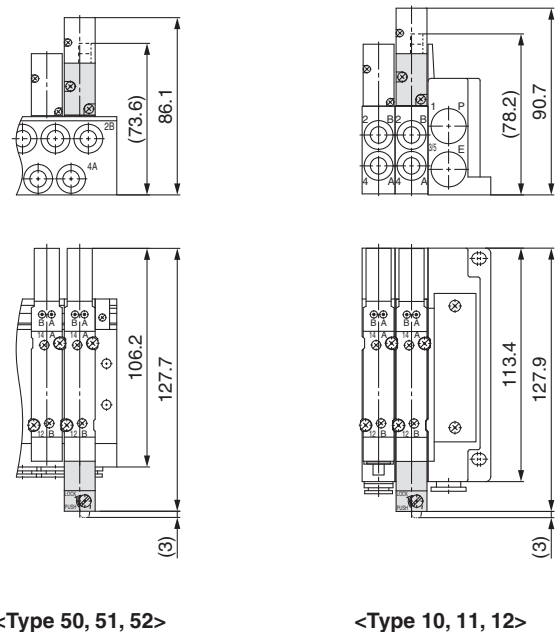
### ■ Individual SUP/EXH spacer assembly (Side ported)



### ■ Individual SUP/EXH spacer assembly (Top/Bottom ported)



### ■ SUP stop valve spacer assembly with residual pressure release valve

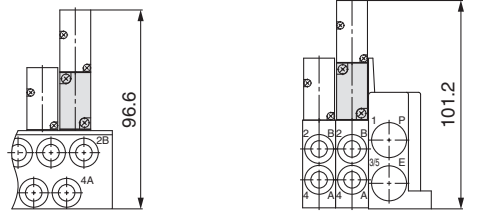


※: The dimensions within ( ) applies to the SY50-50-1AE.

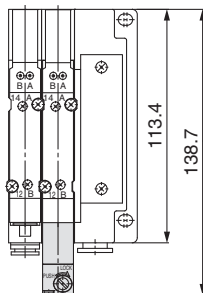
# Series SY3000/5000/7000

## Dimensions: Manifold Options/Series SY5000

### Double check spacer assembly with residual pressure release valve

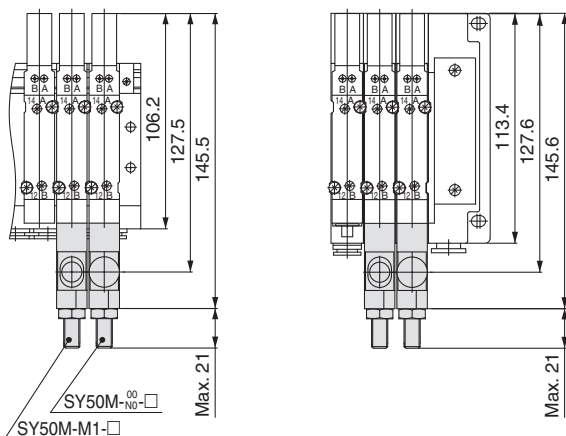
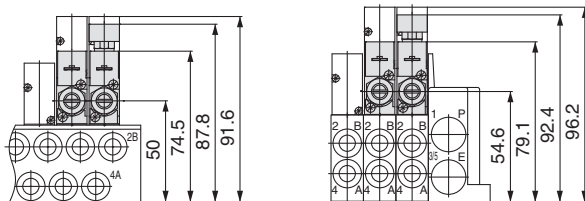


<Type 50, 51>



<Type 10, 11>

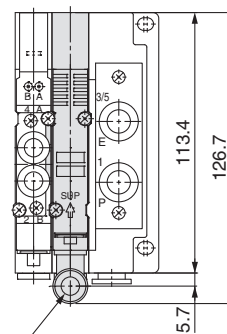
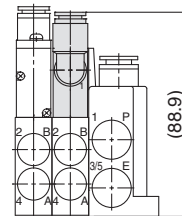
### Interface regulator



<Type 50, 51, 52>

<Type 10, 11, 12>

### Individual SUP/EXH block assembly (Top ported)

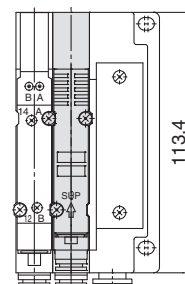
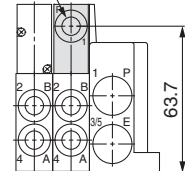


One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\varnothing 4$   
:  $\varnothing 6$ ,  $\varnothing 1/4$ "  
:  $\varnothing 8$ ,  $\varnothing 5/16$ "

<Type 12>

### Individual SUP/EXH block assembly (Side ported)

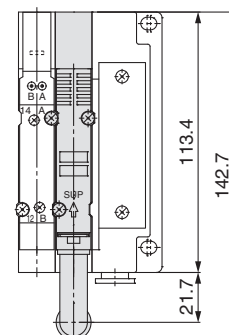
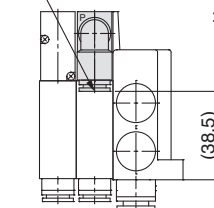
One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\varnothing 4$ ,  $\varnothing 5/32$ "  
:  $\varnothing 6$ ,  $\varnothing 1/4$ "  
:  $\varnothing 8$ ,  $\varnothing 5/16$ "



<Type 10>

### Individual SUP/EXH block assembly (Bottom ported)

One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\varnothing 4$ ,  
:  $\varnothing 6$ ,  $\varnothing 1/4$ "  
:  $\varnothing 8$ ,  $\varnothing 5/16$ "

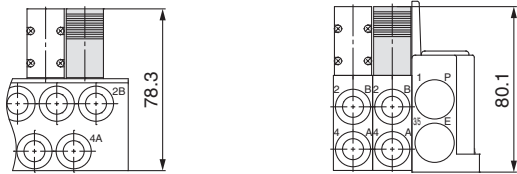


<Type 11>



## Dimensions: Manifold Options/Series SY7000

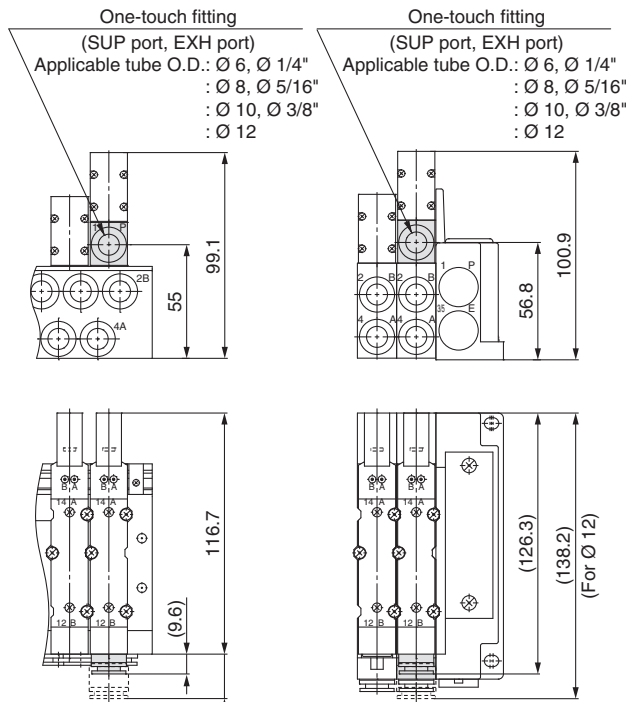
### ■ Blanking plate assembly



<Type 50, 51, 52>

<Type 10, 11, 12>

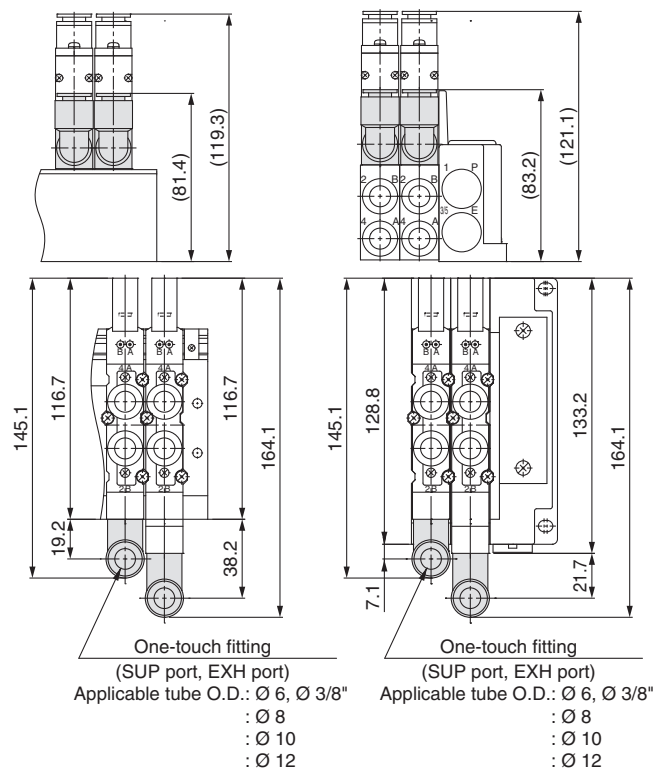
### ■ Individual SUP/EXH spacer assembly (Side ported)



<Type 50>

<Type 10>

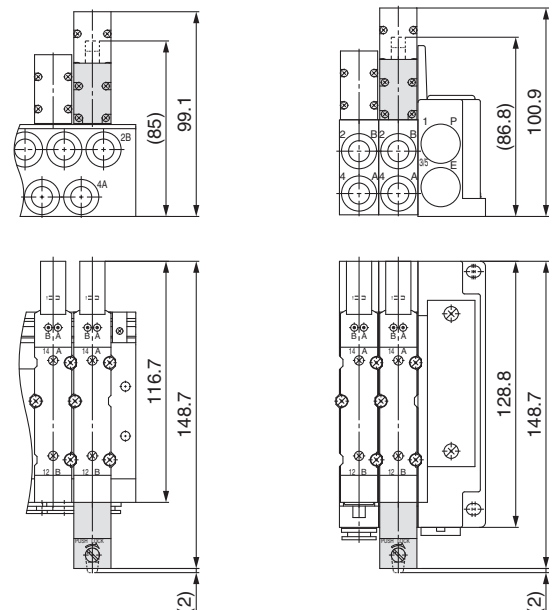
### ■ Individual SUP/EXH spacer assembly (Top/Bottom ported)



<Type 51, 52>

<Type 11, 12>

### ■ SUP stop valve spacer assembly with residual pressure release valve



<Type 50, 51, 52>

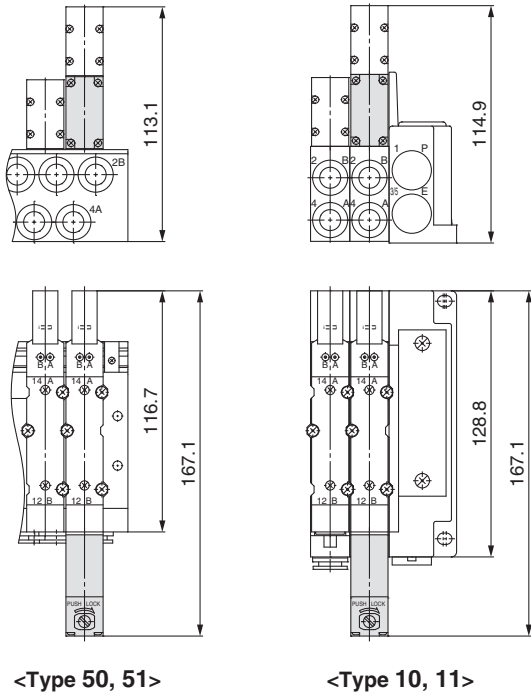
<Type 10, 11, 12>

※: The dimensions within ( ) applies to the SY70-50-1AE.

# Series SY3000/5000/7000

## Dimensions: Manifold Options/Series SY7000

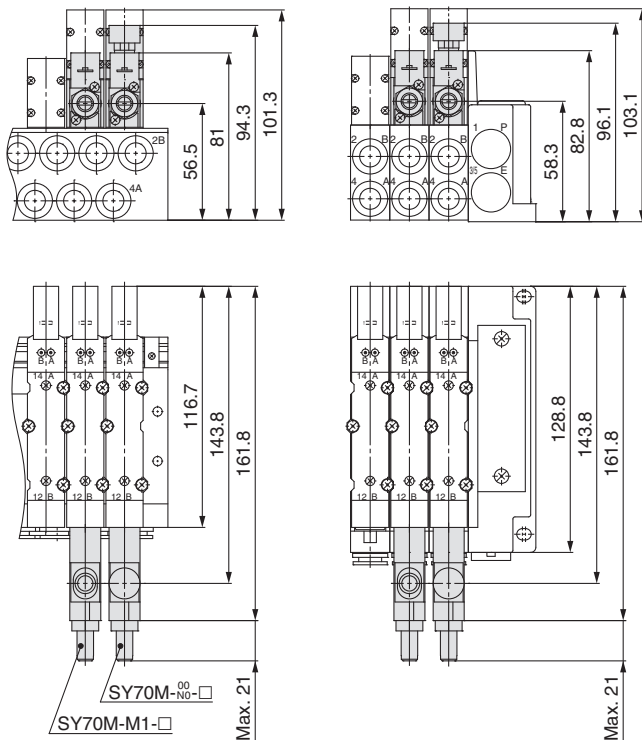
### Double check spacer assembly with residual pressure release valve



<Type 50, 51>

<Type 10, 11>

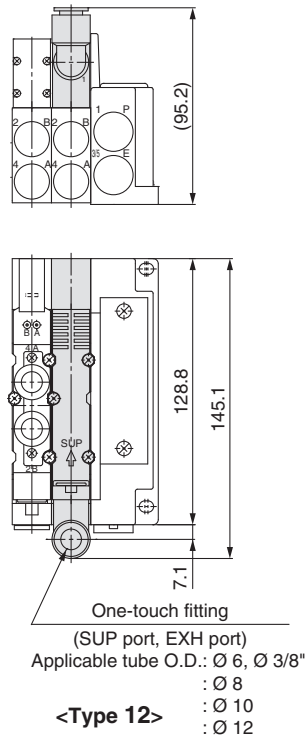
### Interface regulator



<Type 50, 51, 52>

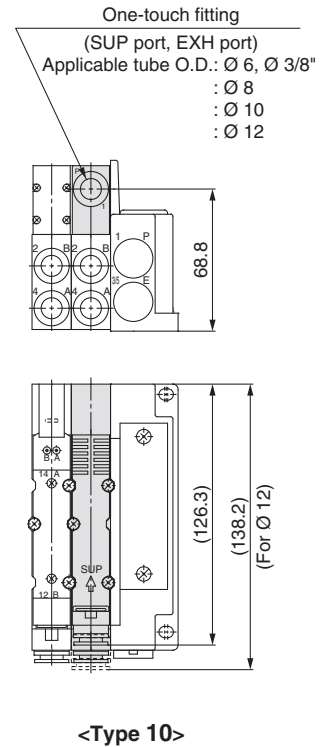
<Type 10, 11, 12>

### Individual SUP/EXH block assembly (Top ported)



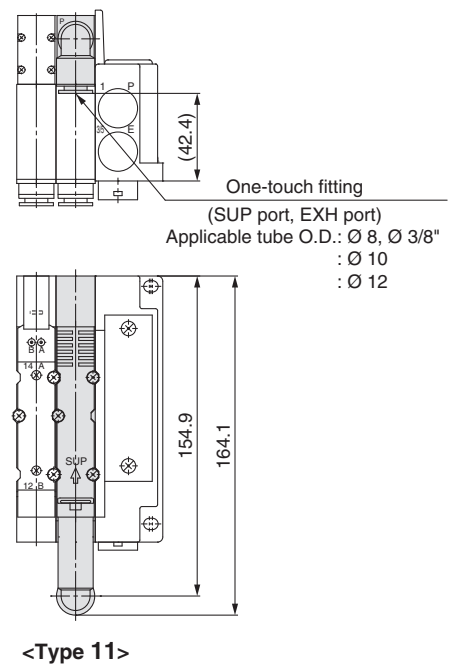
<Type 12>

### Individual SUP/EXH block assembly (Side ported)



<Type 10>

### Individual SUP/EXH block assembly (Bottom ported)



<Type 11>



# Series SY3000/5000/7000

## Specific Product Precautions 1

Be sure to read this before handling. Refer to the back cover for Safety Instructions. For 3/4/5 Port Solenoid Valve Precautions, refer to “Handling Precautions for SMC Products” and the Operation Manual on the SMC website, <http://www.smc.eu>

### Environment

#### Warning

1. Do not use valves in atmospheres of corrosive gases, chemicals, sea water, water, water vapor, or where there is direct contact with any of these.
2. Products compliant with IP67 enclosures (based on IEC60529) are protected against dust and water, however, these products cannot be used in water. If using in an environment that is exposed to water and dust splashes, take measures such as using a protective cover.
3. When using built-in silencer type manifold with an IP67 enclosure, keep the exhaust port of the silencer from coming in direct contact with water or other liquids.
4. The metal seal valve is provided with a hole to discharge the pilot EXH. When using in atmospheres containing water and dust, mount it horizontally.

### Valve Mounting

#### Caution

Mount it so that there is no slippage or deformation in gaskets, and tighten with the tightening torque as shown below.

| Series      | Thread size | Tightening torque |
|-------------|-------------|-------------------|
| SY3000      | M2          | 0.16 N·m          |
| SY5000/7000 | M3          | 0.8 N·m           |

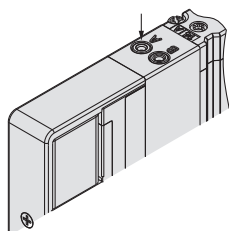
### Manual Override

#### Warning

Regardless of an electric signal for the valve, the manual override is used for switching the main valve. Connected actuator is started by manual operation. Use the manual override after confirming that there is no danger.

##### Non-locking push type

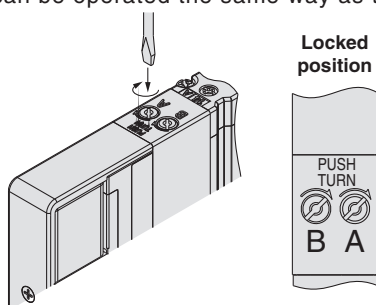
Push down on the manual override button until it stops.



##### Push-turn locking slotted type [Type D]

Push down on the manual override with a small flat head screwdriver until it stops, and then turn it 90° clockwise. The manual override is then locked. To release it, turn it counterclockwise.

If it is not turned, it can be operated the same way as the non-locking type.

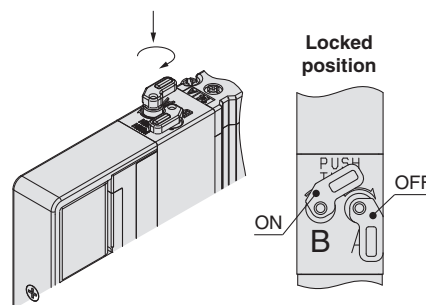


### Manual Override

#### Warning

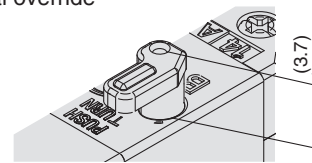
##### Push-turn locking lever type [Type E]

Push down on the manual override by finger until it stops, and then turn it 60° clockwise. The manual override is then locked. To release it, turn it counterclockwise. If it is not turned, it can be operated the same way as the non-locking type.



Carefully check the manual override projection amount.

Max. (at OFF): 3.7 mm



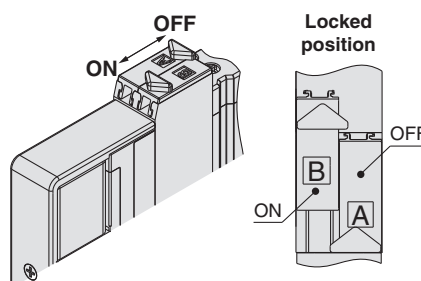
#### Caution

Do not apply excessive torque when turning the manual override. [0.1 N·m]

When locking the manual override, be sure to push it down before turning. Turning without first pushing it down can cause damage to the manual override and other trouble such as air leakage etc.

##### Slide locking type (Manual)

It is locked by sliding the manual override all the way in the direction indicated by the arrow (ON side) with a small flat head screwdriver or with your fingers. Slide it in the direction indicated by the arrow (OFF side) to release it.





## Series SY3000/5000/7000

# Specific Product Precautions 2

Be sure to read this before handling. Refer to the back cover for Safety Instructions. For 3/4/5 Port Solenoid Valve Precautions, refer to “Handling Precautions for SMC Products” and the Operation Manual on the SMC website, <http://www.smc.eu>

### Back Pressure Check Valve

#### ⚠ Caution

- There are two types of back pressure check valves; the one which is built into a valve (with rubber seal type only) and the one which is built in on the manifold side with connector connection. Both of them have a check valve built-in to prevent back pressure. For this reason, use caution that the valves with external pilot specification cannot be pressurised from exhaust port [3/5(E)]. As compared with the types which do not integrate the back pressure check valve, C value of the flow rate characteristics goes down. Please contact SMC for details.
- The manifold installed type back pressure check valve assembly is assembly parts with a check valve structure. However, since slight air leakage against the back pressure is allowed due to its structure, adverse effects of the back pressure due to increase in exhaust resistance cannot be prevented if the manifold exhaust port and other exhaust ports are put together for piping or if the piping diameter is narrowed. As a result, this may cause the actuator and air operated equipment to malfunction. So, be careful not to restrict the exhaust air. If the exhaust resistance becomes large, select a built-in valve type with rubber seal.
- Do not switch valves when A or B port is open to the atmosphere, or while the actuators and air operated equipment are in operation. For built-in valve type with rubber seal, the back pressure prevention seal may be peeled off, which may cause air leakage or malfunctions. Use caution especially when performing a trial operation or maintenance work.

### Valve and Manifold Combination

The SY series plug-in valve has the common configuration of the valve mounting surface between base mounted type (SY $\frac{3}{8}$ □0□) and top ported type (SY $\frac{3}{8}$ □3□), therefore, it can be mounted to all manifolds of the side ported type (Type 50 and Type 10), the bottom ported type (Type 51 and Type 11) and the top ported type (Type 52 and Type 12). For example, air output can be obtained from both sides of the A and B ports of the manifold and the valve by mounting a top ported valve to a side ported or bottom ported manifold, and a pressure switch can be connected to the output port on one side. However, when selecting valves and manifolds, note that when a base mounted valve is mounted to a top ported manifold, there will be no output from the A and B port.

### Exhaust Throttle

#### ⚠ Caution

The SY series pilot valve and main valve share a common exhaust inside the valve. Therefore, do not block the exhaust port when arranging the piping.

### Used as a 3-Port Valve

#### ⚠ Caution

##### ■ In case of using a 5-port valve as a 3-port valve

The SY3000/5000/7000 series can be used as normally closed (N.C.) or normally open (N.O.) 3-port port valves by closing one of the cylinder ports 4(A) or 2(B) with a plug. However, they should be used with the exhaust ports kept open. They are convenient at times when a double solenoid type 3-port valve is required.

| Plug position       |        | B port | A port |
|---------------------|--------|--------|--------|
| Type of actuation   |        | N.C.   | N.O.   |
| Number of solenoids | Single |        |        |
|                     | Double |        |        |



# Series SY3000/5000/7000

## Specific Product Precautions 3

Be sure to read this before handling. Refer to the back cover for Safety Instructions. For 3/4/5 Port Solenoid Valve Precautions, refer to "Handling Precautions for SMC Products" and the Operation Manual on the SMC website, <http://www.smc.eu>

### Light/Surge Voltage Suppressor

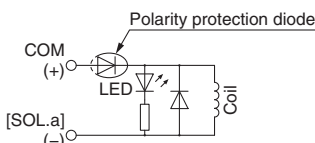
#### Caution

##### ■ Polar type

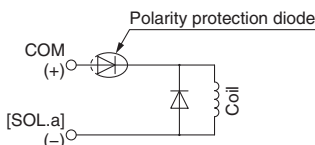
###### Positive common

###### Single solenoid

Light/surge voltage suppressor (□Z)

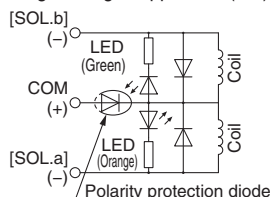


Surge voltage suppressor (□S)

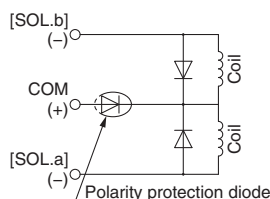


###### Double solenoid, 3-position, 4-position

Light/surge voltage suppressor (□Z)



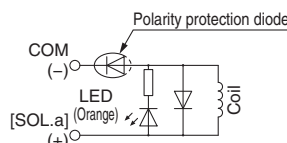
Surge voltage suppressor (□S)



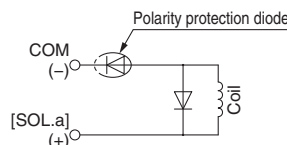
###### Negative common

###### Single solenoid

Light/surge voltage suppressor (□NZ)

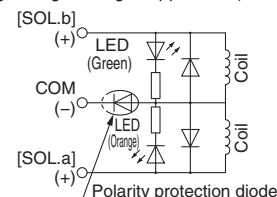


Surge voltage suppressor (□NS)

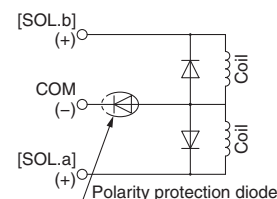


###### Double solenoid, 3-position, 4-position

Light/surge voltage suppressor (□NZ)



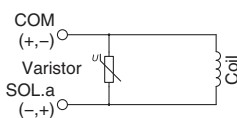
Surge voltage suppressor (□NS)



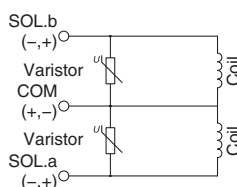
##### ■ Non-polar type

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

###### Single solenoid

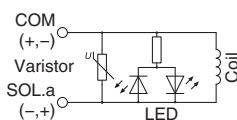


###### Double solenoid

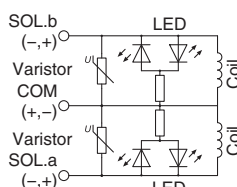


###### With light/surge voltage suppressor (□U)

###### Single solenoid



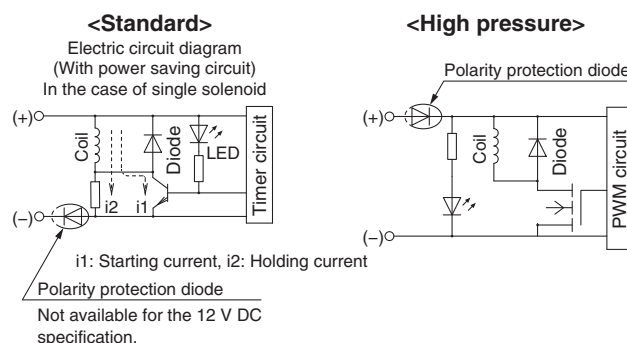
###### Double solenoid



##### ■ With power saving circuit

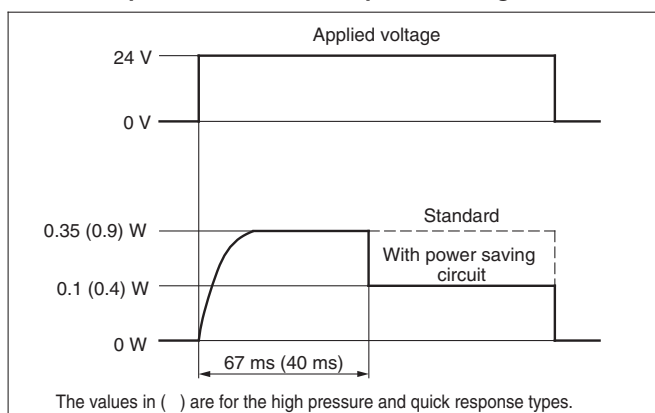
Power consumption is decreased by approx. 1/3 by reducing the wattage required to hold the valve in an energised state. (Effective energising time is over 67 ms at 24 V DC.)

※: Be careful of the energising time, as quick response and high pressure types will become operational when the energising time is over 40 ms.



The above circuit reduces the power consumption for holding in order to save energy. Refer to the electrical power waveform as shown below.

##### <Electrical power waveform with power saving circuit>



- The 12 V DC specification with power saving circuit (standard specification) does not have the polarity protection diode. Do not make a mistake with the polarity.
- Since the voltage will drop by approx. 0.5 V due to the transistor, pay attention to the allowable voltage fluctuation. (For details, refer to the solenoid specifications of each type of valve.)

##### Residual voltage of the surge voltage suppressor

※: If a varistor or diode surge voltage suppressor is used, there is some residual voltage to the protection element and rated voltage. Therefore, refer to the below table and pay attention to the surge voltage protection on the controller side. Also, since the response time does change, refer to the valve specifications on page 14.

##### Residual Voltage

| Surge voltage suppressor | DC           |              |
|--------------------------|--------------|--------------|
|                          | 24 V         | 12 V         |
| S, Z                     | Approx. 1 V  |              |
| R, U                     | Approx. 47 V | Approx. 32 V |



# Series SY3000/5000/7000

## Specific Product Precautions 4

Be sure to read this before handling. Refer to the back cover for Safety Instructions. For 3/4/5 Port Solenoid Valve Precautions, refer to "Handling Precautions for SMC Products" and the Operation Manual on the SMC website, <http://www.smc.eu>

### Continuous Duty

#### ⚠ Caution

If a valve is energised continuously for a long period of time, the rise in temperature due to heat-up of the coil assembly may cause a decline in solenoid valve performance, reduce service life, or have adverse effects on peripheral equipment. If the valve is energised continuously for a long period of time, be sure to use a valve with power saving circuit. In particular, if three or more adjacent stations on the manifold are energised simultaneously for extended periods of time or if the valves on A side and B side are energised simultaneously for a long period of time, take special care as the temperature rise will be greater.

### Countermeasure for Surge Voltage Intrusion

#### ■ Sneak-in of surge voltage

With non-polar type valves, at times of sudden interruption of the loading power supply, such as emergency shutdown, surge voltage intrusion may be generated from loading equipment with a large capacity (power consumption), and the valve in a de-energised state may switch over (see Figure 1). When installing a breaker circuit for the loading power supply, consider using a valve with polarity (with polarity protection diode), or install a surge absorption diode between the loading equipment COM line and the output equipment COM line (see Figure 2).

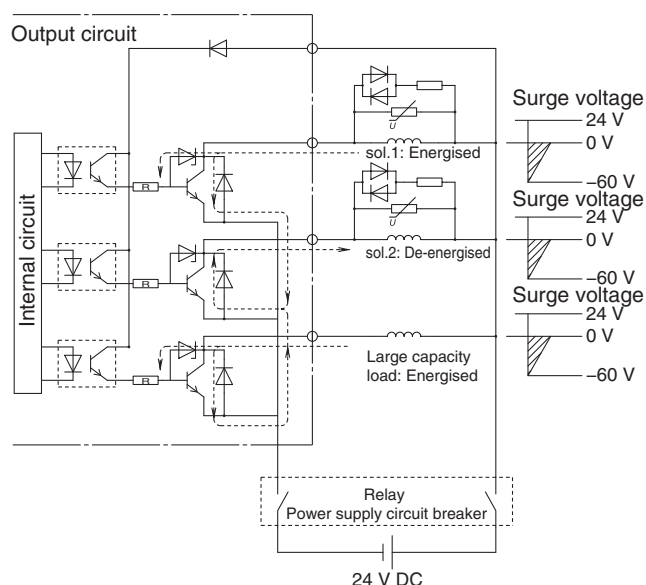


Figure 1. Surge intrusion circuit example (NPN outlet example) (24 V DC)

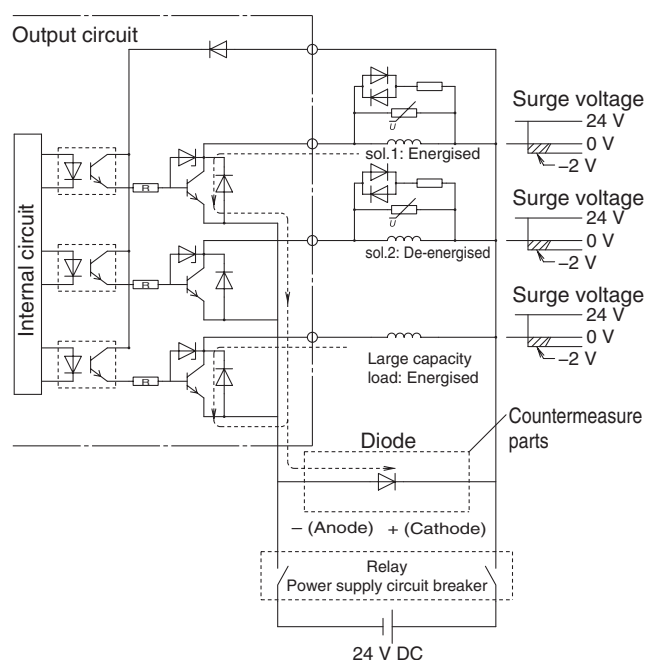


Figure 2. Surge intrusion circuit example (NPN outlet example) (24 V DC)





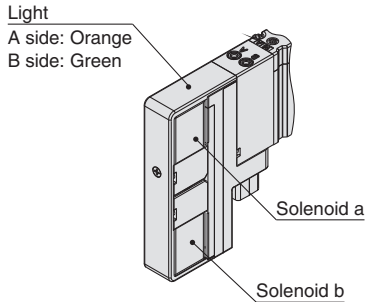
# Series SY3000/5000/7000

## Specific Product Precautions 5

Be sure to read this before handling. Refer to the back cover for Safety Instructions. For 3/4/5 Port Solenoid Valve Precautions, refer to “Handling Precautions for SMC Products” and the Operation Manual on the SMC website, <http://www.smc.eu>

### Light Indication

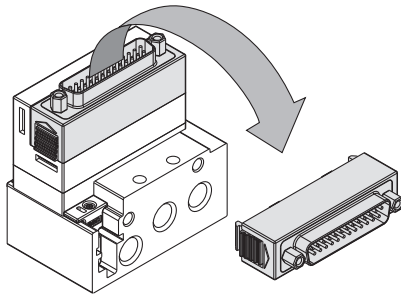
When equipped with indicator light and surge voltage suppressor, the light window turns orange when solenoid a is energised, and it turns green when solenoid b is energised.



### Type 5 (Metal Base) Changing Connector Entry Direction

#### Caution

Connector direction for electrical entry of D-sub connector, flat ribbon cable and PC wiring can be changed. If the directional change is required, push the lever on both sides to remove the connector and change the connector direction for electrical entry as shown in the figure. Since lead wire assemblies are attached to the connector, excessive pulling or twisting can cause broken wires or other trouble. Also, take precautions so that lead wires are not caught and pinched when installing the connector.

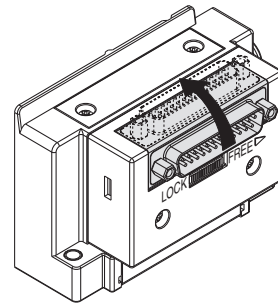


### Type 1 (Connector Connecting Base) Changing Connector Entry Direction

#### Caution

Connector direction for electrical entry of D-sub connector <IP40>, flat ribbon cable and PC wiring can be changed. If the directional change is required, slide the lever on the side of the connector block to the FREE position, and then change the direction as shown in the figure. Also, before connecting the connector, be sure to return the lever to the LOCK position. (If the lever is difficult to slide, move the connector a little bit to make it easier to slide the lever.)

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

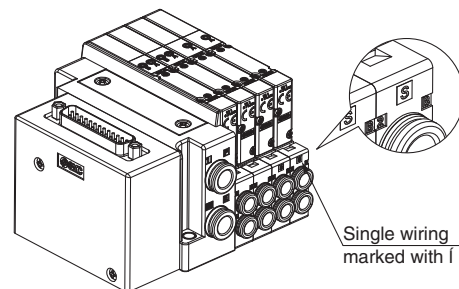


### How to Order Manifold

#### Caution

The letter “f” is indicated on manifold blocks for the SY series Type 1 (connector connecting base) as shown below. This indication refers to the type of substrate assembly (single wiring) inside the manifold blocks. When there is no symbol, double wiring is used.

When the manifold specification sheet does not include a wiring specification, all stations will be double wiring specification. In this case, single and double solenoid valves can be mounted in any position, but when a single valve is used, there will be an unused control signal. To avoid this, indicate positions of manifold blocks for single wiring specification and double wiring specification on a manifold specification sheet. (Note that double, 3-or 4-position valves cannot be used for manifolds blocks with single wiring specification f.)





# Series SY3000/5000/7000

## Specific Product Precautions 6

Be sure to read this before handling. Refer to the back cover for Safety Instructions. For 3/4/5 Port Solenoid Valve Precautions, refer to "Handling Precautions for SMC Products" and the Operation Manual on the SMC website, <http://www.smc.eu>

### Substrate Assemblies inside Manifolds

#### ⚠ Caution

Substrate assemblies inside of manifolds cannot be taken apart. Attempting to do so may damage parts.

### Fixation of DIN Rail Mounting Type Manifold

#### ⚠ Caution

1. When the manifold is fixed with bolts on a mounting surface etc., it can be operated just by fixing on both ends of the DIN rail if the bottom surface of the DIN rail is entirely in contact with the mounting surface when mounted horizontally. However, if it is used with other mounting or with side or reverse mounting, fix the DIN rail with bolts at regular intervals. As a guide, insert bolts in 2 locations for 2-5 stations, 3 locations for 6-10 stations, 4 locations for 11-15 stations, 5 locations for 16-20 stations and 6 locations for 21-24 stations.
2. When using the manifold with DIN rail in an environment where any vibration or impact is applied to it, the DIN rail itself may be broken. In particular, if the installation surface vibrates when mounting the manifold on the wall or if a load is directly applied to the manifold, the DIN rail may be broken, causing the manifold to drop. When any vibration, impact, or load is applied to the manifold, be sure to use the direct mounting manifold.

### Port Block Assembly and How to Change Piping Types between Top and Side

#### ⚠ Caution

For top ported type, the port size of A and B ports can be changed by switching the port block assemblies which are mounted on the body. The piping method can also be changed by switching the top ported type port block assembly with the side ported type cover assembly. Also, it may cause air leakage if the mounting screws are not tightened securely enough when they are switched. Take care to tighten to the correct tightening torque. Refer to page 247 for part numbers of port block assembly and body cover assembly.

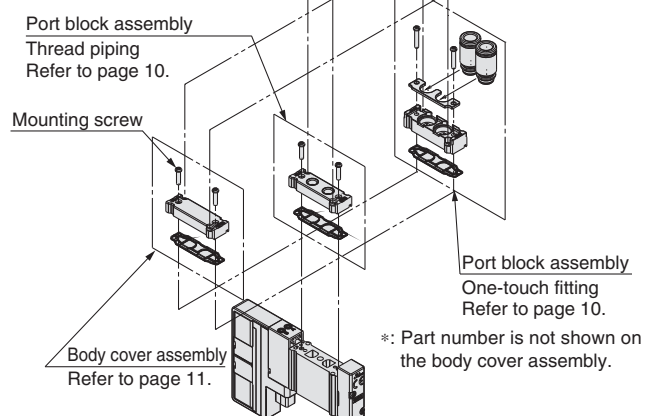
When switching them while valves are mounted on a manifold, remove the clip with a flat head screwdriver before switching the port plugs and the One-touch fittings. It may cause air leakage if the mounting screws are not tightened or the clip is not inserted securely enough when they are switched. Take care to tighten to the correct tightening torque.

#### ⚠ Caution

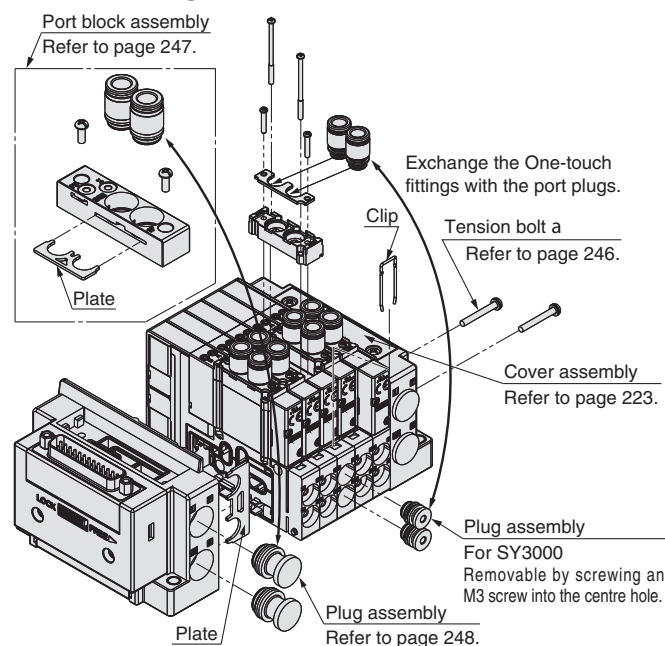
##### Tightening torque

M2: 0.16 N·m (SY3000)

M3: 0.8 N·m (SY5000/7000)



### ■ How to change while mounted on a manifold





# Series SY3000/5000/7000

## Specific Product Precautions 7

Be sure to read this before handling. Refer to the back cover for Safety Instructions. For 3/4/5 Port Solenoid Valve Precautions, refer to "Handling Precautions for SMC Products" and the Operation Manual on the SMC website, <http://www.smc.eu>

### Changing One-touch Fittings

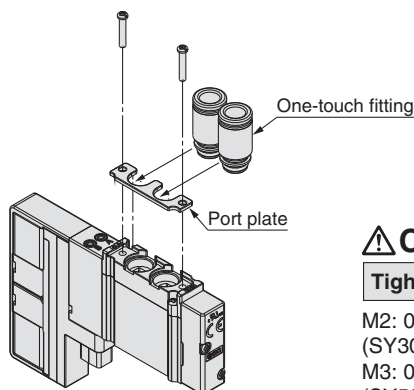
#### Caution

By replacing One-touch fittings of valve or manifold base, it is possible to change the connection diameter of the 4(A), 2(B), 1(P), 3/5(E) ports.

When replacing the One-touch fittings, remove the clip or the plate and the plate mounting screws with a screwdriver before pulling the One-touch fittings off. Mount the One-touch fittings by following the removal procedure in reverse.

It may cause air leakage if the mounting screws are not tightened or the clip and the clip plate are not inserted securely enough when they are switched. Take care to tighten to the correct tightening torque. Refer to page 248 for part numbers of One-touch fittings for valve or manifold.

#### Valve



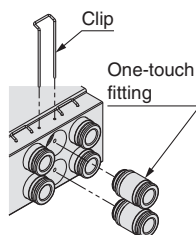
#### Caution

##### Tightening torque

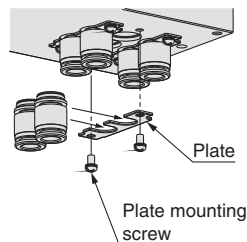
M2: 0.16 N·m  
(SY3000)  
M3: 0.8 N·m  
(SY5000/7000)

#### Plug-in metal base

##### Side ported (Type 50)



##### Bottom ported (Type 51)



#### Clip part no. (10 pcs. included)

| Series | Part no.    |
|--------|-------------|
| SY3000 | SY30M-19-2A |
| SY5000 | SY50M-19-2A |
| SY7000 | SY70M-19-2A |

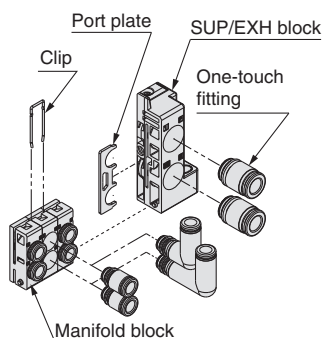
#### Plate assembly part no. (10 pcs. included)

| Series | Part no.    |
|--------|-------------|
| SY3000 | SY30M-10-3A |
| SY5000 | SY50M-10-6A |
| SY7000 | SY70M-10-7A |

\*: Including mounting screw

#### Plug-in connector connecting base

##### Side ported (Type 10)



#### Clip part no. (10 pcs. included)

| Series                             | Part no.     |
|------------------------------------|--------------|
| SY3000                             | SY30M-19-1A  |
| SY5000*                            | SY50M-19-6A  |
| SY3000/5000<br>Mixed mounting type | SY50M-19-1A  |
| SY7000                             | SV3000-70-1A |

\*1: A and B ports (Ø 8 and Ø 5/16") of the SY3000/5000 mixed mounting type are those for the SY5000.

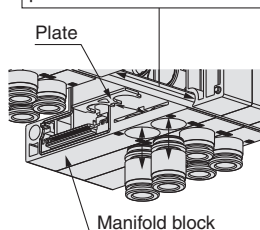
\*: If the port plate for the SUP/EXH block is required, please contact SMC.

### Changing One-touch Fittings

#### Caution

##### Bottom ported (Type 11)

Secure enough space between the manifold blocks when the plate is detached and attached.



#### Plate part no. (10 pcs. included)

| Series                             | Part no.    |
|------------------------------------|-------------|
| SY5000*                            | SY50M-10-4A |
| SY3000/5000<br>Mixed mounting type | SY50M-10-5A |
| SY7000                             | SY70M-10-4A |

\*1: A and B ports (Ø 8 and Ø 5/16") of the SY3000/5000 mixed mounting type are those for the SY5000.

### Other Tube Brands

#### Caution

1. When using other than SMC brand tube, confirm that the following specifications are satisfied with respect to the tube outside diameter tolerance.

- 1) Nylon tube within  $\pm 0.1$  mm
- 2) Soft nylon tube within  $\pm 0.1$  mm
- 3) Polyurethane tube within  $+0.15$  mm  
-0.2 mm

Do not use tube 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 tube pulling out after connection.

### One-touch Fittings

#### Tube attachment/detachment for One-touch fittings

##### 1) Tube attachment

1. Take a tube having no flaws on its periphery and cut it off at a right angle. When cutting the tube, use tube cutters TK-1, 2 or 3. Do not use pinchers, nippers or scissors, etc. If cutting is done with tools other than tube cutters, the tube may be cut diagonally or become flattened, etc., making a secure installation impossible, and causing problems such as the tube pulling out after installation or air leakage. Allow some extra length in the tube.
2. Grasp the tube and push it in slowly, inserting it securely all the way into the fitting.
3. After inserting the tube, pull on it lightly to confirm that it will not come out. If it is not installed securely all the way into the fitting, this can cause problems such as air leakage or the tube pulling out.

##### 2) Tube detachment

1. Push in the release button sufficiently, pushing its collar equally around the circumference.
2. Pull out the tube while holding down the release button so that it does not come out. If the release button is not pressed down sufficiently, there will be increased bite on the tube and it will become more difficult to pull it out.
3. When the removed tube is to be used again, cut off the portion which has been chewed before reusing it. If the chewed portion of the tube is used as is, this can cause trouble such as air leakage or difficulty in removing the tube.



# Series SY3000/5000/7000

## Specific Product Precautions 8

Be sure to read this before handling. Refer to the back cover for Safety Instructions. For 3/4/5 Port Solenoid Valve Precautions, refer to “Handling Precautions for SMC Products” and the Operation Manual on the SMC website, <http://www.smc.eu>

### One-touch Fittings

### Caution

When fittings are used, they may interfere with one another depending on their types and sizes. Therefore, the dimensions of the fittings to be used should first be confirmed in their respective catalogs.

Fittings whose compliance with the SY series is already confirmed are stated below. If the fitting within the applicable range is selected, there will not be any interference.

#### Applicable Fittings: Series KQ2H, KQ2S

| Series | Model                               | Piping port  | Port size | Fittings | Applicable tube O.D. |       |     |     |     |      |      |
|--------|-------------------------------------|--------------|-----------|----------|----------------------|-------|-----|-----|-----|------|------|
|        |                                     |              |           |          | Ø 2                  | Ø 3.2 | Ø 4 | Ø 6 | Ø 8 | Ø 10 | Ø 12 |
| SY3000 | SY3□30-□□-M5                        | 4A, 2B       | M5        | KQ2H     |                      |       |     |     |     |      |      |
|        |                                     |              |           | KQ2S     |                      |       |     |     |     |      |      |
|        | SS5Y3-50/51/52 (R)<br>Manifold base | 1P, 5EA, 3EB | 1/8       | KQ2H     |                      |       |     |     |     |      |      |
|        |                                     |              |           | KQ2S     |                      |       |     |     |     |      |      |
|        |                                     | X, PE        | M5        | KQ2H     |                      |       |     |     |     |      |      |
|        |                                     |              |           | KQ2S     |                      |       |     |     |     |      |      |
|        |                                     | 4A, 2B       | 1/8       | KQ2H     |                      |       |     |     |     |      |      |
|        |                                     |              |           | KQ2S     |                      |       |     |     |     |      |      |
|        |                                     |              | M5        | KQ2H     |                      |       |     |     |     |      |      |
|        |                                     |              |           | KQ2S     |                      |       |     |     |     |      |      |

| Series | Model                               | Piping port  | Port size | Fittings | Applicable tube O.D. |       |     |     |     |      |      |
|--------|-------------------------------------|--------------|-----------|----------|----------------------|-------|-----|-----|-----|------|------|
|        |                                     |              |           |          | Ø 2                  | Ø 3.2 | Ø 4 | Ø 6 | Ø 8 | Ø 10 | Ø 12 |
| SY5000 | SY5□30-□□-01                        | 4A, 2B       | 1/8       | KQ2H     |                      |       |     |     |     |      |      |
|        |                                     |              |           | KQ2S     |                      |       |     |     |     |      |      |
|        | SS5Y5-50/51/52 (R)<br>Manifold base | 1P, 5EA, 3EB | 1/4       | KQ2H     |                      |       |     |     |     |      |      |
|        |                                     |              |           | KQ2S     |                      |       |     |     |     |      |      |
|        |                                     | X, PE        | M5        | KQ2H     |                      |       |     |     |     |      |      |
|        |                                     |              |           | KQ2S     |                      |       |     |     |     |      |      |
|        |                                     | 4A, 2B       | 1/4       | KQ2H     |                      |       |     |     |     |      |      |
|        |                                     |              |           | KQ2S     |                      |       |     |     |     |      |      |
|        |                                     |              | 1/8       | KQ2H     |                      |       |     |     |     |      |      |
|        |                                     |              |           | KQ2S     |                      |       |     |     |     |      |      |

| Series | Model                               | Piping port  | Port size | Fittings | Applicable tube O.D. |       |     |     |     |      |      |
|--------|-------------------------------------|--------------|-----------|----------|----------------------|-------|-----|-----|-----|------|------|
|        |                                     |              |           |          | Ø 2                  | Ø 3.2 | Ø 4 | Ø 6 | Ø 8 | Ø 10 | Ø 12 |
| SY7000 | SY7□30-□□-02                        | 4A, 2B       | 1/4       | KQ2H     |                      |       |     |     |     |      |      |
|        |                                     |              |           | KQ2S     |                      |       |     |     |     |      |      |
|        | SS5Y7-50/51/52 (R)<br>Manifold base | 1P, 5EA, 3EB | 3/8       | KQ2H     |                      |       |     |     |     |      |      |
|        |                                     |              |           | KQ2S     |                      |       |     |     |     |      |      |
|        |                                     | X, PE        | M5        | KQ2H     |                      |       |     |     |     |      |      |
|        |                                     |              |           | KQ2S     |                      |       |     |     |     |      |      |
|        |                                     | 4A, 2B       | 1/4       | KQ2H     |                      |       |     |     |     |      |      |
|        |                                     |              |           | KQ2S     |                      |       |     |     |     |      |      |

#### Trademark

DeviceNet™ is a trademark of ODVA.

EtherNet/IP™ is a trademark of ODVA.

CompoNet™ is a trademark of ODVA.

EtherCAT® is registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.





## Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of “**Caution**,” “**Warning**” or “**Danger**.” They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)\*1), and other safety regulations.

### Caution:

**Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

### Warning:

**Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

### Danger:

**Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

## Warning

### 1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

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

### 2. Only personnel with appropriate training should operate machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

### 3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.

1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

### 4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.

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

## Caution

### 1. The product is provided for use in manufacturing industries.

The product herein described is basically provided for peaceful use in manufacturing industries.

If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.

If anything is unclear, contact your nearest sales branch.

## Caution

### SMC products are not intended for use as instruments for legal metrology.

Measurement instruments that SMC manufactures or sells have not been qualified by type approval tests relevant to the metrology (measurement) laws of each country. Therefore, SMC products cannot be used for business or certification ordained by the metrology (measurement) laws of each country.

## Safety Instructions

Be sure to read “Handling Precautions for SMC Products” (M-E03-3) before using.

### SMC Corporation (Europe)

|                |                    |                       |                        |
|----------------|--------------------|-----------------------|------------------------|
| Austria        | ☎+43 (0)2262622800 | www.smc.at            | office@smc.at          |
| Belgium        | ☎+32 (0)33551464   | www.smc.be            | info@smc.be            |
| Bulgaria       | ☎+359 (0)2807670   | www.smc.bg            | office@smc.bg          |
| Croatia        | ☎+385 (0)13707288  | www.smc.hr            | office@smc.hr          |
| Czech Republic | ☎+420 541424611    | www.smc.cz            | office@smc.cz          |
| Denmark        | ☎+45 70252900      | www.smc.dk.com        | smc@smcdk.com          |
| Estonia        | ☎+372 6510370      | www.smc.pneumatics.ee | smc@smcpneumatics.ee   |
| Finland        | ☎+358 207513513    | www.smc.fi            | smc@smc.fi             |
| France         | ☎+33 (0)164761000  | www.smc-france.fr     | info@smc-france.fr     |
| Germany        | ☎+49 (0)61034020   | www.smc.de            | info@smc.de            |
| Greece         | ☎+30 210 2717265   | www.smchellas.gr      | sales@smchellas.gr     |
| Hungary        | ☎+36 23513000      | www.smc.hu            | office@smc.hu          |
| Ireland        | ☎+353 (0)14039000  | www.smc.pneumatics.ie | sales@smcpneumatics.ie |
| Italy          | ☎+39 0292711       | www.smcitalia.it      | mailbox@smcitalia.it   |
| Latvia         | ☎+371 67817700     | www.smc.lv            | info@smc.lv            |

|             |                      |                         |                          |
|-------------|----------------------|-------------------------|--------------------------|
| Lithuania   | ☎+370 5 2308118      | www.smclt.lt            | info@smclt.lt            |
| Netherlands | ☎+31 (0)205318888    | www.smc.nl              | info@smc.nl              |
| Norway      | ☎+47 67129020        | www.smc-norge.no        | post@smc-norge.no        |
| Poland      | ☎+48 222119600       | www.smc.pl              | office@smc.pl            |
| Portugal    | ☎+351 226166570      | www.smc.eu              | postpt@smc.smces.es      |
| Romania     | ☎+40 213205111       | www.smcromania.ro       | smcromania@smcromania.ro |
| Russia      | ☎+7 8127185445       | www.smc-pneumatik.ru    | info@smc-pneumatik.ru    |
| Slovakia    | ☎+421 (0)413213212   | www.smc.sk              | office@smc.sk            |
| Slovenia    | ☎+386 (0)73885412    | www.smc.si              | office@smc.si            |
| Spain       | ☎+34 902184100       | www.smc.eu              | post@smc.smces.es        |
| Sweden      | ☎+46 (0)86031200     | www.smc.nu              | post@smc.nu              |
| Switzerland | ☎+41 (0)523963131    | www.smc.ch              | info@smc.ch              |
| Turkey      | ☎+90 212 489 0 440   | www.smc.pnomatik.com.tr | info@smcpnomatik.com.tr  |
| UK          | ☎+44 (0)845 121 5122 | www.smc.uk              | sales@smc.uk             |

SMC CORPORATION Akihara UDX 15F, 4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-0021, JAPAN Phone: 03-5207-8249 FAX: 03-5298-5362

1st printing WY printing WY 00 Printed in Spain

Specifications are subject to change without prior notice and any obligation on the part of the manufacturer.

- \*1) ISO 4414: Pneumatic fluid power – General rules relating to systems.  
ISO 4413: Hydraulic fluid power – General rules relating to systems.  
IEC 60204-1: Safety of machinery – Electrical equipment of machines.  
(Part 1: General requirements)  
ISO 10218-1: Manipulating industrial robots - Safety.  
etc.

## Limited warranty and Disclaimer/ Compliance Requirements

The product used is subject to the following “Limited warranty and Disclaimer” and “Compliance Requirements”.

Read and accept them before using the product.

### Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first.\*2)  
Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.  
This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products.

\*2) Vacuum pads are excluded from this 1 year warranty.

A vacuum pad is a consumable part, so it is warranted for a year after it is delivered. Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

### Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.