

# 5 Port Solenoid Valve

New  
CE

Plug-in Type

Thanks to the flow increase, valve size can be reduced!  
Saves **energy** and **space**.

**SY3000**

← 10 mm

ø2, ø3.2, ø4, ø6, ø8\* fittings are connectable.  
\* Type M10/M11 manifold

**SY5000**

← 15 mm

ø4, ø6, ø8 fittings are connectable.

**New SY7000**

← 18 mm

ø6, ø8, ø10, ø12 fittings are connectable.

At 300 mm/s

Existing ø32 → ø50 (Valve size DOWN)

Possible to drive cylinders  
Up to **ø50\***  
(ø80 at 100 mm/s)

At 300 mm/s

Existing ø50 → ø63 (Valve size DOWN)

Possible to drive cylinders  
Up to **ø63\***  
(ø125 at 100 mm/s)

At 300 mm/s

Existing ø63 → ø80

Possible to drive cylinders  
Up to **ø80\***  
(ø160 at 100 mm/s)

Page 16  
Plug-in Sub-plate newly added!  
SY3000/5000

New



- New**
- The SY7000 newly added
  - Plug-in Sub-plate
  - With residual pressure release valve
  - With safety slide locking manual override
  - D-sub connector [IP67] manifold
  - PC wiring (with power supply terminal) manifold

**Power consumption**  
\* Refer to Features 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)

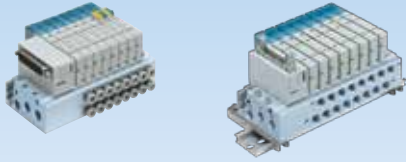
\* According to SMC life test conditions

Series **SY3000/5000/7000**

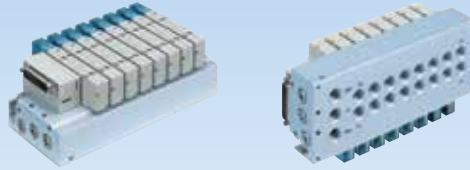
# 5 Port Solenoid Valve

## Plug-in Metal Base [IP40]

Side ported [From page 29](#)



Bottom ported [From page 29](#)



Top ported [From page 49](#)



## Plug-in Connector Connecting Base [IP67 <sup>Note)</sup>]

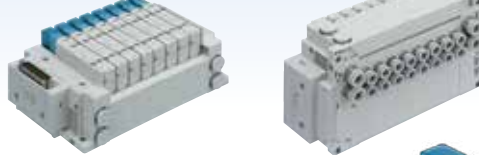
Note) Refer to page 77 for details on IP67.

### Manifold

Side ported [From page 81](#)



Bottom ported [From page 81](#)



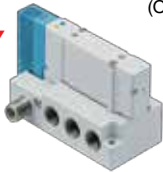
Top ported [From page 93](#)



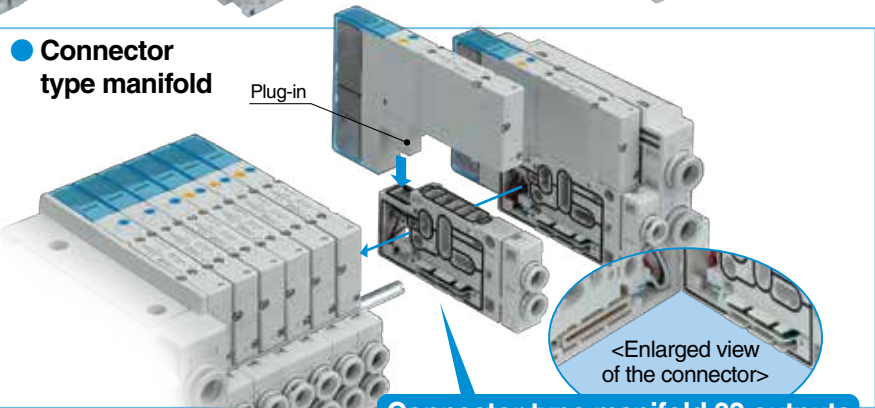
## Plug-in Compatible sub-plate type

(Only SY3000/5000)

**New**



- 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 32 outputs

## 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	EX120	EX120
Applicable protocol									
DeviceNet™	●	●	●	●	●	●	●	●	●
PROFIBUS DP	●	●	●	●	●	●	●	●	●
CC-Link	●		●	●	●	●	●	●	●
EtherNet/IP™		●	●	●	●	●	●	●	●
EtherCAT			●	●	●	●	●	●	●
PROFINET			●	●	●	●	●	●	●
CANopen				●	●	●	●	●	●
AS-Interface				●	●	●	●	●	●
OMRON CompoBus/S								●	●
CompoNet™								●	●



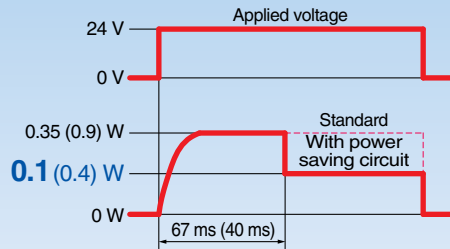
## Power consumption

**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 energized state. (Effective energizing time is over 67 ms at 24 VDC.) Refer to the electrical power waveform as shown on the left.

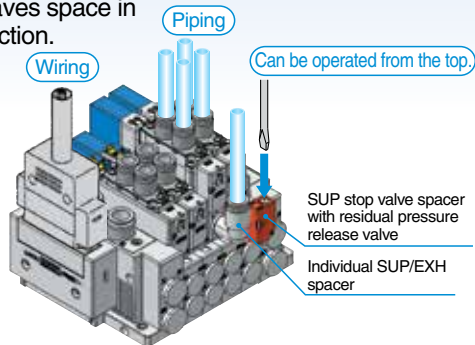
The value in ( ) are for the quick response and high pressure types.

## 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.

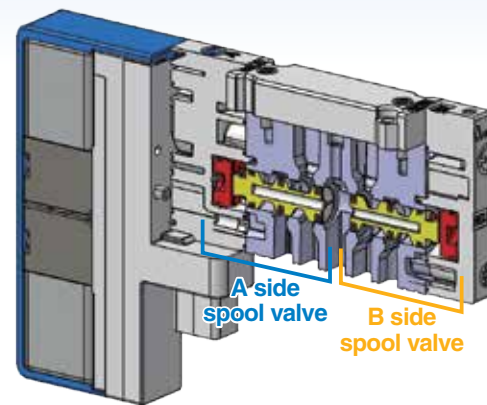
From page 226



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

(Only rubber seal type)

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

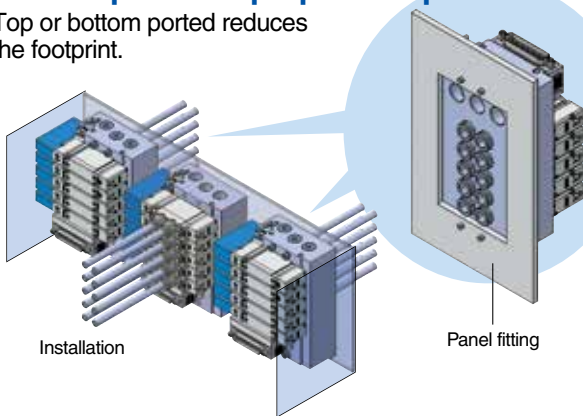


- 3-port valves on the A and B sides can operate independently.
- When used as a 3-port valve, only half the number of stations is required.
- Can also be used as a 4-position, 5-port valve.
- 4-position dual 3-port valve with back pressure check valve is available.
- Combination examples

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

**Bottom ported is prepared. Space saving**

Top or bottom ported reduces the footprint.



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

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

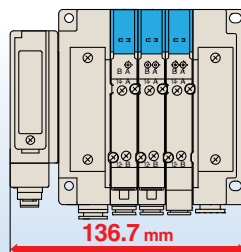
From page 189

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

For serial transmission EX260

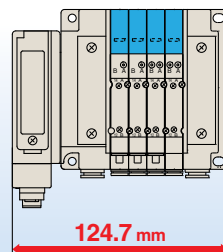
Installation space

**SY5000 manifold**  
SY5000 3 stations



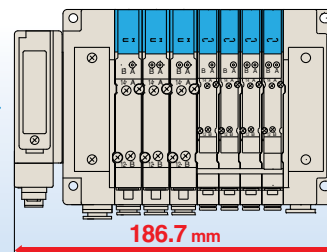
+

**SY3000 manifold**  
SY3000 4 stations



**Mixed manifold**

SY5000 3 stations SY3000 4 stations



Number of serial units



2 sets



1 set



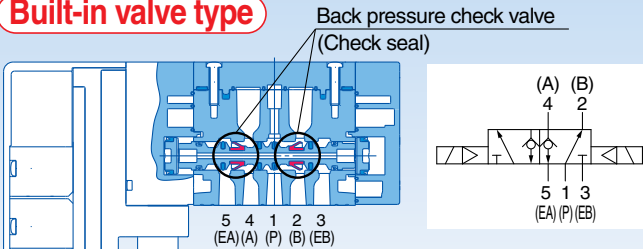
# 5 Port Solenoid Valve

## Improved safety

### Back pressure check valve

This prevents actuator and air operated valve malfunctions caused by the exhaust from other valves.\*

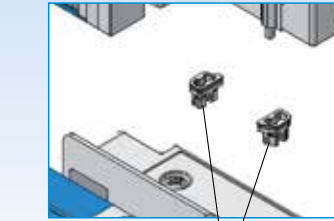
#### Built-in valve type



\* For back pressure check valve precautions, refer to the Specific Product Precautions on page 243.

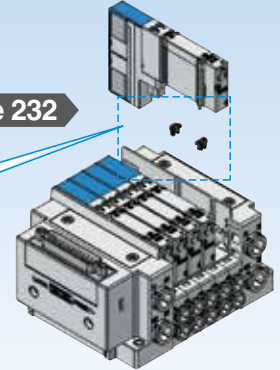
#### Retrofit or pre-installed type

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



Back pressure check valve assembly

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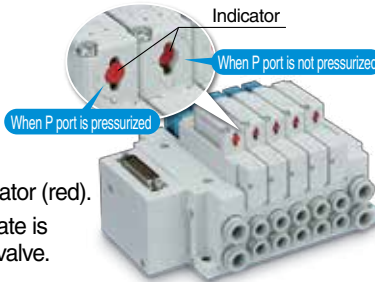
### New With residual pressure release valve (Only SY5000)

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IP67 compliant

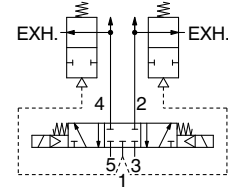
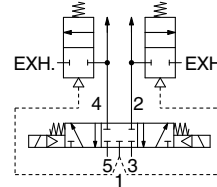
#### For residual pressure release of the 3-position closed center valve

- 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 visualized using the indicator (red).
- Since this valve is not a spacer type, the flow rate is equivalent to that of the normal closed center valve.



[When 1(P) port is pressurized]

[When 1(P) port is not pressurized]



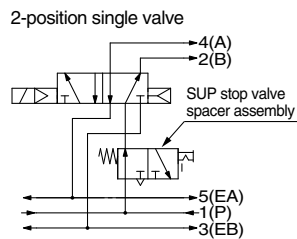
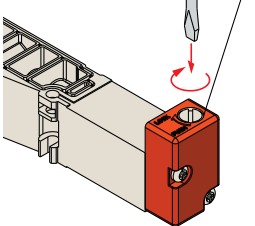
### SUP stop valve spacer (With residual pressure release valve)

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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.



2-position single valve example

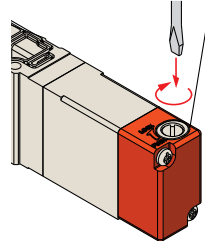
### Double check spacer (With residual pressure release valve)

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Long time of intermediate stop and position holding are possible.

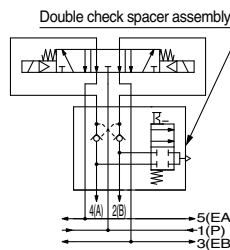
Button for manual release of residual pressure

To exhaust residual pressure on cylinder side.

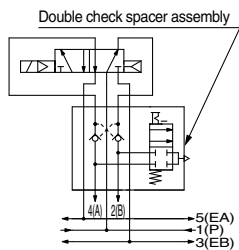


[Intermediate stop]

[Drop prevention]



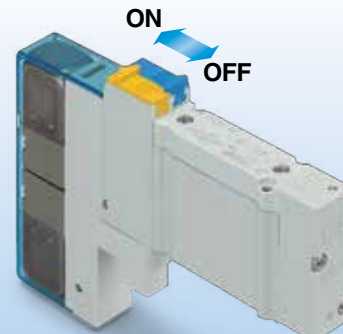
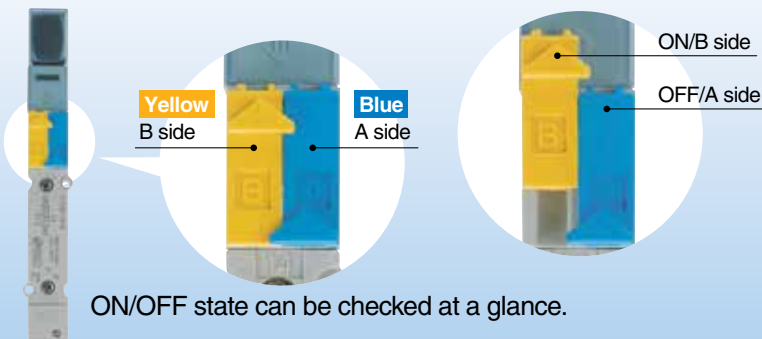
Exhaust center



2-position single/double

### With slide locking manual override

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



# Improved safety

**New** With safety slide locking manual override  
**SY3000/5000/7000-X13** **Page 14**

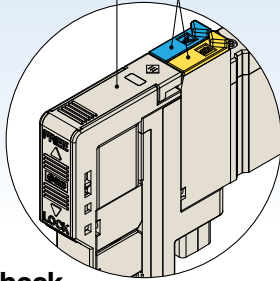
Double action manual override prevents incorrect operation!

**Double action operation**

**Before operation**

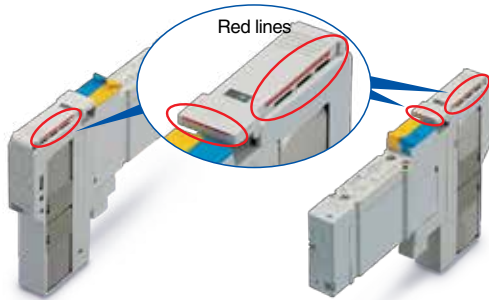
The slide manual overrides cannot be turned ON with the safety slide cover. (OFF status: Locked)

Safety slide cover      Slide manual overrides



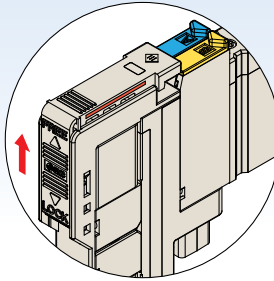
**Visual check**

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



**Operation 1**

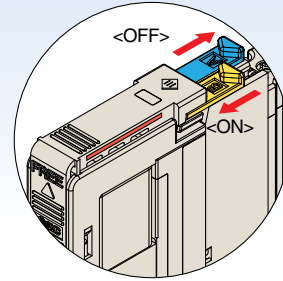
Operates the safety slide cover upward. (Unlocked)



<Vertical sliding>

**Operation 2**

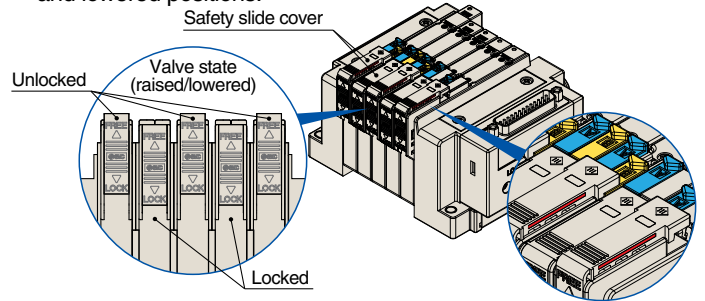
The slide manual overrides can be operated.



<Horizontal sliding>

\* The safety slide cover cannot be locked when the slide manual override is turned ON.

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



Locked

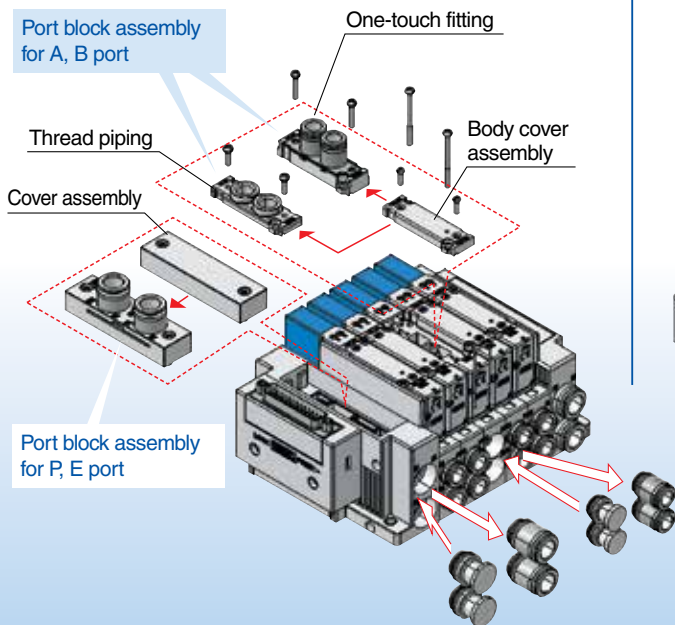
Safety slide cover

Valve state (raised/lowered)

Unlocked

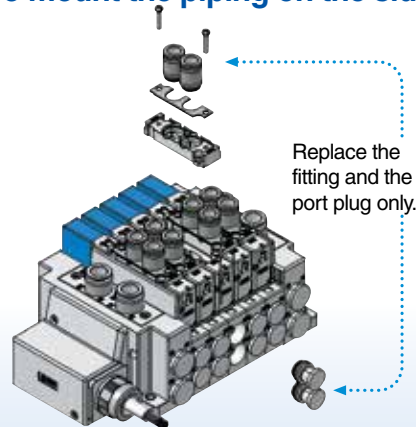
# Piping options

**To mount the piping on top**

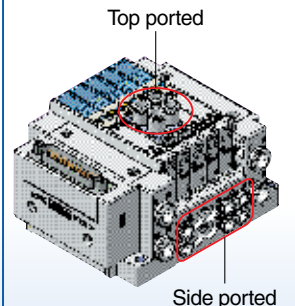


Refer to page 247 for how to change piping types.

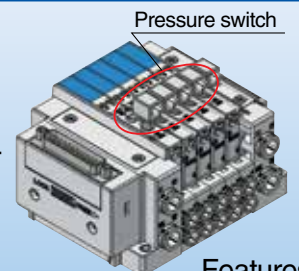
**To mount the piping on the side**



**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.)





Features 4



# 5 Port Solenoid Valve

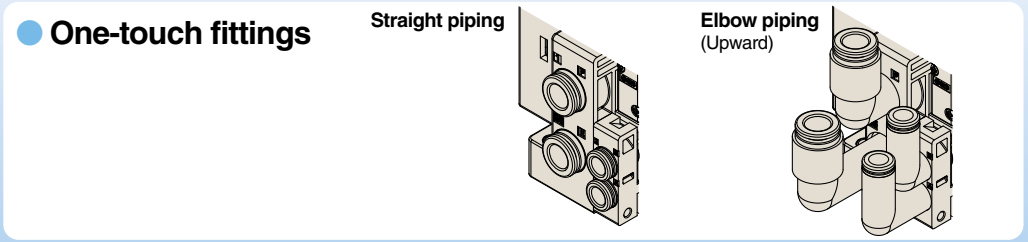
## Variations

Variations		Valve Series	Wiring														Manifold						
			Connection														Common specification		Blanking plate	Individual SUP spacer	Individual EXH spacer	SUP stop valve spacer with residual pressure release valve	Double check spacer with residual pressure release valve
			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	EX600	EX250	EX260	EX126			EX120					
5 ports																							
Plug-in Sub-plate	 M12 connector From page 18	SY3□ <sub>3</sub> □																					
 Type 50□ From page 29	SY5□ <sub>3</sub> □																						
Metal Base	Side ported	SY3□0□																					
		SY5□0□	●	●	●																		
		SY7□0□	P.29	P.29	P.29																		
Metal Base	Bottom ported	SY3□0□																					
		SY5□0□	●	●	●																		
		SY7□0□	P.29	P.29	P.29																		
Metal Base	Top ported	SY3□3□																					
		SY5□3□	●	●	●																		
		SY7□3□	P.49	P.49	P.49																		
Plug-in Connector Connecting Base	Manifold	Side ported	Type 10□ From page 81	SY3□0□																			
			SY5□0□	●	●	●	●	●	●														
			SY7□0□	P.81	P.81	P.81	P.99	P.109	P.119														
	Manifold	Bottom ported	Type 11□ From page 81	SY5□0□	●	●	●	●	●	●													
			SY7□0□	P.81	P.81	P.81	P.99	P.109	P.119														
			Type 12□ From page 93	SY3□3□																			
	Manifold	Top ported	Type 12□ From page 93	SY5□3□	●	●	●	●	●	●													
			SY7□3□	P.93	P.93	P.93	P.105	P.115	P.125														
			SY7□3□	P.93	P.93	P.93	P.105	P.115	P.125														

● Standard ○ Option ▲ Made-to-Order (Refer to page 14.)

Options (Pages 226 to 234)										A, B Port Size										Valve Options																					
Interface regulator	Individual SUP block assembly	Individual EXH block assembly	SUP/EXH blocking disk	Label for blocking disk	Back pressure check valve assembly (Manifold installed type)	Dual flow fitting	Silencer (One-touch fitting connection type)	Plug (White)	Name plate	M5	1/8	1/4	One-touch fittings									SY3000/5000 mixed mounting	SY5000/7000 mixed mounting	Oil resistant (Other than designated turbine oil)	Vacuum/Low pressure specification	Different pressures	Reverse pressure	Mixed fitting sizes	Enclosure IP67												
													C2	C3	C4	C6	C8	C10	C12																						
													Straight piping	Straight piping	Straight piping	Elbow piping <small>Note 1)</small>	Straight piping	Elbow piping <small>Note 1)</small>	Straight piping	Elbow piping <small>Note 1)</small>	Straight piping	Elbow piping <small>Note 1)</small>	Straight piping	Elbow piping <small>Note 1)</small>	Straight piping	Elbow piping <small>Note 1)</small>															

Note 1) Elbow piping may specify size only in millimeters, depending on the port size. Refer to How to Order Manifold for details.  
 Note 2) Refer to Manifold Specifications on page 77 for details on IP67.



# INDEX

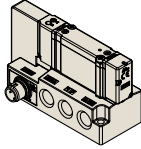
Manifold Variations .....	<b>Features 5</b>	Valve Replacement Parts .....	<b>Page 11</b>
Optimum Actuation Size Chart of Air Cylinder .....	<b>Page 1</b>	With Residual Pressure Release Valve .....	<b>Page 13</b>
Valve Specifications .....	<b>Page 3</b>	Made-to-Order for Valve .....	<b>Page 14</b>
(Specifications, Response Time, Weight)			
Valve Construction .....	<b>Page 7</b>		

Sub-plate

**Plug-in**

Sub-plate

**Page 16**



**M12 connector**



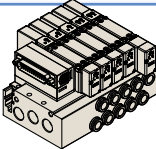
<b>Plug-in</b> Sub-plate Specifications (M12 Connector) .....	<b>Page 17</b>
Sub-plate Parts No. ....	<b>Page 19</b>

Manifold

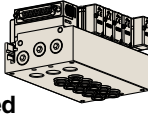
**Plug-in**

Metal Base

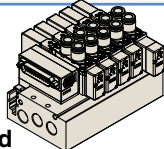
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**Type 50/  
Side ported**

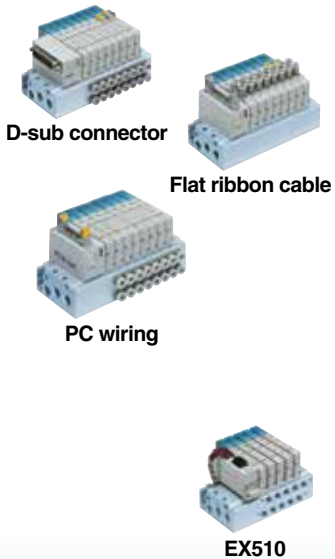


**Type 51/  
Bottom ported**



**Type 52/  
Top ported**

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



<b>Plug-in</b> Metal Base .....	<b>Page 27</b>
D-sub Connector, Flat Ribbon Cable, PC Wiring System [IP40]	
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Type 51/Bottom Ported .....	<b>Page 29</b>
Type 52/Top Ported .....	<b>Page 49</b>
Wiring Specifications .....	<b>Page 54</b>
EX510 Gateway-type Serial Transmission System [IP20]	
Type 50/Side Ported .....	<b>Page 57</b>
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Type 52/Top Ported .....	<b>Page 67</b>
Manifold Exploded View [Exploded View, Manifold Parts No.] .....	<b>Page 73</b>

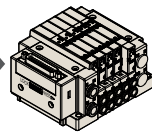


Manifold

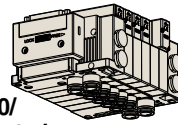
Plug-in

# Connector Connecting Base

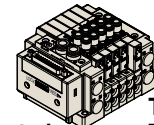
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Type 10/  
Side ported





















Type 11/  
Bottom ported



Type 12/  
Top ported

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

	D-sub connector		PC wiring	<b>Plug-in</b> Connector Connecting Base ..... Page 77
	Flat ribbon cable		Terminal block box	D-sub Connector, Flat Ribbon Cable, PC Wiring System [IP40/67] ..... Page 81
	Lead wire		Circular connector	Terminal Block Box [IP67] ..... Page 99
	EX500			Lead Wire [IP67] ..... Page 109
	EX600			Circular Connector [IP67] ..... Page 119
	EX250		EX600	EX500 Gateway-type Serial Transmission System [IP67] ..... Page 129
	EX260		EX250	EX600 Integrated-type (For Input/Output) Serial Transmission System (Fieldbus System) [IP67] .... Page 137
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	EX120		EX126	EX260 Integrated type (For Output) Serial Transmission System [IP67] ..... Page 157
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				EX120 Integrated-type (For Output) Serial Transmission System [IP20] ..... Page 173
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	Mixed mounting			<b>Plug-in</b> Manifold Mixed Mounting Type ..... Page 189
				Manifold Exploded View [Exploded View, Manifold Parts No.] ..... Page 206
				How to Increase Connector Type Manifold ..... Page 219
				One-touch Fittings, Plug Assembly/Part No. .... Page 224
				Manifold Options [ <b>Plug-in</b> Metal Base, <b>Plug-in</b> Connector Connecting Base] ..... Page 225
				Specific Product Precautions ..... Page 242

Valve

Sub-plate  
**Plug-in**

Metal Base  
**Plug-in**

Type 50, 51, 52  
Manifold Exploded View

Connector Connecting Base  
**Plug-in**

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

# Optimum Actuation Size Chart of Air Cylinder

Applicable cylinder speed	Main valve seal type	Series	Applicable cylinder				
			ø6	ø10	ø16	ø20	ø25
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: 73 psi (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								
	ø32	ø40	ø50	ø63	ø80	ø100	ø125	ø140	ø160
					●				
							●		
									●
					●				
							●		
								●	
			●						
				●					
					●				
			●						
				●					
					●				
	●								
			●						
				●					
		●							
			●						

- Valve
- Sub-plate
- Plug-in
- Metal Base
- Plug-in
- Type 50, 51, 52  
Manifold Exploded View
- Connector Connecting Base
- Plug-in
- 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	
<b>Fluid</b>		Air		
<b>Internal pilot operating pressure range psi (MPa)</b>	<b>2-position single</b>	22 to 102 (0.15 to 0.7)	0.1 to 0.7 (High pressure type: 0.1 to 1)	
	<b>2-position double</b>	15 to 102 (0.1 to 0.7)		
	<b>3-position</b>	29 to 102 (0.2 to 0.7)		
	<b>4-position dual 3-port valve</b>	22 to 102 (0.15 to 0.7)	—	
<b>External pilot operating pressure range psi (MPa)</b>	<b>Operating pressure range</b>		—15 to 102 (—100 kPa to 0.7) (4-position: —15 to 87 (—100 kPa to 0.6)) (High pressure type: —15 to 145 (—100 kPa to 1))	
	<b>Pilot pressure range</b>	<b>2-position single</b>	36 to 102 (0.25 to 0.7)	
		<b>2-position double</b>		
		<b>3-position</b>		
	<b>4-position dual 3-port valve</b>	Operating pressure + 15 (0.1) or more (Min. 36 (0.25)) to 102 (0.7)	—	
<b>Ambient and fluid temperature °F (°C)</b>		14 to 122 (—10 to 50) (No freezing)		
<b>Max. operating frequency (Hz)</b>	SY3000 SY5000	<b>2-position single/double</b>	5	20 Note 1)
		<b>4-position dual 3-port valve</b>		
		<b>3-position</b>		
	SY7000	<b>2-position single/double</b>	3	10 Note 1)
		<b>4-position dual 3-port valve</b>		
		<b>3-position</b>		
<b>Manual override</b>		Non-locking push type		
		Push-turn locking slotted type		
		Push-turn locking lever type		
		Slide locking type		
<b>Pilot exhaust type</b>	<b>Internal pilot</b>	Main/Pilot valve common exhaust	Main/Pilot valve individual exhaust	
	<b>External pilot</b>	Pilot valve individual exhaust		
<b>Lubrication</b>		Not required		
<b>Mounting orientation</b> <small>Note 2)</small>		Unrestricted	Single: Unrestricted Double/3-position: Main valve is horizontal.	
<b>Impact/Vibration resistance</b> <small>Note 2)</small> (m/s <sup>2</sup> )		150/30		
<b>Enclosure</b>		IP67 (Based on IEC60529)*		
<b>Coil rated voltage (DC)</b>		24, 12 V		
<b>Allowable voltage fluctuation (V)</b>		±10% of rated voltage <small>Note 3)</small>		
<b>Power consumption (W)</b>	<b>Standard</b>	0.35 (With indicator light: 0.4)		
	<b>High pressure type, Quick response type</b>	0.9 (With indicator light: 0.95)		
	<b>With power saving circuit</b>	Standard: 0.1 <small>Note 4)</small> (With indicator light only) [Inrush 0.35, Holding 0.1], High pressure type: 0.4 <small>Note 4)</small> (With indicator light only) [Inrush 0.9, Holding 0.4]		
<b>Surge voltage suppressor</b>		Diode (Varistor for non-polar type)		
<b>Indicator light</b>		LED		

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

Note 1) Use below 5 Hz for with the power saving circuit.

Note 2) Impact resistance: No malfunction occurred when it is tested in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)  
Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)  
Refer to page 247 for the fixation of DIN rail mounting type manifold.

Note 3) 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  $\begin{cases} 24 \text{ VDC: } -7\% \text{ to } +10\% \\ 12 \text{ VDC: } -4\% \text{ to } +10\% \end{cases}$  T type  $\begin{cases} 24 \text{ VDC: } -8\% \text{ to } +10\% \\ 12 \text{ VDC: } -6\% \text{ to } +10\% \end{cases}$

Note 4) For details, refer to page 244.

## Response Time

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

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 center	87
			Exhaust center	
			Pressure center	
		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 center	90
			Exhaust center	
			Pressure center	

Valve model	Seal type	Type of actuation		Port size	Weight g
				4, 2 (A, B)	
SY3□30-M5	Rubber seal	2-position	Single	M5 x 0.8	74
			Double		83
		3-position	Closed center		87
			Exhaust center		
			Pressure center		
		4-position	Dual 3-port valve		83
SY3□30-C2	Rubber seal	2-position	Single	C2 ø2 One-touch fitting	82
			Double		91
		3-position	Closed center		95
			Exhaust center		
			Pressure center		
		4-position	Dual 3-port valve		91
SY3□30-C3	Rubber seal	2-position	Single	C3 ø3.2 One-touch fitting	85
			Double		94
		3-position	Closed center		98
			Exhaust center		
			Pressure center		
		4-position	Dual 3-port valve		94
SY3□30-C4	Rubber seal	2-position	Single	C4 ø4 One-touch fitting	77
			Double		86
		3-position	Closed center		90
			Exhaust center		
			Pressure center		
		4-position	Dual 3-port valve		86
SY3□30-C6	Rubber seal	2-position	Single	C6 ø6 One-touch fitting	80
			Double		89
		3-position	Closed center		93
			Exhaust center		
			Pressure center		
		4-position	Dual 3-port valve		89

Valve model	Seal type	Type of actuation		Port size	Weight g
				4, 2 (A, B)	
SY3□31-M5	Metal seal	2-position	Single	M5 x 0.8	76
			Double		86
		3-position	Closed center		90
			Exhaust center		
			Pressure center		
		SY3□31-C2	Metal seal		2-position
Double	94				
3-position	Closed center			98	
	Exhaust center				
	Pressure center				
SY3□31-C3	Metal seal			2-position	Single
		Double	97		
		3-position	Closed center	101	
			Exhaust center		
			Pressure center		
		SY3□31-C4	Metal seal	2-position	Single
Double	89				
3-position	Closed center			93	
	Exhaust center				
	Pressure center				
SY3□31-C6	Metal seal			2-position	Single
		Double	92		
		3-position	Closed center	96	
			Exhaust center		
			Pressure center		

### Series SY5000

Valve model	Seal type	Type of actuation		Weight g
SY5□00	Rubber seal	2-position	Single	82
			Double	90
		3-position	Closed center	100
			Exhaust center	
			Pressure center	
		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 center	111
			Exhaust center	
			Pressure center	

Valve model	Seal type	Type of actuation		Port size	Weight g
				4, 2 (A, B)	
SY5□30-01	Rubber seal	2-position	Single	1/8	102
			Double		110
		3-position	Closed center		120
			Exhaust center		
			Pressure center		
		4-position	Dual 3-port valve		110
SY5□30-C4	Rubber seal	2-position	Single	C4 ø4 One-touch fitting	115
			Double		123
		3-position	Closed center		133
			Exhaust center		
			Pressure center		
		4-position	Dual 3-port valve		123
SY5□30-C6	Rubber seal	2-position	Single	C6 ø6 One-touch fitting	110
			Double		118
		3-position	Closed center		128
			Exhaust center		
			Pressure center		
		4-position	Dual 3-port valve		118
SY5□30-C8	Rubber seal	2-position	Single	C8 ø8 One-touch fitting	99
			Double		107
		3-position	Closed center		117
			Exhaust center		
			Pressure center		
		4-position	Dual 3-port valve		107

Valve model	Seal type	Type of actuation		Port size	Weight g
				4, 2 (A, B)	
SY5□31-01	Metal seal	2-position	Single	1/8	111
			Double		121
		3-position	Closed center		131
			Exhaust center		
			Pressure center		
		SY5□31-C4	Metal seal		2-position
Double	134				
3-position	Closed center			144	
	Exhaust center				
	Pressure center				
SY5□31-C6	Metal seal			2-position	Single
		Double	130		
		3-position	Closed center	140	
			Exhaust center		
			Pressure center		
		SY5□31-C8	Metal seal	2-position	Single
Double	118				
3-position	Closed center			128	
	Exhaust center				
	Pressure center				



## Valve Weight

### Series SY7000

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

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

Valve model	Seal type	Type of actuation		Port size	Weight g
				4, 2 (A, B)	
SY7□30-02	Rubber seal	2-position	Single	1/4	125
			Double		133
		3-position	Closed center		147
			Exhaust center		
4-position	Dual 3-port valve	129			
SY7□30-C6	Rubber seal	2-position	Single	C6 ø6 One-touch fitting	163
			Double		171
		3-position	Closed center		186
			Exhaust center		
4-position	Dual 3-port valve	167			
SY7□30-C8	Rubber seal	2-position	Single	C8 ø8 One-touch fitting	151
			Double		159
		3-position	Closed center		174
			Exhaust center		
4-position	Dual 3-port valve	155			
SY7□30-C10	Rubber seal	2-position	Single	C10 ø10 One-touch fitting	136
			Double		144
		3-position	Closed center		159
			Exhaust center		
4-position	Dual 3-port valve	140			
SY7□30-C12	Rubber seal	2-position	Single	C12 ø12 One-touch fitting	146
			Double		154
		3-position	Closed center		169
			Exhaust center		
4-position	Dual 3-port valve	150			

Valve model	Seal type	Type of actuation		Port size	Weight g
				4, 2 (A, B)	
SY7□31-02	Metal seal	2-position	Single	1/4	136
			Double		148
		3-position	Closed center		164
			Exhaust center		
SY7□31-C6	Metal seal	2-position	Single	C6 ø6 One-touch fitting	174
			Double		186
		3-position	Closed center		202
			Exhaust center		
SY7□31-C8	Metal seal	2-position	Single	C8 ø8 One-touch fitting	162
			Double		174
		3-position	Closed center		190
			Exhaust center		
SY7□31-C10	Metal seal	2-position	Single	C10 ø10 One-touch fitting	148
			Double		159
		3-position	Closed center		176
			Exhaust center		
SY7□31-C12	Metal seal	2-position	Single	C12 ø12 One-touch fitting	157
			Double		169
		3-position	Closed center		185
			Exhaust center		

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

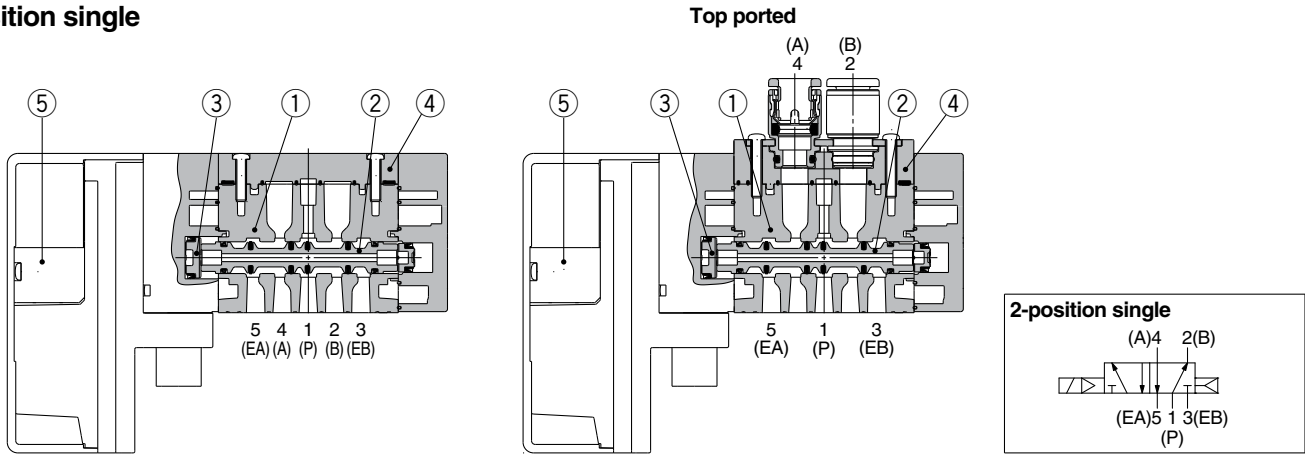
One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

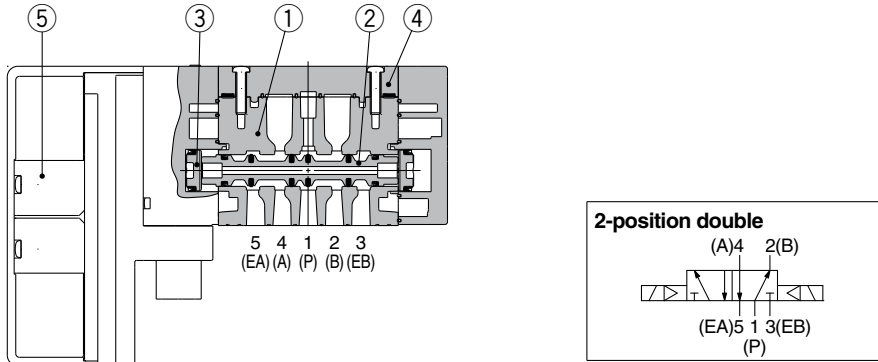
# Series SY3000/5000/7000 Valve Construction

## Rubber Seal

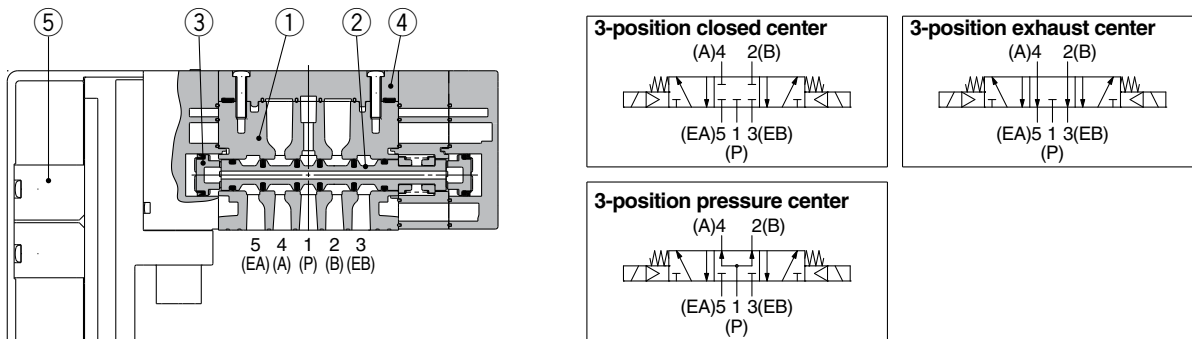
### 2-position single



### 2-position double



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

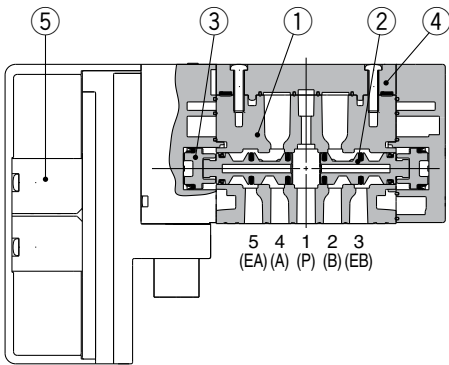


## Component Parts

No.	Description	Material	Note
1	Body	SY3000: Zinc die-casted SY5000/SY7000: Aluminum die-casted	
2	Spool valve	Special resin/HNBR (3-position valve: Aluminum/HNBR)	
3	Piston	Resin	
4	Body cover assembly	Resin	For side/bottom ported
	Port block assembly	SY3000: Resin SY5000: Zinc die-casted SY7000: Aluminum die-casted	For top ported
5	Pilot valve assembly	—	Refer to page 12.

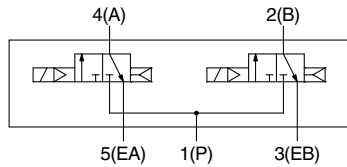
**Rubber Seal**

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

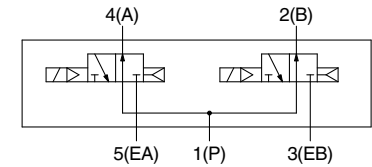


**4-position dual 3-port valve**

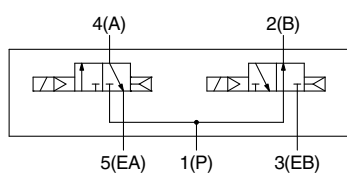
**N.C. valve x 2 pcs.**



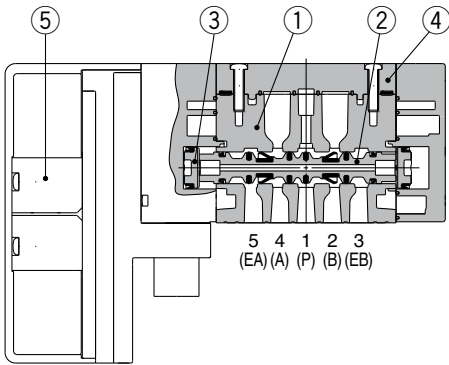
**N.O. valve x 2 pcs.**



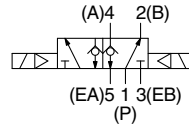
**N.C. valve, N.O. valve 1 pc. of each**



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

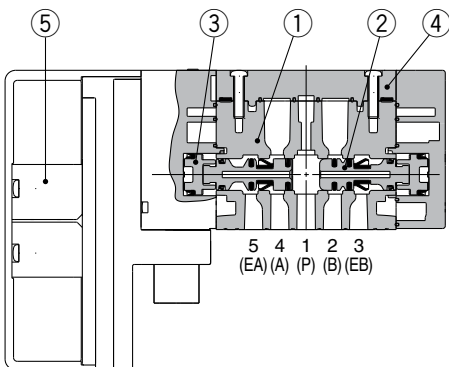


**2-position double with back pressure check valve**



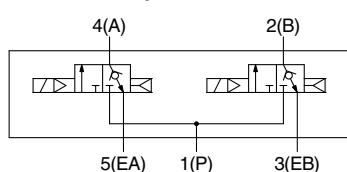
\* The built-in valve type back pressure check valve is not available for the SY7000.

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

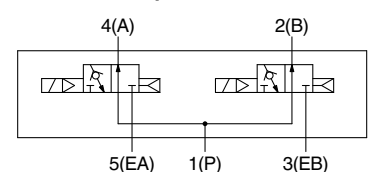


**4-position dual 3-port valve with back pressure check valve**

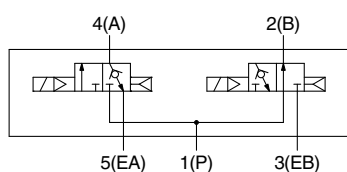
**N.C. valve x 2 pcs.**



**N.O. valve x 2 pcs.**



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

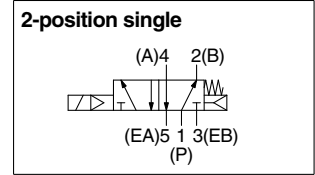
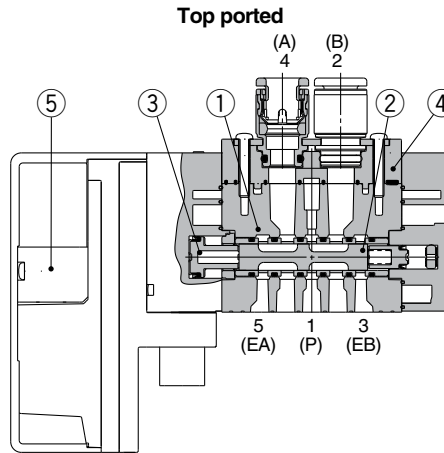
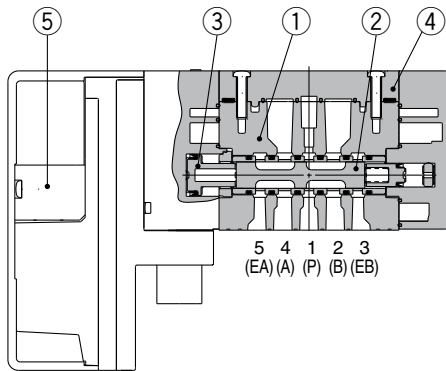


\* The built-in valve type back pressure check valve is not available for the SY7000.

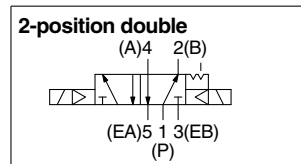
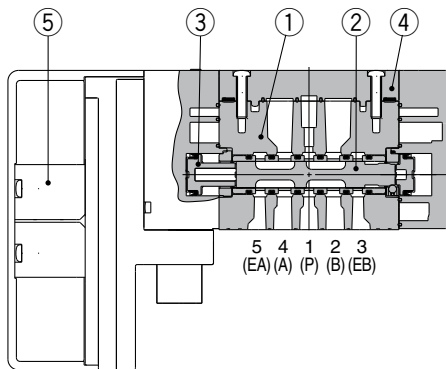
# Series SY3000/5000/7000

## Metal Seal

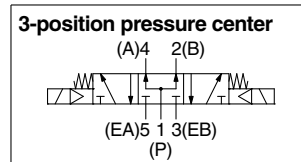
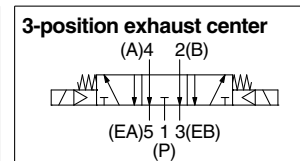
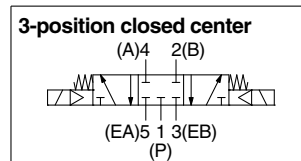
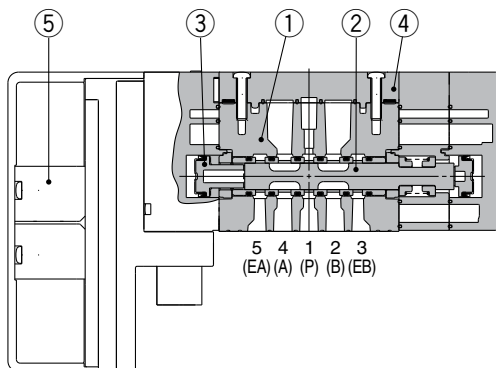
### 2-position single



### 2-position double



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



## Component Parts

No.	Description	Material	Note
1	<b>Body</b>	SY3000: Zinc die-casted SY5000/SY7000: Aluminum die-casted	
2	<b>Spool, Sleeve</b>	Stainless steel/HNBR	
3	<b>Piston</b>	Resin	
	<b>Body cover assembly</b>	Resin	For side/bottom ported
4	<b>Port block assembly</b>	SY3000: Resin SY5000: Zinc die-casted SY7000: Aluminum die-casted	For top ported
5	<b>Pilot valve assembly</b>	—	Refer to page 12.

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

Nil	Internal pilot
R	External pilot

● Option for mounting

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

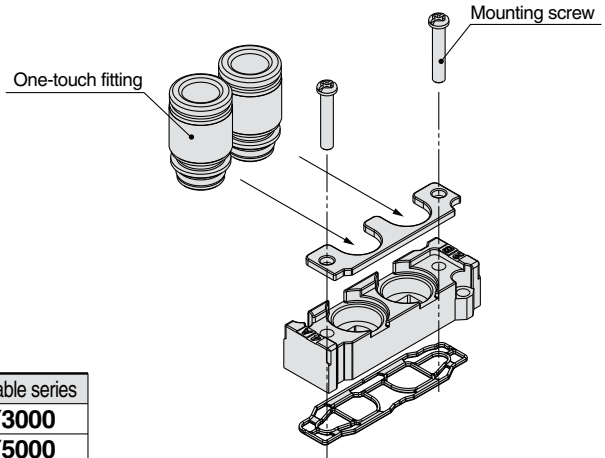
● Thread type

Nil	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	ø2	●	—	—
C3	ø3.2	●	—	—
C4	ø4	●	●	—
C6	ø6	●	●	●
C8	ø8	—	●	●
C10	ø10	—	—	●
C12	ø12	—	—	●

Inch size (One-touch fitting)

Symbol	Port size	Applicable series		
		SY3000	SY5000	SY7000
N1	ø1/8"	●	—	—
N3	ø5/32"	●	●	—
N7	ø1/4"	●	●	●
N9	ø5/16"	—	●	●
N11	ø3/8"	—	—	●

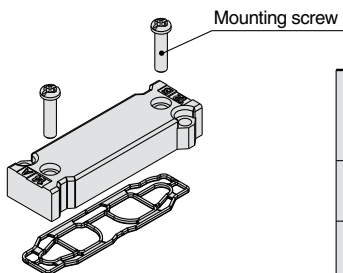
● Possible to replace only the One-touch fitting.

Port size		SY3000	SY5000	SY7000
Metric size	ø2	VVQ1000-50A-C2	—	—
	ø3.2	VVQ1000-50A-C3	—	—
	ø4	VVQ1000-50A-C4	VVQ1000-51A-C4	—
	ø6	VVQ1000-50A-C6	VVQ1000-51A-C6	VVQ2000-51A-C6
	ø8	—	VVQ1000-51A-C8	VVQ2000-51A-C8
	ø10	—	—	VVQ2000-51A-C10
Inch size	ø1/8"	VVQ1000-50A-N1	—	—
	ø5/32"	VVQ1000-50A-N3	VVQ1000-51A-N3	—
	ø1/4"	VVQ1000-50A-N7	VVQ1000-51A-N7	VVQ2000-51A-N7
	ø5/16"	—	VVQ1000-51A-N9	VVQ2000-51A-N9
	ø3/8"	—	—	VVQ2000-51A-N11

Refer to pages 247 and 248 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.	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 ●

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K	High pressure type (145 psi (1.0 MPa))*

\* Only metal seal type is available for the high pressure type. (145 psi (1.0 MPa))

### Coil type ●

Nil	Standard
T	With power saving circuit

### Rated voltage ●

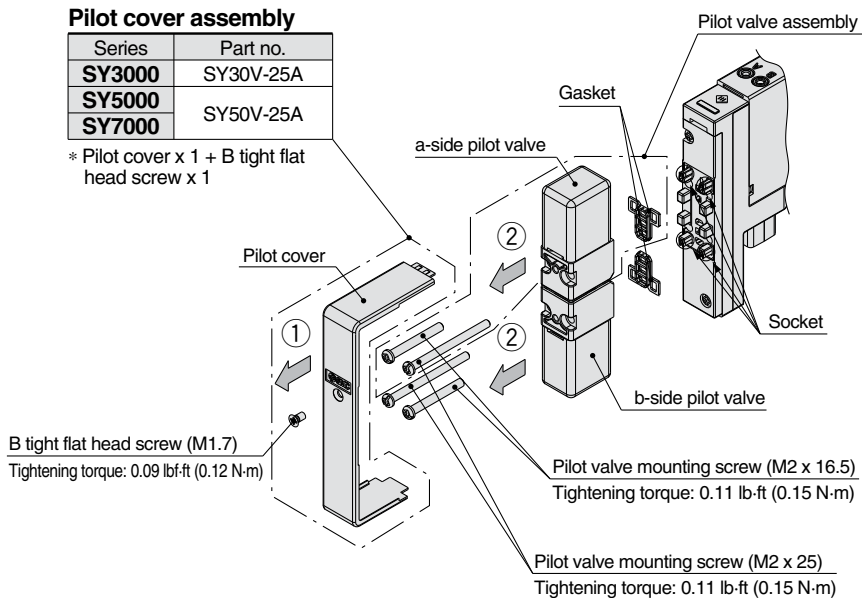
5	24 VDC
6	12 VDC

## How to replace pilot valves

### Pilot cover assembly

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

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



## ⚠ Caution

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

- 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.

Note 1) Ensure the gasket is mounted, and take care not to bend the socket.

Note 2) Be noted for mounting that there are two types of lengths for the pilot valve mounting screws.

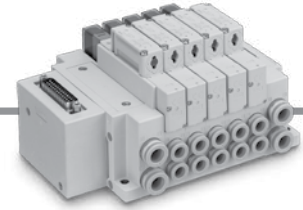
# Series SY5000

# With Residual Pressure Release Valve



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

## How to Order (With mounting screw)



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

**Series**  
 5 SY5000

**Type of actuation**  
 3 3-position closed center\*

**Base mounted**  
 (Top ported is not available.)

\* Only closed center type is available.

**With residual pressure release valve**  
**E** With residual pressure release valve\*

\* 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

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

### 3 Coil type

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

\* Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.  
 \* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

### 4 Rated voltage

5	24 VDC
6	12 VDC

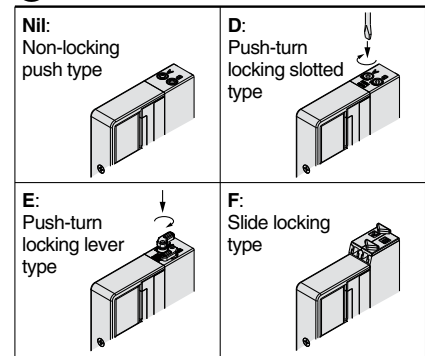
\* The applicable rated voltage varies depending on the manifold wiring type. Refer to the "How to Order Manifold" pages.

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

Symbol	With light	Surge voltage suppressor	Common specification
Nil	—	—	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 14 for with the safety slide locking manual override.

## Valve Specifications

Valve construction	Rubber seal	Metal seal
	3-position closed center valve with residual pressure release valve (Note 1)	
Fluid	Air	
Operating pressure range psi MPa (Note 2)	44 to 102 (0.3 to 0.7)	44 to 102 (0.3 to 0.7) (High pressure: 44 to 145 (0.3 to 1))
Weight g	117	128

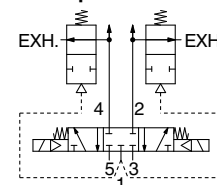
Note 1) Rubber seal is used for the residual pressure release valve.

Note 2) Internal pilot type only

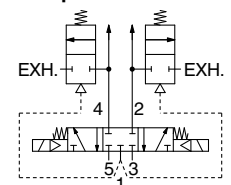
Note 3) Other specifications are common to the valve specifications on page 3.

### Symbol

<When 1(P) port is not pressurized>

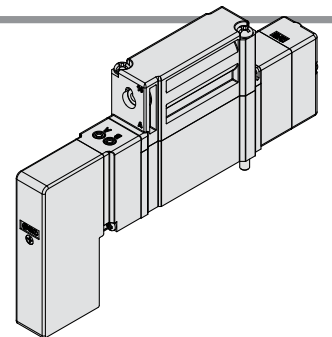
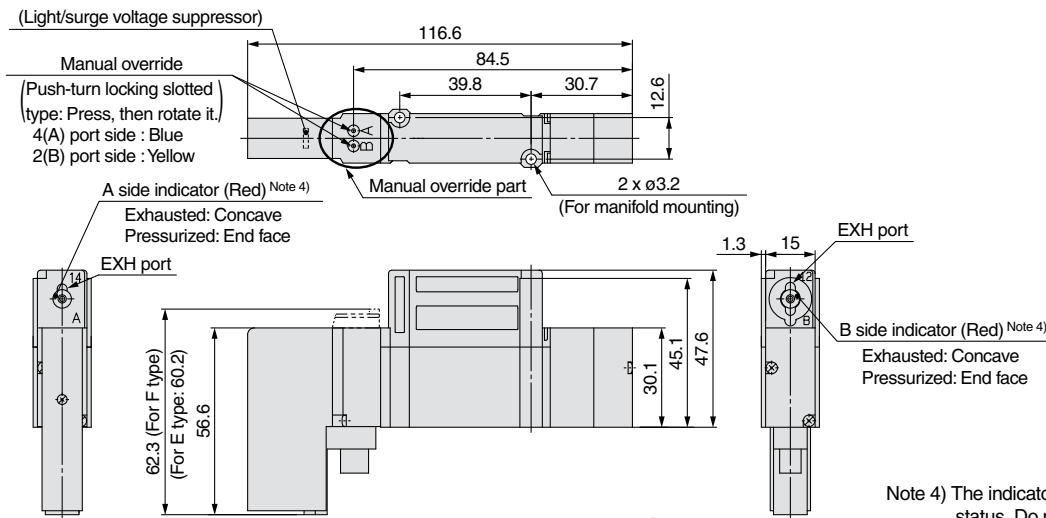


<When 1(P) port is pressurized>



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

## Dimensions



Note 4) The indicator shows the pressurization status. Do not push it.



## 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>0</sup>/<sub>3</sub>0 □□□□ - □□□□ 1 - □□ - □ - X90

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

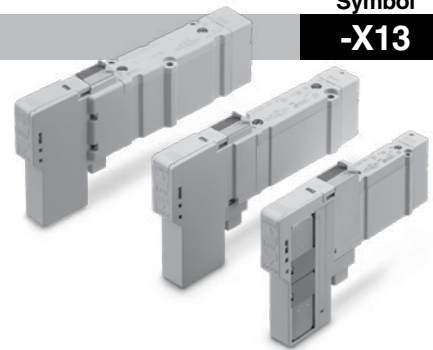
## 2 With Safety Slide Locking Manual Override

Symbol  
**-X13**

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

SY<sup>3</sup>/<sub>5</sub>□<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.

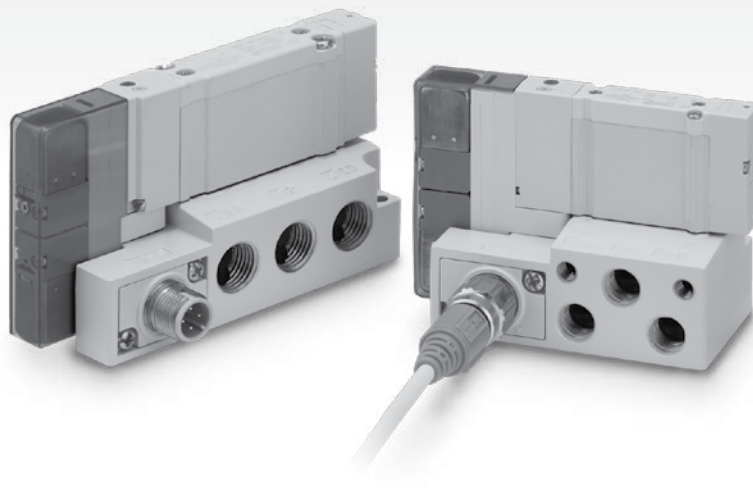
SY<sup>3</sup>/<sub>5</sub>□<sup>0</sup>/<sub>3</sub>1 □□□□ - □□□□ 1 - □□ - X16

- 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

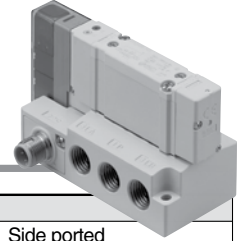
One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

# Series SY3000/5000

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

(Side ported, Bottom ported, Top ported)



### 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
	Bottom ported	1(P), 5(EA)/3(EB) port, 4(A)/2(B) port		SY3000	1/8
				SY5000	1/4
	Top ported	1(P), 5(EA)/3(EB) port		SY3000	1/8
				SY5000	1/4
		4(A)/2(B) port	Compliant with the valve. <sup>Note 1)</sup>		
Enclosure (Based on IEC60529)	IP67				
Weight: W [g] <sup>Note 2)</sup>	SY3000	Side ported		99	
		Bottom ported		109	
		Top ported		104	
	SY5000	Side ported		150	
		Bottom ported		172	
		Top ported		159	

Note 1) Refer to page 3 for valve specifications.

Note 2) The valve and cable weights are not included. To obtain the weight with valves attached, add the valve weights given on page 5.

### 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	C	b
SY3000	Side ported	01	01	1.8	0.27	1.7	0.26
	Bottom ported	01	01	1.7	0.23	1.4	0.27
	Top ported	01	C6	1.3	0.34	1.5	0.27
SY5000	Side ported	02	02	4.2	0.21	4.0	0.26
	Bottom ported	02	02	4.0	0.19	4.0	0.23
	Top ported	02	C8	2.9	0.29	4.1	0.33

#### Metal Seal

Series	Sub-plate piping location	Fitting port size		1 → 4/2		4/2 → 5/3	
		(P,E)	(A,B)	C	b	C	b
SY3000	Side ported	01	01	1.4	0.14	1.3	0.26
	Bottom ported	01	01	1.3	0.13	1.3	0.22
	Top ported	01	C6	1.2	0.22	1.4	0.29
SY5000	Side ported	02	02	3.2	0.13	3.5	0.16
	Bottom ported	02	02	3.0	0.12	3.2	0.17
	Top ported	02	C8	2.6	0.23	3.2	0.19

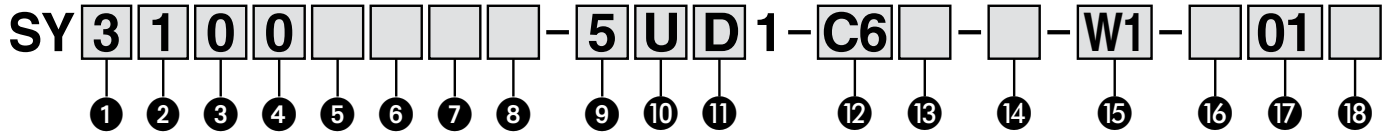
\* Calculation of effective area S and sonic conductance C:  $S = 5.0 \times C$

Note) The value is for individually operated 2-position type.



**How to Order**

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



**1 Series**

3	SY3000
5	SY5000

**2 Type of actuation**

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

\* 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**

Nil	Internal pilot
R	External pilot

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

Nil	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.

**7 Pilot valve option**

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

**8 Coil type**

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

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

\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

**9 Rated voltage**

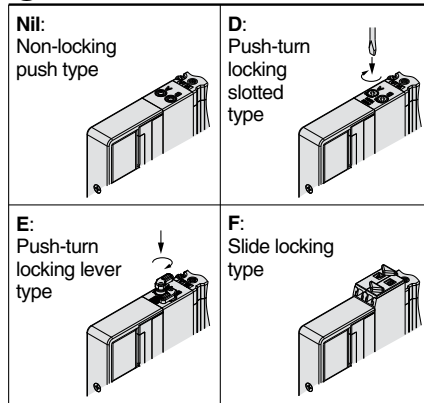
5	24 VDC
6	12 VDC

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

Symbol	With light	Surge voltage suppressor	Common specification
Nil	—	—	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.

**11 Manual override**



\* Refer to page 14 for with the safety slide locking manual override.

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

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

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

Symbol	A, B port	SY3000	SY5000
C2	ø2	●	—
C3	ø3.2	●	—
C4	ø4	●	●
C6	ø6	●	●
C8	ø8	—	●

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

Symbol	A, B port	SY3000	SY5000
N1	ø1/8"	●	—
N3	ø5/32"	●	●
N7	ø1/4"	●	●
N9	ø5/16"	—	●

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

Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

**14 Type of mounting screw**

Nil	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 19 for part numbers of the base gasket and mounting screw.

\* When using an optional spacer assembly, "B" and "H" cannot be selected.

**15 Wiring specifications**

W0	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)**

Nil	Side ported
B	Bottom ported
V	Top ported (1P, 5EA, 3EB port: Side ported)

**17 Port size**

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

**18 Sub-plate thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

(Note) When mounting a special order (including Made-to-Order specification) valve on the sub-plate, add the valve part number under the sub-plate part number to place an order. For details, refer to the ordering example on page 19.

## How to Order

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

\* Without valve

SY **3** 0M - 27 - 1 - **W1** - **01**

①
②
③
④
⑤

### ① Series

<b>3</b>	SY3000
<b>5</b>	SY5000

### ② Wiring specifications

<b>W0</b>	Without M12 connector cable
<b>W1</b>	With M12 connector cable (300 mm)
<b>W2</b>	With M12 connector cable (500 mm)
<b>W3</b>	With M12 connector cable (1000 mm)
<b>W4</b>	With M12 connector cable (2000 mm)
<b>W7</b>	With M12 connector cable (5000 mm)

Note 1) Refer to the table below for connector cable part numbers.

Note 2) When ordering a product with M12 connector cable, the connector cable is included.

### ③ Port location (Sub-plate)

<b>Nil</b>	Side ported
<b>B</b>	Bottom ported
<b>V</b>	Top ported [1(P), 5(EA), 3(EB) port: Side ported]

### ④ Port size

Symbol	Port size	Applicable series
<b>01</b>	1/8	SY3000
<b>02</b>	1/4	SY5000

### ⑤ Sub-plate thread type

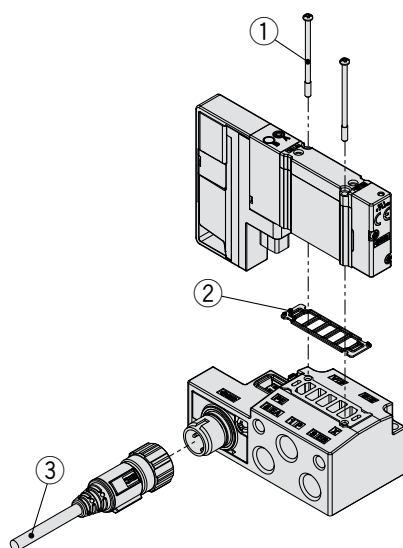
<b>Nil</b>	Rc
<b>F</b>	G
<b>N</b>	NPT
<b>T</b>	NPTF

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)

## Sub-plate Parts No.



No.	Description	Part no.		Note
		SY3000	SY5000	
①	Valve mounting screw	Round head combination screw (M2 x 32)	<b>SY3000-23-24A</b>	Part numbers shown on the left are for 10 valves (20 pcs.).
		Hexagon socket head cap screw (M2 x 32)	<b>SY5000-221-1A</b>	
②	Base gasket (for sub-plate)	<b>SY3000-222-1A</b>	<b>SY5000-222-1A</b>	Part numbers shown on the left are for 10 valves (10 pcs.).
③	M12 waterproof connector cable		<b>ZS-37-L</b>	Cable length: 300 mm
			<b>ZS-37-M</b>	Cable length: 500 mm
			<b>ZS-37-N</b>	Cable length: 1000 mm
			<b>ZS-37-P</b>	Cable length: 2000 mm
			<b>ZS-37-C</b>	Cable length: 5000 mm

### ⚠ Caution

#### Tightening torque

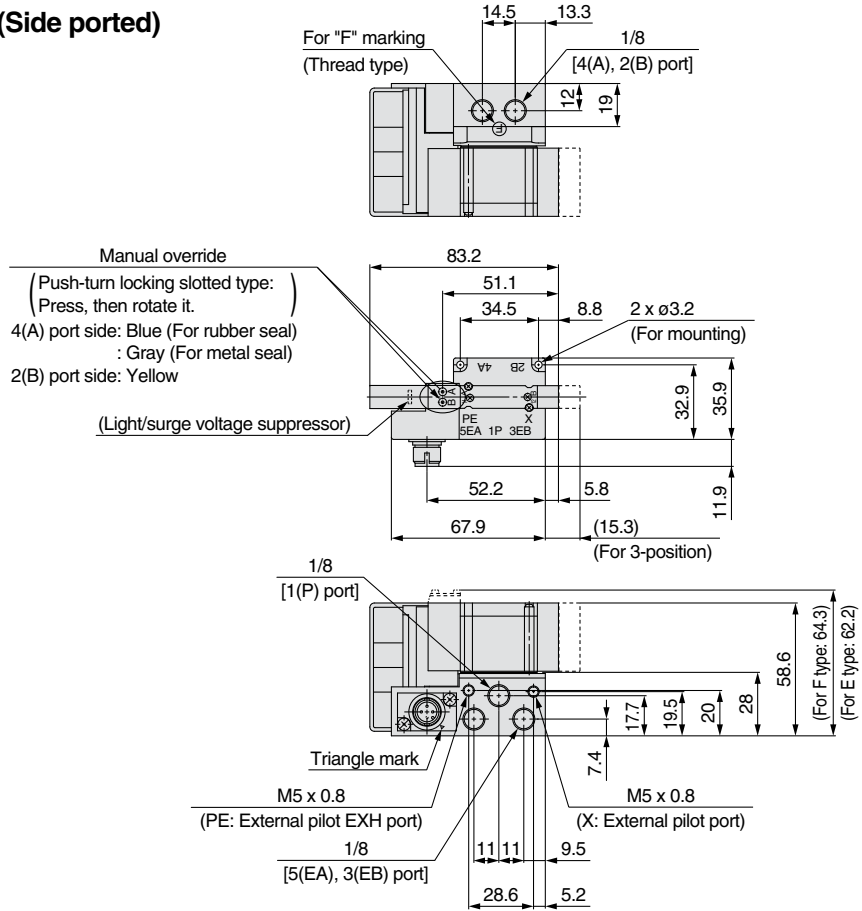
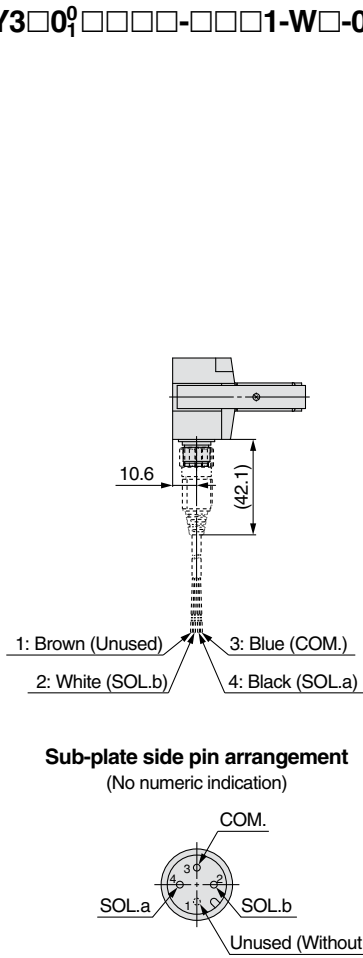
M2: 0.12 (0.16 N·m) (SY3000)

M3: 0.59 (0.8 N·m) (SY5000)

**Dimensions: Series SY3000**

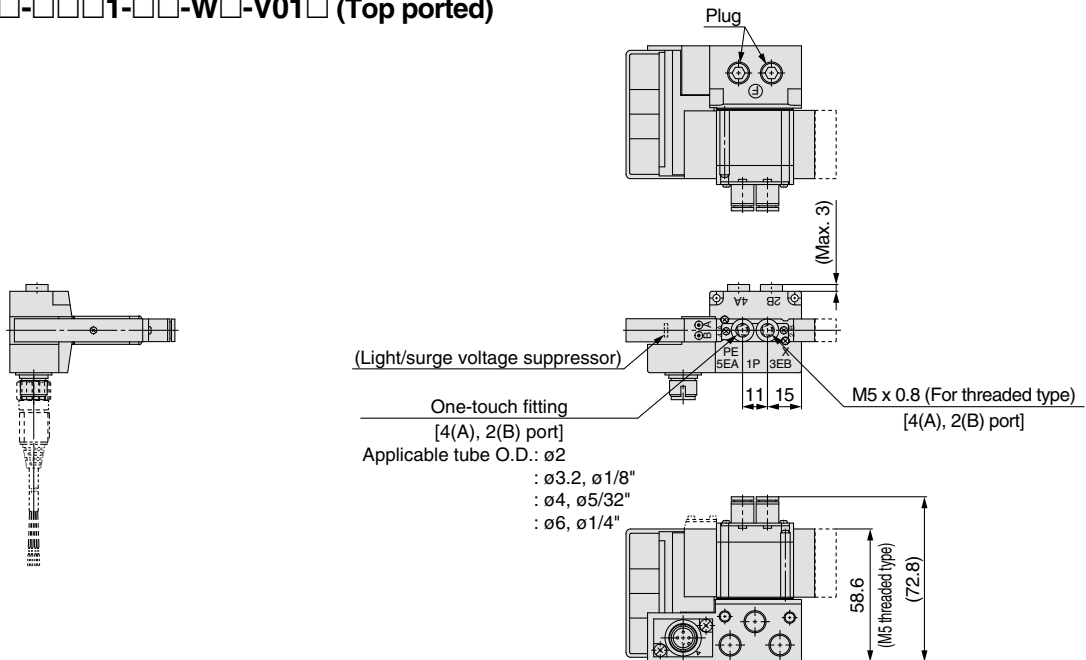
**Plug-in Sub-plate** **Side Ported**  
**Top Ported**

**SY3□0<sup>0</sup>□□□□-□□□1-W□-01□ (Side ported)**



Note 1) These figures show the "SY3200-5Z1-WO-01F".

**SY3□3<sup>0</sup>□□□□-□□□1-□□-W□-V01□ (Top ported)**



Note 2) These figures show the "SY3230-5Z1-C6-WO-V01F".

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

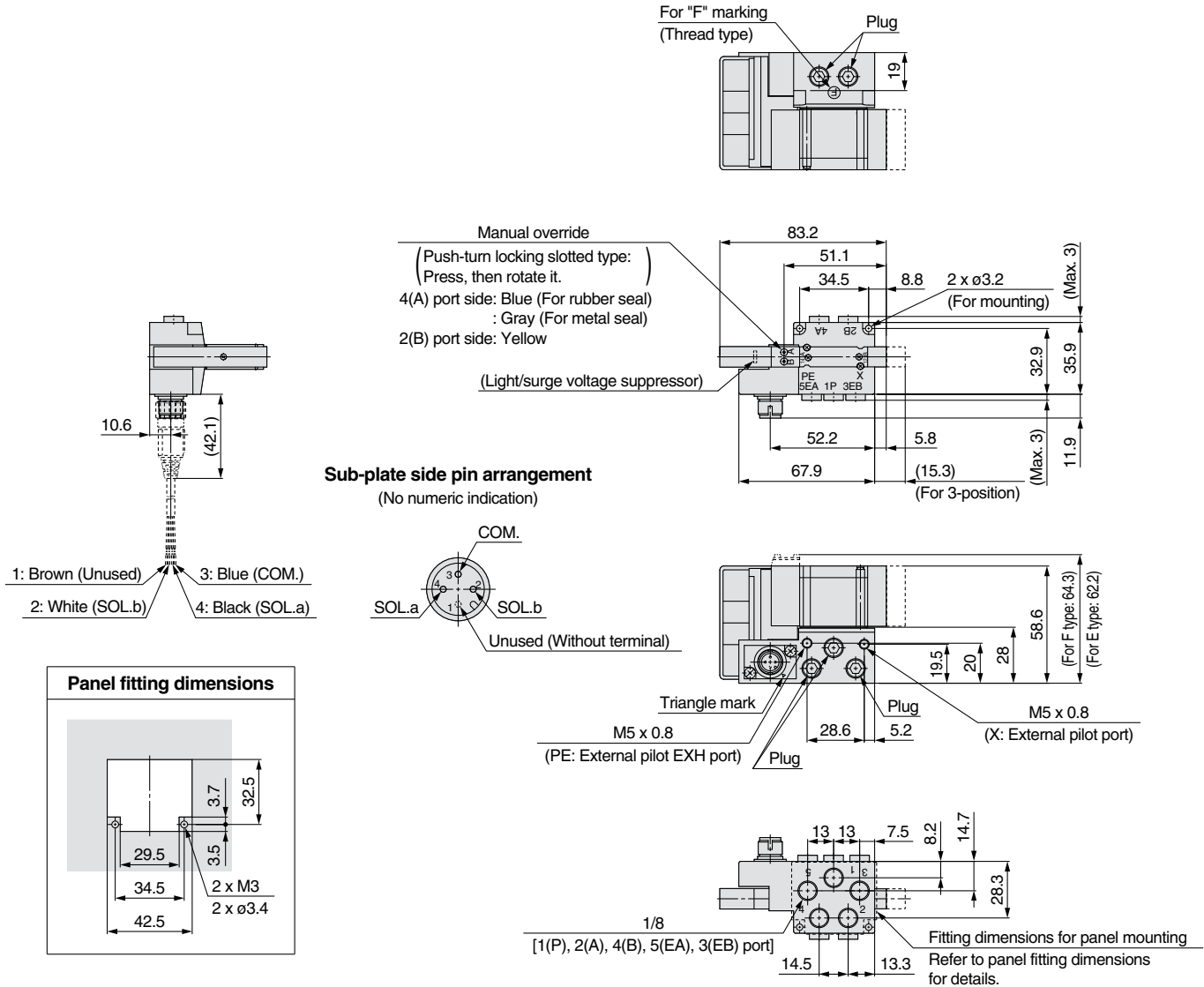


# Series SY3000/5000

**Plug-in Sub-plate** **Bottom Ported**

## Dimensions: Series SY3000

SY3000-□□□□-□□□□1-W□-B01□ (Bottom ported)

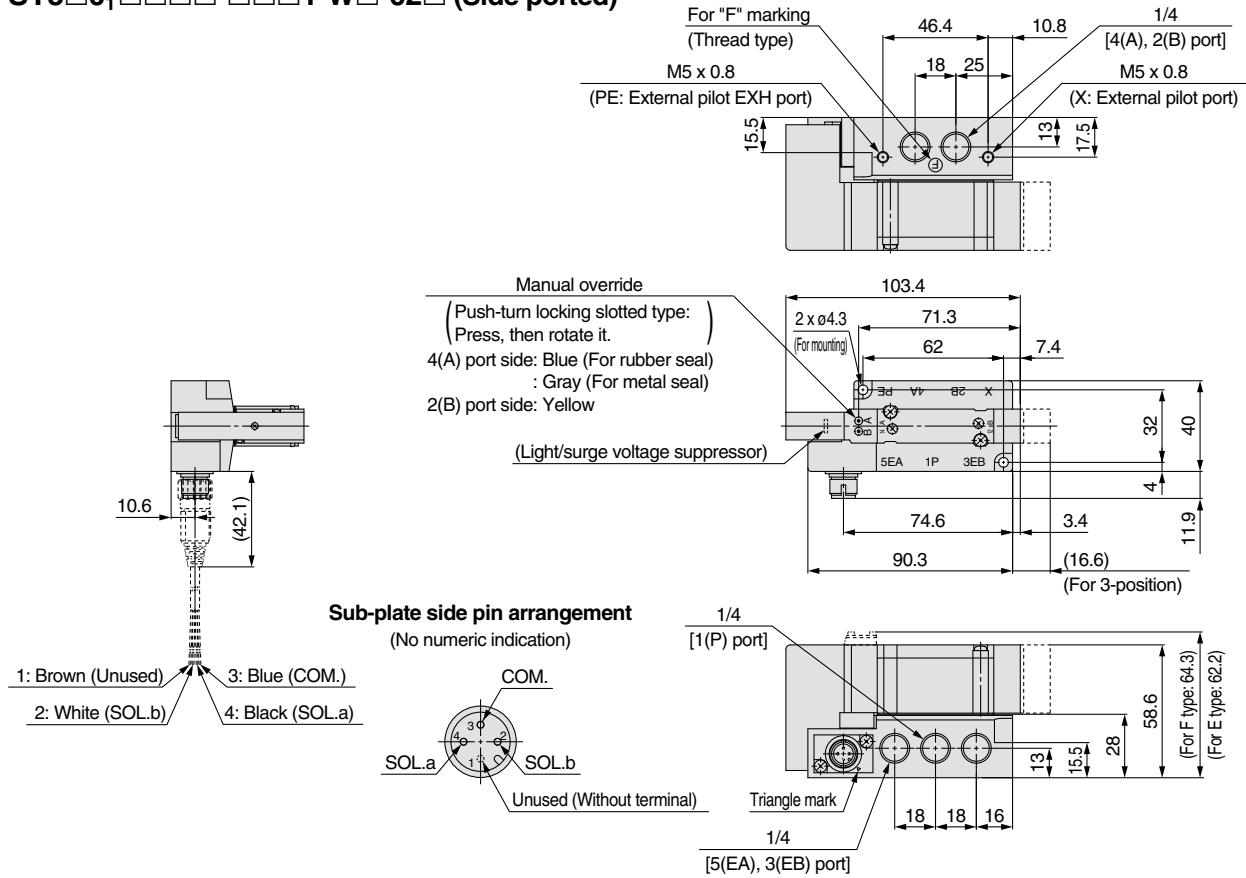


Note) These figures show the "SY3200-5Z1-WO-B01F".

**Dimensions: Series SY5000**

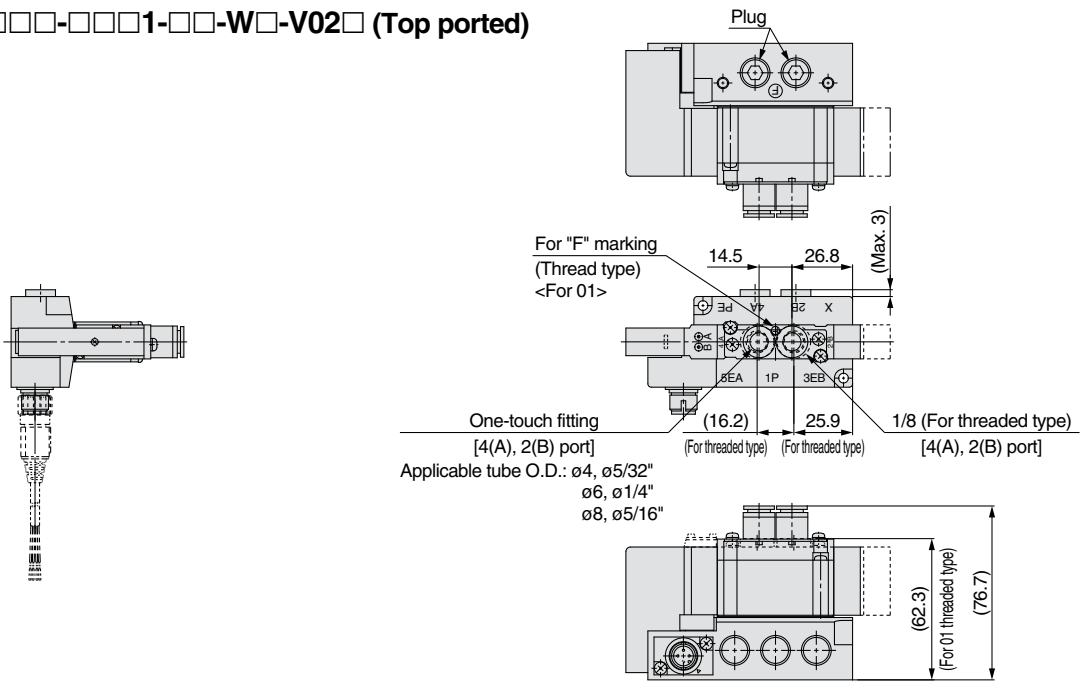
**Plug-in Sub-plate** **Side Ported**  
**Top Ported**

**SY5□□□□□□□□□□□□□□1-W□-02□ (Side ported)**



Note 1) These figures show the "SY5200-5Z1-WO-02F".

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



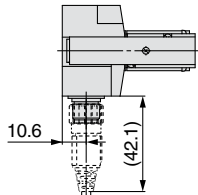
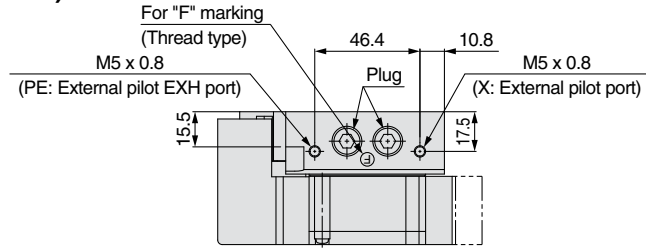
Note 2) These figures show the "SY5230-5Z1-C8-WO-V02F".  
Note 3) 1 (P), 5 (EA), 3 (EB), X and PE ports are side ported.



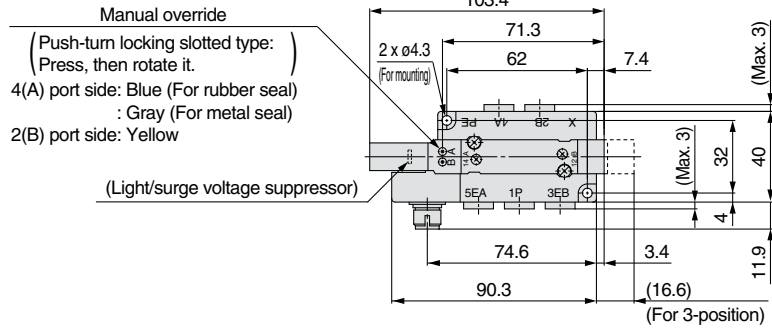
Valve  
Plug-in Sub-plate  
Plug-in Metal Base  
Type 50, 51, 52  
Manifold Exploded View  
Plug-in Connector Connecting Base  
Type 10, 11, 12  
Manifold Exploded View  
One-touch Fittings/  
Plug Assembly Part No.  
Manifold Options

## Dimensions: Series SY5000

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

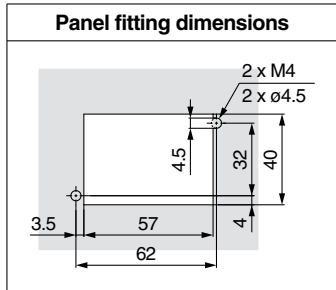
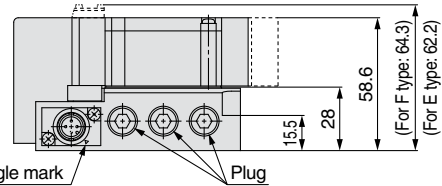
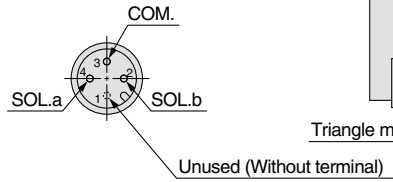


- 1: Brown (Unused)
- 2: White (SOL.b)
- 3: Blue (COM.)
- 4: Black (SOL.a)

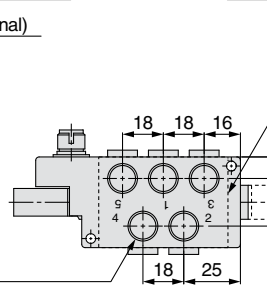


### Sub-plate side pin arrangement

(No numeric indication)



Triangle mark



Fitting dimensions for panel mounting  
Refer to panel fitting dimensions for details.

Note) These figures show the "SY5200-5Z1-WO-B02F".

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

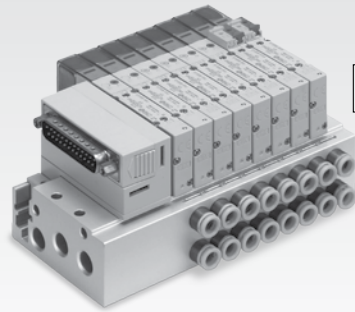
Plug-in Sub-plate

Valve

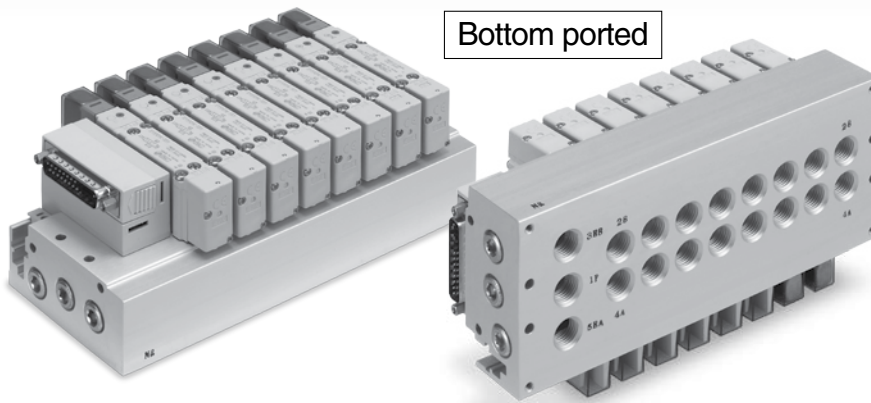




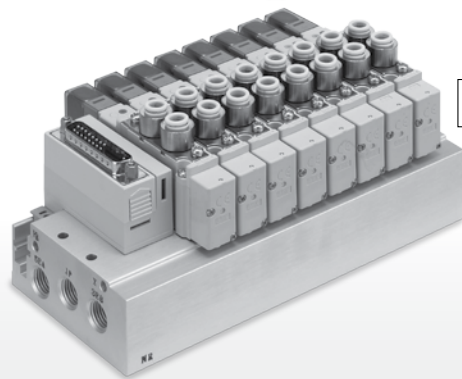
# Plug-in Metal Base



Side ported



Bottom ported

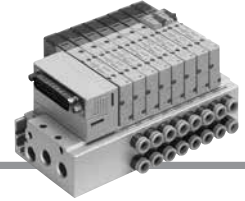


Top ported

Series **SY3000/5000/7000**

Type **50, 51, 52**

**Plug-in Metal Base**



**Manifold Specifications**

Model		D-sub connector	Flat ribbon cable			Serial wiring
		F type	P type	PG type J type	PH type	S5 type (EX510)
<b>Manifold type</b>		Plug-in metal base				
<b>SUP/EXH port type</b>		Common SUP/EXH				
<b>Valve stations</b>	<b>All double wiring</b>	2 to 12 stations		2 to 9 stations (J type: 2 to 8 stations)	2 to 4 stations	2 to 8 stations
	<b>All single wiring</b>			2 to 12 stations	2 to 8 stations	2 to 12 stations
<b>Applicable connector</b>		D-sub connector Conforming to MIL-C-24308 JIS-X-5101	Flat ribbon cable connector with strain relief Conforming to MIL-C-83503			—
			Socket: 26 pins MIL type	Socket: 20 pins MIL type	Socket: 10 pins MIL type	
<b>Internal wiring</b>		Positive common, Negative common				
<b>Port size</b>	<b>1(P), 3/5(E) port</b>	<b>SY3000</b>	1/8			
		<b>SY5000</b>	1/4			
		<b>SY7000</b>	3/8			
	<b>4(A), 2(B) port</b>	<b>SY3000</b>	M5 x 0.8, 1/8 ø2 One-touch fitting, ø3.2 One-touch fitting, ø4 One-touch fitting, ø6 One-touch fitting ø1/8" One-touch fitting, ø5/32" One-touch fitting, ø1/4" One-touch fitting			
		<b>SY5000</b>	1/8, 1/4 ø4 One-touch fitting, ø6 One-touch fitting, ø8 One-touch fitting ø5/32" One-touch fitting, ø1/4" One-touch fitting, ø5/16" One-touch fitting			
		<b>SY7000</b>	1/4 ø6 One-touch fitting, ø8 One-touch fitting, ø10 One-touch fitting, ø12 One-touch fitting ø1/4" One-touch fitting, ø5/16" One-touch fitting, ø3/8" One-touch fitting			
<b>Enclosure (Based on IEC60529)</b>		IP40			IP20	

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

### Valve Seal Type: Rubber Seal

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

### Valve Seal Type: Metal Seal

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

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

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

Note 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 5 for the appropriate number of stations.

Type 50  
Side Ported

Type 51  
Bottom Ported

# Plug-in Metal Base

D-sub Connector

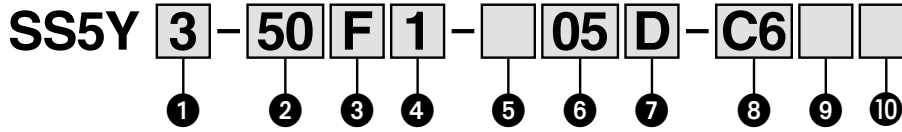
Flat Ribbon Cable

PC Wiring



# Series SY3000/5000/7000

## How to Order Manifold



### 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.

### 3 Connector type

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

### 4 Connector entry direction

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

### 5 Wiring type

Nil	All double wiring <sup>Note 1)</sup>
S	All single wiring <sup>Note 2)</sup>

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

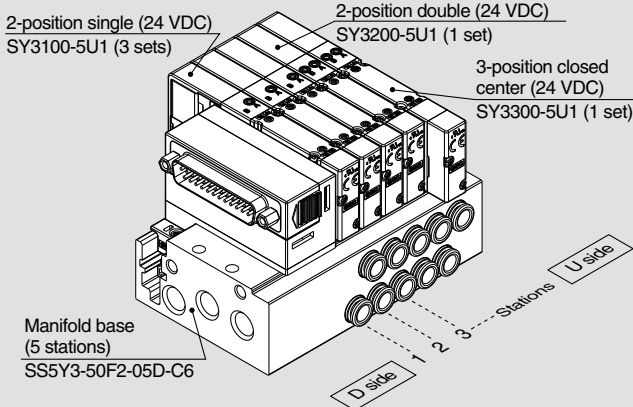
Note 2) All single wiring: Available only for the manifold which has 2-position single for all stations.

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

Note 3) 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 center 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	:	:	double	:	:	double
12	12 stations	wiring	12	12 stations	wiring	09	9 stations	wiring
02	2 stations	All	02	2 stations	All	02	2 stations	All
:	:	single	:	:	single	:	:	single
12	12 stations	wiring	12	12 stations	wiring	12	12 stations	wiring

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	:	:	double
04	4 stations	wiring	08	8 stations	wiring
02	2 stations	All	02	2 stations	All
:	:	single	:	:	single
08	8 stations	wiring	12	12 stations	wiring

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

Note) When mixing top ported configurations, select from page 50.

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 <small>Note 1)</small>
<b>D</b>	D side <small>Note 1, Note 2)</small>
<b>B</b>	Both sides

Note 1) Plugs are mounted on the opposite side of the selected ports.

Note 2) Only D side is available for Type 51 (Bottom ported).

**9 Thread type**

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

**10 Mounting**

<b>Nil</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>⋮</b>
<b>D12</b>	For 12 stations

Specify a longer rail than the standard length.

Note 1) Only direct mounting is available for Type 51 (Bottom ported).

Note 2) Refer to page 247 for the fixation of DIN rail mounting type manifold.

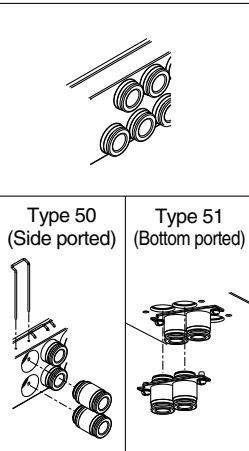
**8 A, B port size**

**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)**

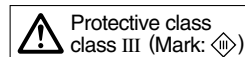
Symbol	A, B port	SY3000	SY5000	SY7000
<b>Fixed</b>	<b>C2</b>	●	—	—
	<b>C3</b>	●	—	—
	<b>C4</b>	●	●	—
	<b>C6</b>	●	●	—
	<b>C8</b>	—	●	●
	<b>C10</b>	—	—	●
<b>Replaceable</b>	<b>KC2</b>	●	—	—
	<b>KC3</b>	●	—	—
	<b>KC4</b>	●	●	—
	<b>KC6</b>	●	●	●
	<b>KC8</b>	—	●	●
	<b>KC10</b>	—	—	●
	<b>KC12</b>	—	—	●
<b>M*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



**One-touch fitting (Inch)**

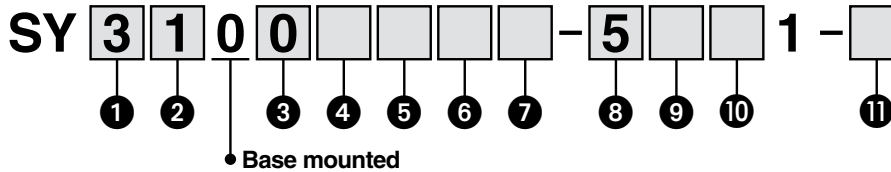
Symbol	A, B port	SY3000	SY5000	SY7000	
<b>Fixed</b>	<b>N1</b>	●	—	—	
	<b>N3</b>	●	●	—	
	<b>N7</b>	●	●	—	
	<b>N9</b>	—	●	●	
	<b>N11</b>	—	—	●	
	<b>Replaceable</b>	<b>KN1</b>	●	—	—
<b>KN3</b>		●	●	—	
<b>KN7</b>		●	●	●	
<b>KN9</b>		—	●	●	
<b>KN11</b>		—	—	●	
<b>M*</b>		Mixed sizes	●	●	●
P, E port size (Thread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

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



## How to Order Valves (With mounting screw)

Refer to page 3 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 center
4		Exhaust center
5		Pressure center
A*	4-position dual 3-port	N.C./N.C.
B*		N.O./N.O.
C*		N.C./N.O.

\* 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

Nil	Internal pilot
R	External pilot

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

Nil	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

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

### 7 Coil type

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

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

\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

### 8 Rated voltage

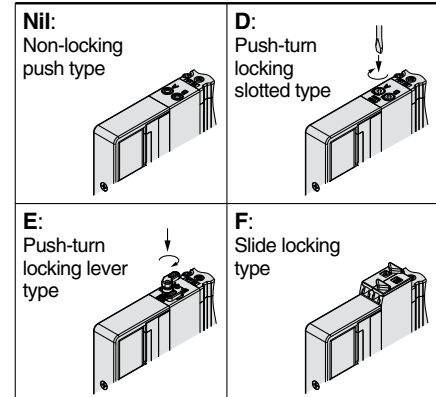
5	24 VDC
6	12 VDC

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

Symbol	With light	Surge voltage suppressor	Common specification
Nil	—	—	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 14 for with the safety slide locking manual override.

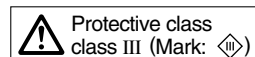
### 11 Type of mounting screw

Nil	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 73 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.



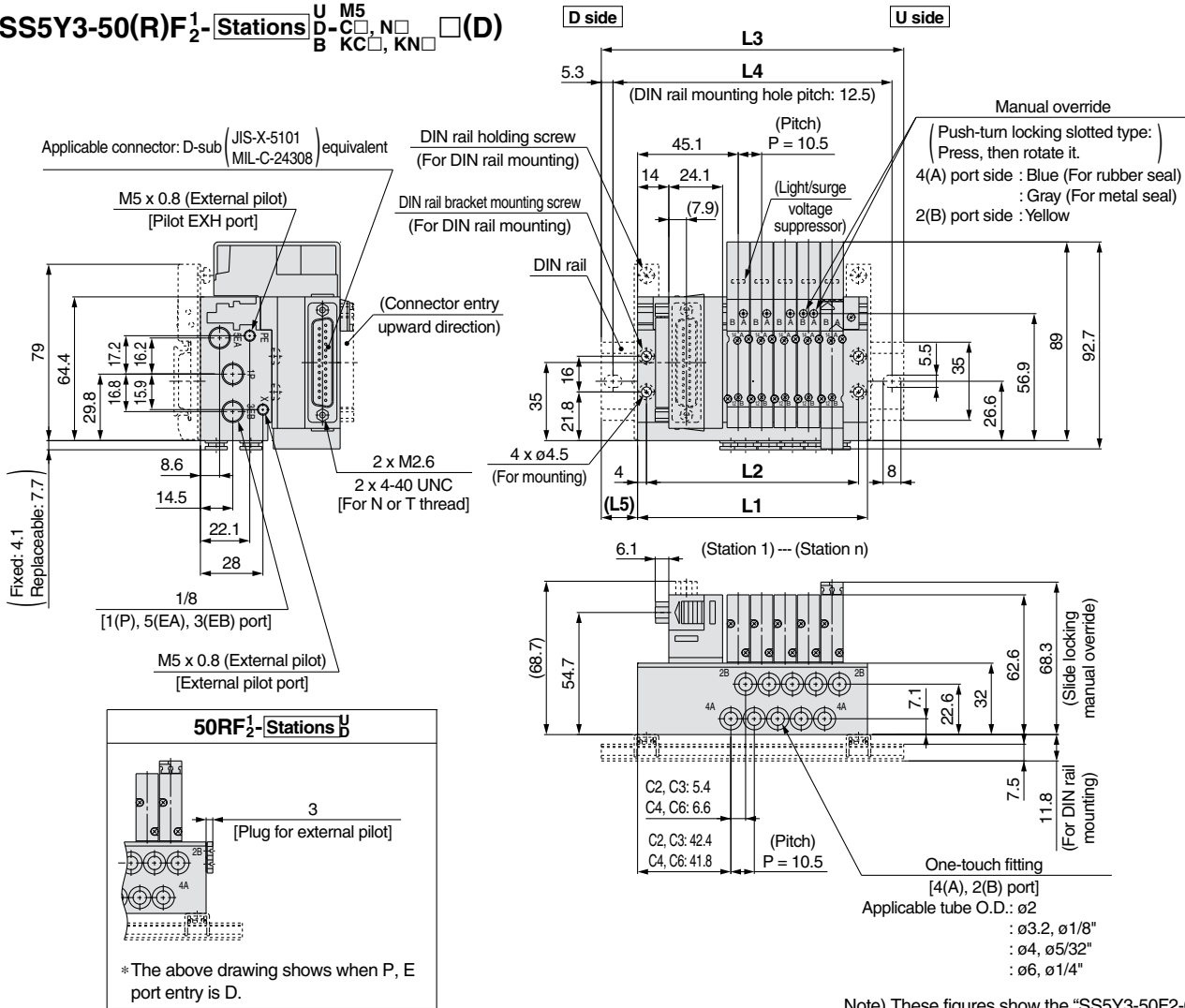
Plug-in Metal Base

Type 50/Side Ported

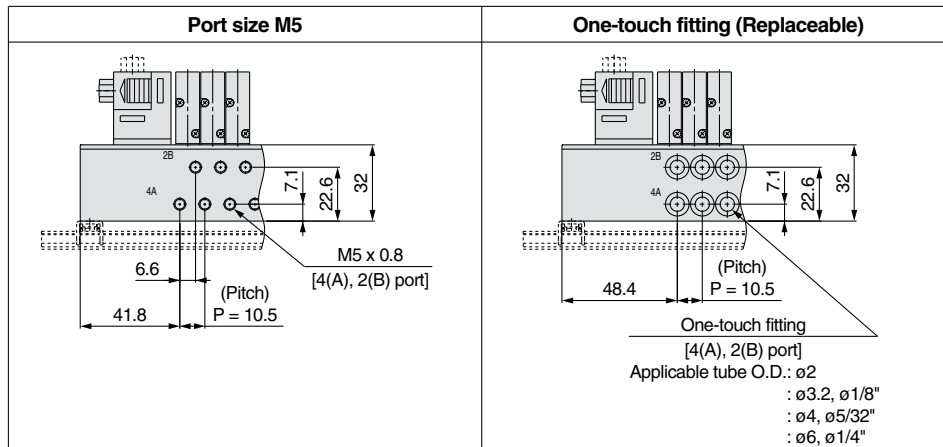
D-sub Connector

Dimensions: Series SY3000

SS5Y3-50(R)F<sub>2</sub> 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)



Note) These figures show the "SS5Y3-50F2-05B-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

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52 Manifold Exploded View

Connector Connecting Base

Type 10, 11, 12 Manifold Exploded View

One-touch Fittings/ Plug Assembly Part No.

Manifold Options



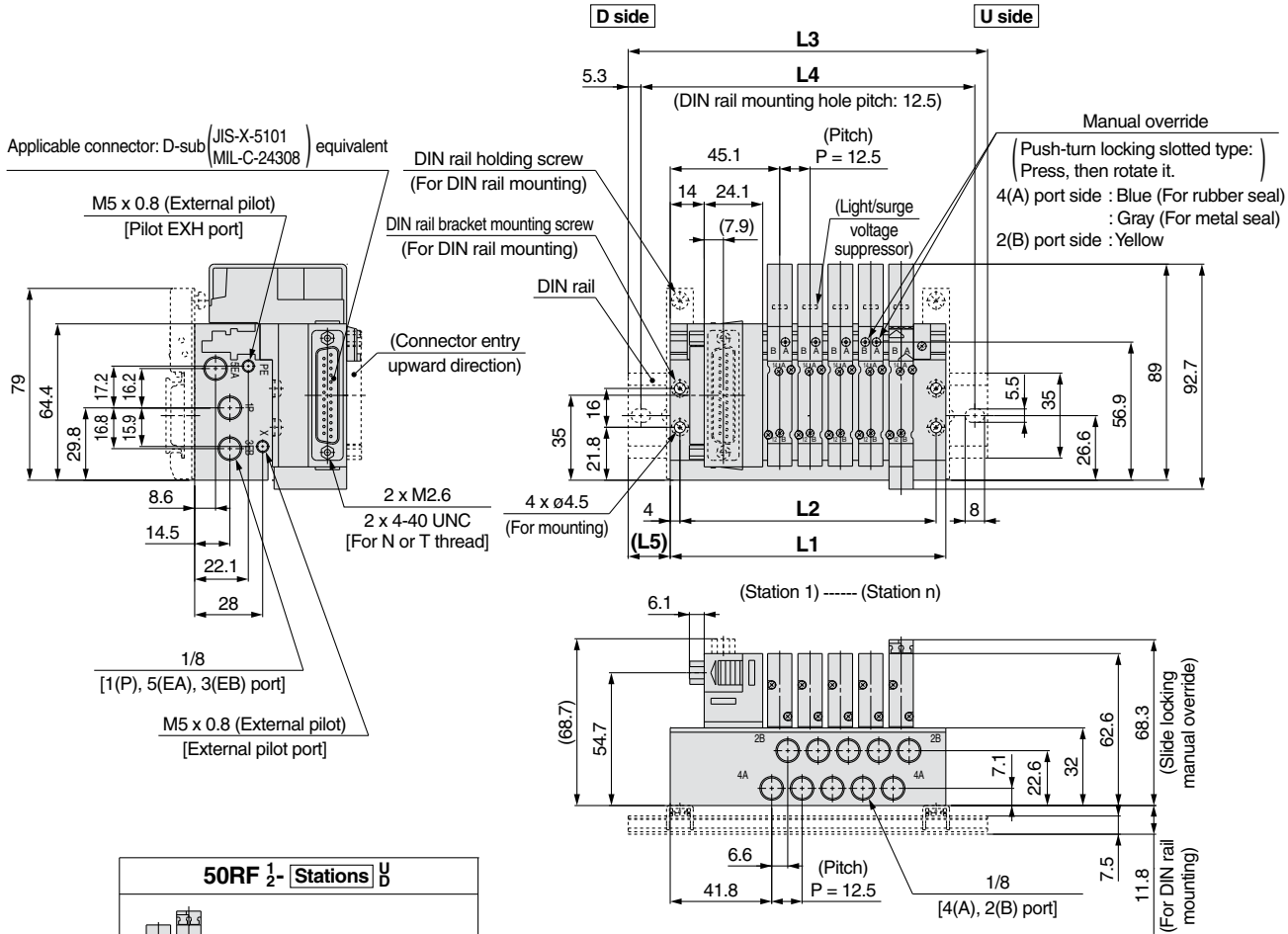
# Series SY3000/5000/7000

**Plug-in  
Metal Base**

**Type 50/Side Ported  
D-sub Connector**

## Dimensions: Series SY3000

SS5Y3-50(R)F<sub>2</sub>- Stations  $\frac{U}{D}$  01 □ (D)

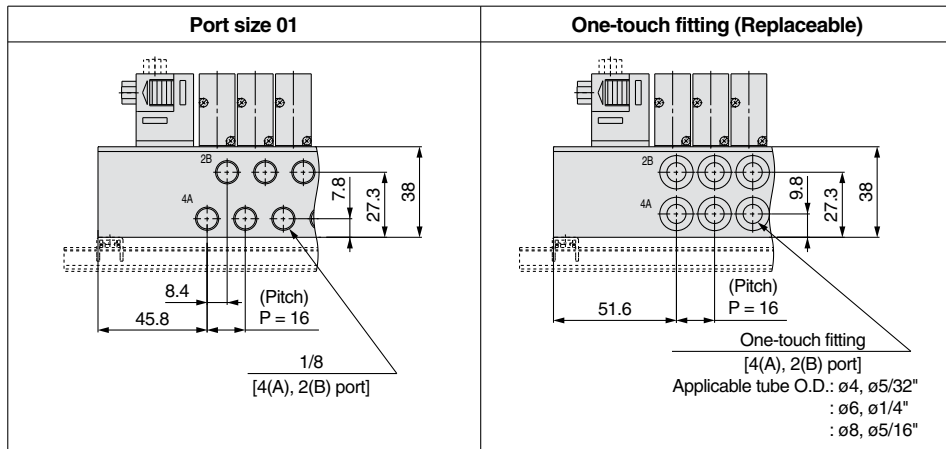
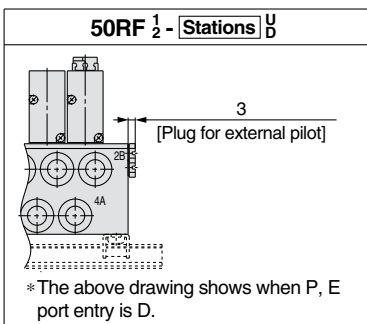
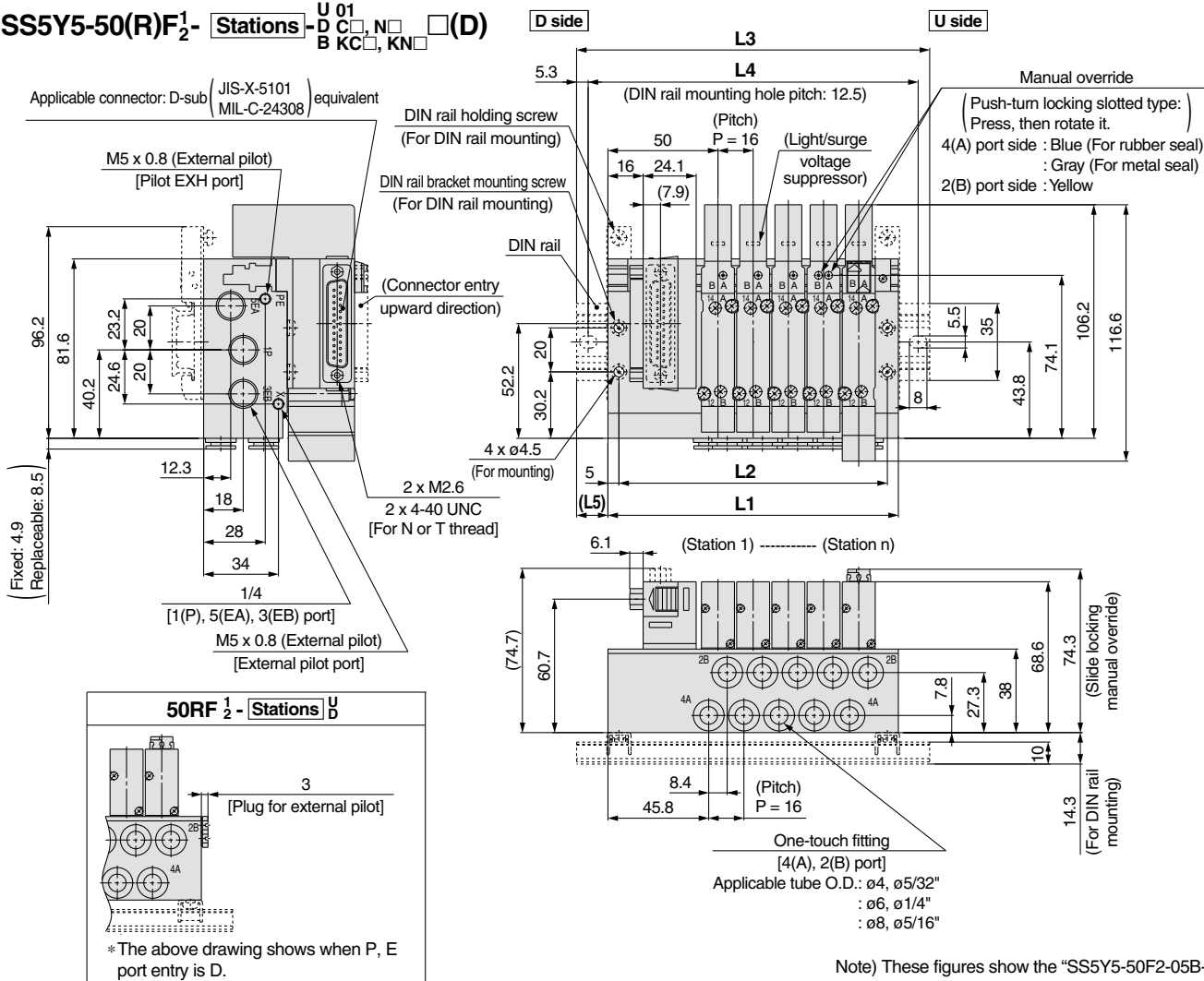


Note) These figures show the "SS5Y3-50F2-05B-01".

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

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

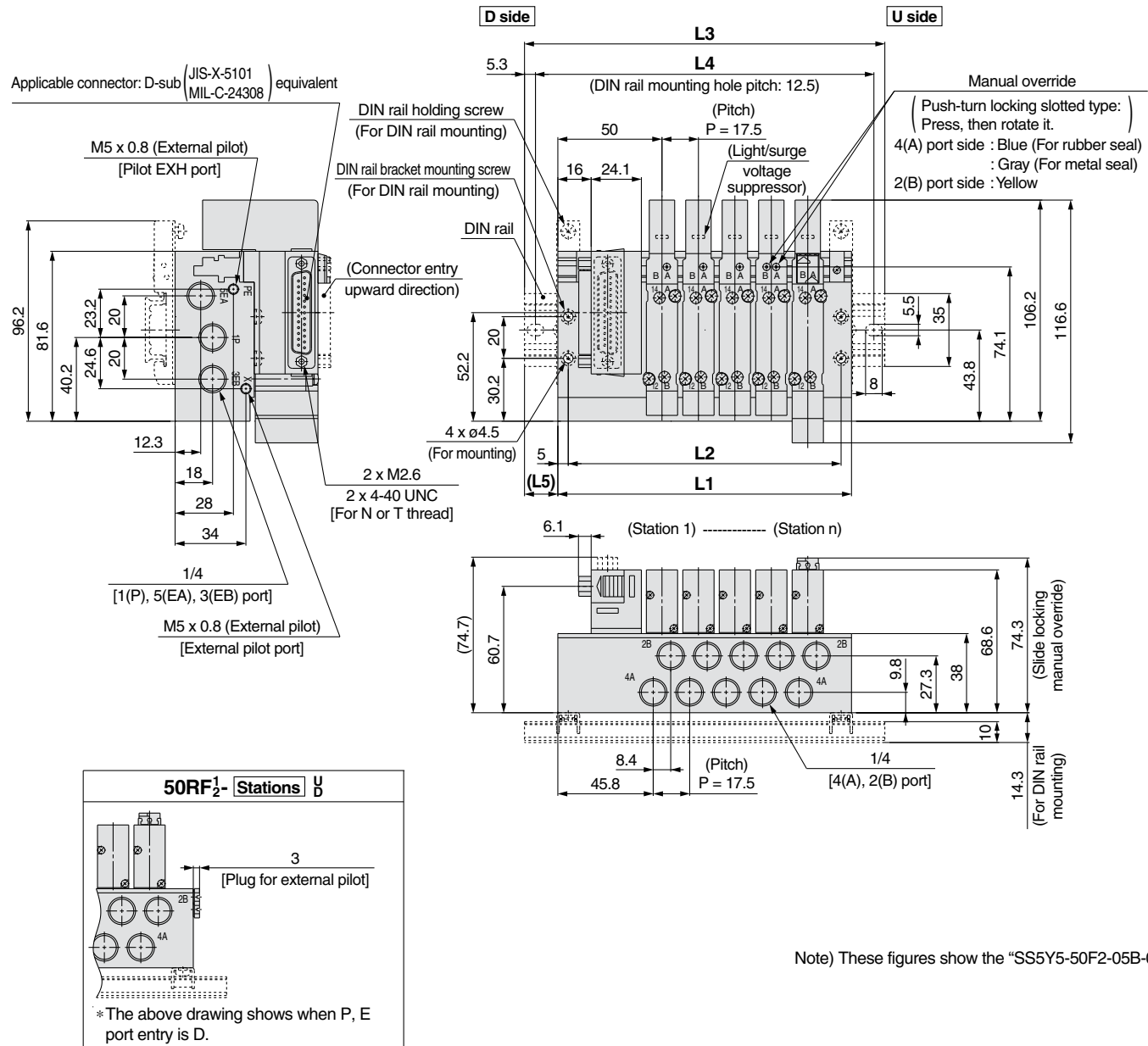
# Series SY3000/5000/7000

**Plug-in  
Metal Base**

**Type 50/Side Ported  
D-sub Connector**

## Dimensions: Series SY5000

SS5Y5-50(R)F  $\frac{1}{2}$ - Stations  $\frac{U}{D}$ -02□(D)



Note) 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

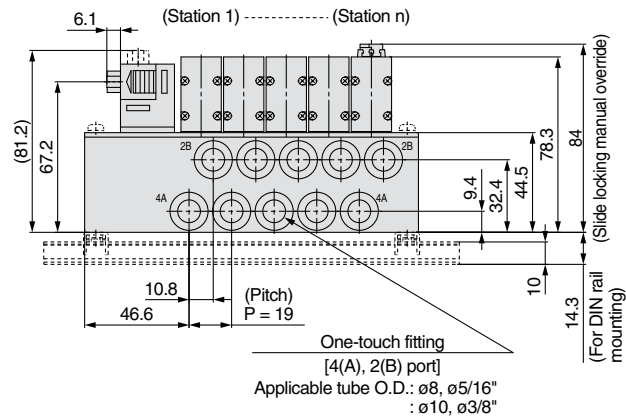
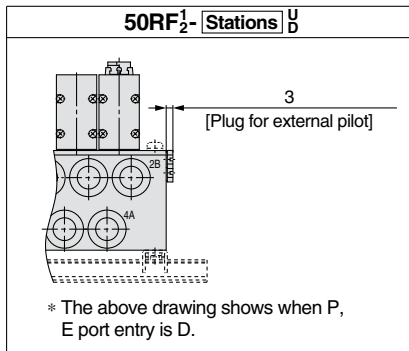
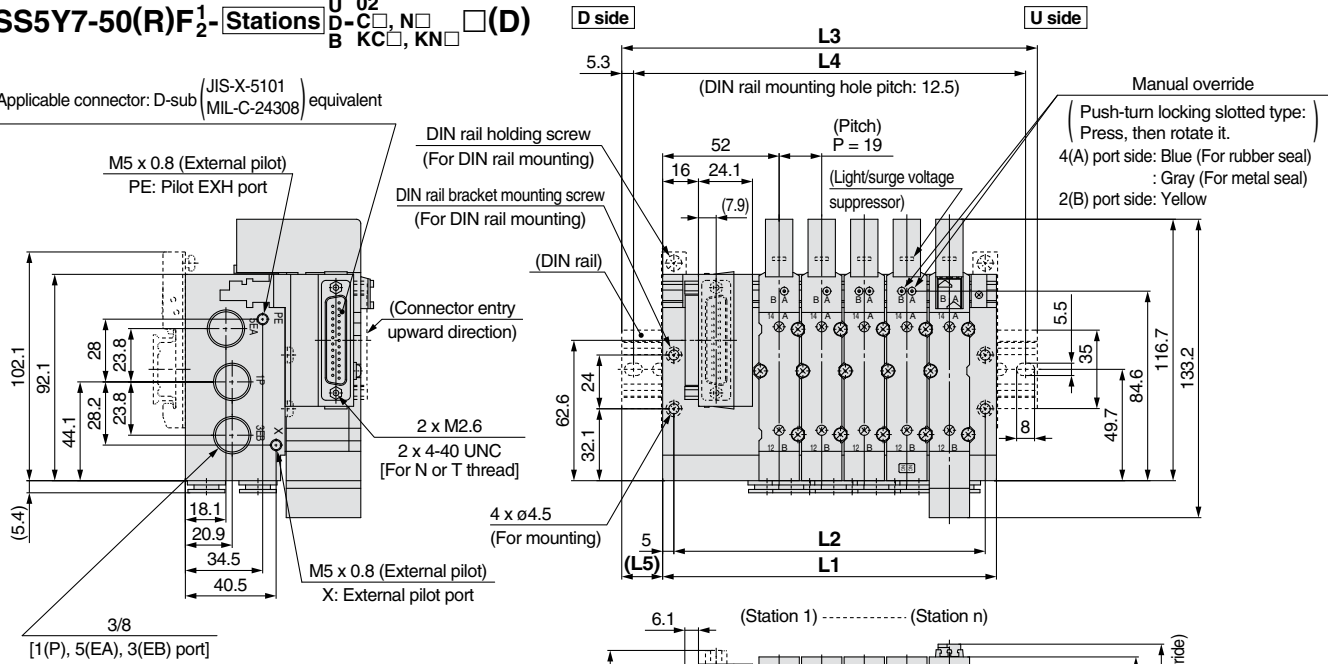
Plug-in Metal Base

Type 50/Side Ported  
D-sub Connector

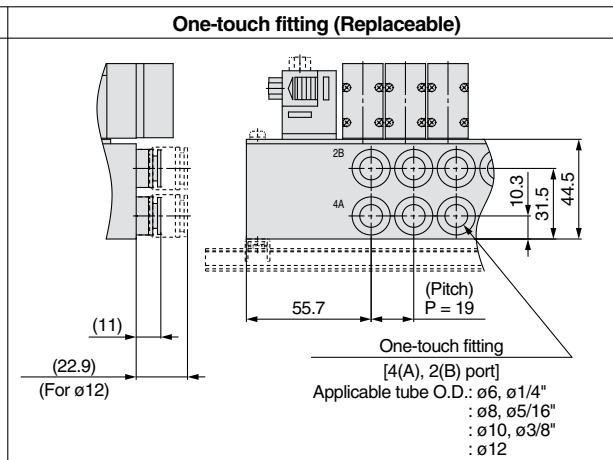
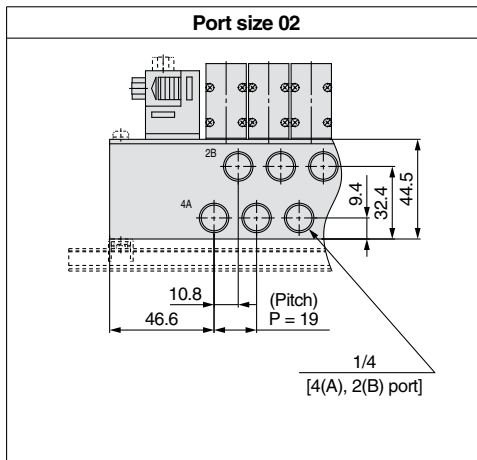
Dimensions: Series SY7000

SS5Y7-50(R)F<sub>2</sub>- Stations  $\begin{matrix} U \\ D \end{matrix}$   $\begin{matrix} 02 \\ C \\ N \end{matrix}$   $\begin{matrix} \square \\ \square \\ \square \end{matrix}$  (D)  
 $\begin{matrix} B \\ K \\ C \\ KN \end{matrix}$   $\begin{matrix} \square \\ \square \\ \square \\ \square \end{matrix}$

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



Note) These figures show the "SS5Y7-50F2-05B-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

# Series SY3000/5000/7000

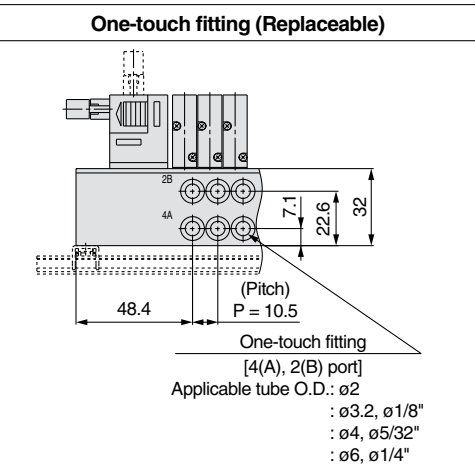
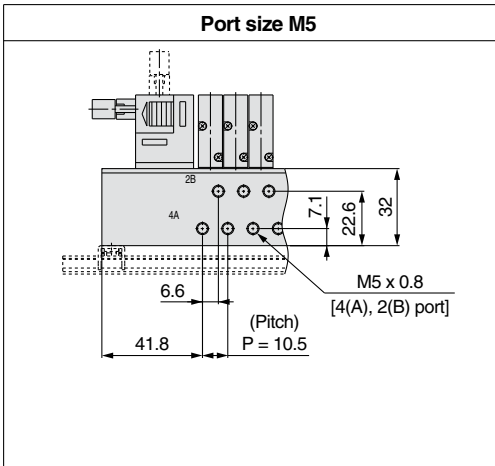
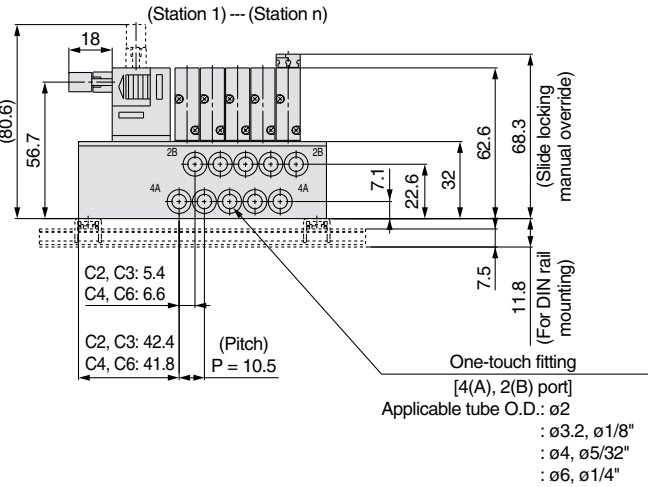
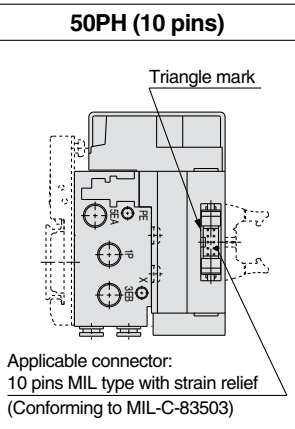
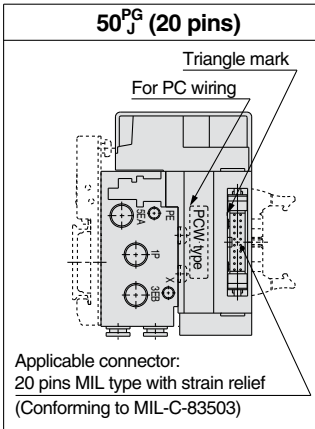
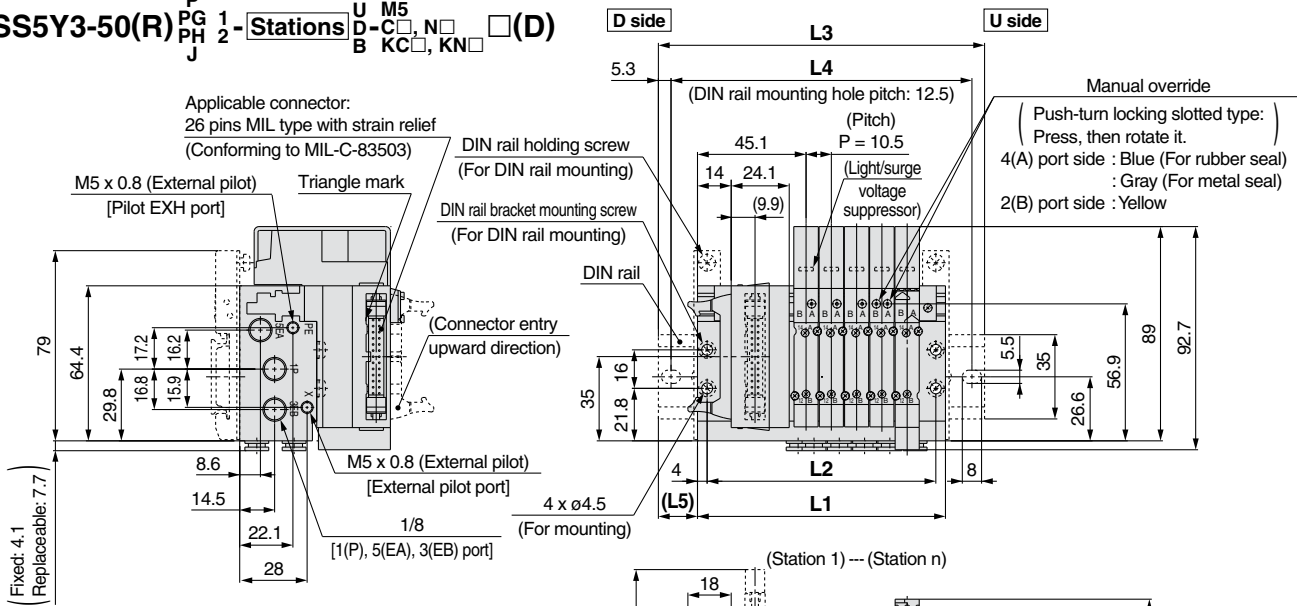
**Plug-in  
Metal Base**

Type 50/Side Ported

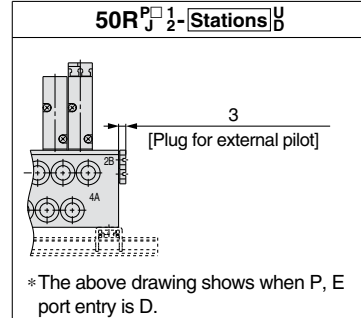
Flat Ribbon Cable

## Dimensions: Series SY3000

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



Note 1) These figures show the "SS5Y3-50P2-05B-C6".  
Note 2) 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

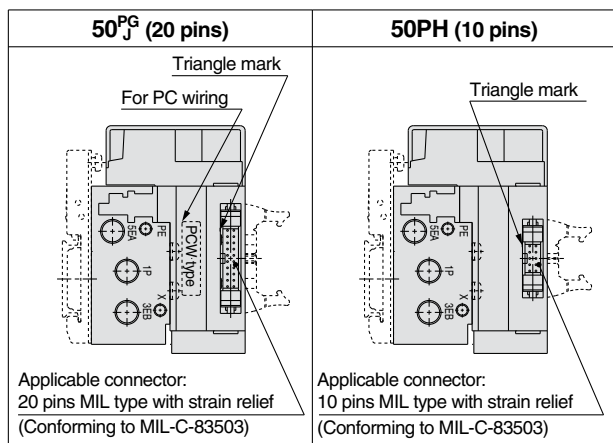
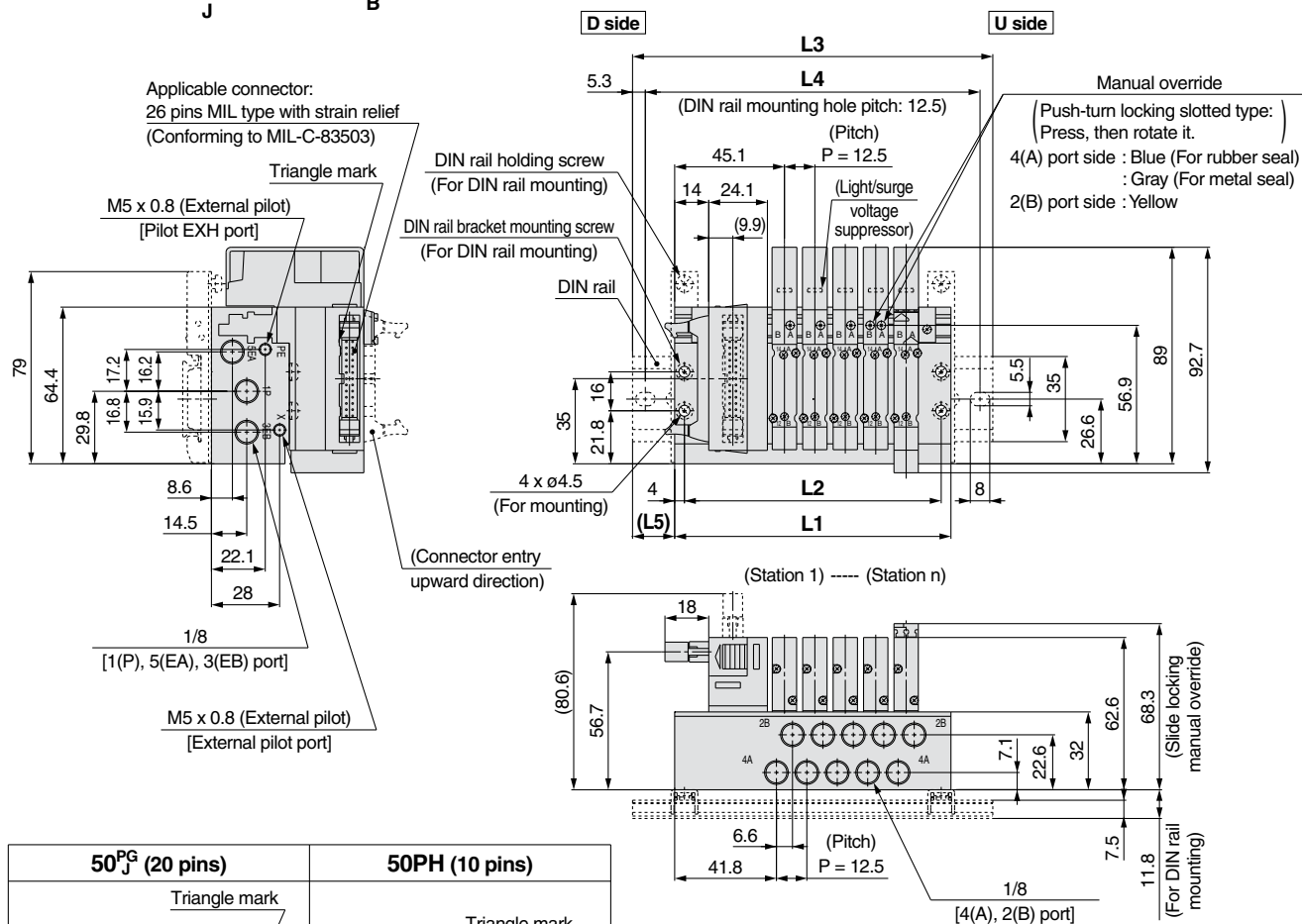
**Plug-in Metal Base**

Type 50/Side Ported

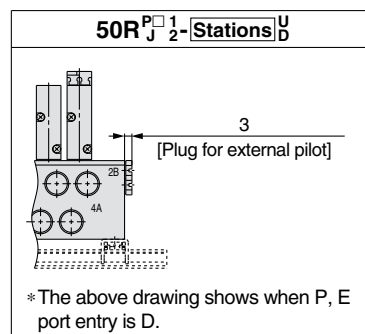
Flat Ribbon Cable

Dimensions: Series **SY3000**

SS5Y3-50(R)  $\begin{matrix} P \\ PH \\ J \end{matrix}$   $\begin{matrix} 1 \\ 2 \end{matrix}$  - Stations  $\begin{matrix} U \\ B \end{matrix}$  01 □(D)



Note 1) These figures show the "SS5Y3-50P2-05B-01".  
 Note 2) 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	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



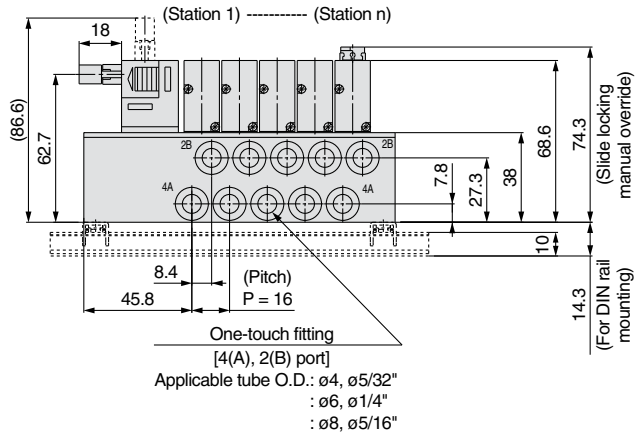
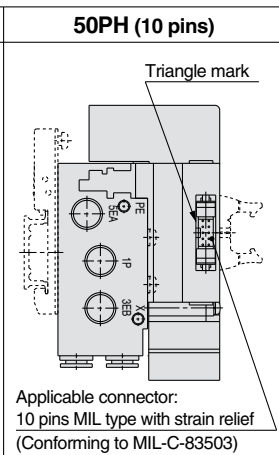
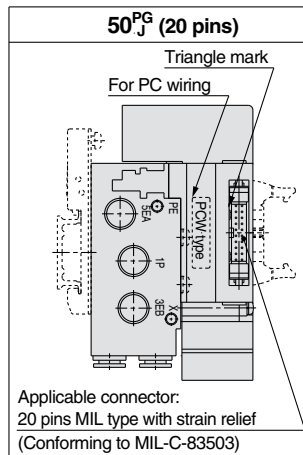
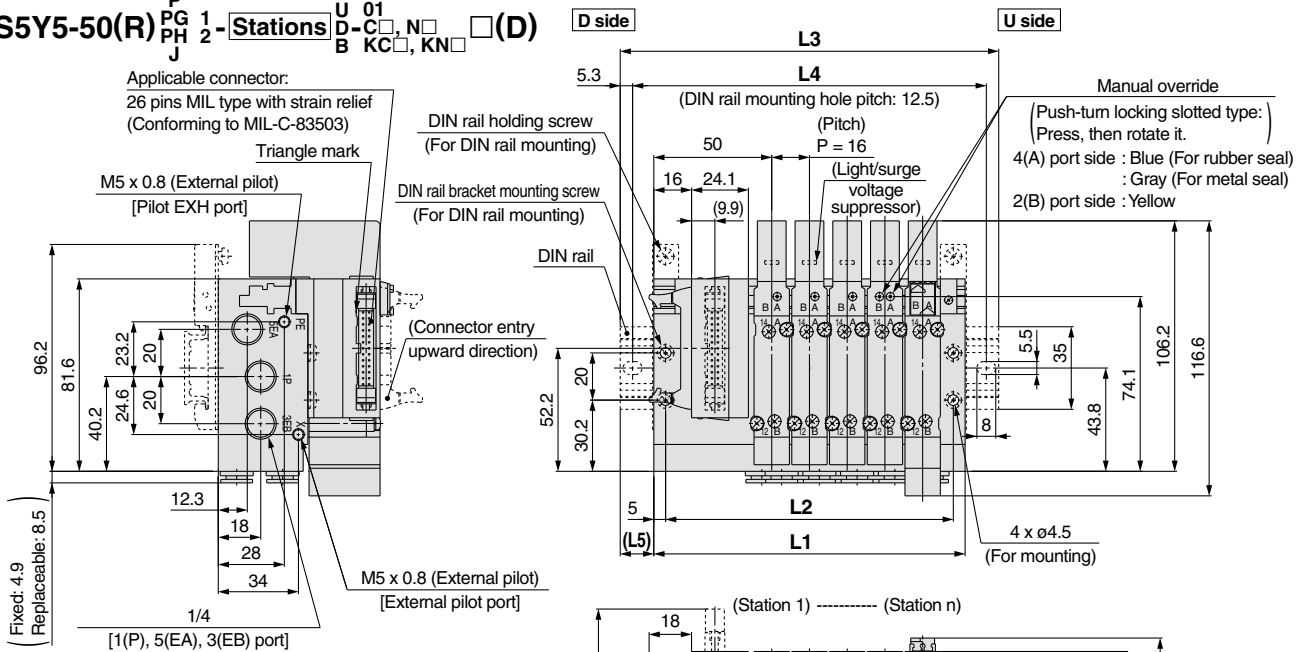
# Series SY3000/5000/7000

**Plug-in  
Metal Base**

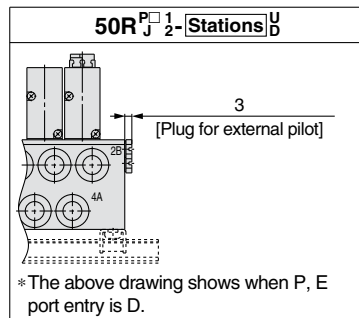
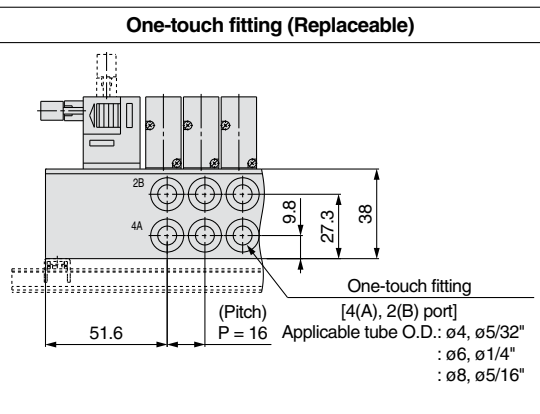
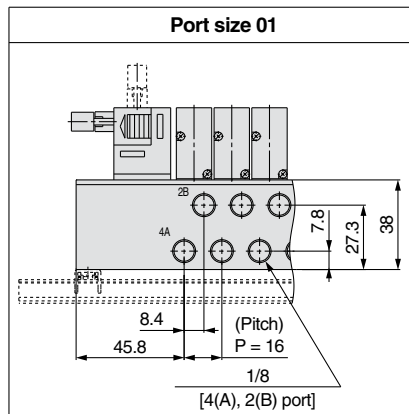
**Type 50/Side Ported  
Flat Ribbon Cable**

## Dimensions: Series SY5000

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



Note 1) These figures show the "SS5Y5-50P2-05B-C8".  
Note 2) Only connectors are different for 50PG, 50PH and 50J.  
L1 to L5 dimensions are the same as 50P type.

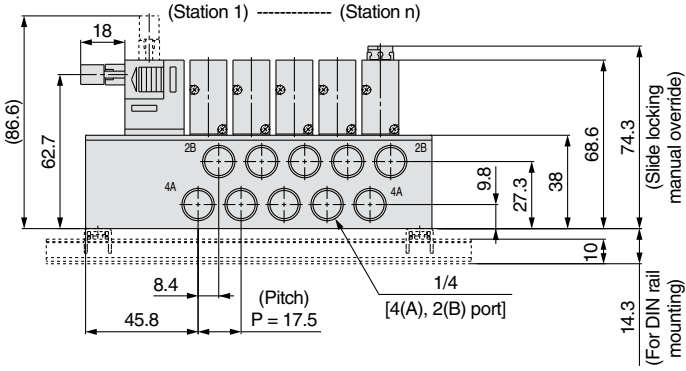
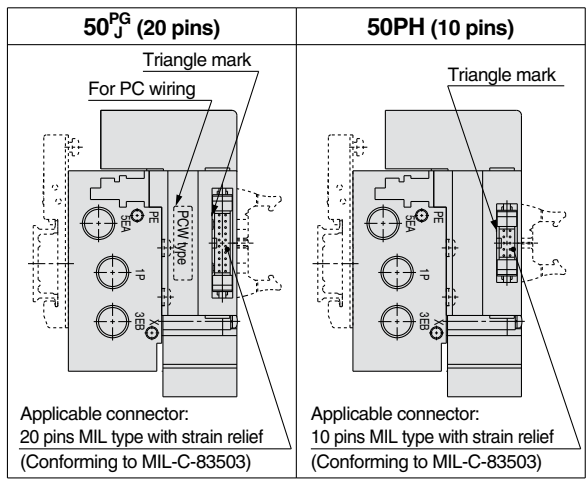
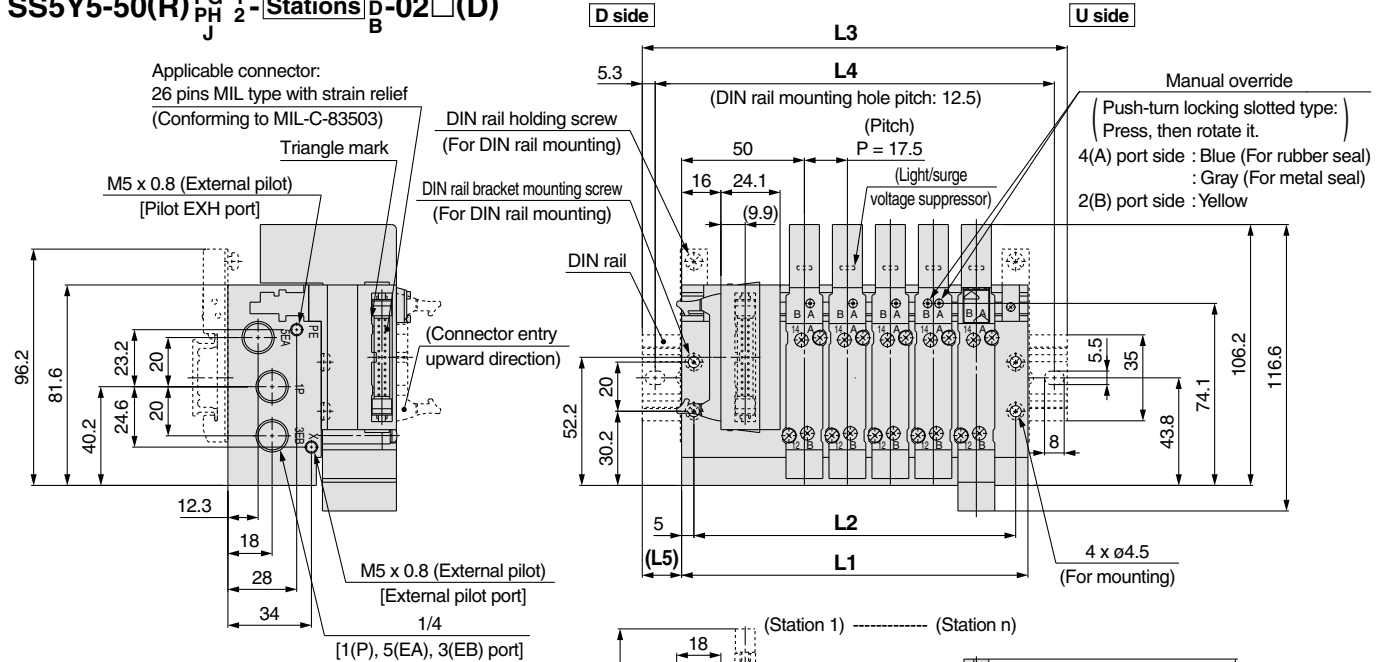


n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	84	100	116	132	148	164	180	196	212	228	244
L2	74	90	106	122	138	154	170	186	202	218	234
L3	110.5	135.5	148	160.5	173	198	210.5	223	248	260.5	273
L4	100	125	137.5	150	162.5	187.5	200	212.5	237.5	250	262.5
L5	13.5	18	16	14.5	12.5	17	15.5	13.5	18	16.5	14.5

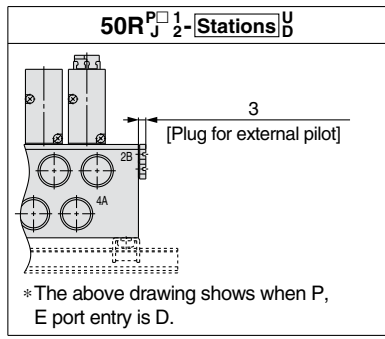


Dimensions: Series SY5000

SS5Y5-50(R)  $\begin{matrix} P \\ PG \\ PH \\ J \end{matrix} \frac{1}{2}$  - Stations  $\begin{matrix} U \\ D \\ B \end{matrix} 02 \square (D)$



Note 1) These figures show the "SS5Y5-50P2-05B-02".  
 Note 2) 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

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  
Metal Base**

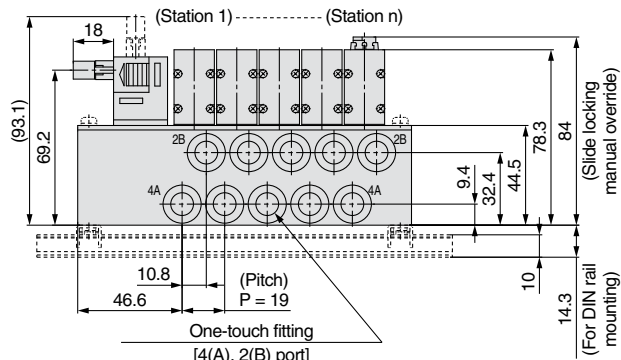
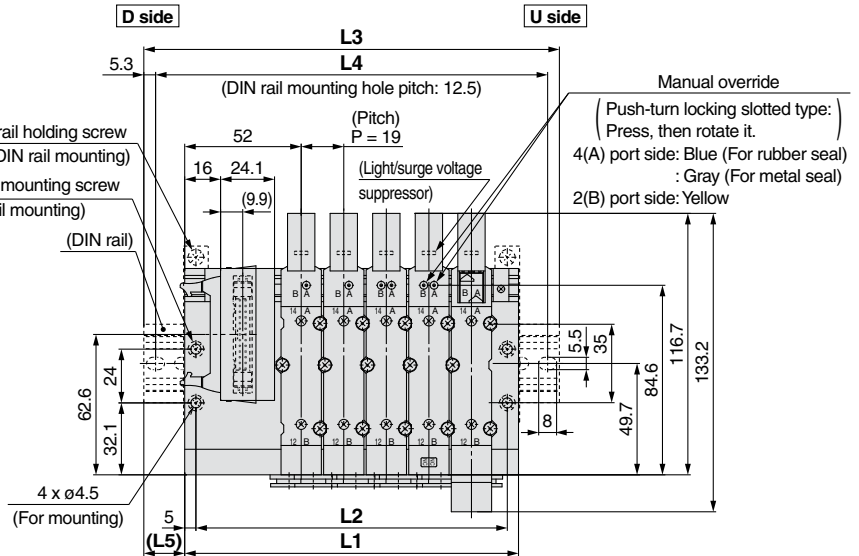
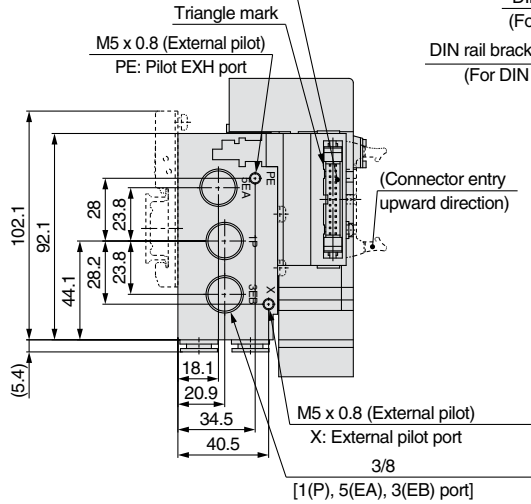
**Type 50/Side Ported  
Flat Ribbon Cable**

## Dimensions: Series SY7000

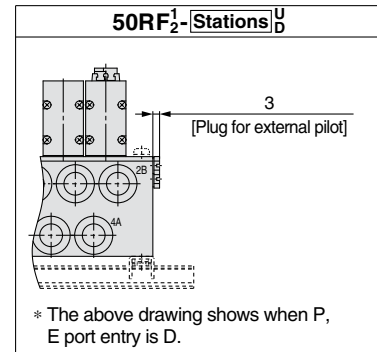
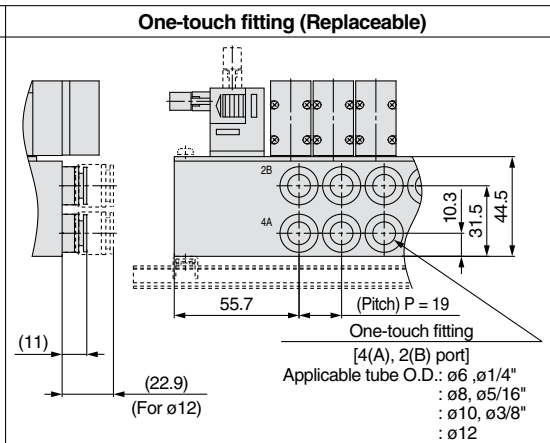
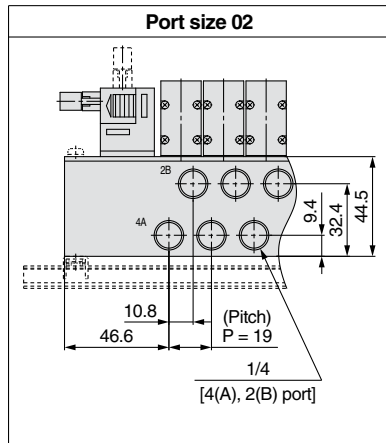
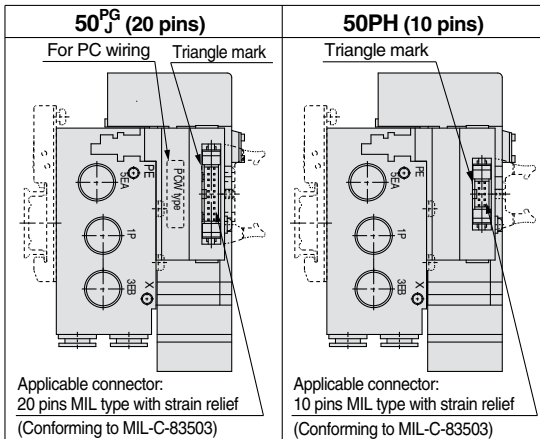
SS5Y7-50(R)  $\begin{matrix} P \\ PG \\ J \end{matrix} 1 - \text{Stations} \begin{matrix} U \\ D \\ B \end{matrix} \begin{matrix} 02 \\ C \\ KC \end{matrix}, \begin{matrix} N \\ \square \\ KN \end{matrix} \begin{matrix} \square \\ \square \\ \square \end{matrix} (D)$

Applicable connector:

26 pins MIL type with strain relief  
(Conforming to MIL-C-83503)



Note) 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

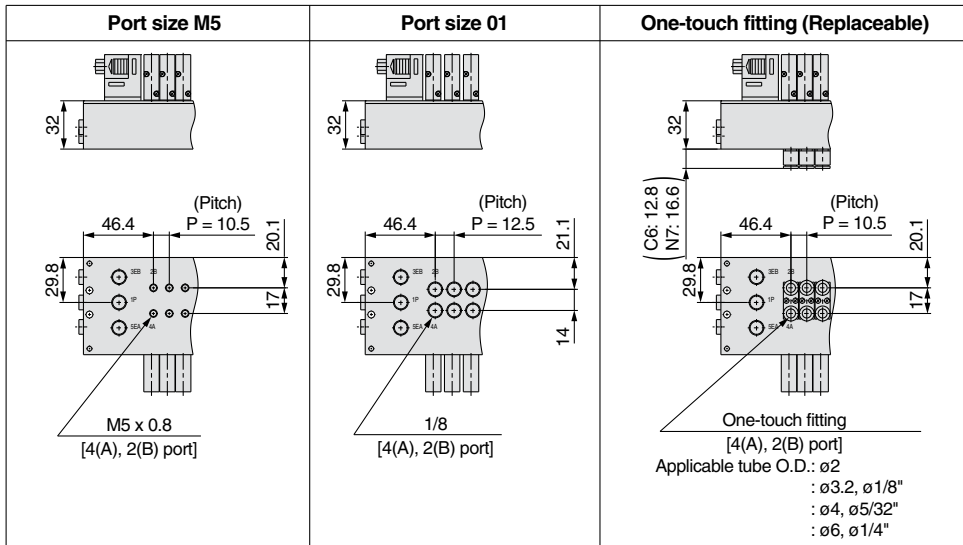
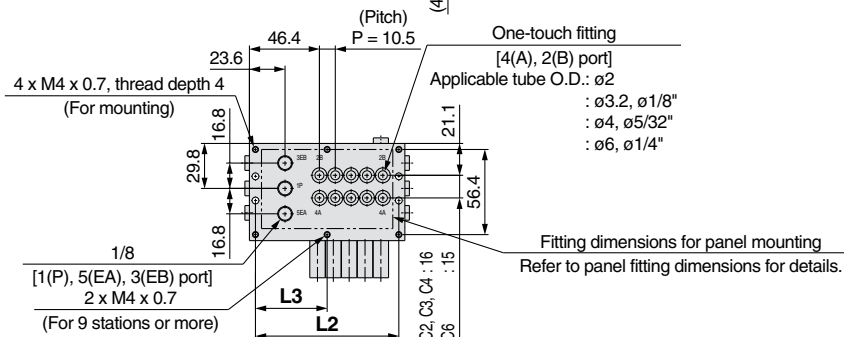
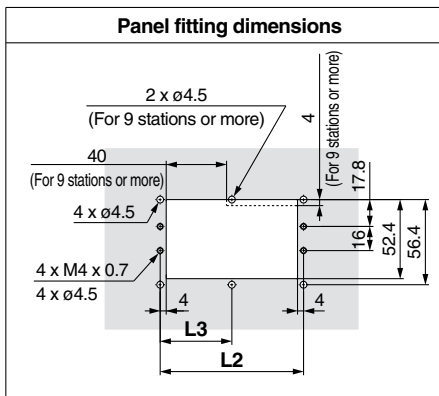
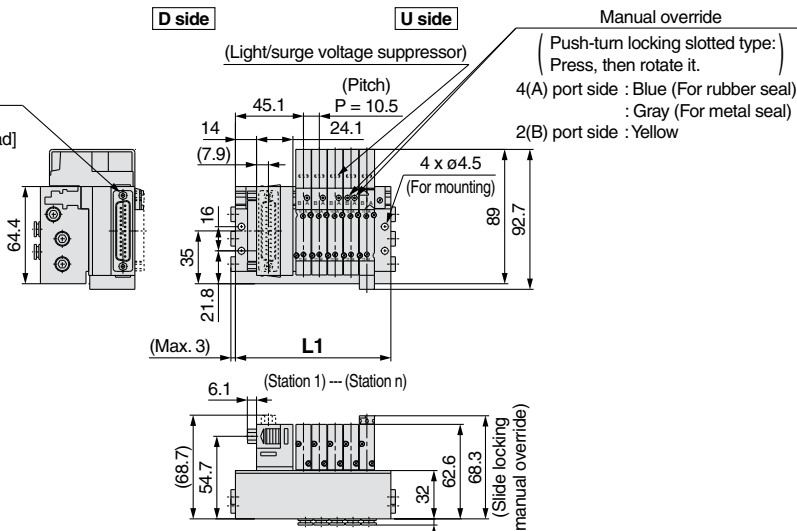
Dimensions: Series SY3000

Plug-in Metal Base

Type 51/Bottom Ported D-sub Connector

SS5Y3-51F<sub>2</sub>-Stations D-C□, N□, KC□, KN□ M5, 01

2 x M2.6  
2 x 4-40 UNC  
[For N or T thread]



Note) 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

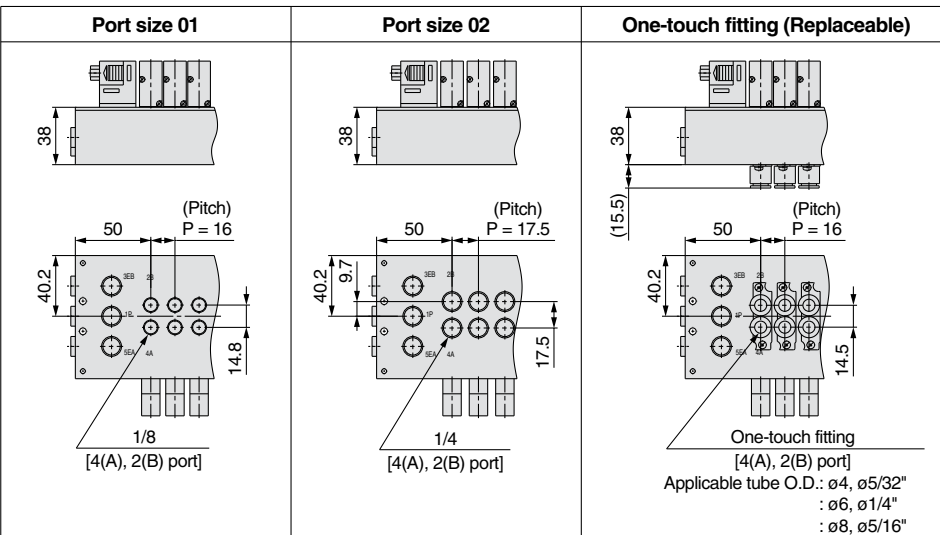
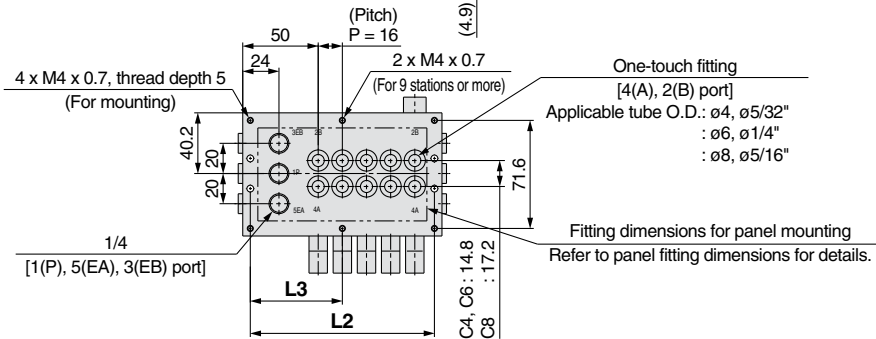
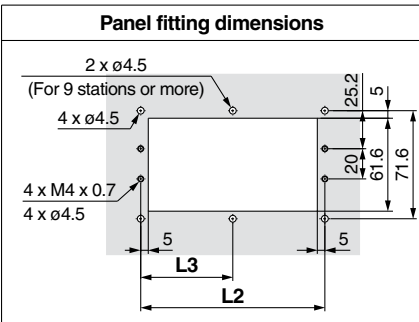
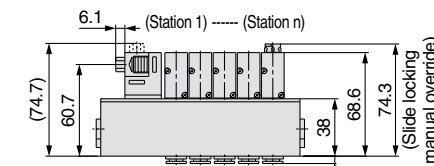
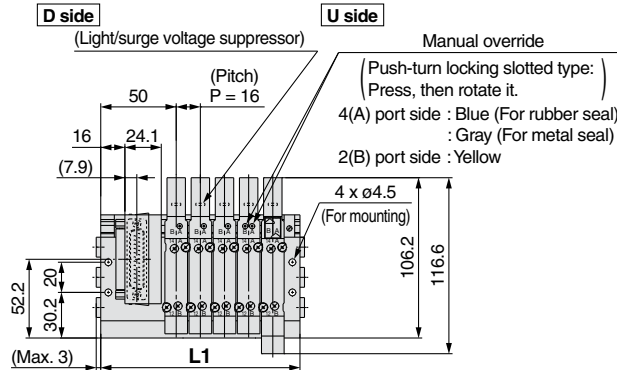
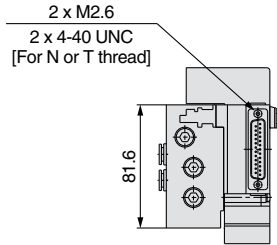
**Plug-in  
Metal Base**

Type 51/Bottom Ported

D-sub Connector

## Dimensions: Series SY5000

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



Note) 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

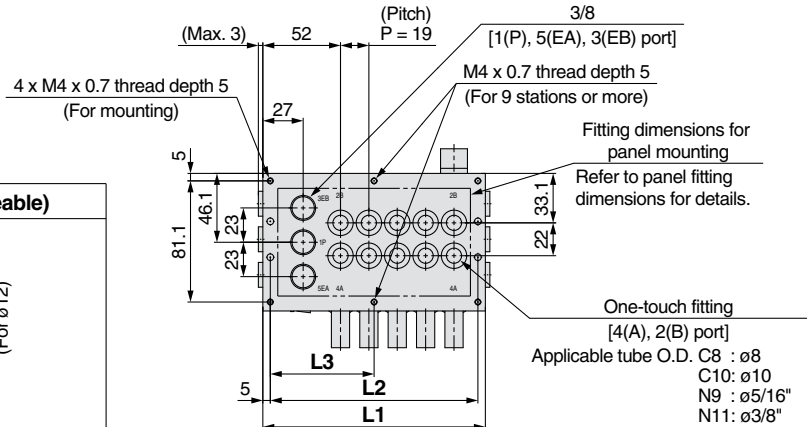
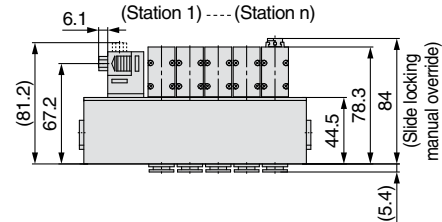
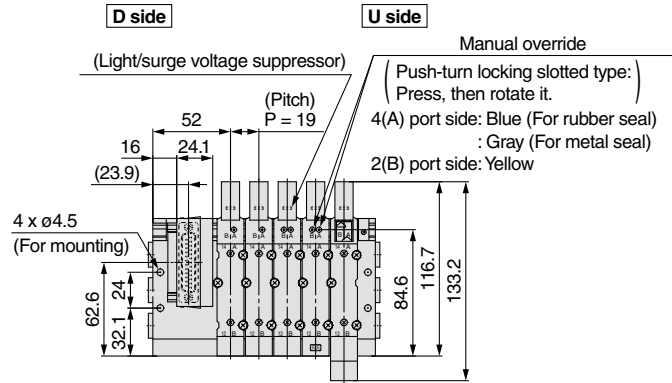
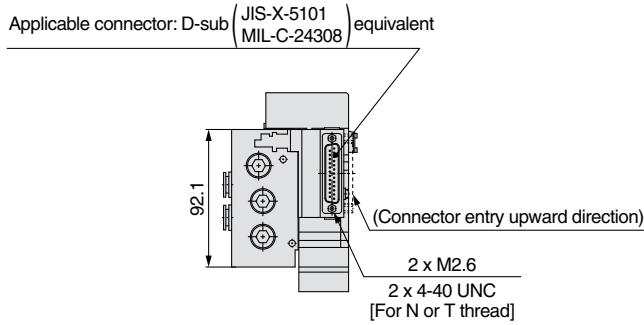
**Plug-in Metal Base**

Type 51/Bottom Ported

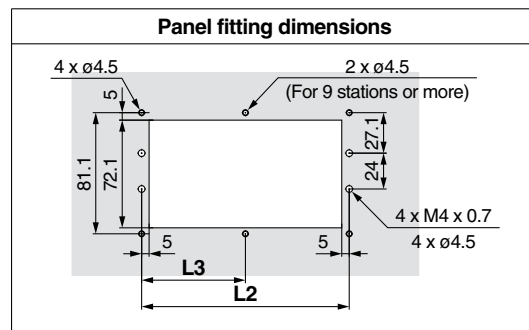
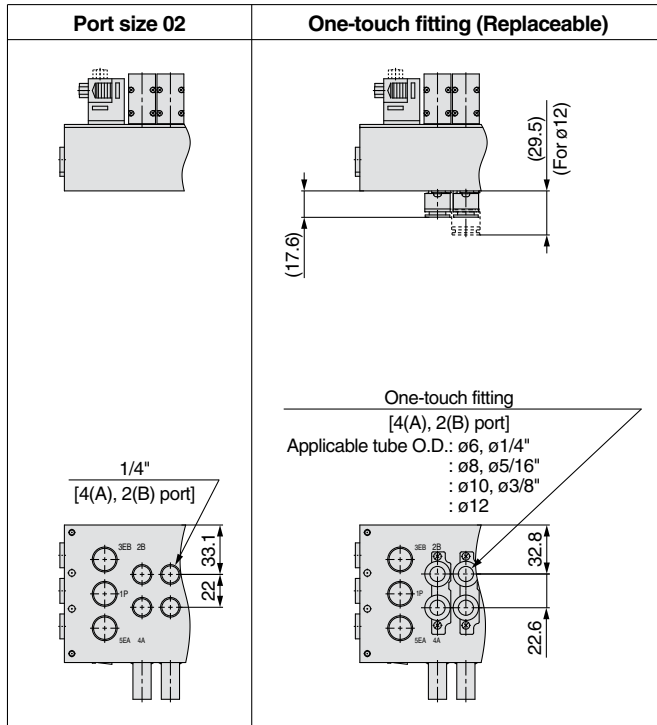
D-sub Connector

Dimensions: Series **SY7000**

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



Note) These figures show the "SS5Y7-51F2-05D-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

# Series SY3000/5000/7000

**Plug-in  
Metal Base**

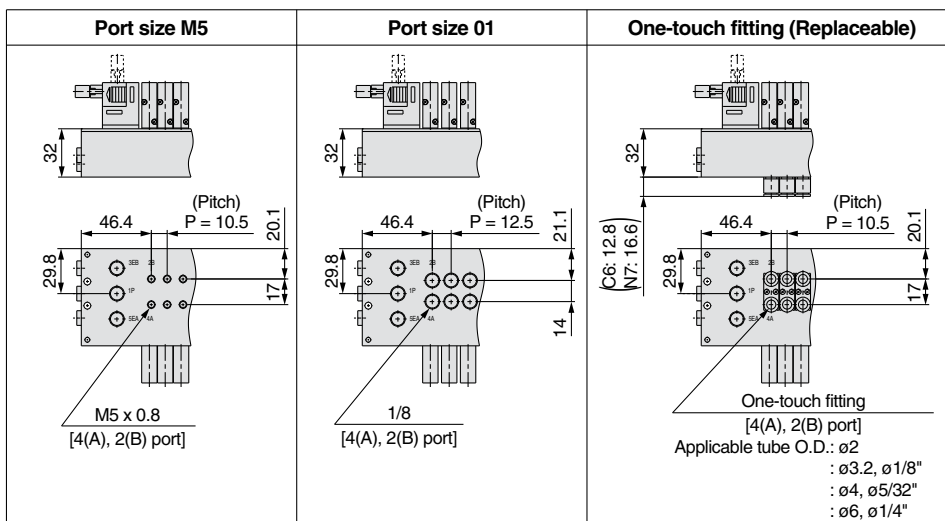
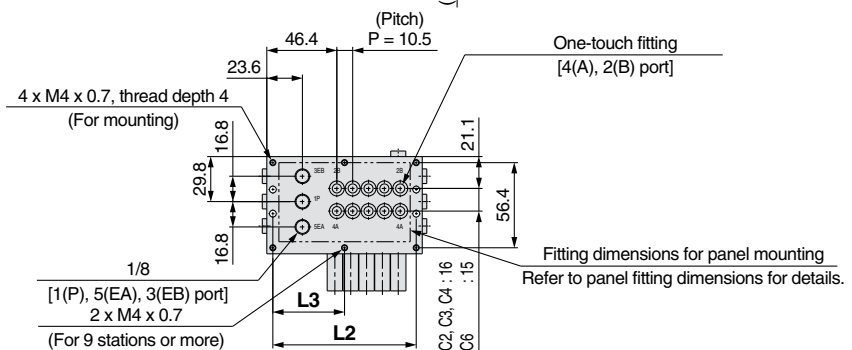
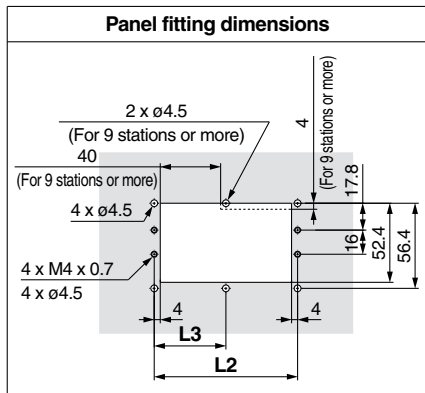
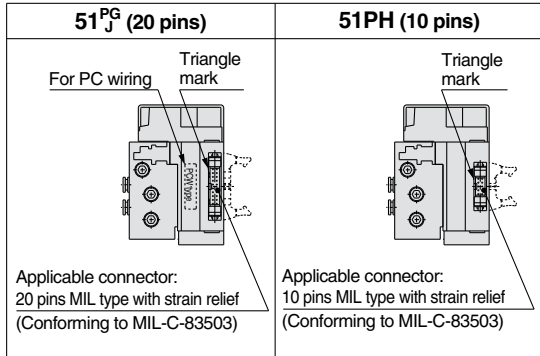
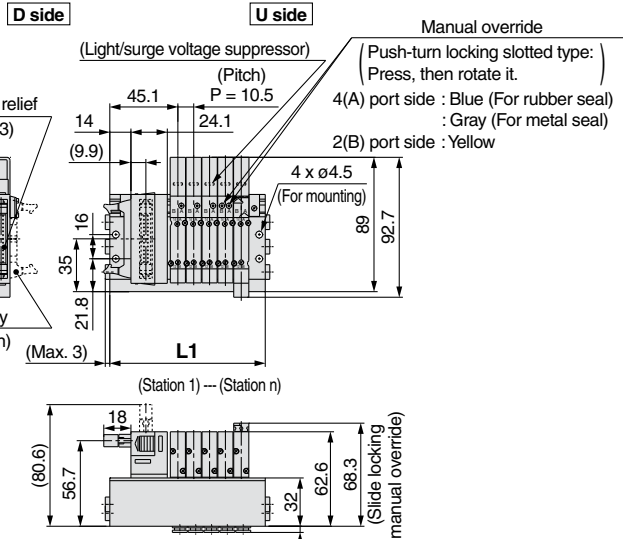
**Type 51/Bottom Ported**

**Flat Ribbon Cable**

## Dimensions: Series SY3000

SS5Y3-51<sup>P</sup><sub>PH</sub> 1<sup>J</sup> - Stations D-C<sup>M5, 01</sup><sub>□, N□, KC□, KN□</sub>

Applicable connector:  
26 pins MIL type with strain relief  
(Conforming to MIL-C-83503)



Note) These figures show the "SS5Y3-51P2-05D-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

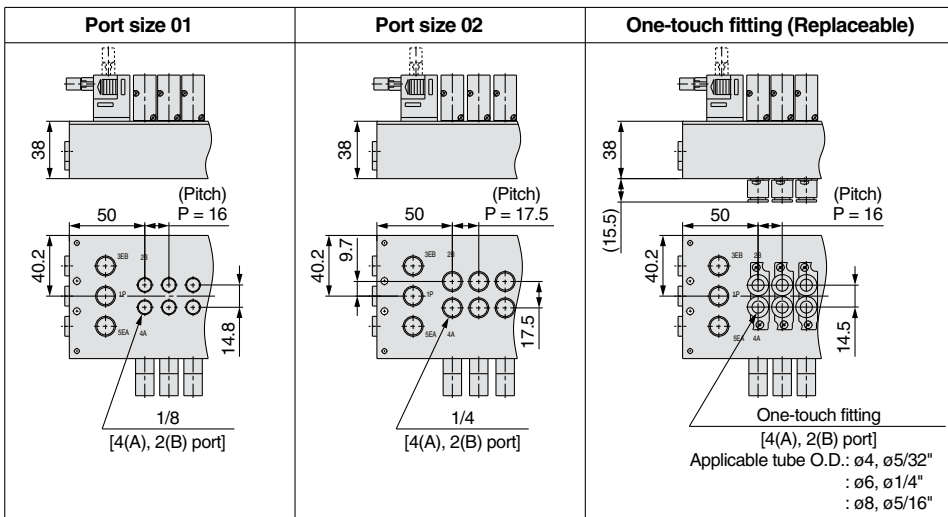
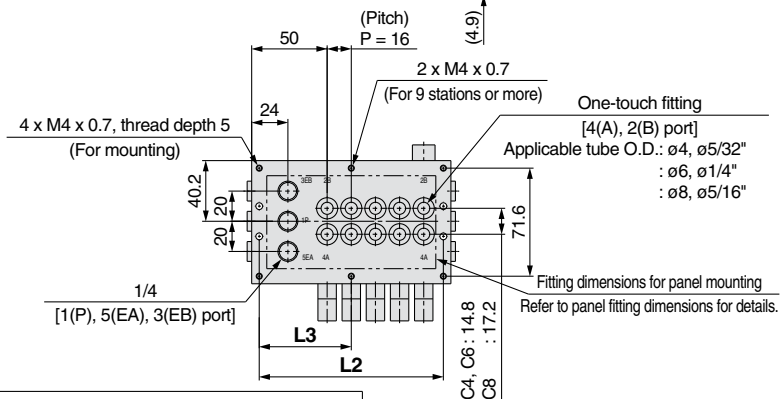
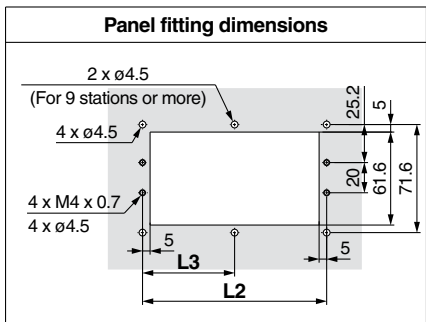
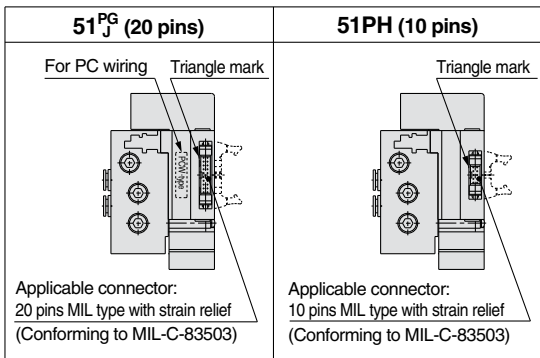
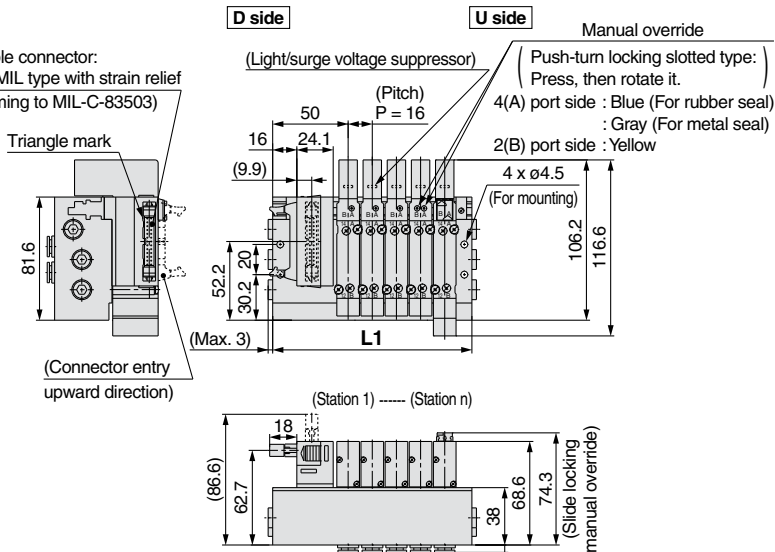


**Plug-in Metal Base** Type 51/Bottom Ported  
Flat Ribbon Cable

Dimensions: Series **SY5000**

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

Applicable connector:  
26 pins MIL type with strain relief  
(Conforming to MIL-C-83503)



Note) 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

Valve  
Sub-plate  
Plug-in Metal Base  
Type 50, 51, 52  
Manifold Exploded View  
Connector Connecting Base  
Plug-in  
Type 10, 11, 12  
Manifold Exploded View  
One-touch Fittings/  
Plug Assembly Part No.  
Manifold Options



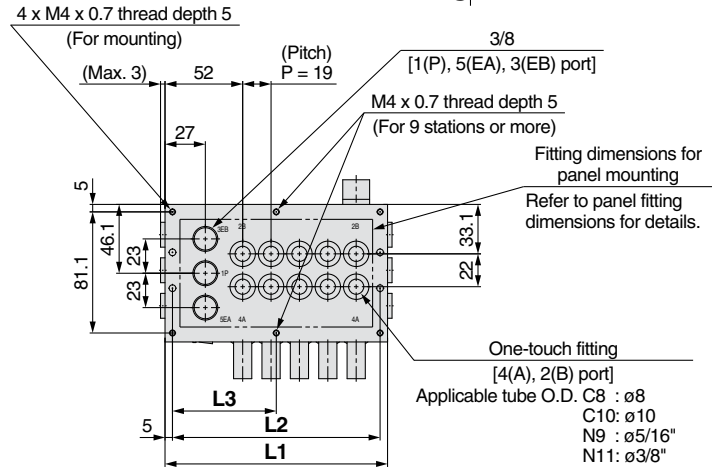
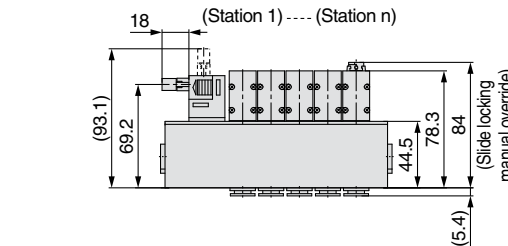
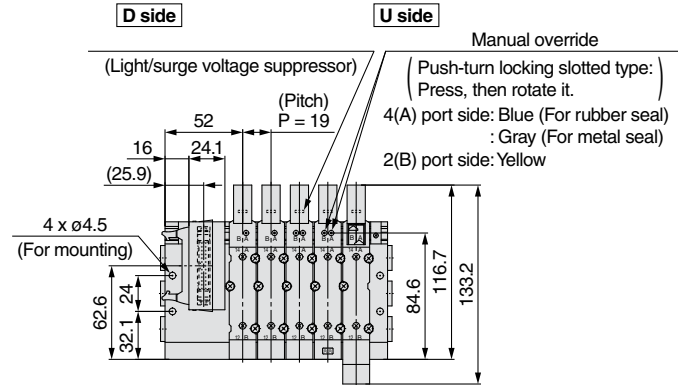
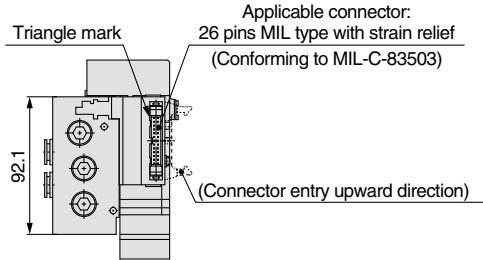
# Series SY3000/5000/7000

**Plug-in  
Metal Base**

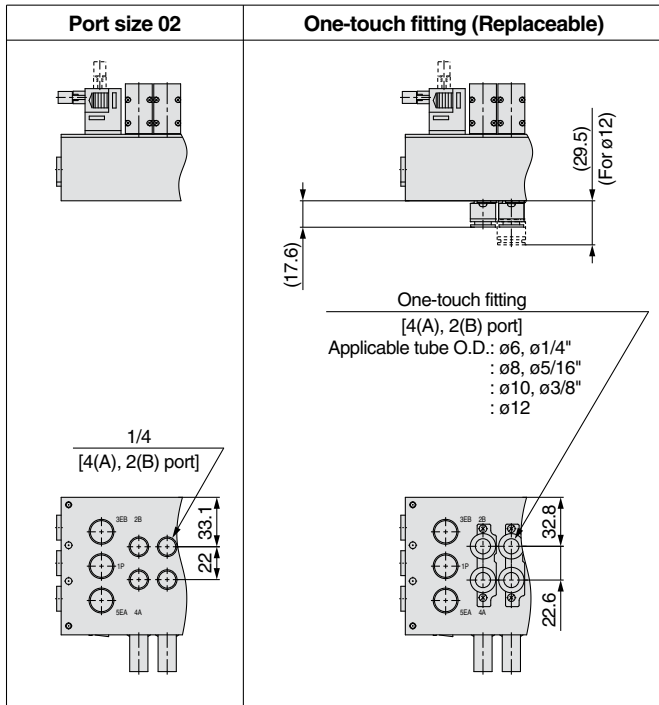
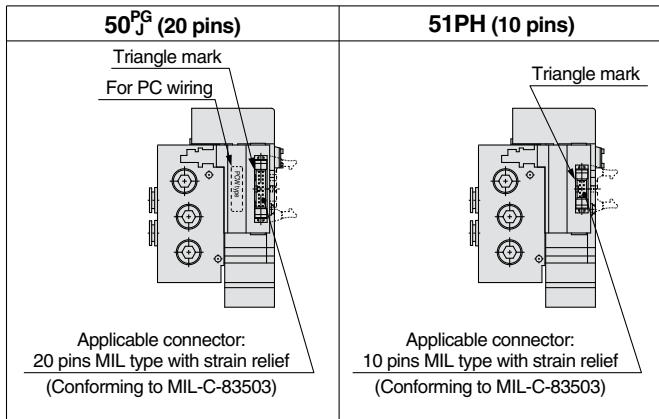
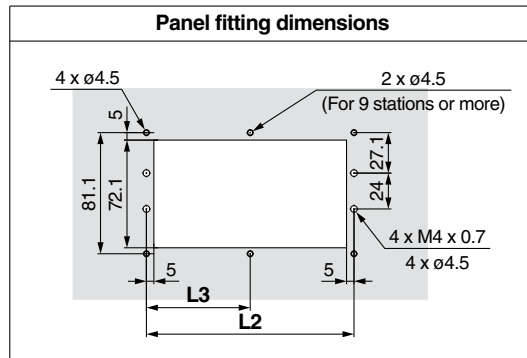
**Type 51/Bottom Ported  
Flat Ribbon Cable**

## Dimensions: Series SY7000

SS5Y7-51(R)  $\begin{matrix} P \\ PG \\ PH \\ J \end{matrix}$  1-2 Stations D-  $\begin{matrix} 02 \\ C \\ KC \end{matrix}$   $\begin{matrix} \square \\ \square \\ \square \end{matrix}$   $\begin{matrix} N \\ N \\ KN \end{matrix}$   $\begin{matrix} \square \\ \square \\ \square \end{matrix}$  (D)



Note) 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

Type 52  
Top Ported

# Plug-in Metal Base

D-sub Connector

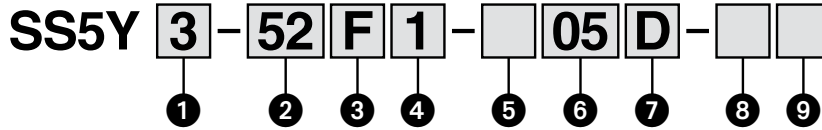
Flat Ribbon Cable

PC Wiring

# Series SY3000/5000/7000



## How to Order Manifold



### 1 Series

3	SY3000
5	SY5000
7	SY7000

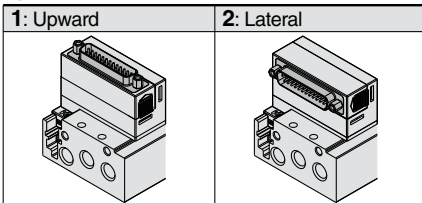
### 2 Type

52	Top ported
52R	Top ported, External pilot

### 3 Connector type

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

### 3 Connector entry direction



### 5 Wiring type

Nil	All double wiring (Note 1)
S	All single wiring (Note 2)

Note 1) All double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.  
 Note 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.  
 Note 3) If a mix of single and double wiring is required, it is supplied as a special order.

### 6 Valve stations

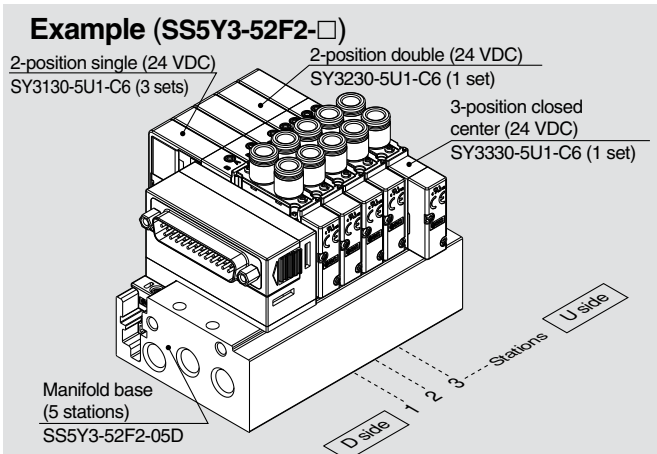
F: D-sub connector (25 pins)			P: Flat ribbon cable (26 pins)			PG: Flat ribbon cable (20 pins)		
Symbol	Stations	Note	Symbol	Stations	Note	Symbol	Stations	Note
02	2 stations	All	02	2 stations	All	02	2 stations	All
:	:	double	:	:	double	:	:	double
12	12 stations	wiring	12	12 stations	wiring	09	9 stations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

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	:	:	double
04	4 stations	wiring	08	8 stations	wiring
02	2 stations	All	02	2 stations	All
:	:	single	:	:	single
08	8 stations	wiring	12	12 stations	wiring

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

## How to Order Manifold Assembly



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 center part no.)  
 The asterisk denotes the symbol for assembly.  
 Prefix it to the part numbers of the valve etc.

### 7 P, E port entry

U	U side (Note)
D	D side (Note)
B	Both sides

Note) Plugs are mounted on the opposite side of the selected ports.

### 8 Thread type

Nil	Rc
00F	G
00N	NPT
00T	NPTF

### 9 Mounting

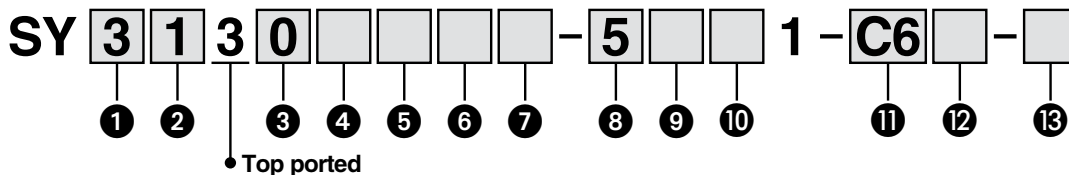
Nil	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	For 3 stations
:	:
D12	For 12 stations

Specify a longer rail than the standard length.

Note) Refer to page 247 for the fixation of DIN rail mounting type manifold.

**How to Order Valves (With mounting screw)**

Refer to page 3 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 center
4		Exhaust center
5		Pressure center
A*	4-position dual	N.C./N.C.
B*		N.O./N.O.
C*		3-port

\* 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**

Nil	Internal pilot
R	External pilot

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

Nil	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**

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

**7 Coil type**

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

\* Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.  
\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

**8 Rated voltage**

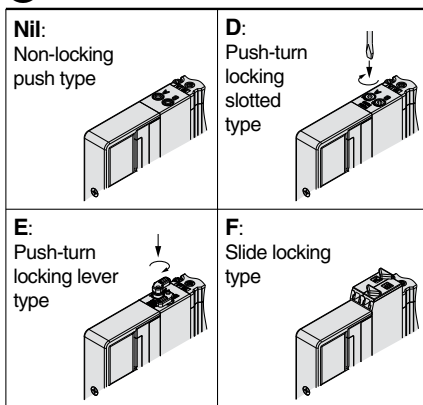
5	24 VDC
6	12 VDC

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

Symbol	With light	Surge voltage suppressor	Common specification
Nil	—	—	Non-polar
R	—	●	
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 14 for with the safety slide locking manual override.

**11 A, B port size**

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	ø2	●	—	—
C3	ø3.2	●	—	—
C4	ø4	●	●	—
C6	ø6	●	●	●
C8	ø8	—	●	●
C10	ø10	—	—	●
C12	ø12	—	—	●

**One-touch fitting (Inch)**

Symbol	A, B port	SY3000	SY5000	SY7000
N1	ø1/8"	●	—	—
N3	ø5/32"	●	●	—
N7	ø1/4"	●	●	●
N9	ø5/16"	—	●	●
N11	ø3/8"	—	—	●

**12 Thread type**

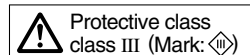
Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

**13 Type of mounting screw**

Nil	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 73 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.



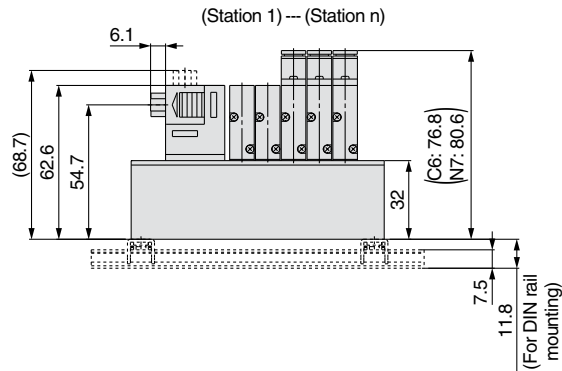
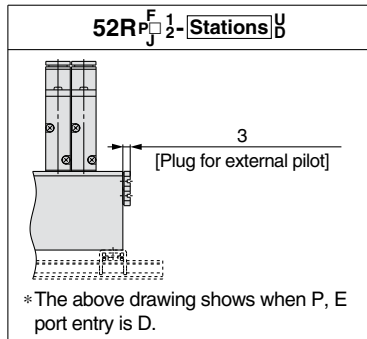
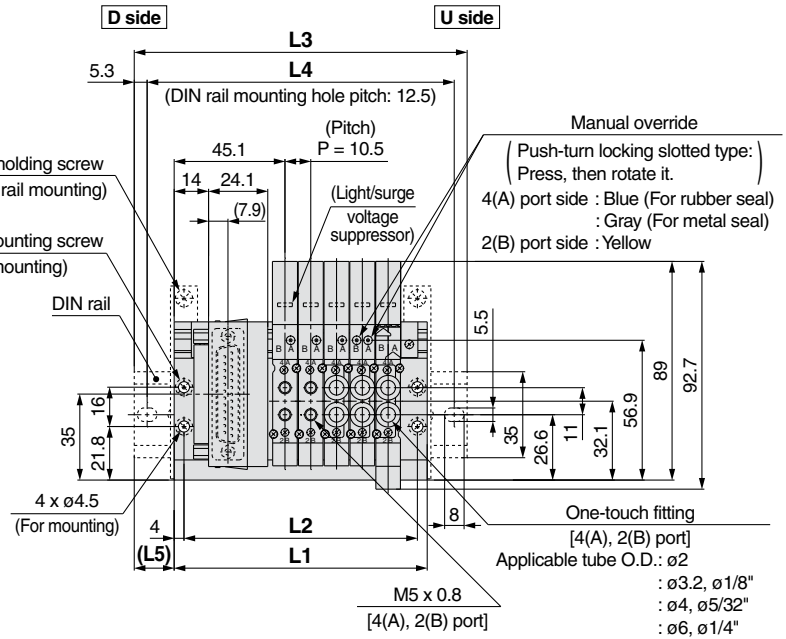
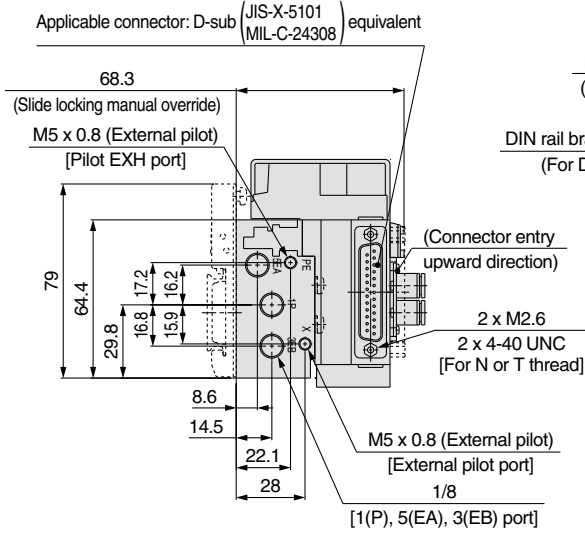
# Series SY3000/5000/7000

## Dimensions: Series SY3000

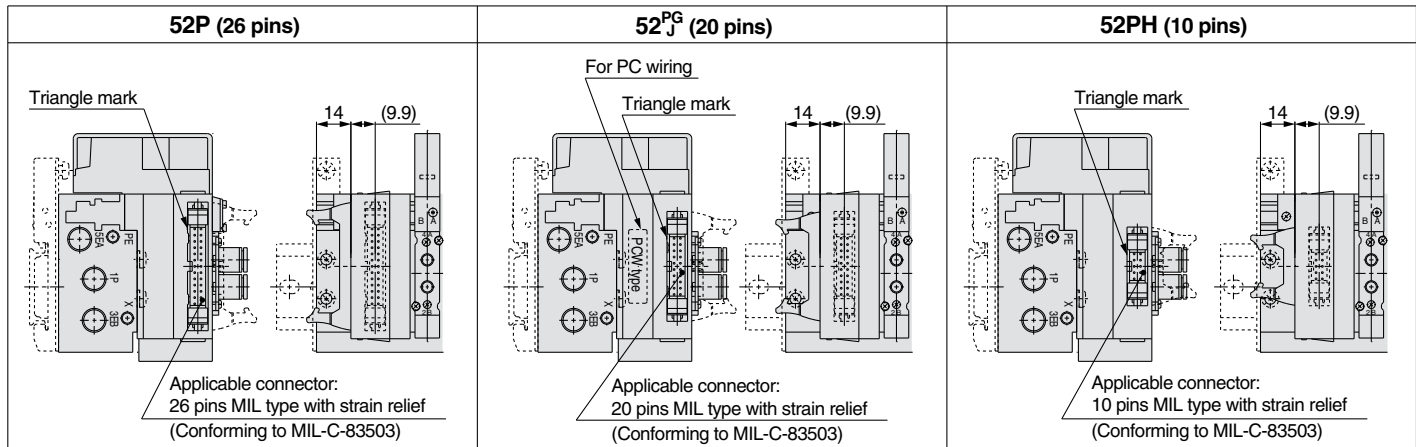
Plug-in  
Metal Base

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

SS5Y3-52(R)  $\frac{F}{P} \frac{PH}{J} \frac{1}{2}$  - Stations  $\frac{U}{D} \square$  (D)



Note) These figures show the "SS5Y3-52F2-05B".



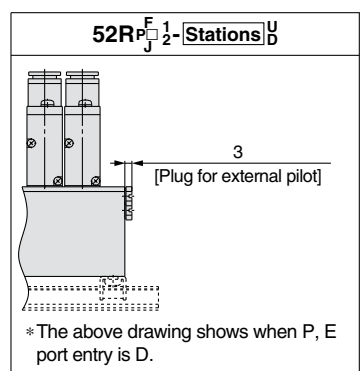
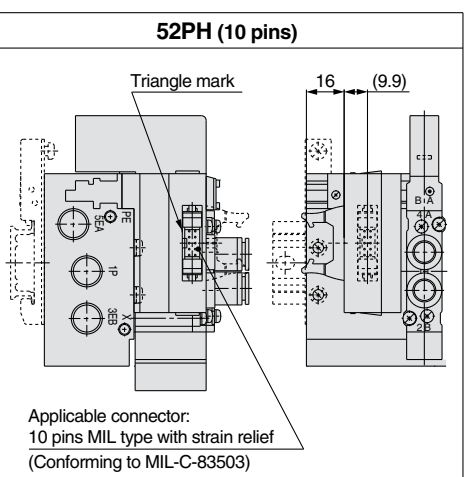
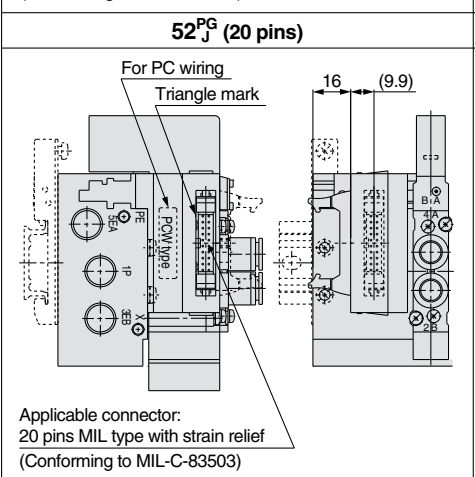
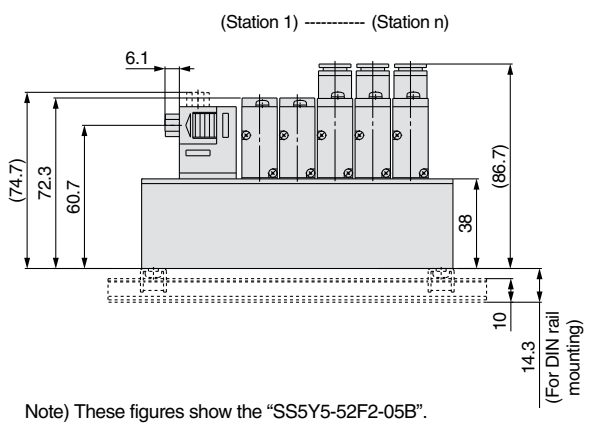
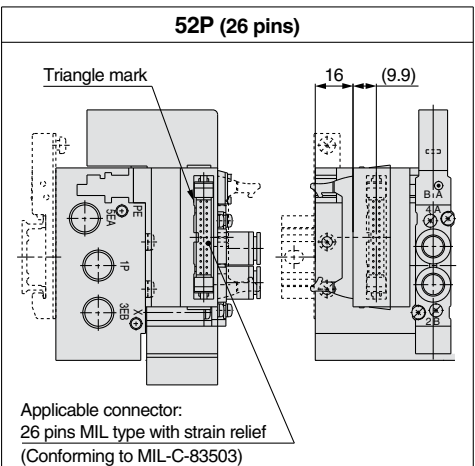
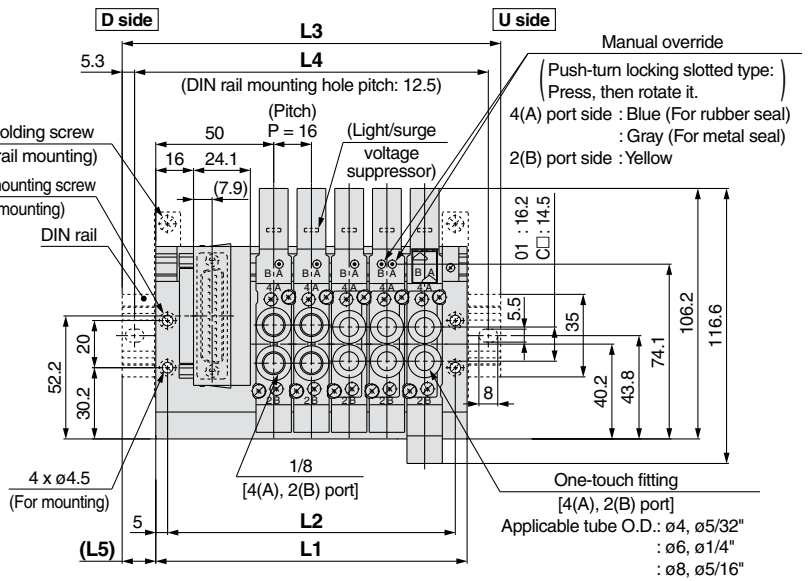
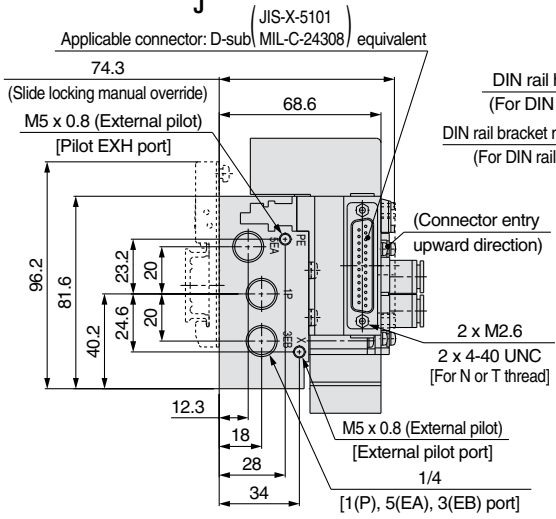
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	71.5	82	92.5	103	113.5	124	134.5	145	155.5	166	176.5
L2	63.5	74	84.5	95	105.5	116	126.5	137	147.5	158	168.5
L3	98	110.5	123	135.5	148	160.5	160.5	173	185.5	198	210.5
L4	87.5	100	112.5	125	137.5	150	150	162.5	175	187.5	200
L5	13.5	14.5	15.5	16.5	17.5	18.5	13	14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

Plug-in  
Metal Base

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

Dimensions: Series **SY5000**

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



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

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



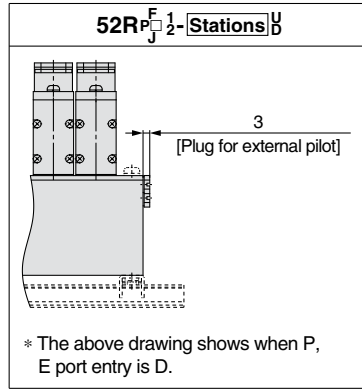
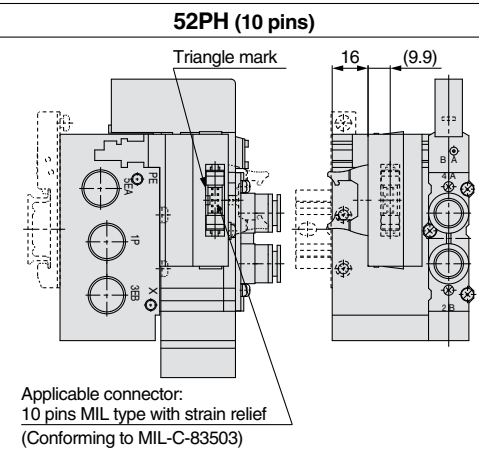
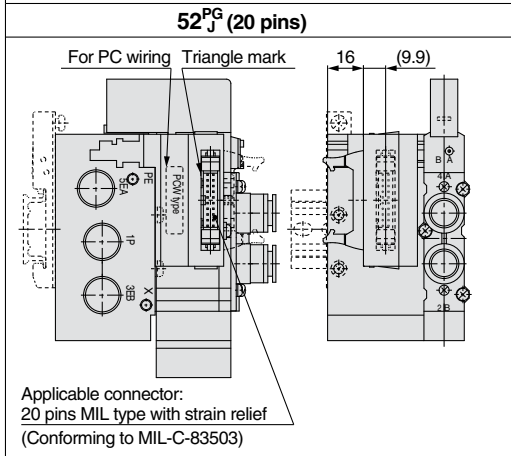
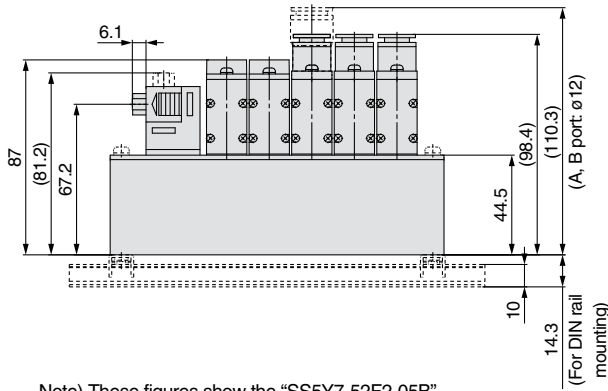
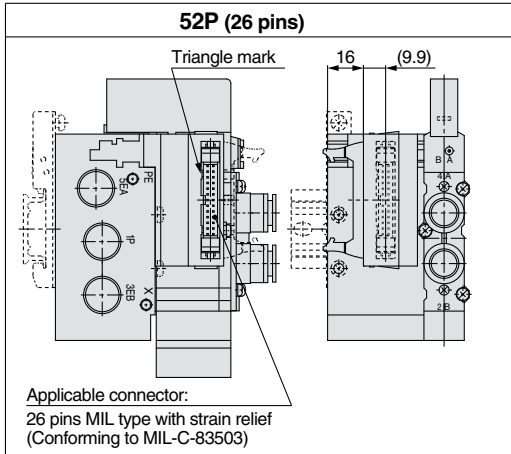
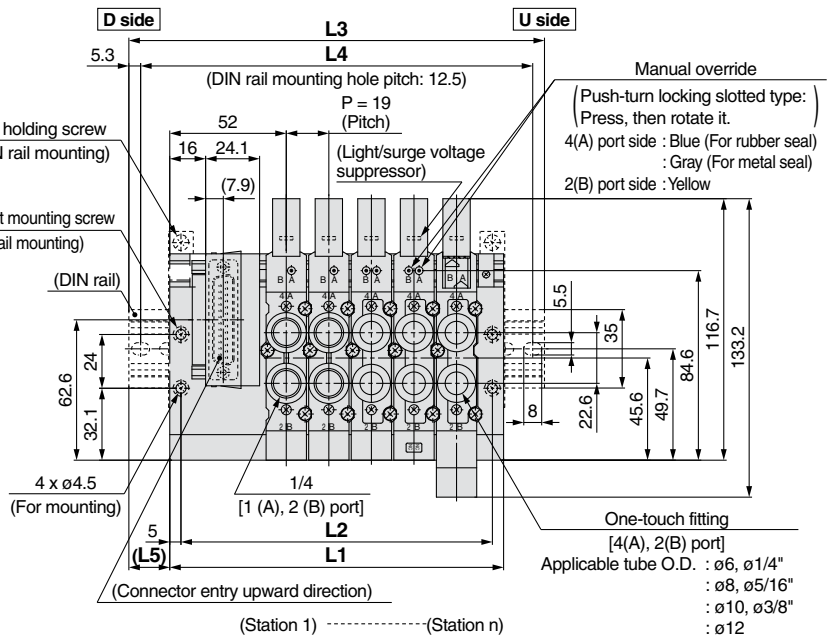
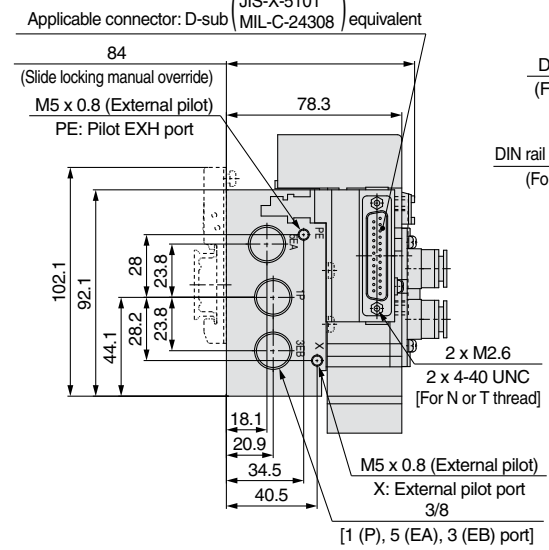
# Series SY3000/5000/7000

**Plug-in  
Metal Base**

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

## Dimensions: Series SY7000

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



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>**

Station	Wiring	Terminal no.	Station	Wiring	Terminal no.	Polarity
Station 1	SOL.a	1	Station 1	SOL.a	1	(-) (+)
Station 2	SOL.a	14	Station 2	SOL.b	14	(-) (+)
Station 3	SOL.a	2	Station 3	SOL.a	2	(-) (+)
Station 4	SOL.a	15	Station 4	SOL.b	15	(-) (+)
Station 5	SOL.a	3	Station 5	SOL.a	3	(-) (+)
Station 6	SOL.a	16	Station 6	SOL.b	16	(-) (+)
Station 7	SOL.a	4	Station 7	SOL.a	4	(-) (+)
Station 8	SOL.a	17	Station 8	SOL.b	17	(-) (+)
Station 9	SOL.a	5	Station 9	SOL.a	5	(-) (+)
Station 10	SOL.a	18	Station 10	SOL.b	18	(-) (+)
Station 11	SOL.a	6	Station 11	SOL.a	6	(-) (+)
Station 12	SOL.a	19	Station 12	SOL.b	19	(-) (+)
		7	Station 7	SOL.a	7	(-) (+)
		20	Station 7	SOL.b	20	(-) (+)
		8	Station 8	SOL.a	8	(-) (+)
		21	Station 8	SOL.b	21	(-) (+)
		9	Station 9	SOL.a	9	(-) (+)
		22	Station 9	SOL.b	22	(-) (+)
		10	Station 10	SOL.a	10	(-) (+)
		23	Station 10	SOL.b	23	(-) (+)
		11	Station 11	SOL.a	11	(-) (+)
		24	Station 11	SOL.b	24	(-) (+)
		12	Station 12	SOL.a	12	(-) (+)
		25	Station 12	SOL.b	25	(-) (+)
		COM. 13		COM. 13		(+) (-)

Positive common Negative common

Note) 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**

Nil: Metric size  
N: Inch size

**Lead wire color for D-sub connector cable assembly by terminal number**

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

Cable 0.3 mm<sup>2</sup> x 25 cores  
O.D. ø1.4

Approx. ø10

Seal (Length)

Molded cover

2 x M2.6 x 0.45 or 2 x 4-40 UNC

Connector JBZ-25S-3 made by J.S.T. Mfg. Co., Ltd.

Socket side

Terminal no.

**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 Ω/km, 20°C	65 or less
Voltage limit V, 1 minute, AC	1000
Insulation resistance MΩ/km, 20°C	5 or more

Note) The minimum bending radius of the D-sub connector cable is 20 mm.

**Connector Manufacturers' Example**

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

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

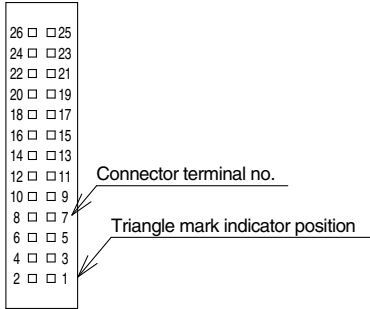
One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

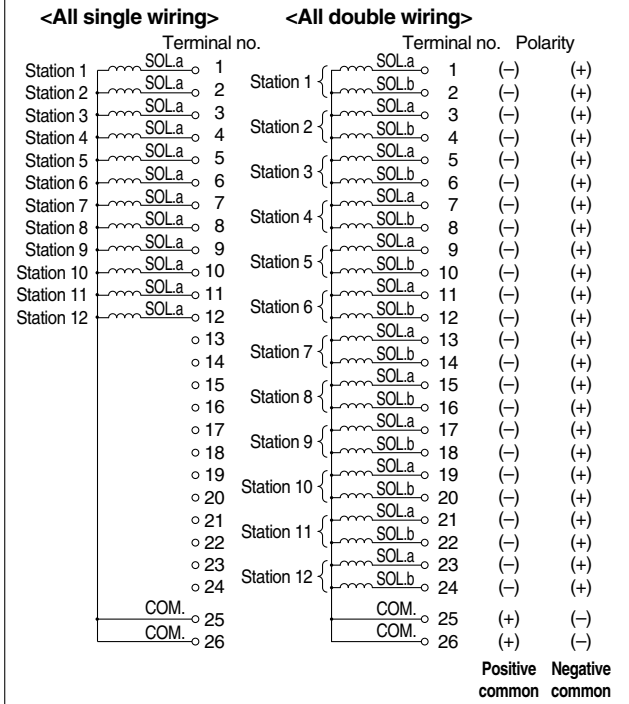
# Series SY3000/5000/7000

## Electrical Wiring Specifications

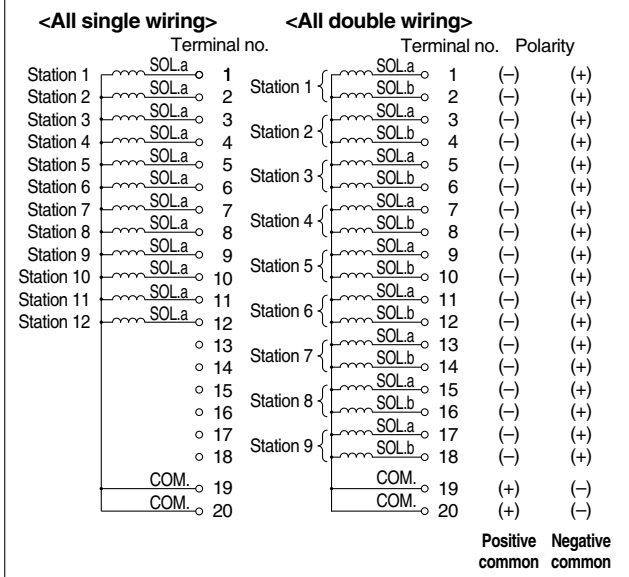
### Flat ribbon cable connector



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

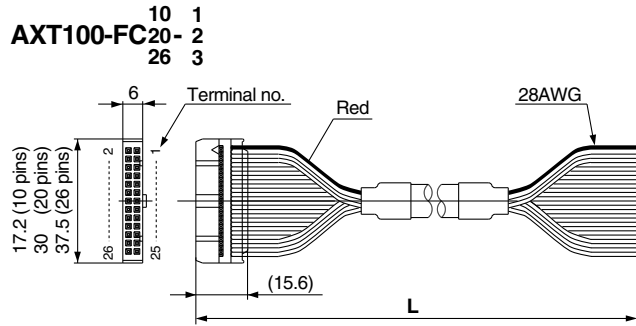


### PG: Flat ribbon cable (20 pins)



Note) 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.

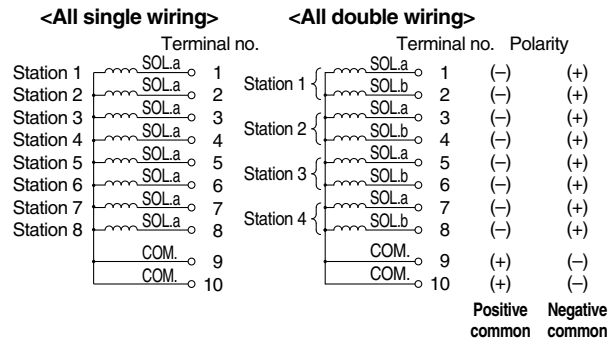
\* Cannot be used for movable wiring.

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

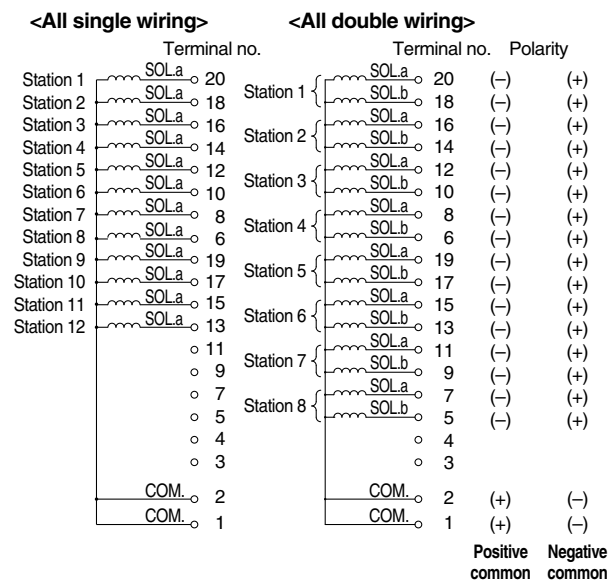
### Connector Manufacturers' Example

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

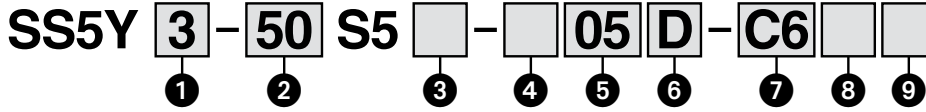
Type 51  
Bottom Ported

Plug-in Metal Base EX510



# Series SY3000/5000/7000

## How to Order Manifold



### 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.

### 3 SI unit output polarity

Nil	Positive common
N	Negative common

### 4 Wiring type

Nil	All double wiring <sup>Note 1)</sup>
S	All single wiring <sup>Note 2)</sup>

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

Note 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.

Note 3) If a mix of single and double wiring is required, it is supplied as a special order.

### 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 <sup>Note 1)</sup>
D	D side <sup>Note 1) Note 2)</sup>
B	Both sides

Note 1) Plugs are mounted on the opposite side of the selected ports.

Note 2) Only D side is available for Type 51 (Bottom ported).

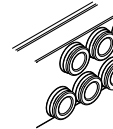
### 7 A, B port size

#### Thread piping

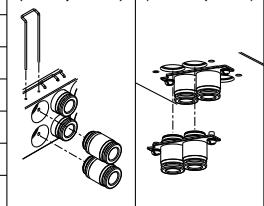
Symbol	A, B port	SY3000	SY5000	SY7000
M5	M5 x 0.8	●	—	—
01	1/8	●	●	—
02	1/4	—	●	●

#### One-touch fitting (Metric)

Symbol	A, B port	SY3000	SY5000	SY7000
Fixed	C2	ø2	●	—
	C3	ø3.2	●	—
	C4	ø4	●	●
	C6	ø6	●	●
	C8	ø8	—	●
Replaceable	KC2	ø2	●	—
	KC3	ø3.2	●	—
	KC4	ø4	●	●
	KC6	ø6	●	●
	KC8	ø8	—	●
	KC10	ø10	—	●
	KC12	ø12	—	●
M*	Mixed sizes	●	●	●
P, E port size (Thread piping)		1/8	1/4	3/8

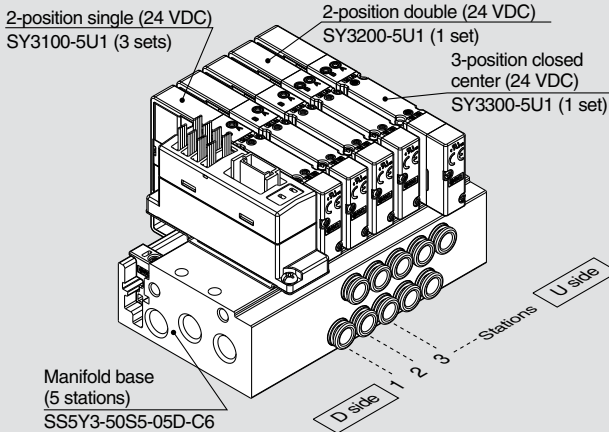


Type 50 (Side ported)      Type 51 (Bottom ported)



## How to Order Manifold Assembly

### Example (SS5Y3-50S5-□)



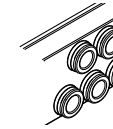
SS5Y3-50S5-05D-C6 ...1 set (Type 50 5-station manifold base part no.)  
 \*SY3100-5U1 .....3 sets (2-position single part no.)  
 \*SY3200-5U1 .....1 set (2-position double part no.)  
 \*SY3300-5U1 .....1 set (3-position closed center part no.)  
 → The asterisk denotes the symbol for assembly. Prefix 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.

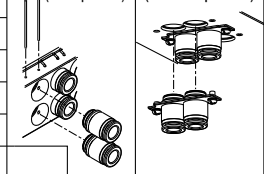
Note) When mixing top ported configurations, select from page 68. In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

#### One-touch fitting (Inch)

Symbol	A, B port	SY3000	SY5000	SY7000
Fixed	N1	ø1/8"	●	—
	N3	ø5/32"	●	—
	N7	ø1/4"	●	●
	N9	ø5/16"	—	●
	N11	ø3/8"	—	●
Replaceable	KN1	ø1/8"	●	—
	KN3	ø5/32"	●	—
	KN7	ø1/4"	●	●
	KN9	ø5/16"	—	●
	KN11	ø3/8"	—	●
M*	Mixed sizes	●	●	●
P, E port size (Thread piping)		1/8	1/4	3/8



Type 50 (Side ported)      Type 51 (Bottom ported)



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

**8 Thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

**9 Mounting**

Nil	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.
⋮	⋮	
D12	For 12 stations	

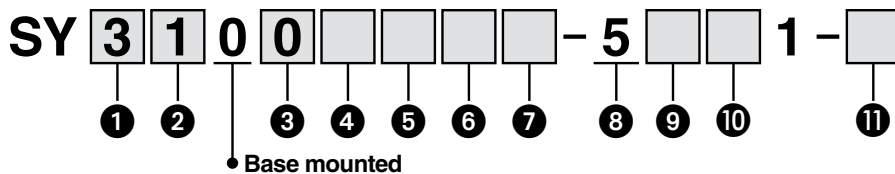
For details about the EX510 Gateway-type Serial Transmission System, refer to the **WEB catalog** or the Best Pneumatics No. 1 and the Operation Manual. Please download the Operation Manual via SMC website, <http://www.smcworld.com>

Note 1) Only direct mounting is available for Type 51 (Bottom ported).

Note 2) Refer to page 247 for the fixation of DIN rail mounting type manifold.

**How to Order Valves (With mounting screw)**

Refer to page 3 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 center
4		Exhaust center
5		Pressure center
A*	4-position dual 3-port	N.C./N.C.
B*		N.O./N.O.
C*		N.C./N.O.

\* 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**

Nil	Internal pilot
R	External pilot

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

Nil	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**

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

**7 Coil type**

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

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

\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

**8 Rated voltage**

5	24 VDC
---	--------

**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	●		

\* 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 Nil (positive common).

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

**10 Manual override**

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

\* Refer to page 14 for with the safety slide locking manual override.

**11 Type of mounting screw**

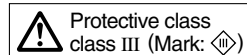
Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\*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 73 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.

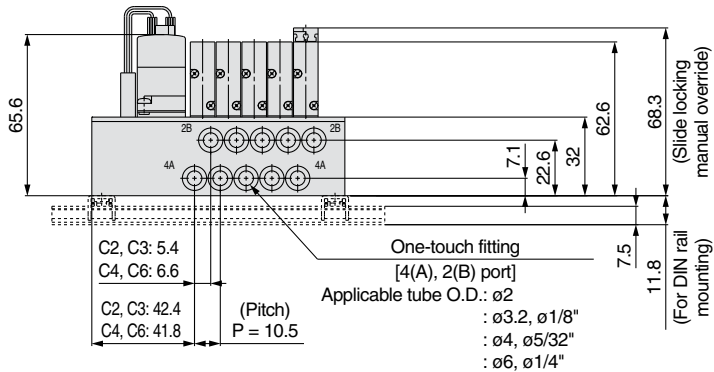
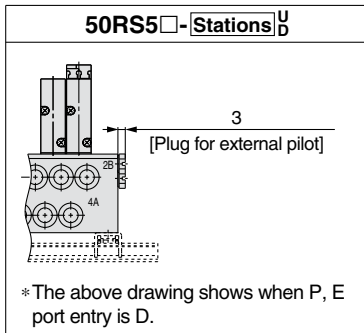
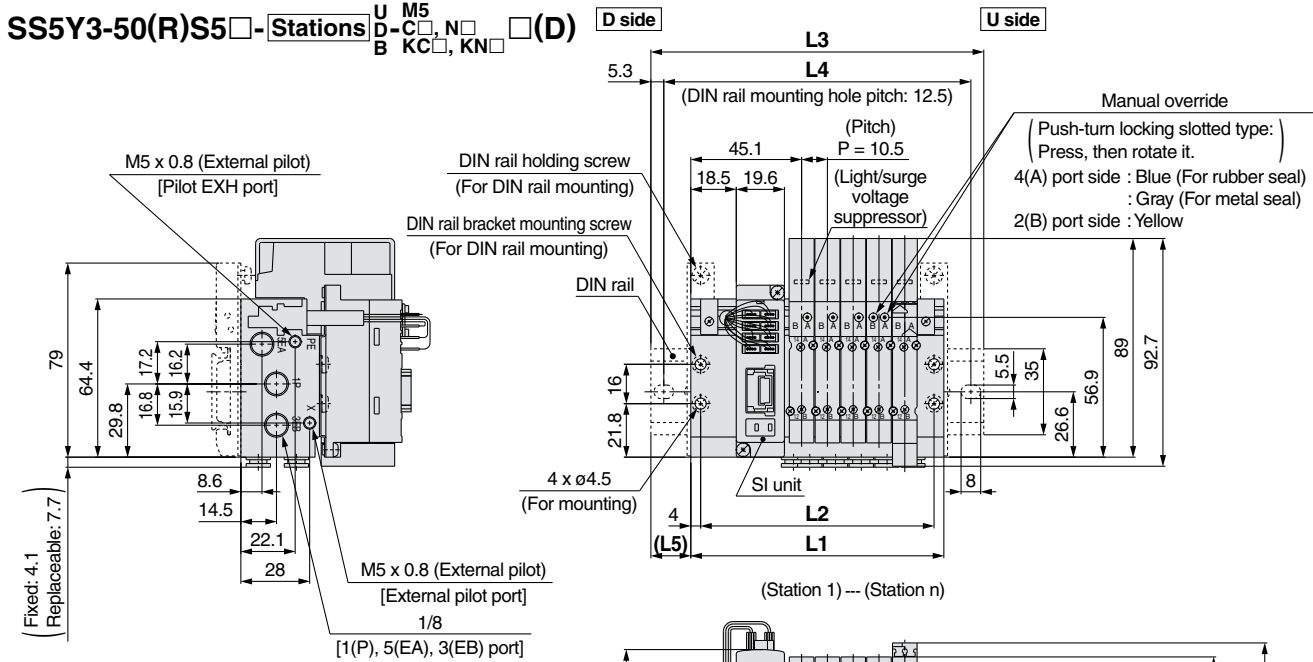


# Series SY3000/5000/7000

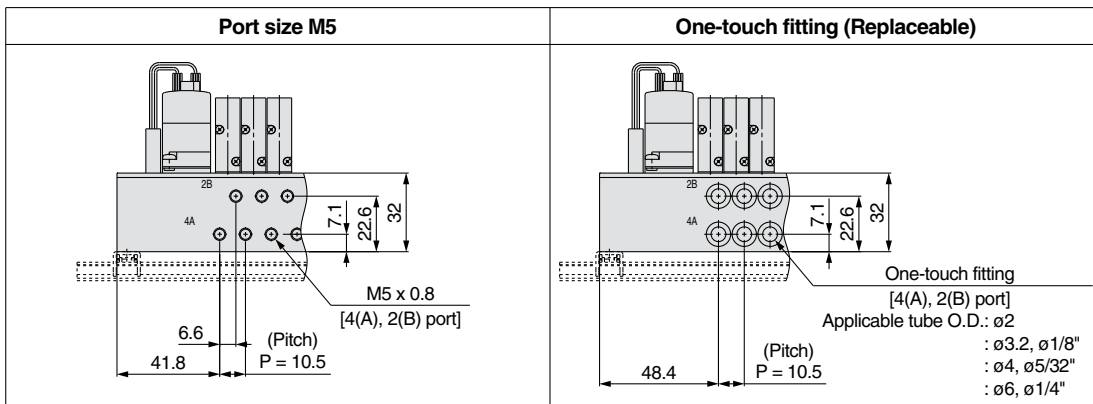
**Plug-in Metal Base** Type 50/Side Ported  
EX510

## Dimensions: Series SY3000

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



Note) 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



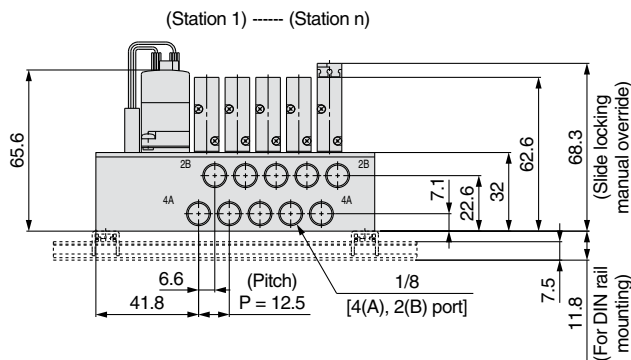
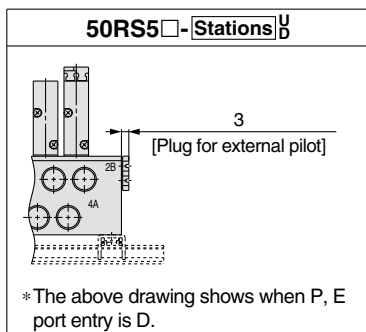
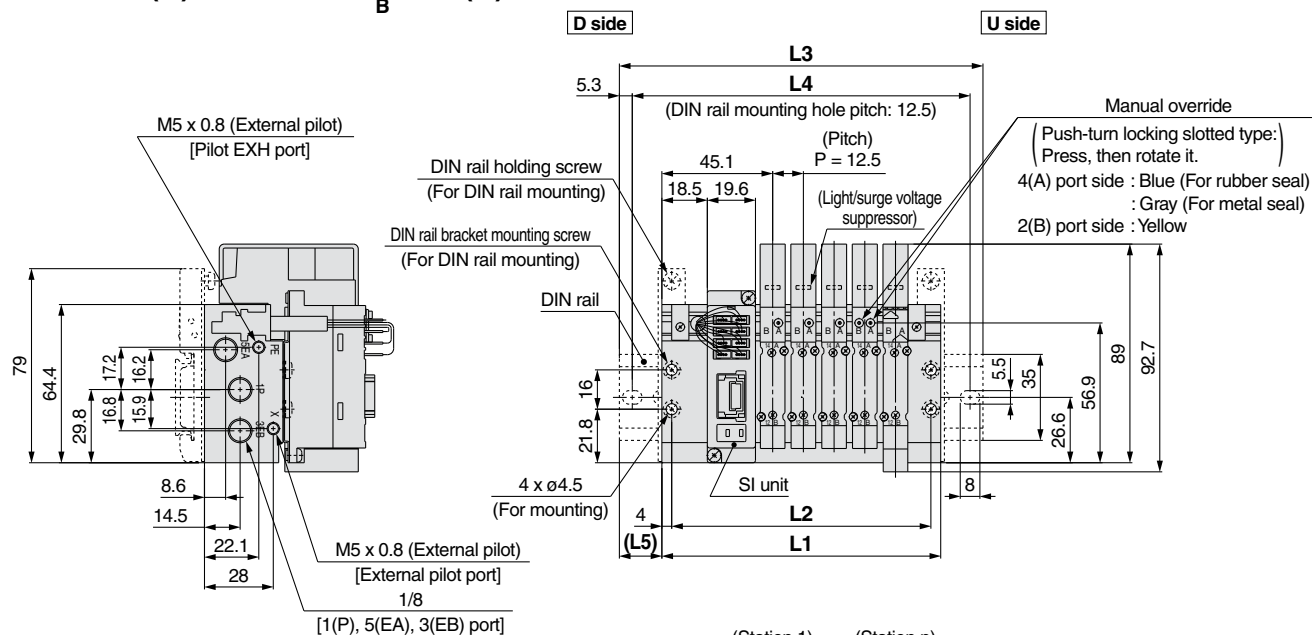
Dimensions: Series **SY3000**

Plug-in  
Metal Base

Type 50/Side Ported

EX510

SS5Y3-50(R)S5□-Stations  $\frac{U}{D}$ -01□(D)



Note) These figures show the "SS5Y3-50S5-05B-01".

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

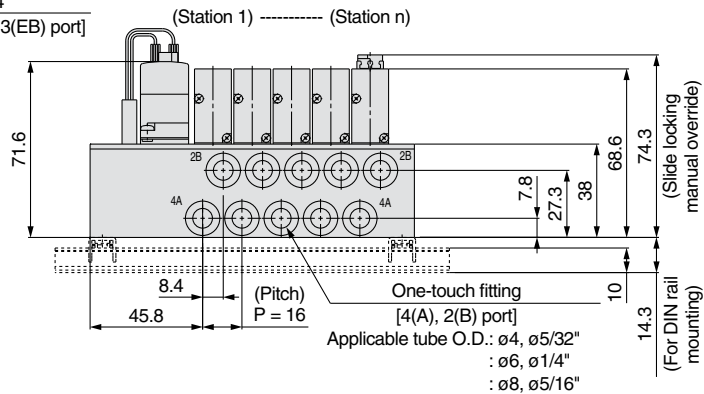
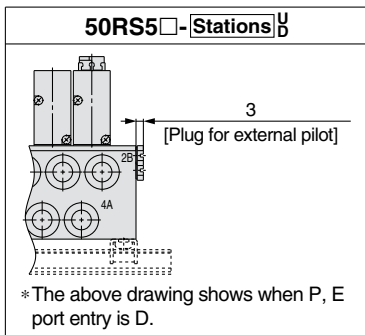
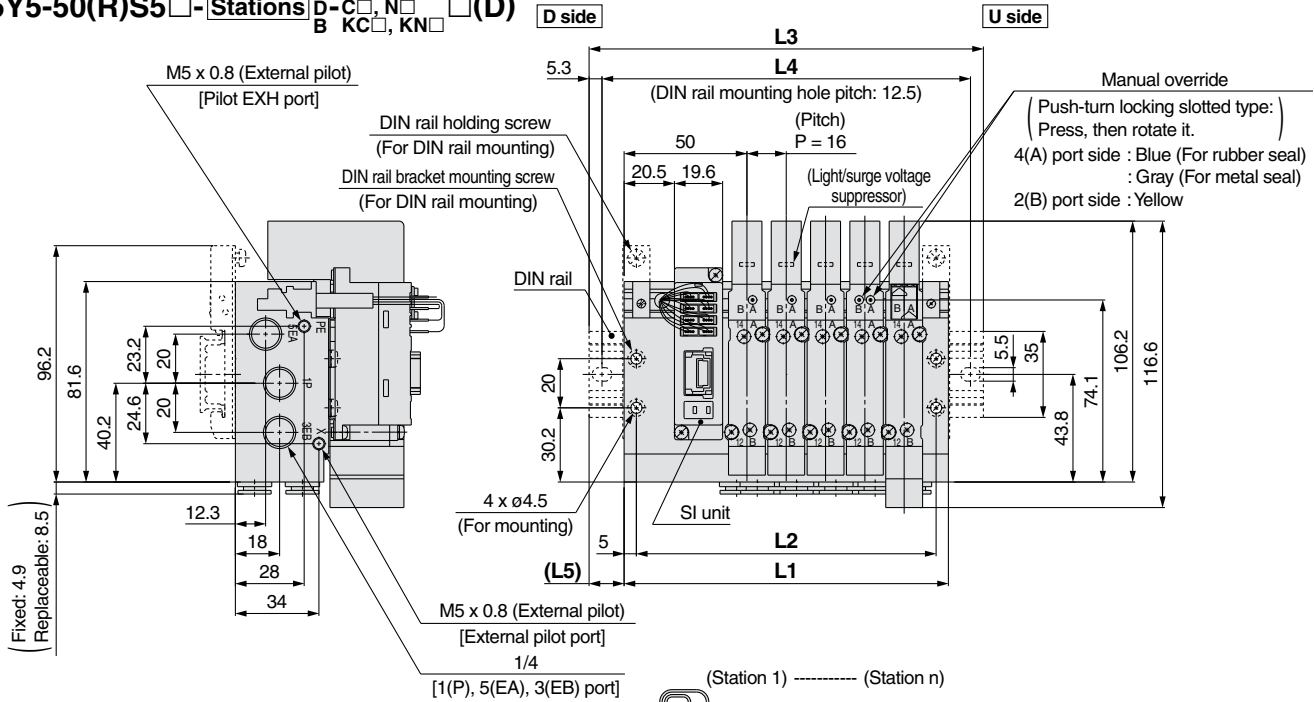
**Plug-in  
Metal Base**

**Type 50/Side Ported**

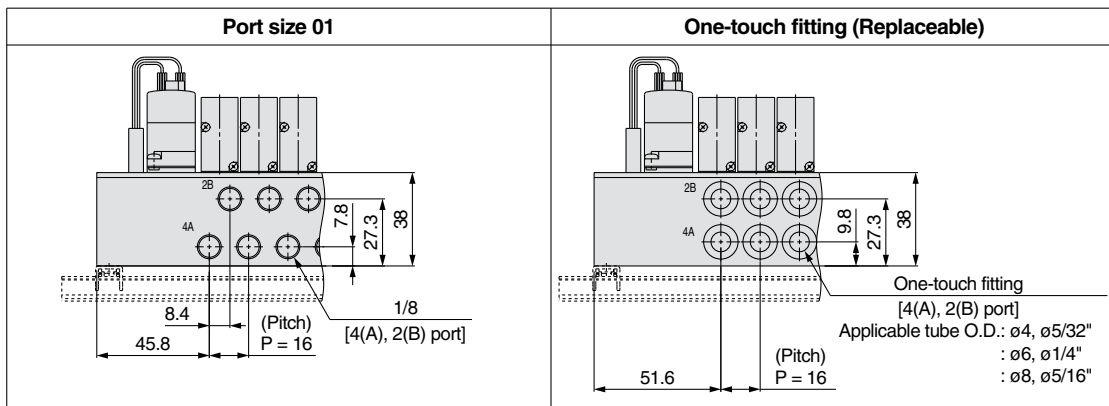
**EX510**

## Dimensions: Series SY5000

SS5Y5-50(R)S5□-Stations  $\frac{U}{D}$   $\frac{01}{C}$  □  $\frac{N}{K}$  □  $\frac{N}{K}$  □ (D)



Note) 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

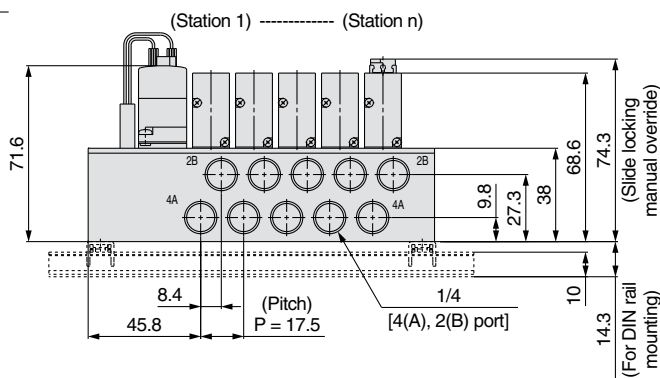
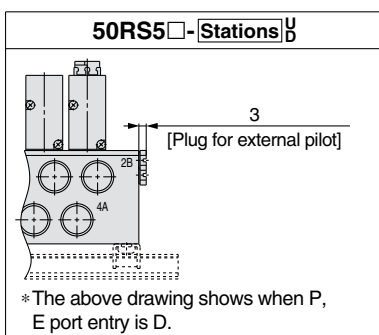
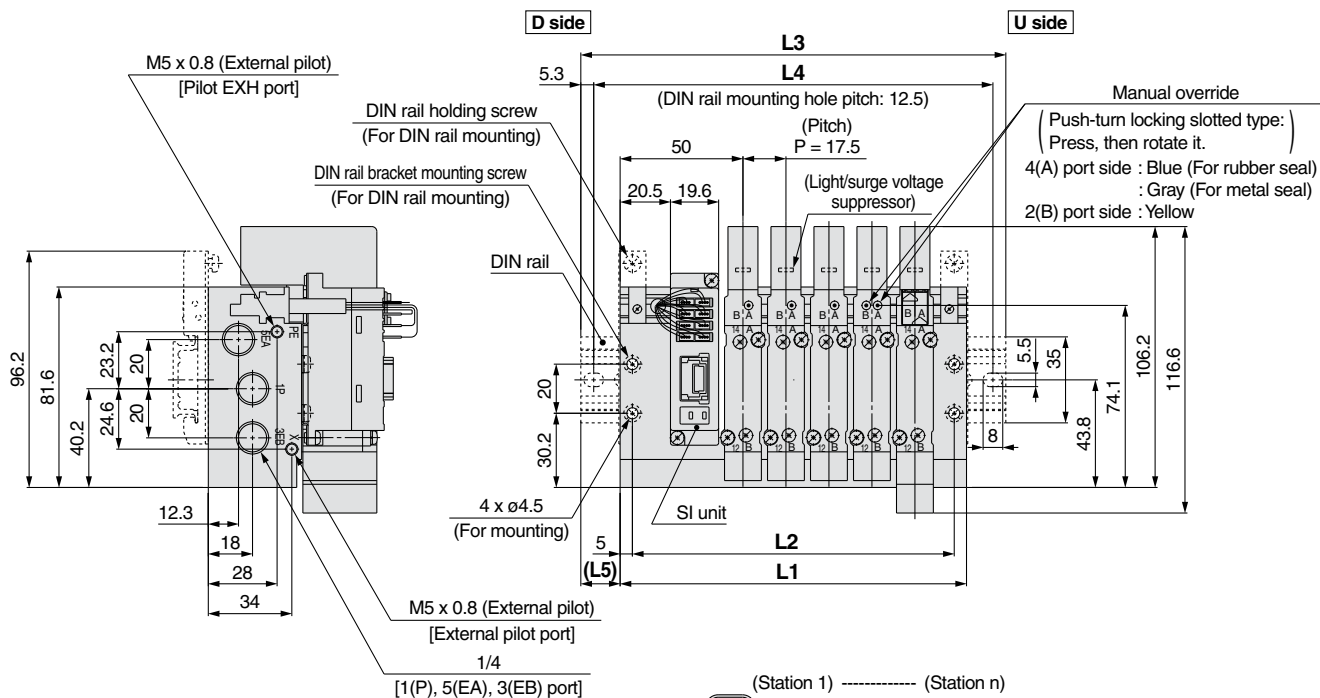
Plug-in  
Metal Base

Type 50/Side Ported

EX510

Dimensions: Series **SY5000**

SS5Y5-50(R)S5□ - Stations  $\frac{U}{D}$ -02□(D)



Note) These figures show the "SS5Y5-50S5-05B-02".

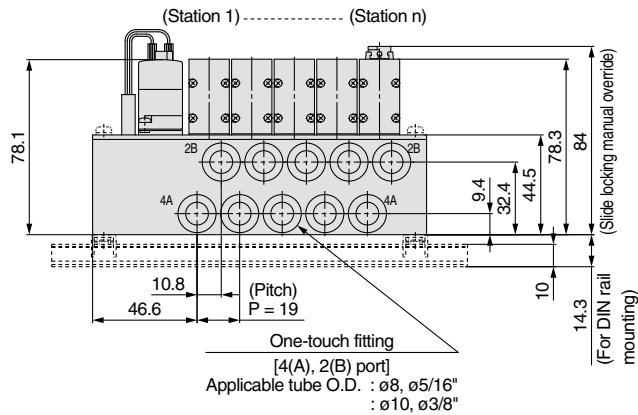
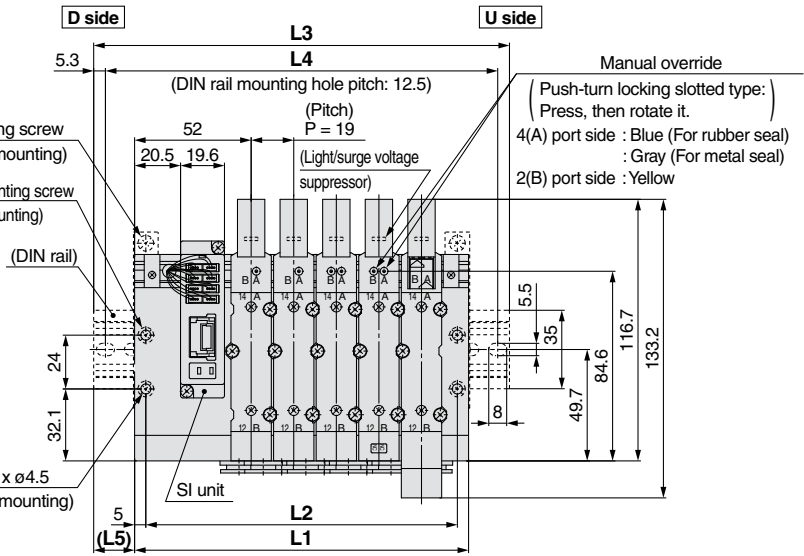
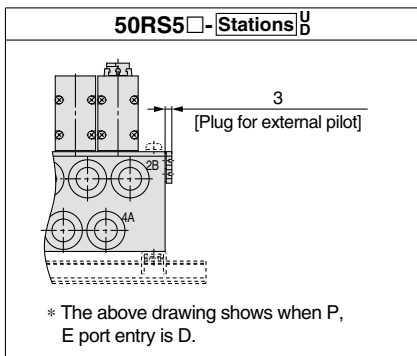
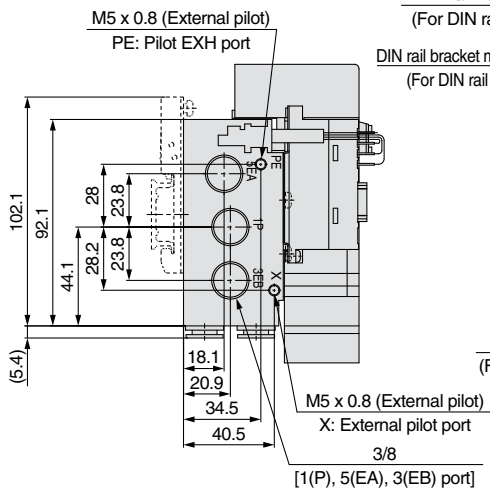
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	88.5	106	123.5	141	158.5	176	193.5	211	228.5	246	263.5
L2	78.5	96	113.5	131	148.5	166	183.5	201	218.5	236	253.5
L3	123	135.5	148	173	185.5	210.5	223	235.5	260.5	273	298
L4	112.5	125	137.5	162.5	175	200	212.5	225	250	262.5	287.5
L5	17.5	15	12.5	16	13.5	17.5	15	12.5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

# Series SY3000/5000/7000

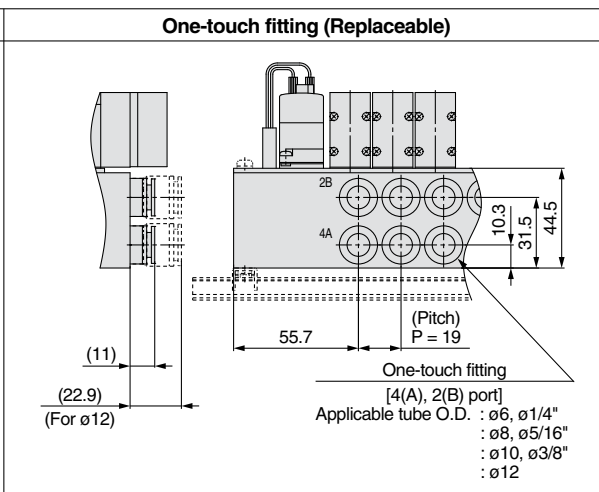
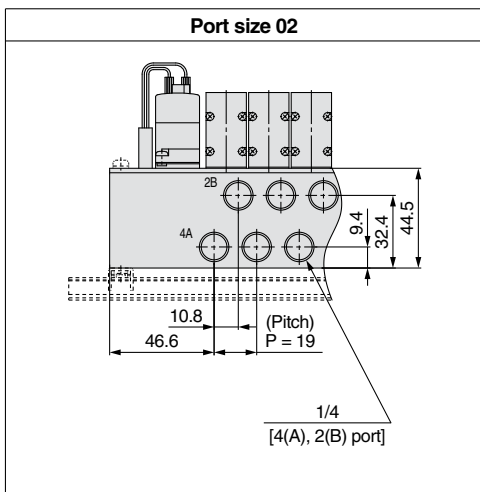
**Plug-in Metal Base** Type 50/Side Ported  
EX510

## Dimensions: Series SY7000

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



Note) 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

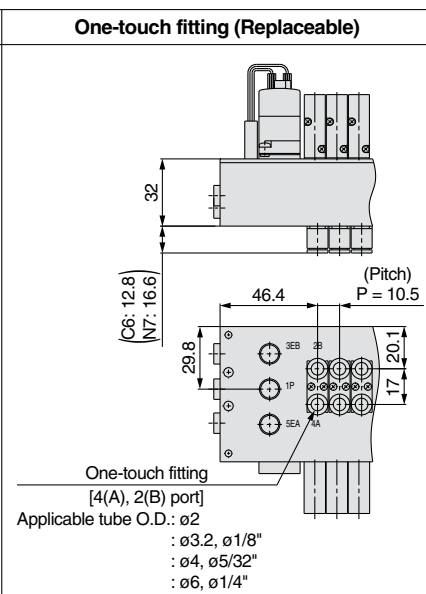
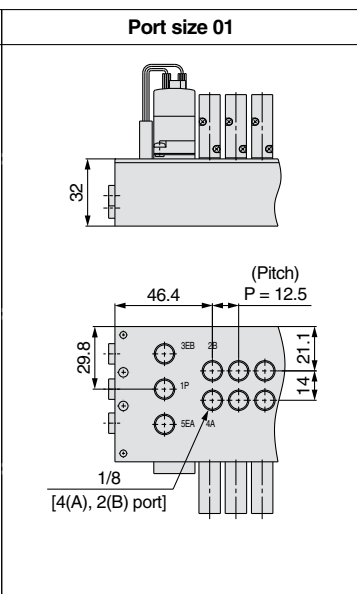
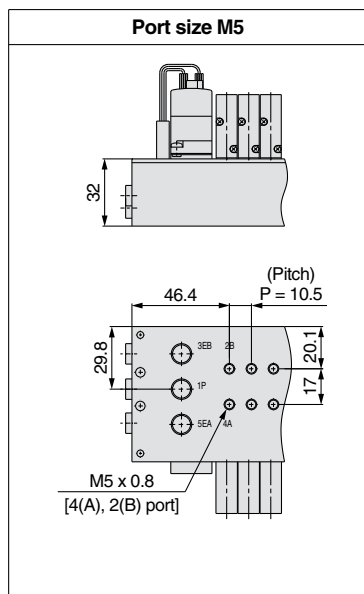
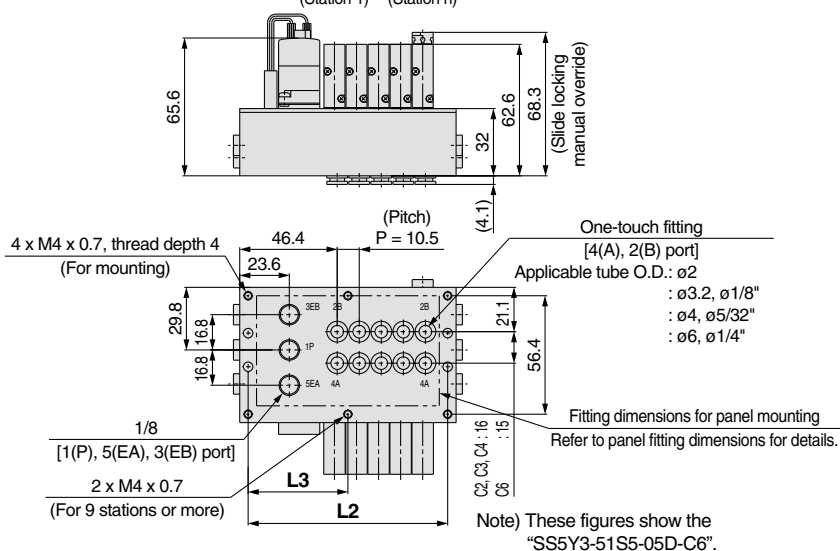
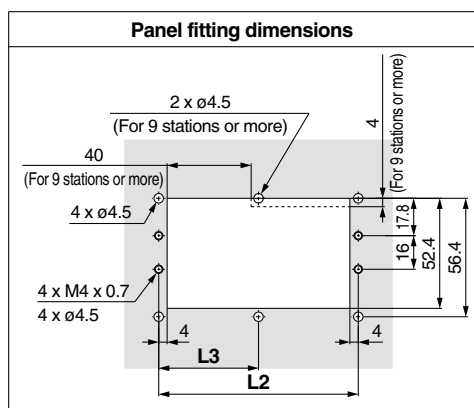
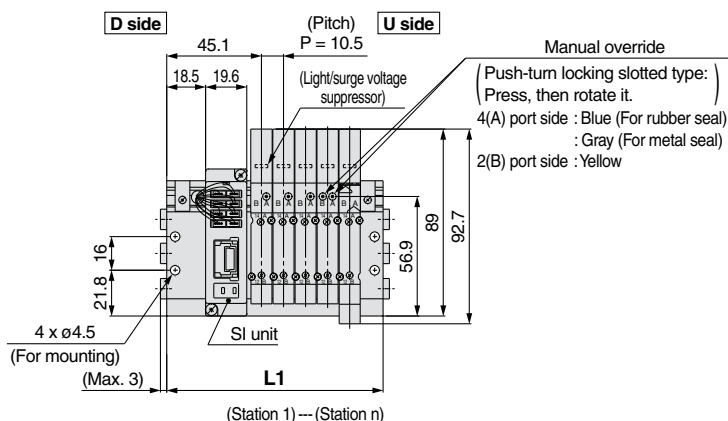
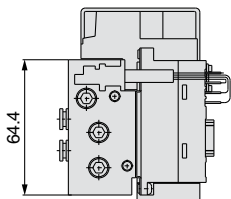
Dimensions: Series SY3000

Plug-in  
Metal Base

Type 51/Bottom Ported

EX510

SS5Y3-51S5□ - Stations D- M5, 01  
C□, N□ KC□, KN□



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

Valve  
Sub-plate  
Metal Base  
Type 50, 51, 52  
Manifold Exploded View  
Connector Connecting Base  
Type 10, 11, 12  
Manifold Exploded View  
One-touch Fittings/  
Plug Assembly Part No.  
Manifold Options

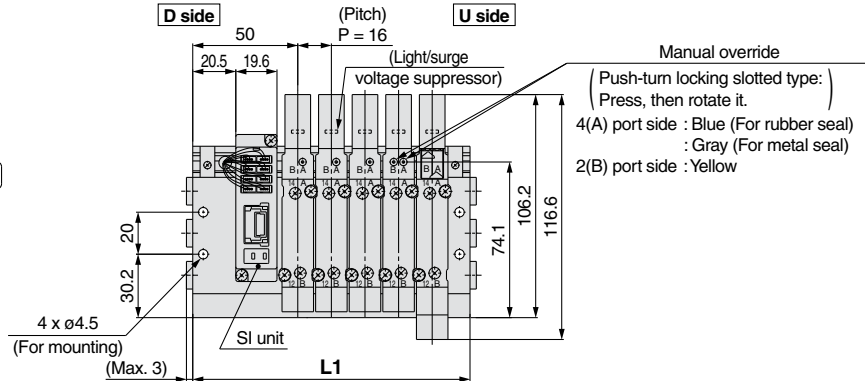
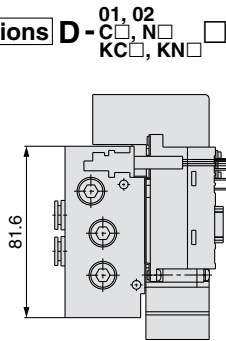
# Series SY3000/5000/7000

## Dimensions: Series SY5000

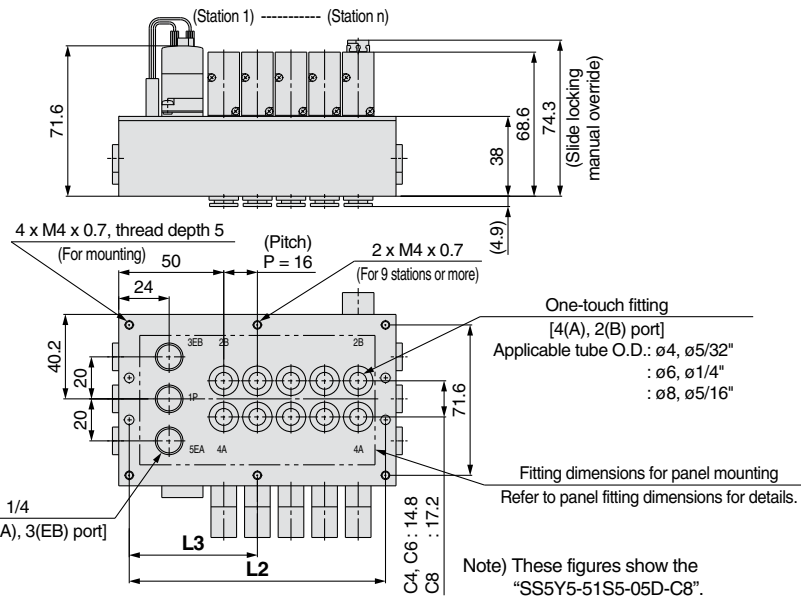
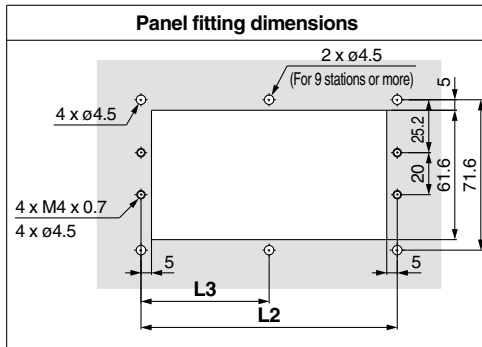
Plug-in  
Metal Base

Type 51/Bottom Ported  
EX510

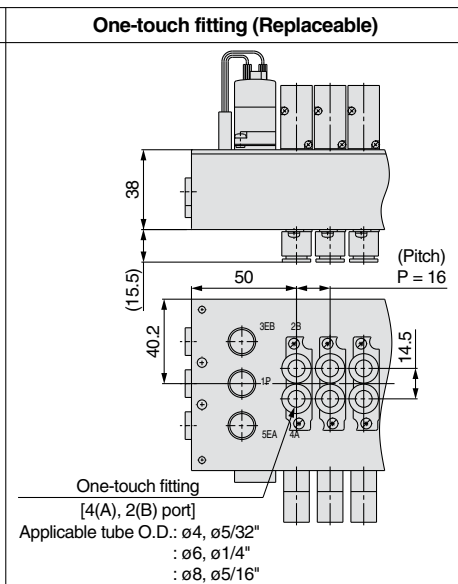
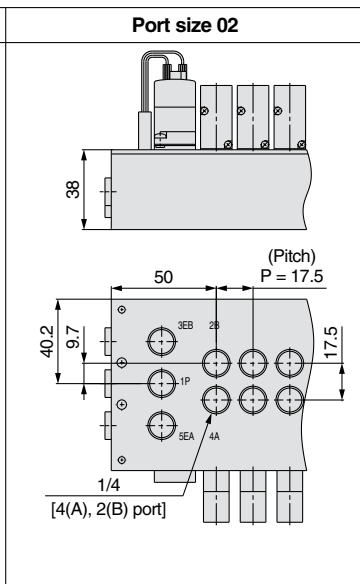
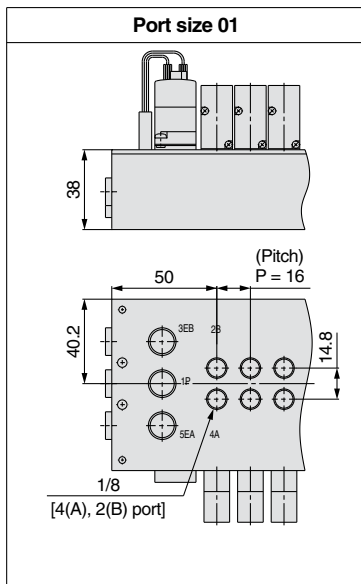
SS5Y5-51S5- Stations D -  C  N    
KC  KN



Manual override  
(Push-turn locking slotted type:)  
Press, then rotate it.  
4(A) port side : Blue (For rubber seal)  
                          : Gray (For metal seal)  
2(B) port side : Yellow



Note) These figures show the "SS5Y5-51S5-05D-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

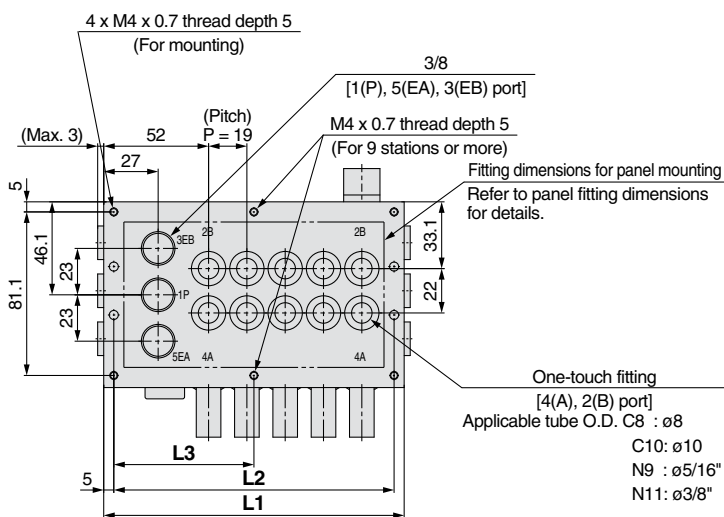
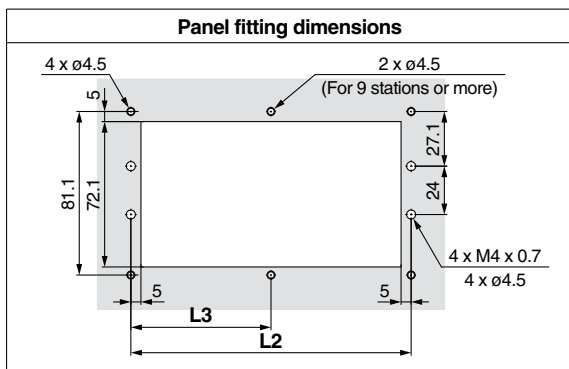
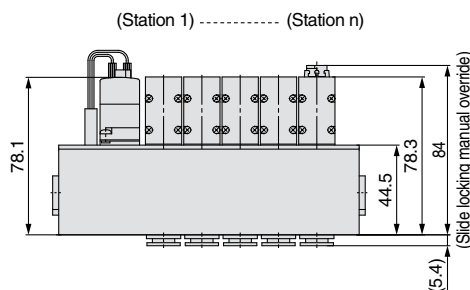
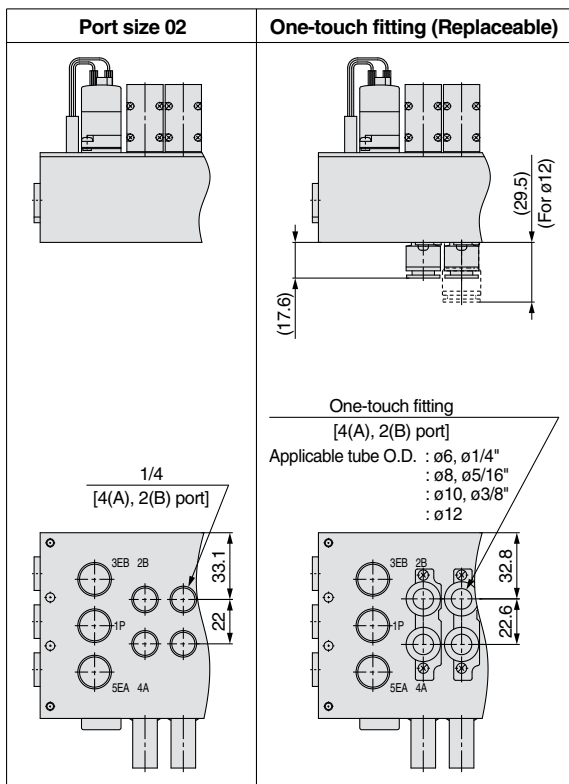
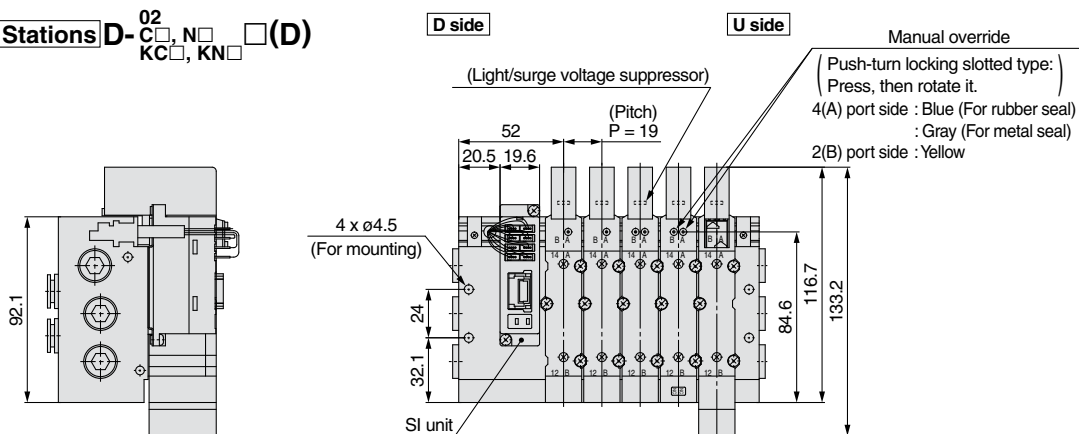
Port Size 02

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 EX510

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



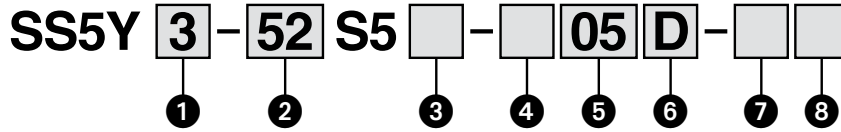
Note) These figures show the "SS5Y7-51S5-05D-C10".

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

# Series SY3000/5000/7000



## How to Order Manifold



### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type

52	Top ported
52R	Top ported, External pilot

### 3 SI unit output polarity

Nil	Positive common
N	Negative common

### 4 Wiring type

Nil	All double wiring <small>Note 1)</small>
S	All single wiring <small>Note 2)</small>

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

Note 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.

Note 3) 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	All single wiring
02	2 stations	
⋮	⋮	
12	12 stations	

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

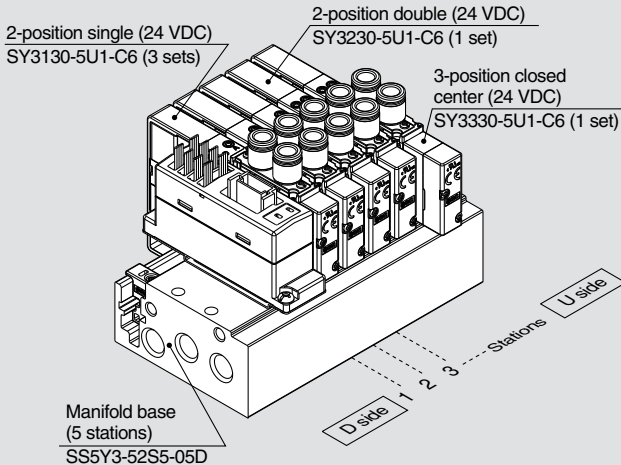
### 6 P, E port entry

U	U side <small>Note)</small>
D	D side <small>Note)</small>
B	Both sides

Note) 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 center 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

Nil	Rc
00F	G
00N	NPT
00T	NPTF

### 8 Mounting

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

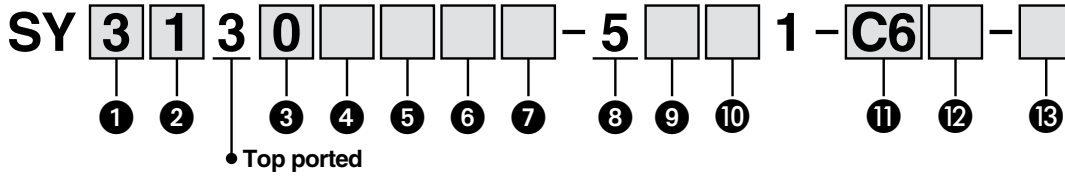
Note) Refer to page 247 for the fixation of DIN rail mounting type manifold.

For details on the EX510 Gateway-type Serial Transmission System, refer to the **WEB catalog** or the Best Pneumatics No. 1 and the Operation Manual. Please download the Operation Manual via SMC website, <http://www.smcworld.com>



How to Order Valves (With mounting screw)

Refer to page 3 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 center
4		Exhaust center
5		Pressure center
A*	4-position dual	N.C./N.C.
B*		N.O./N.O.
C*		N.C./N.O.

\* 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**

Nil	Internal pilot
R	External pilot

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

Nil	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**

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

**7 Coil type**

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

\* Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.  
\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

**8 Rated voltage**

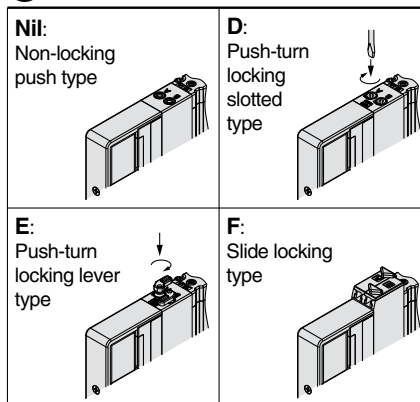
5	24 VDC
---	--------

**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	●		

\* 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 Nil (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 14 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
O1	1/8	SY5000
O2	1/4	SY7000

One-touch fitting (Metric)

Symbol	A, B port	SY3000	SY5000	SY7000
C2	ø2	●	—	—
C3	ø3.2	●	—	—
C4	ø4	●	●	—
C6	ø6	●	●	●
C8	ø8	—	●	●
C10	ø10	—	—	●
C12	ø12	—	—	●

One-touch fitting (Inch)

Symbol	A, B port	SY3000	SY5000	SY7000
N1	ø1/8"	●	—	—
N3	ø5/32"	●	●	—
N7	ø1/4"	●	●	●
N9	ø5/16"	—	●	●
N11	ø3/8"	—	—	●

**12 Thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

**13 Type of mounting screw**

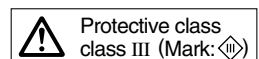
Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* 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 73 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.



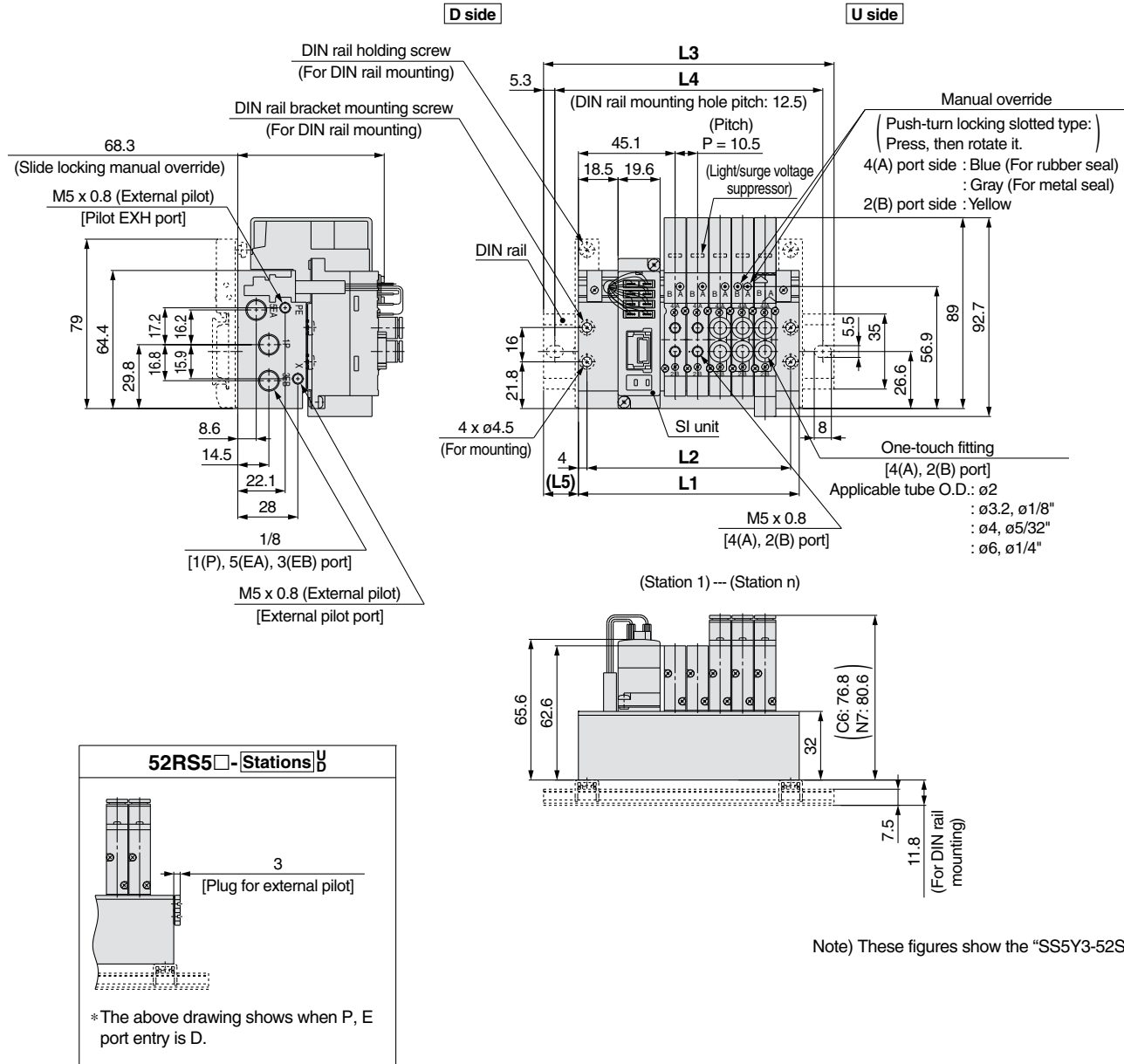
# Series SY3000/5000/7000

## Dimensions: Series SY3000

**Plug-in  
Metal Base**

Type 52/Top Ported

EX510



Note) 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

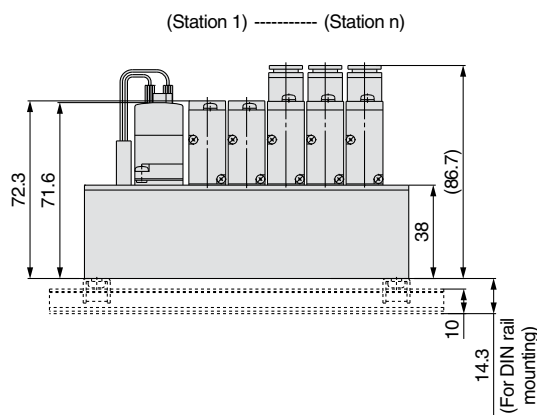
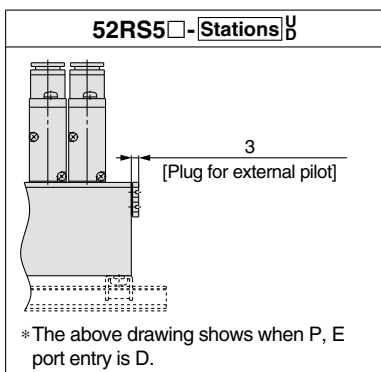
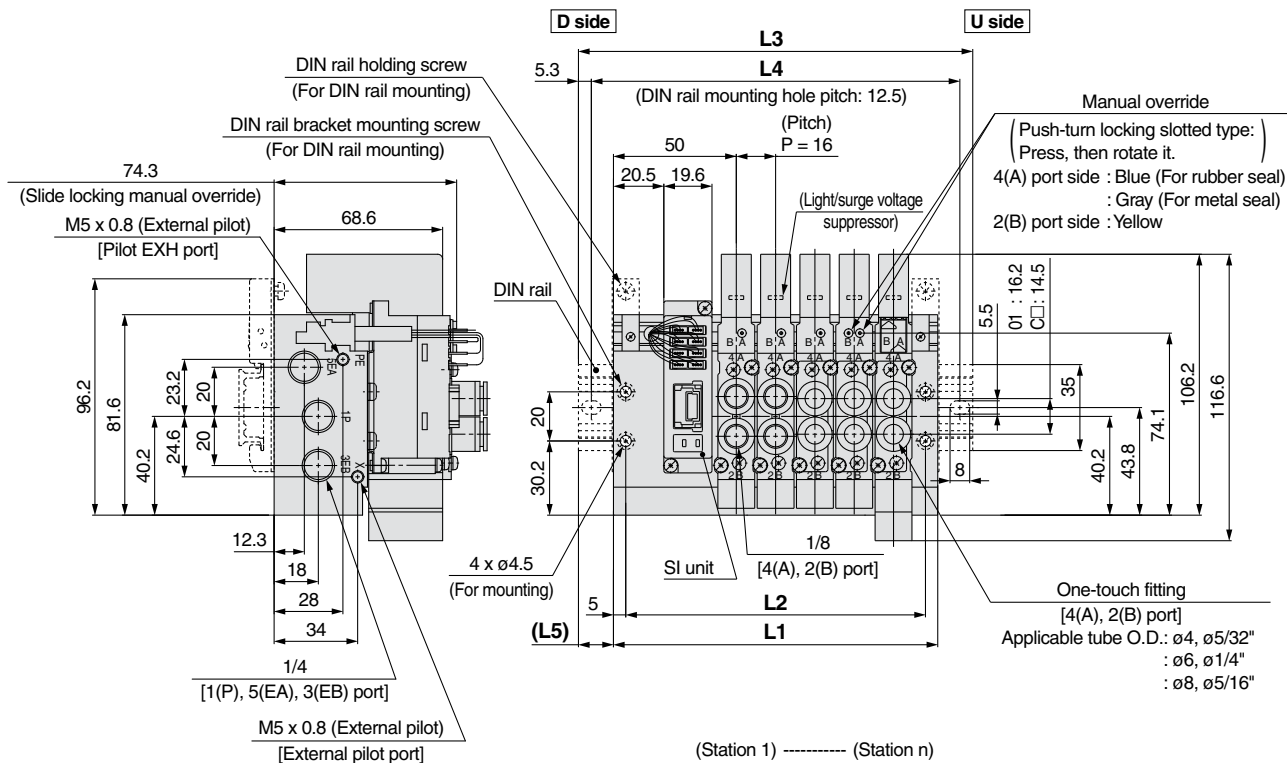
Dimensions: Series **SY5000**

Plug-in  
Metal Base

Type 52/Top Ported

EX510

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



Note) These figures show the "SS5Y5-52S5-05B".

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

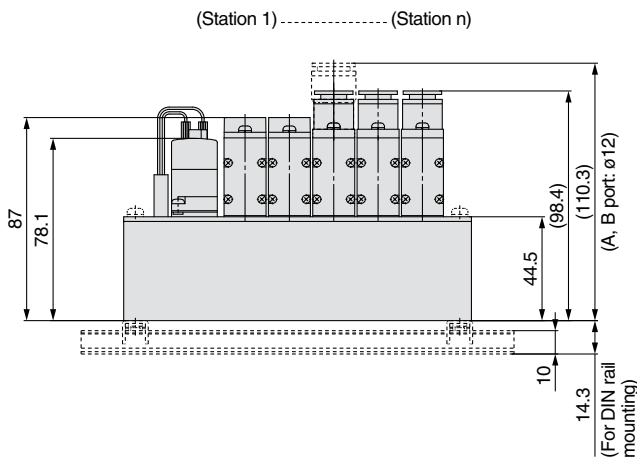
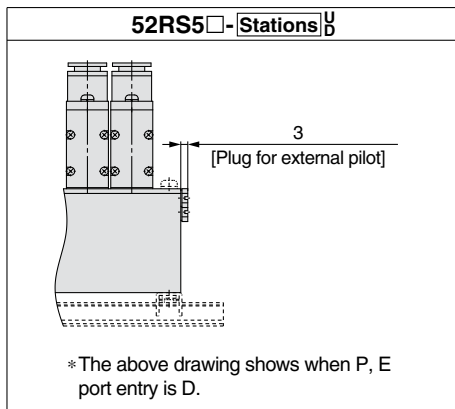
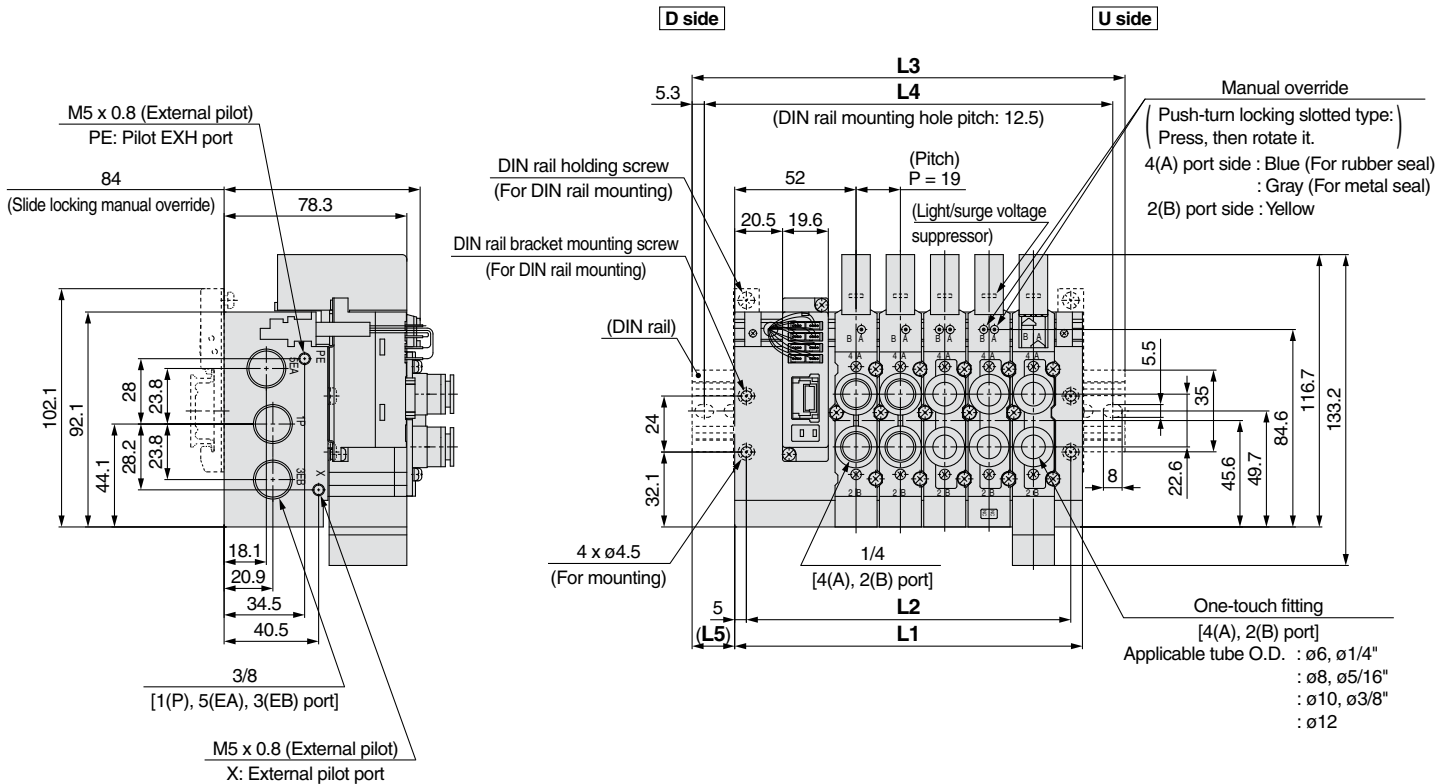
# Series SY3000/5000/7000

**Plug-in  
Metal Base**

**Type 52/Top Ported  
EX510**

## Dimensions: Series SY7000

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



Note) 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

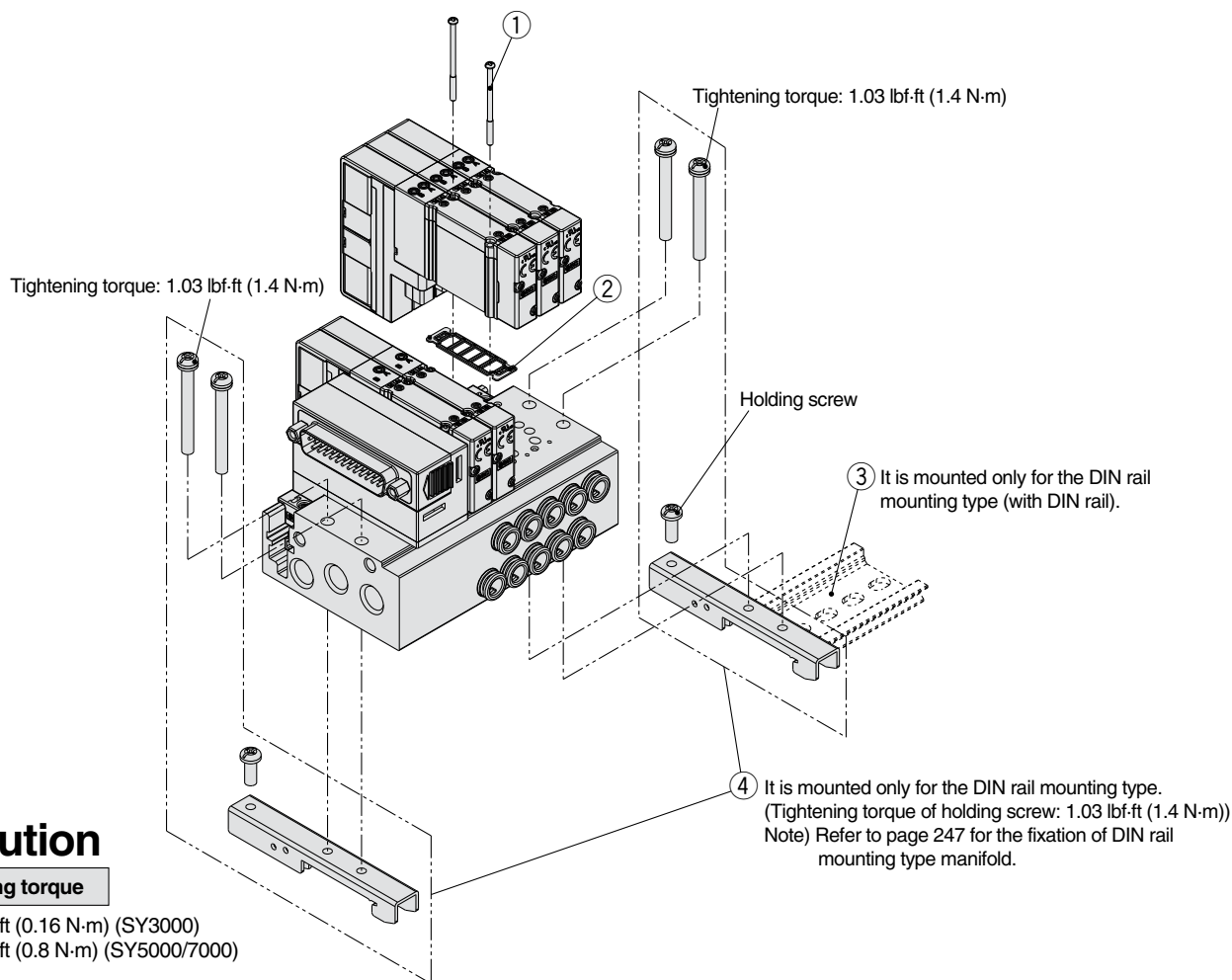
Type 50, 51, 52  
Manifold Exploded View

**Plug-in** Metal Base

**Plug-in** Sub-plate

Valve

# Plug-in Metal Base Manifold Exploded View



## Caution

### Tightening torque

M2: 0.12 lbf ft (0.16 N·m) (SY3000)  
 M3: 0.59 lbf ft (0.8 N·m) (SY5000/7000)

## Manifold Parts No.

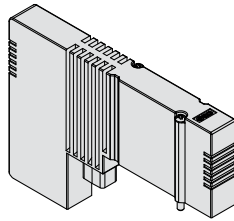
No.	Description		Part no.			Note
			SY3000	SY5000	SY7000	
①	Valve mounting screw	Round head combination screw	SY3000-23-24A (M2 x 32)	SY5000-221-1A (M3 x 32.5)	SY7000-221-1A (M3 x 36.5)	Part numbers shown on the left are for 10 valves (20 pcs.). (30 pcs. for the SY7000)
		Hexagon socket head cap screw	SY3000-222-1A (M2 x 32)	SY5000-222-1A (M3 x 32.5)	SY7000-222-1A (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 225.
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.**

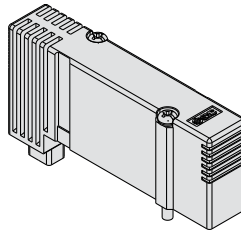
■ **Blanking plate assembly (With mounting screw)**

Used when expecting valve additions, or for maintenance.

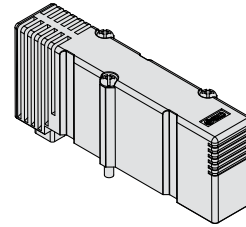
A structure to prevent screws falling out is in place on the blanking plate, making it much harder for the mounting screws to fall out.



SY30M-26-2A (-B)



SY50M-26-2A (-B)



SY70M-26-2A (-B)

Refer to pages 236, 238, 240 for dimensions.

Refer to pages 226 to 230 for individual SUP/EXH and other options.

**How to Order Blanking Plate Assembly**

SY    0M - 26 - 2 A -   

● **Series**

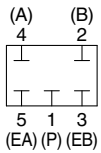
3	SY3000
5	SY5000
7	SY7000

● **Option for mounting**

Nil	With mounting screw (Round head combination screw)
B	With mounting screw (Hexagon socket head cap screw)

● **Base type**

2	For plug-in metal base
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**Circuit diagram**

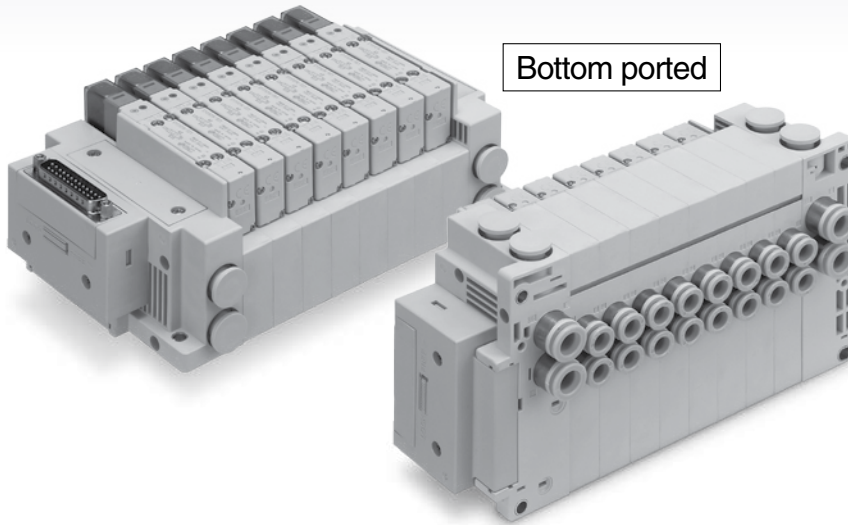




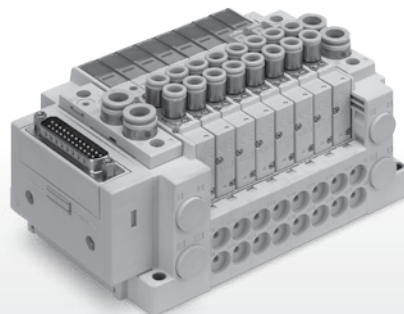
# Plug-in Connector Connecting Base



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 J type G type	PH type	T type	L type	M type	S6□ type (EX600)	SA2 type (EX500) S4□ type (EX126)	S□ type (EX250) (EX260)
<b>Manifold type</b>		Plug-in connector connecting base										
<b>SUP/EXH port type</b>		Common SUP/EXH (Common for 3/5 port)										
<b>Valve stations</b>		2 to 24 stations		2 to 18 stations (J/G type: 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	
<b>Applicable connector</b>		D-sub connector Conforming to MIL-C-24308 JIS-X-5101 (Refer to page 95.)	Dedicated connector (Refer to page 95.)	Flat ribbon cable connector with strain relief Conforming to MIL-C-83503 (Refer to page 97.)			—					
				Socket: 26 pins MIL type	Socket: 20 pins MIL type	Socket: 10 pins MIL type						
<b>Internal wiring</b>		Positive common, Negative common										
<b>Port size</b>	<b>1(P), 3/5(E) port</b>	<b>SY3000</b>	ø8 One-touch fitting ø5/16" One-touch fitting									
		<b>SY5000</b>	ø10 One-touch fitting ø3/8" One-touch fitting									
		<b>SY7000</b>	ø12 One-touch fitting ø1/2" One-touch fitting									
	<b>4(A), 2(B) port</b>	<b>SY3000</b>	ø2 One-touch fitting, ø3.2 One-touch fitting, ø4 One-touch fitting, ø6 One-touch fitting ø1/8" One-touch fitting, ø5/32" One-touch fitting, ø1/4" One-touch fitting									
		<b>SY5000</b>	ø4 One-touch fitting, ø6 One-touch fitting, ø8 One-touch fitting ø5/32" One-touch fitting, ø1/4" One-touch fitting, ø5/16" One-touch fitting									
		<b>SY7000</b>	ø6 One-touch fitting, ø8 One-touch fitting, ø10 One-touch fitting, ø12 One-touch fitting ø1/4" One-touch fitting, ø5/16" One-touch fitting, ø3/8" One-touch fitting									
<b>Enclosure (Based on IEC60529)</b>		IP40	IP67*	IP40			IP67*		IP67* (I/O unit: partially IP40)	IP67* (EX500 gateway unit, input unit: IP65)	IP67* (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>Note 1)</sup> / **Manifold Weight****Valve Seal Type: Rubber Seal**

Model	Port size		Valve flow-rate characteristics				Weight: W [g] <sup>Note 2)</sup> (n: stations)
	1, 3/5 (P, E)	4, 2 (A, B)	1→4/2 (P→A/B)		4/2→5/3 (A/B→E)		
			C [dm <sup>3</sup> /(s·bar)]	b	C [dm <sup>3</sup> /(s·bar)]	b	
SS5Y3-10 (Side ported)	C8	C6	1.4	0.30	1.6	0.19	28.9n + 293
SS5Y3-12 (Top ported)	C8	C6	1.2	0.29	1.3	0.19	25.1n + 314
SS5Y5-10 (Side ported)	C10	C8	3.3	0.30	3.6	0.17	74.7n + 398
SS5Y5-11 (Bottom ported)	C10	C8	3.3	0.29	4.2	0.26	76.8n + 445
SS5Y5-12 (Top ported)	C10	C8	2.8	0.27	3.8	0.23	66.3n + 417
SS5Y7-10 (Side ported)	C12	C12	6.2	0.23	5.9	0.20	106.6n + 496
SS5Y7-11 (Bottom ported)	C12	C12	6.2	0.25	6.6	0.21	117.9n + 532
SS5Y7-12 (Top ported)	C12	C12	5.6	0.31	5.7	0.24	84.1n + 519

**Valve Seal Type: Metal Seal**

Model	Port size		Valve flow-rate characteristics				Weight: W [g] <sup>Note 2)</sup> (n: stations)
	1, 3/5 (P, E)	4, 2 (A, B)	1→4/2 (P→A/B)		4/2→5/3 (A/B→E)		
			C [dm <sup>3</sup> /(s·bar)]	b	C [dm <sup>3</sup> /(s·bar)]	b	
SS5Y3-10 (Side ported)	C8	C6	1.2	0.19	1.3	0.18	28.9n + 293
SS5Y3-12 (Top ported)	C8	C6	1.2	0.16	1.3	0.18	25.1n + 314
SS5Y5-10 (Side ported)	C10	C8	2.7	0.24	3.1	0.17	74.7n + 398
SS5Y5-11 (Bottom ported)	C10	C8	2.8	0.25	3.5	0.15	76.8n + 445
SS5Y5-12 (Top ported)	C10	C8	2.6	0.18	3.0	0.16	66.3n + 417
SS5Y7-10 (Side ported)	C12	C12	4.4	0.14	4.4	0.17	106.6n + 496
SS5Y7-11 (Bottom ported)	C12	C12	4.6	0.16	4.7	0.18	117.9n + 532
SS5Y7-12 (Top ported)	C12	C12	3.9	0.21	4.1	0.14	84.1n + 519

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

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

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

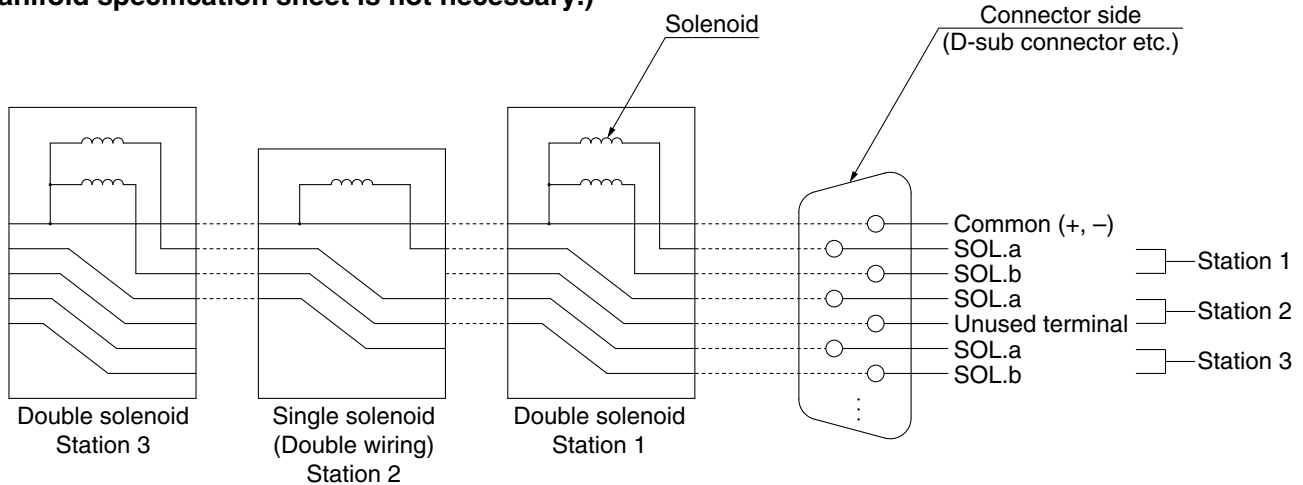
To obtain the weight with valves attached, add the valve weights given on page 5 for the appropriate number of stations.

# Series SY3000/5000/7000

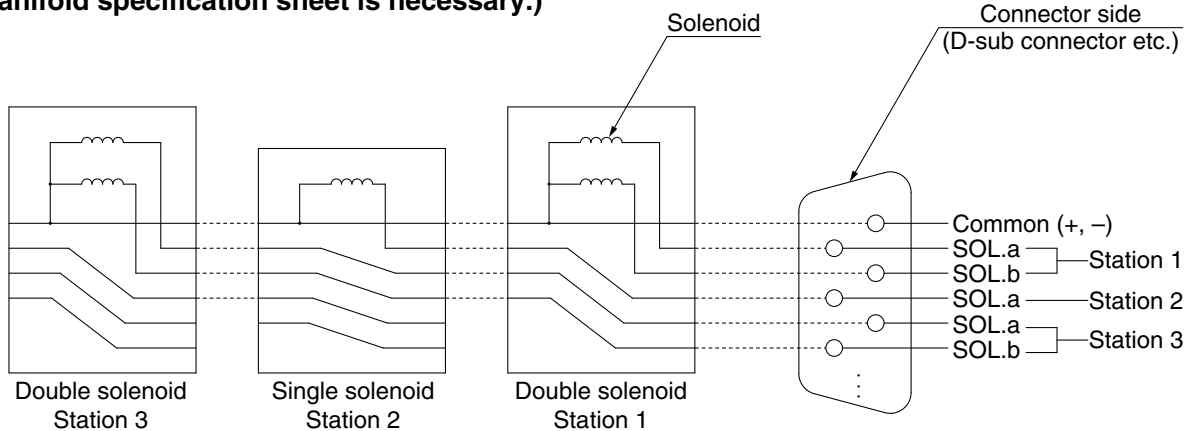
## Connector Wiring Layout

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.)



Note) 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

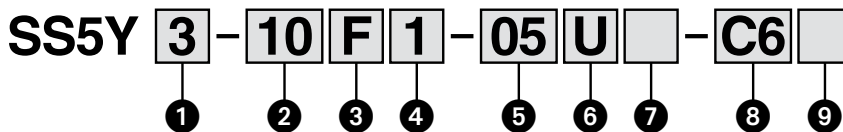
D-sub Connector Flat Ribbon Cable PC Wiring

# Series SY3000/5000/7000



## How to Order Manifold

Refer to pages 184 (SY5000) and 185 (SY7000) for dimensions of Type 11/Bottom ported type.



### 1 Series

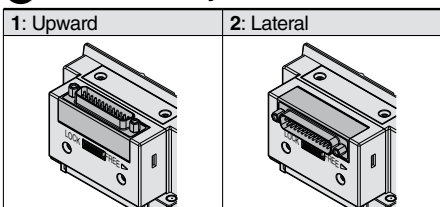
3	SY3000
5	SY5000
7	SY7000

### 2 Type

10	Side ported
11	Bottom ported*

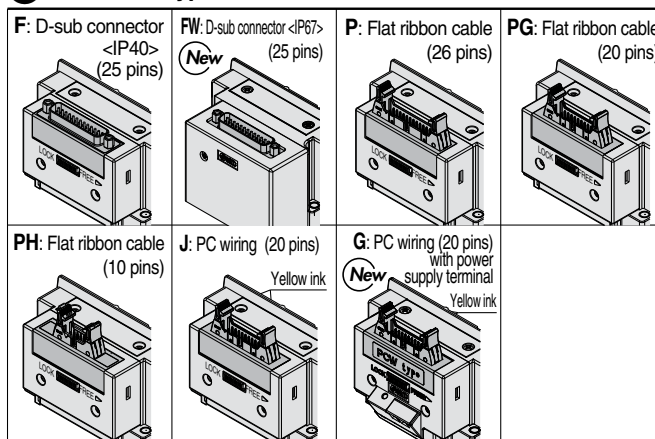
\* The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to "Plug-in Mixed Mounting Type Manifold" (from page 189).

### 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 208) separately.

### 3 Connector type

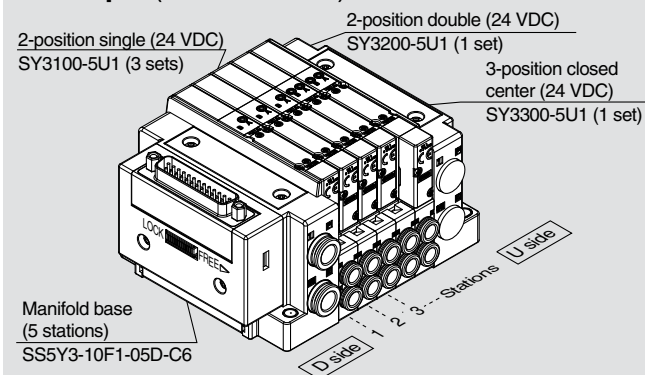


### 5 Valve stations

F/FW: D-sub connector (25 pins)			P: Flat ribbon cable (26 pins)		
Symbol	Stations	Note	Symbol	Stations	Note
02	2 stations	Double wiring <sup>Note 1)</sup>	02	2 stations	Double wiring <sup>Note 1)</sup>
∴	∴		∴	∴	
12	12 stations	Specified layout <sup>Note 2)</sup> (Available up to 24 solenoids)	12	12 stations	Specified layout <sup>Note 2)</sup> (Available up to 24 solenoids)
02	2 stations		02	2 stations	
∴	∴		∴	∴	
24	24 stations		24	24 stations	
PG: Flat ribbon cable (20 pins)			PH: Flat ribbon cable (10 pins)		
Symbol	Stations	Note	Symbol	Stations	Note
02	2 stations	Double wiring <sup>Note 1)</sup>	02	2 stations	Double wiring <sup>Note 1)</sup>
∴	∴		∴	∴	
09	9 stations	Specified layout <sup>Note 2)</sup> (Available up to 18 solenoids)	04	4 stations	Specified layout <sup>Note 2)</sup> (Available up to 8 solenoids)
02	2 stations		02	2 stations	
∴	∴		∴	∴	
18	18 stations		08	8 stations	
J/G: PC wiring (20 pins)			Note 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.		
Symbol	Stations	Note			
02	2 stations	Double wiring <sup>Note 1)</sup>			
∴	∴				
08	8 stations	Specified layout <sup>Note 2)</sup> (Available up to 16 solenoids)			
02	2 stations				
∴	∴				
16	16 stations				

## 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 center 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.

Note) When mixing top ported configurations, select from page 94. 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**

<b>Nil</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.

**8 Mounting and Option**

Symbol	Mounting	Option	
		Name plate	Station number
<b>Nil</b>	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
⋮	⋮
<b>24</b>	For 24 stations

Specify a longer rail than the total length of specified stations.

Note 1) Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" above.)

Note 2) Only direct mounting is available for Type 11 (Bottom ported).

Note 3) Refer to page 247 for the fixation of DIN rail mounting type manifold.

**9 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>	ø2	●	—	—	—	—
<b>C3</b>	ø3.2	●	—	—	—	—
<b>C4</b>	ø4	●	●	—	●	—
<b>C6</b>	ø6	●	●	●	●	●
<b>C8</b>	ø8	—	●	●	●	●
<b>C10</b>	ø10	—	—	●	—	●
<b>C12</b>	ø12	—	—	●	—	●
<b>CM*</b>	Straight port, mixed sizes	●	●	●	●	●
<b>L4</b>	Upward	ø4	●	●	—	—
<b>L6</b>		ø6	●	●	●	—
<b>L8</b>		ø8	—	●	●	—
<b>L10</b>		ø10	—	—	●	—
<b>L12</b>	ø12	—	—	●	—	
<b>B4</b>	Downward	ø4	●	●	—	—
<b>B6</b>		ø6	●	●	●	—
<b>B8</b>		ø8	—	●	●	—
<b>B10</b>		ø10	—	—	●	—
<b>B12</b>	ø12	—	—	●	—	
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	●	●	●	—	—
<b>P, E port size (One-touch fittings)</b>		ø8	ø10	ø12	ø10	ø12

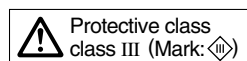
**A, B port size (Inch/One-touch fitting)**

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported	
		SY3000	SY5000	SY7000	SY5000	SY7000
<b>N1</b>	ø1/8"	●	—	—	—	—
<b>N3</b>	ø5/32"	●	●	—	●	—
<b>N7</b>	ø1/4"	●	●	●	●	●
<b>N9</b>	ø5/16"	—	●	●	●	●
<b>N11</b>	ø3/8"	—	—	●	—	●
<b>CM*</b>	Straight port, mixed sizes	●	●	●	●	●
<b>LN3</b>	Upward	ø5/32"	●	—	—	—
<b>LN7</b>		ø1/4"	●	●	—	—
<b>LN9</b>		ø5/16"	—	●	—	—
<b>LN11</b>		ø3/8"	—	—	●	—
<b>BN3</b>	Downward	ø5/32"	●	—	—	—
<b>BN7</b>		ø1/4"	●	●	—	—
<b>BN9</b>		ø5/16"	—	●	—	—
<b>BN11</b>		ø3/8"	—	—	●	—
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	●	●	●	—	—
<b>P, E port size (One-touch fittings)</b>		ø5/16"	ø3/8"	ø1/2"	ø3/8"	ø1/2"

Note) To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 226 to 228).

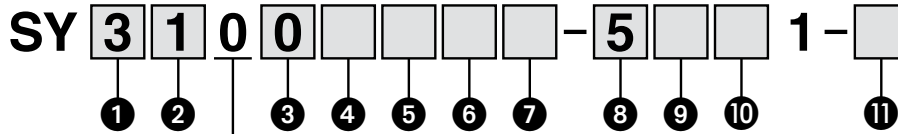
\* Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

\* 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.



## How to Order Valves (With mounting screw)

Refer to page 3 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 center
4		Exhaust center
5		Pressure center
A*	4-position dual 3-port	N.C./N.C.
B*		N.O./N.O.
C*		N.C./N.O.

\* 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

Nil	Internal pilot
R	External pilot

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

Nil	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 232 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

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

### 7 Coil type

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

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

\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

### 8 Rated voltage

5	24 VDC
6	12 VDC

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

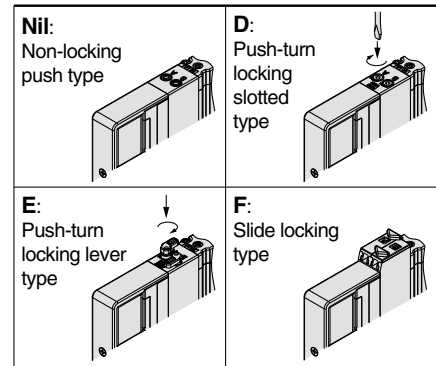
### 9 Light/surge voltage suppressor and common specification

Symbol	With light	Surge voltage suppressor	Common specification
Nil	—	—	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 14 for with the safety slide locking manual override.

### 11 Type of mounting screw

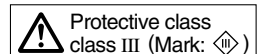
Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* 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 220 for part numbers of the base gasket and mounting screw.

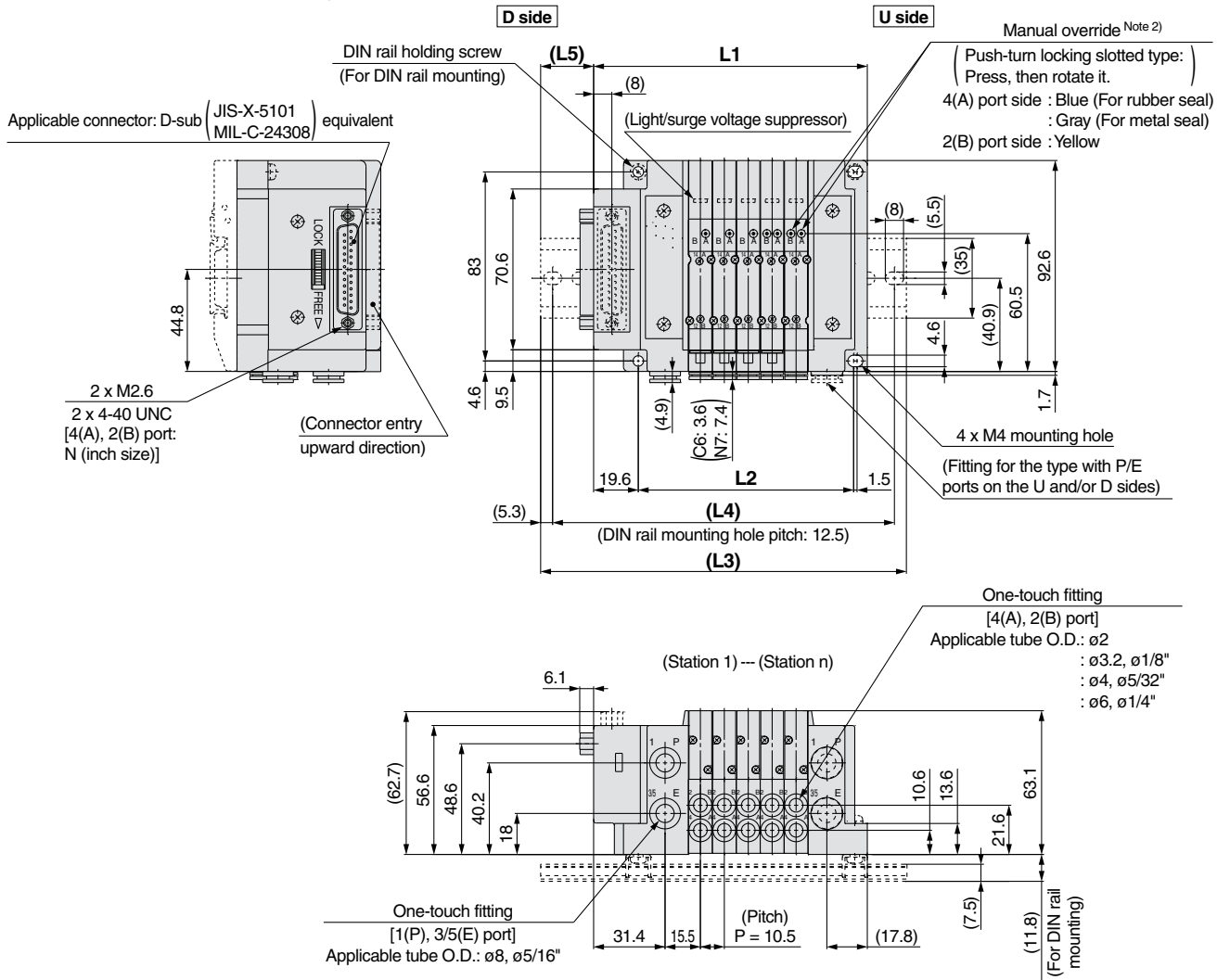
\* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.



Dimensions: Series **SY3000**

<b>Plug-in Connector Connecting Base</b>	Type 10/Side Ported
	D-sub Connector (IP40)

SS5Y3-10F<sub>2</sub>- 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)



Note 1) These figures show the "SS5Y3-10F2-05D-C6".  
 Note 2) Refer to page 181 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
 Note 3) Refer to page 186 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>	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
<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>	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
<b>L4</b>	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
<b>L5</b>	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

Valve

Sub-plate

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

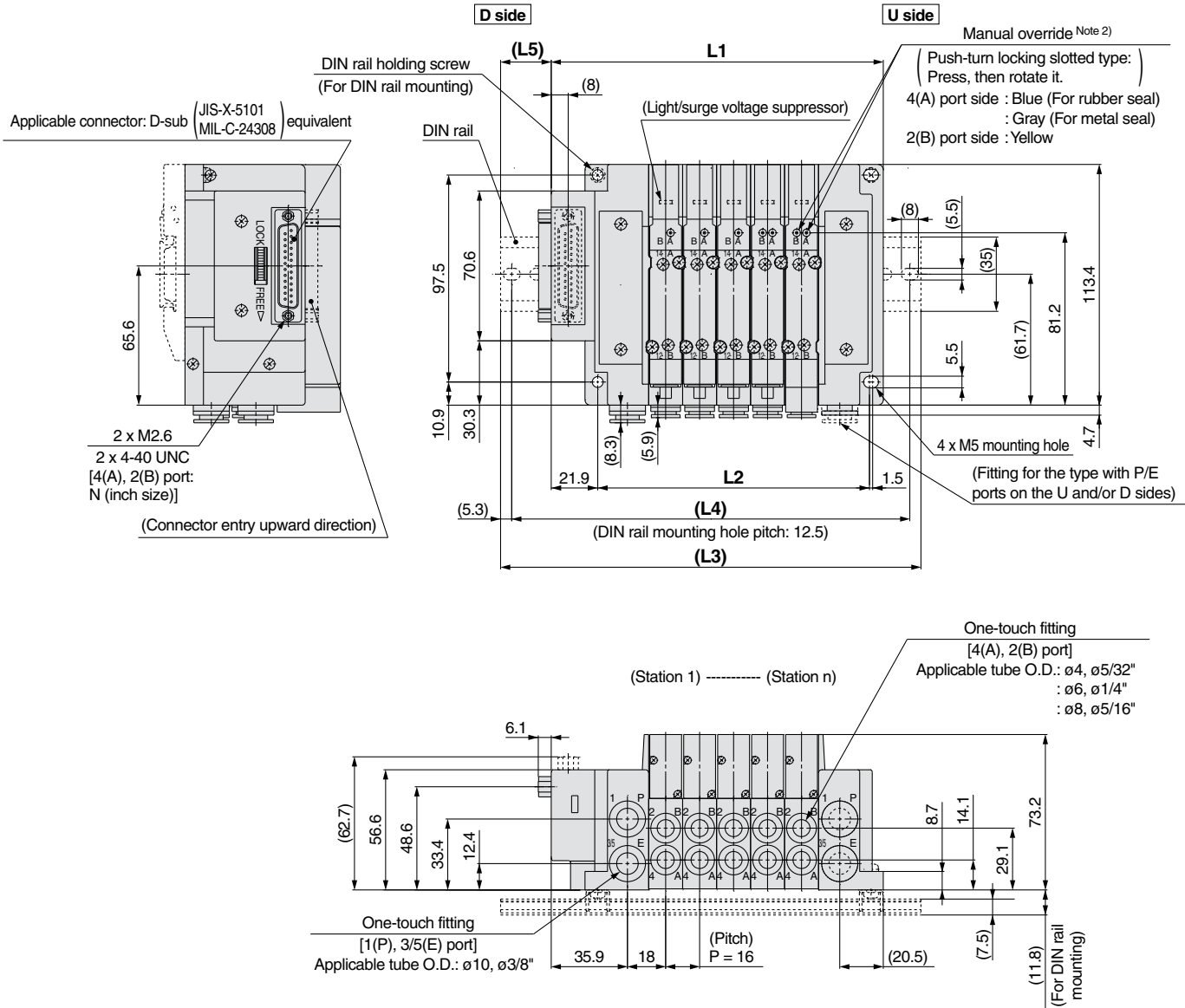
# Series SY3000/5000/7000

## Dimensions: Series SY5000

### Plug-in Connector Connecting Base

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

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



Note 1) These figures show the "SS5Y5-10F2-05D-C8".

Note 2) Refer to page 182 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 187 for dimensions of A or B port top-ported type.

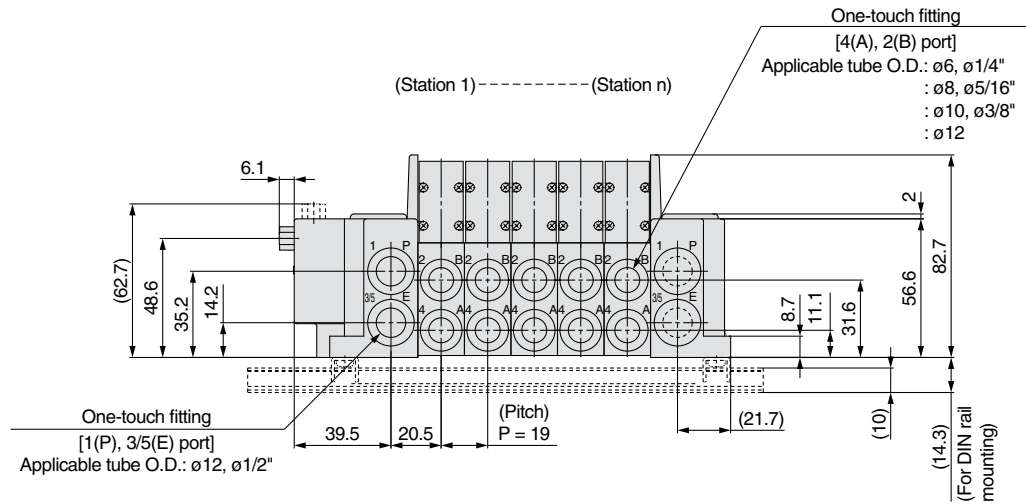
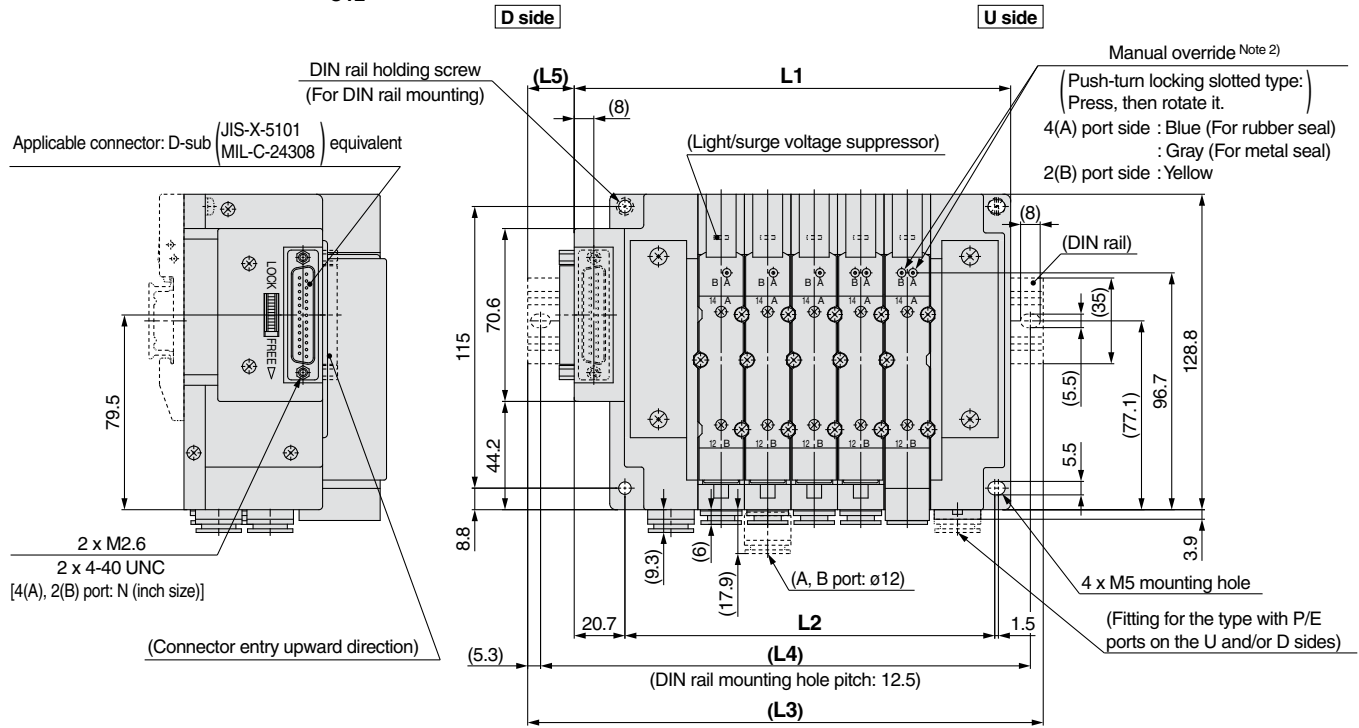
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	108.4	124.4	140.4	156.4	172.4	188.4	204.4	220.4	236.4	252.4	268.4	284.4	300.4	316.4	332.4	348.4	364.4	380.4	396.4	412.4	428.4	444.4	460.4
L2	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	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

**Plug-in Connector Connecting Base**

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

Dimensions: Series **SY7000**

SS5Y7-10F<sub>2</sub><sup>1</sup> Stations U C6, N7  
D C8, N9  
B C10, N11 (D)  
C12



Note 1) These figures show the "SS5Y7-10F2-05D-C10".  
Note 2) Refer to page 183 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
Note 3) Refer to page 188 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>	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
<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>	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
<b>L4</b>	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
<b>L5</b>	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

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base  
Manifold Exploded View

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

# Series SY3000/5000/7000

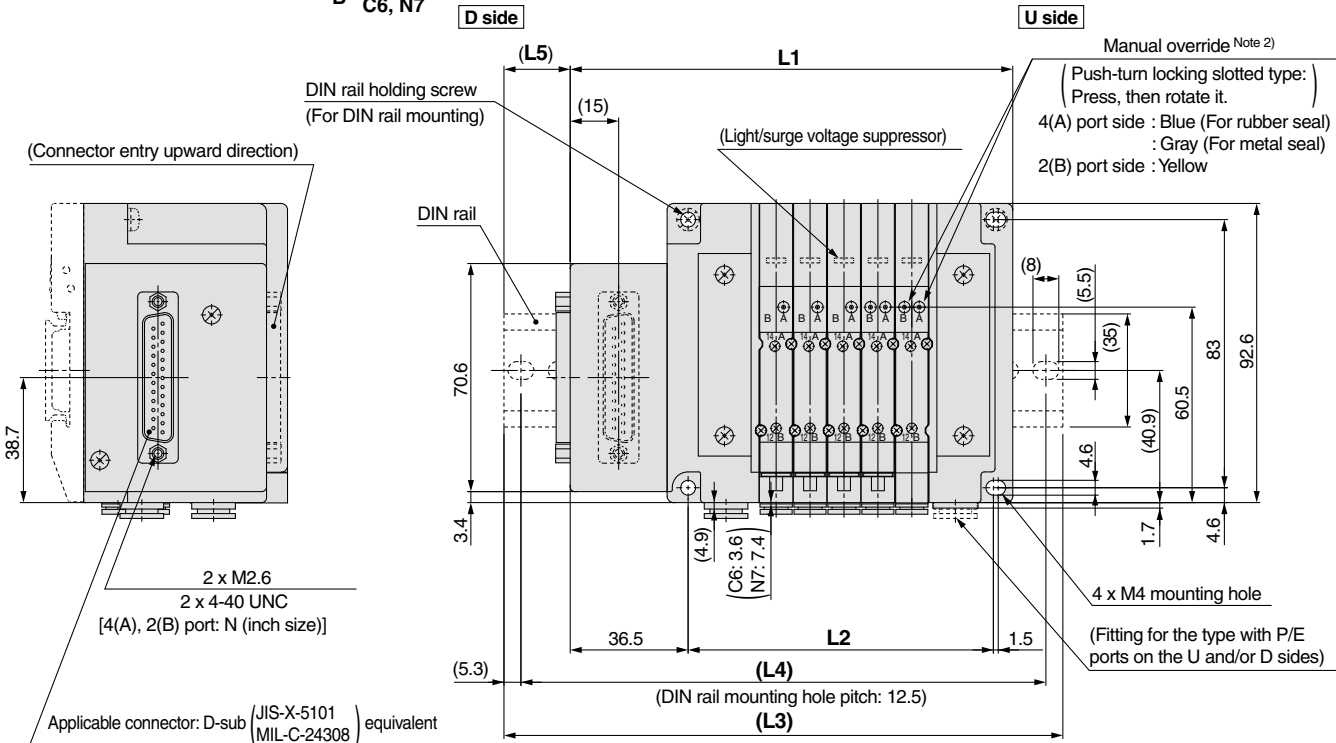
## Dimensions: Series SY3000

### Plug-in Connector Connecting Base

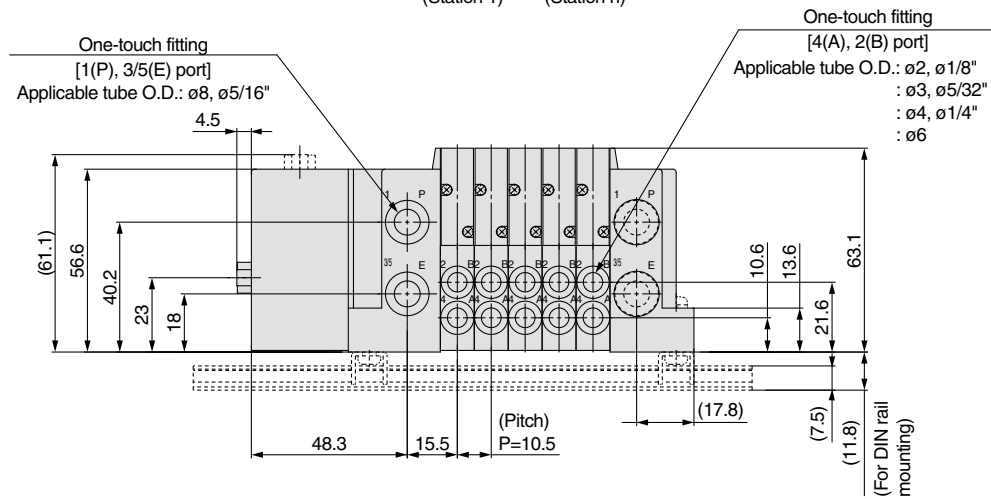
Type 10/Side Ported

D-sub Connector (IP67)

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



(Station 1) --- (Station n)



Note 1) These figures show the "SS5Y3-10FW2-05D-C6".

Note 2) Refer to page 181 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

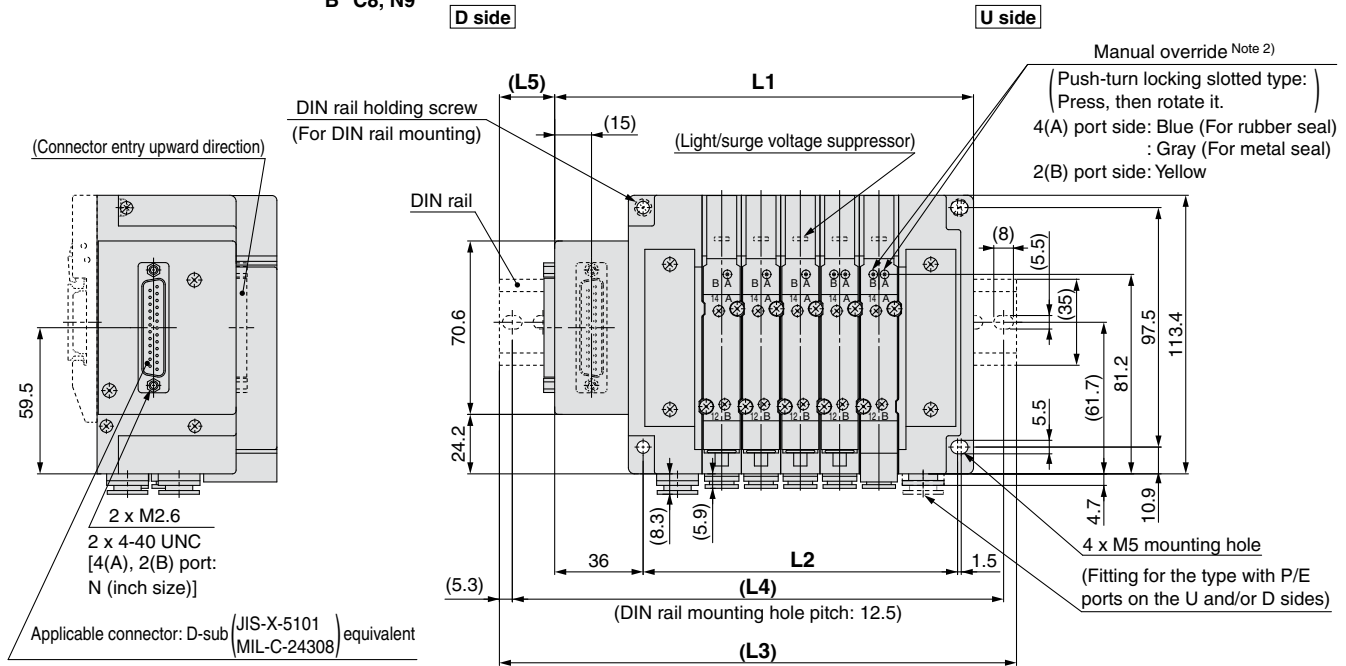
Note 3) Refer to page 186 for dimensions of A or B port top-ported type.

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

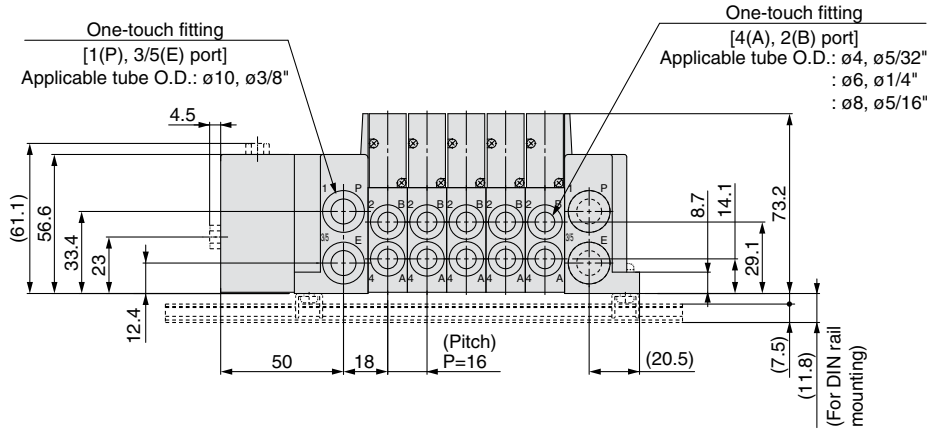
**Plug-in Connector Connecting Base** Type 10/Side Ported  
D-sub Connector (IP67)

Dimensions: Series **SY5000**

SS5Y5-10FW<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)



(Station 1) --- (Station n)



Note 1) These figures show the "SS5Y5-10FW2-05D-C8".

Note 2) Refer to page 182 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 187 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>	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
<b>L2</b>	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432
<b>L3</b>	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
<b>L4</b>	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
<b>L5</b>	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



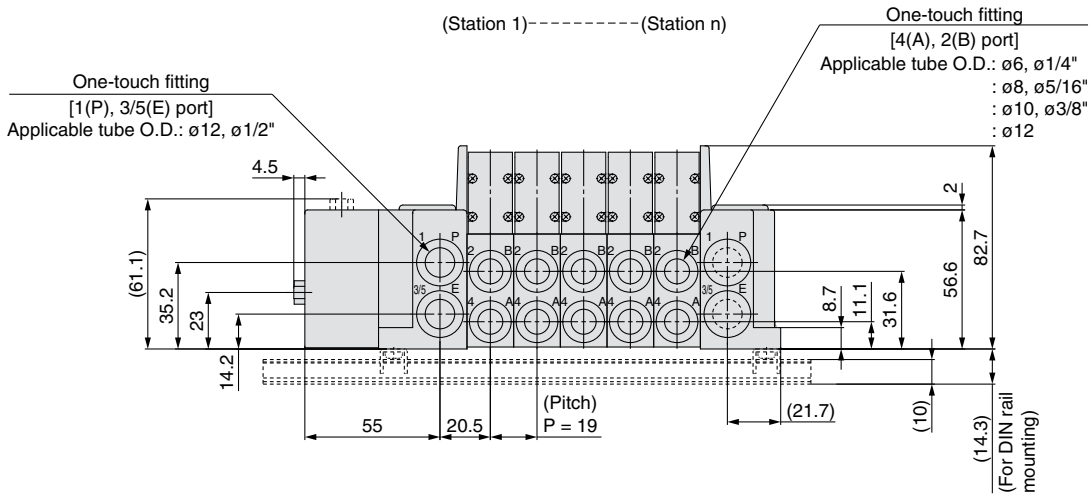
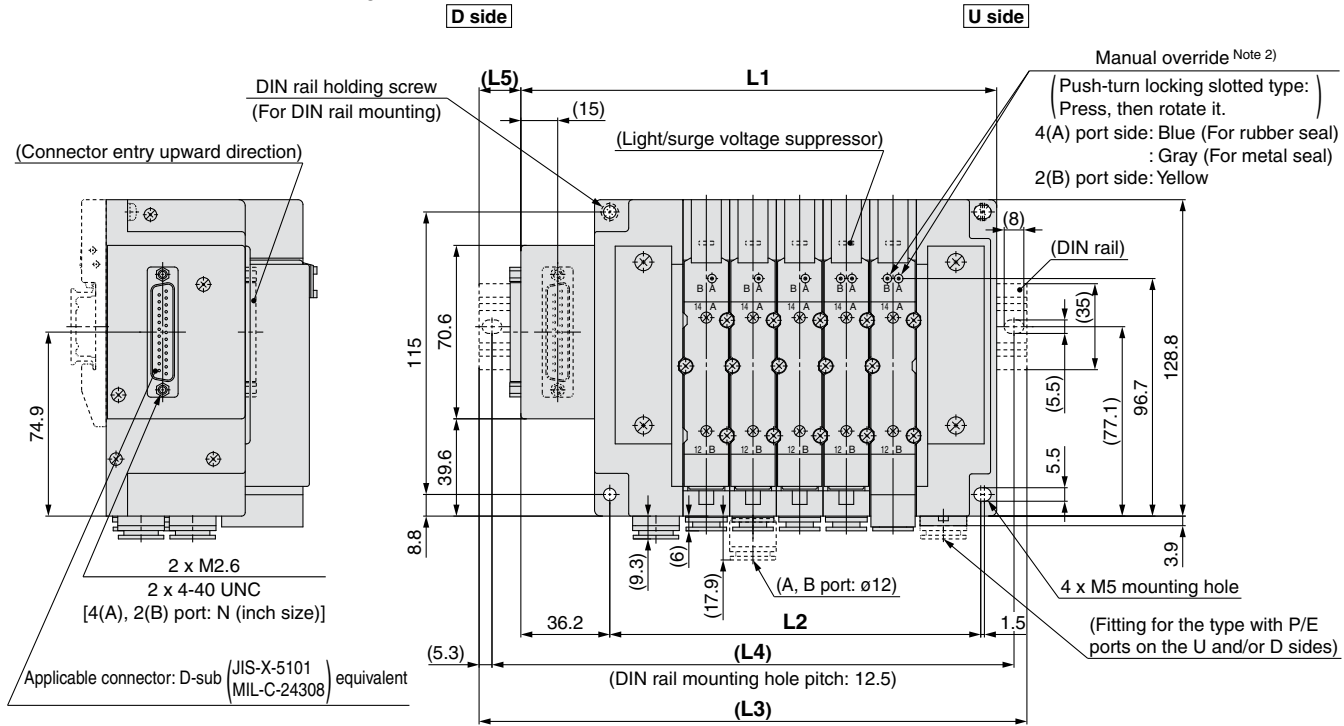
# Series SY3000/5000/7000

## Plug-in Connector Connecting Base

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

### Dimensions: Series SY7000

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



Note 1) These figures show the "SS5Y7-10FW2-05D-C10".

Note 2) Refer to page 183 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 188 for dimensions of A or B port top-ported type.

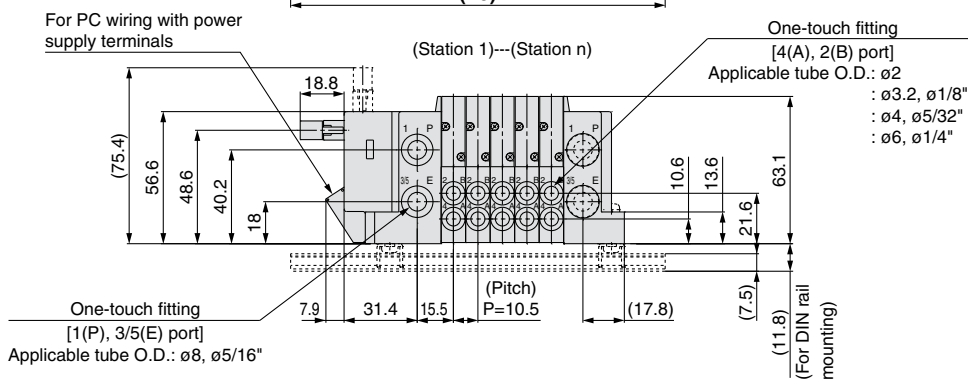
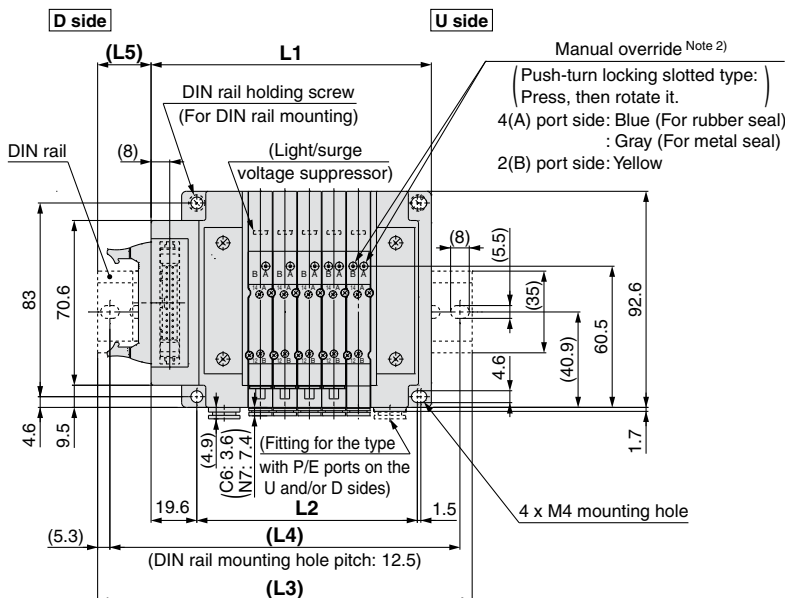
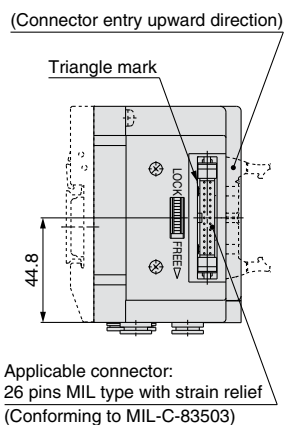
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
<b>L1</b>	136.7	155.7	174.7	193.7	212.7	231.7	250.7	269.7	288.7	307.7	326.7	345.7	364.7	383.7	402.7	421.7	440.7	459.7	478.7	497.7	516.7	535.7	554.7
<b>L2</b>	94	113	132	151	170	189	208	227	246	265	284	303	322	341	360	379	398	417	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>PH</sup> <sup>J</sup> 2 - Stations <sup>U</sup>D <sup>B</sup> - C2, N1 (D) C3, N1 (D) C4, N3 (D) C6, N7



Note 1) These figures show the "SS5Y3-10P2-05D-C6".  
Note 2) Refer to page 181 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
Note 3) Refer to page 186 for dimensions of A or B port top-ported type.  
Note 4) Only connectors are different for 10PG, 10PH, 10J and 10G. L1 to L5 dimensions are the same as 10P type.

	10 <sup>PG</sup> (20 pins)	10PH (10 pins)	10G (20 pins)
For PC wiring	Triangle mark	Triangle mark	Switch for locking a connector LED Triangle mark
Applicable connector: 20 pins MIL type with strain relief (Conforming to MIL-C-83503)		Applicable connector: 10 pins MIL type with strain relief (Conforming to MIL-C-83503)	Power supply terminal (24 VDC +COM) - (Negative) + (Positive) (M3 terminal screw)
			44.8
			LOOK FREE
			Applicable connector: 20 pins MIL type with strain relief (Conforming to MIL-C-83503)

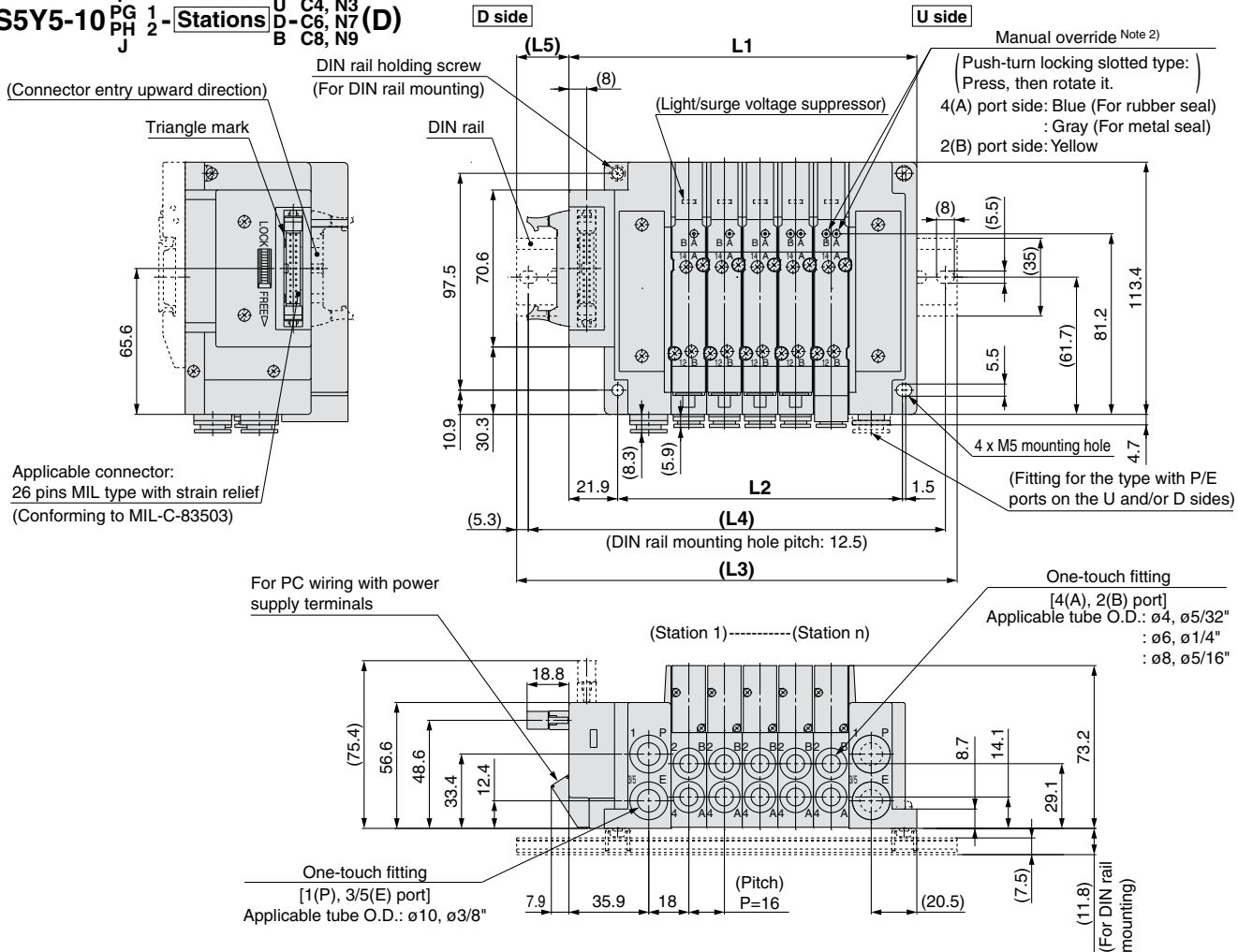
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	88.6	99.1	109.6	120.1	130.6	141.1	151.6	162.1	172.6	183.1	193.6	204.1	214.6	225.1	235.6	246.1	256.6	267.1	277.6	288.1	298.6	309.1	319.6
L2	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5	231	241.5	252	262.5	273	283.5	294
L3	123	135.5	148	160.5	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	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

## Plug-in Connector Connecting Base Type 10/Side Ported Flat Ribbon Cable

### Dimensions: Series SY5000

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

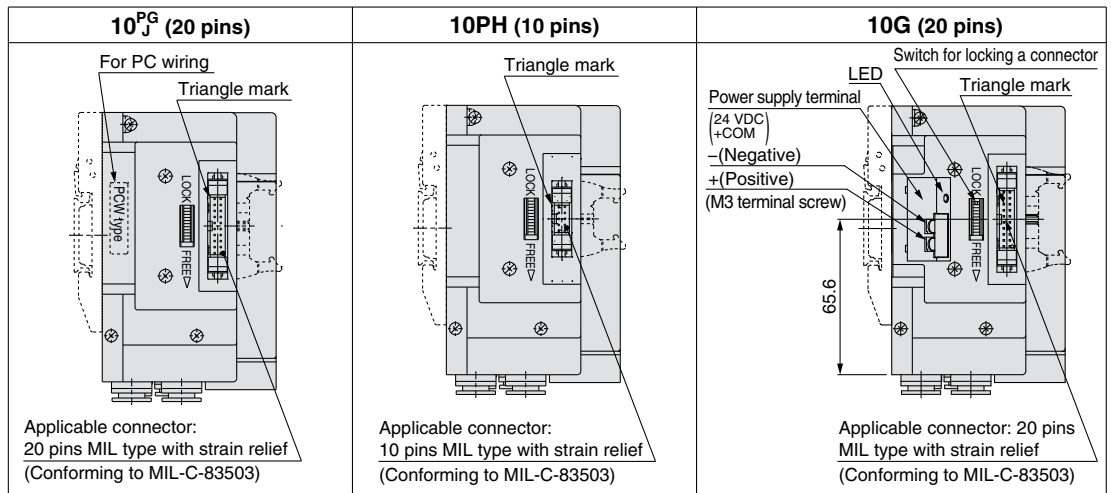


Applicable connector:  
26 pins MIL type with strain relief  
(Conforming to MIL-C-83503)

For PC wiring with power supply terminals

One-touch fitting  
[4(A), 2(B) port]  
Applicable tube O.D.: ø4, ø5/32"  
: ø6, ø1/4"  
: ø8, ø5/16"

One-touch fitting  
[1(P), 3/5(E) port]  
Applicable tube O.D.: ø10, ø3/8"



- Note 1) These figures show the "SS5Y5-10P2-05D-C8".
- Note 2) Refer to page 182 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
- Note 3) Refer to page 187 for dimensions of A or B port top-ported type.
- Note 4) Only connectors are different for 10PG, 10PH and 10J. 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	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

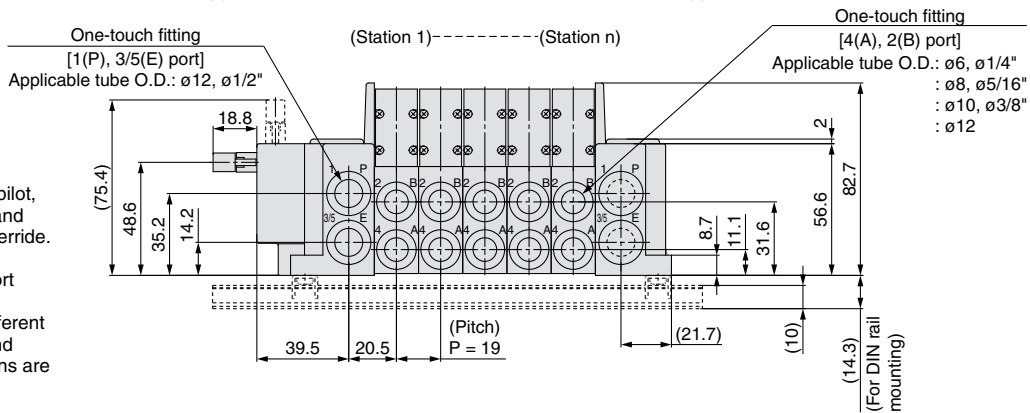
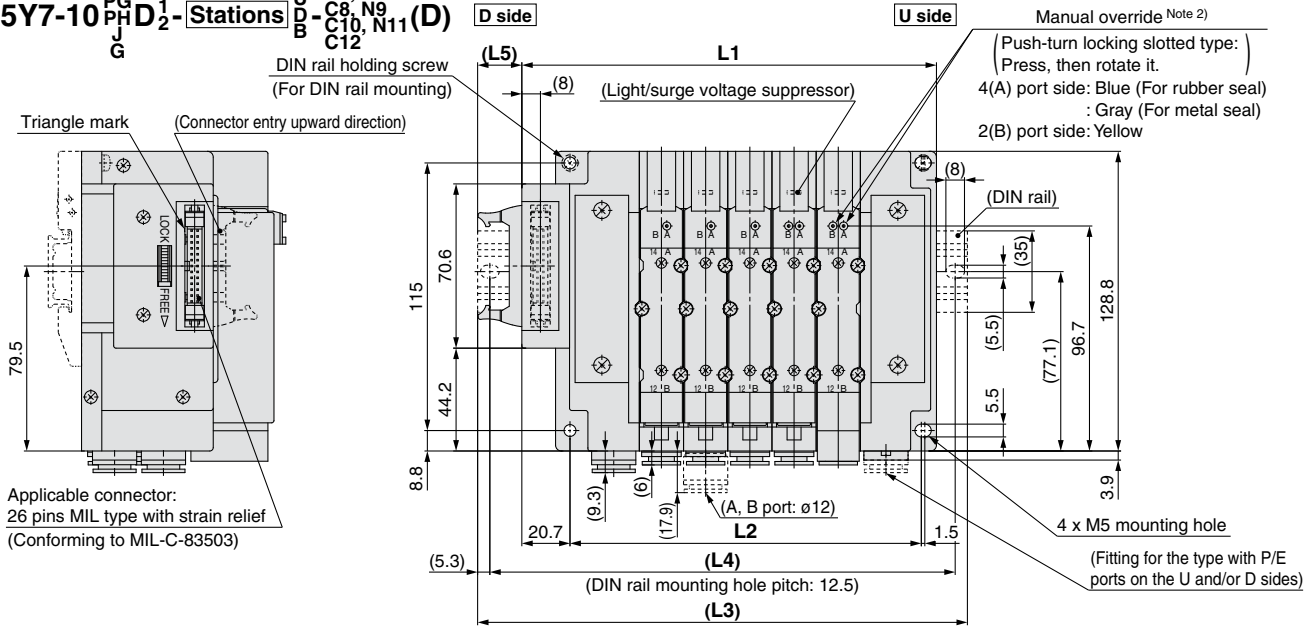


Dimensions: Series **SY7000**

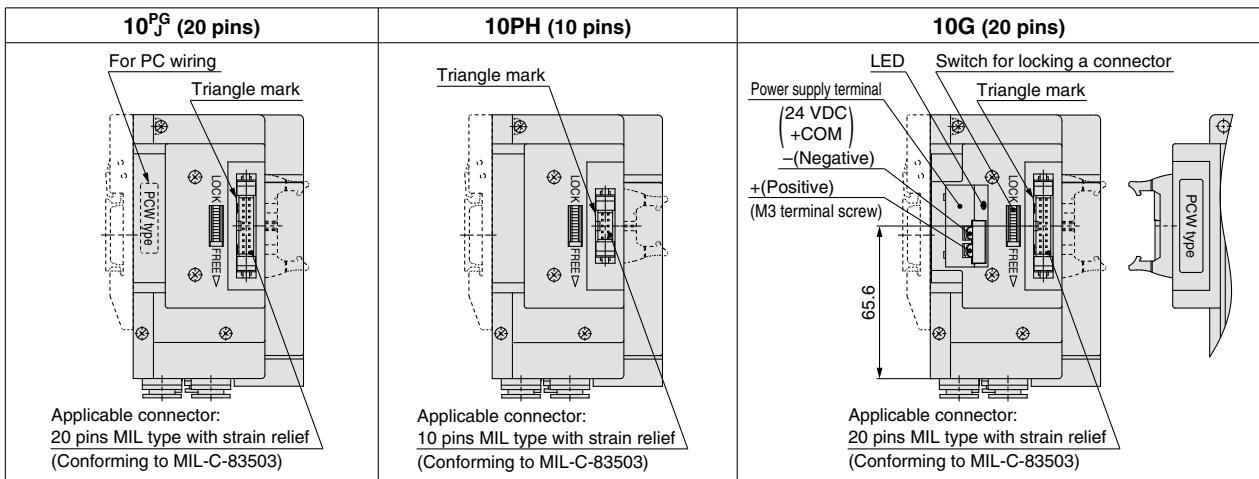
Plug-in  
Connector Connecting Base

Type 10/Side Ported  
Flat Ribbon Cable

SS5Y7-10PGHD<sub>2</sub>-Stations U<sub>D</sub>-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)



- Note 1) These figures show the "SS5Y7-10P2-05D-C8".
- Note 2) Refer to page 183 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.
- Note 3) Refer to page 188 for dimensions of A or B port top-ported type.
- Note 4) 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

Type 12  
Top Ported

# Plug-in Connector Connecting Base

D-sub Connector Flat Ribbon Cable PC Wiring

# Series SY3000/5000/7000

How to Order Manifold

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

1 2 3 4 5 6 7 8

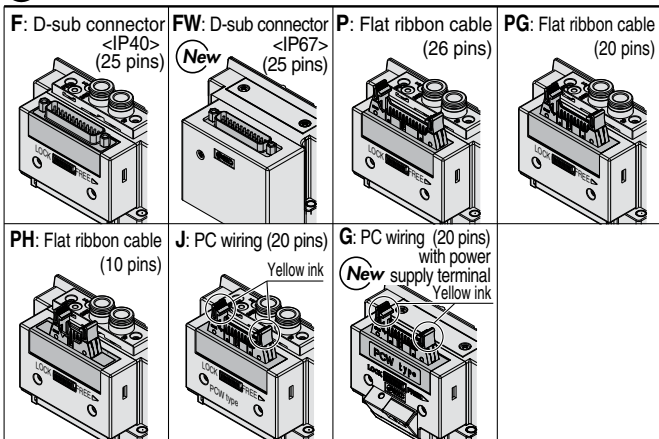


Refer to pages 186 to 188 for dimensions of Type 12/Top ported type.

## 1 Series

3	SY3000
5	SY5000
7	SY7000

## 2 Connector type

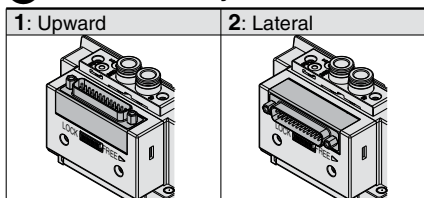


## 5 P, E port entry

U Note)	U side (2 to 10 stations)
D Note)	D side (2 to 10 stations)
B	Both sides (2 to 24 stations)

Note) ◇ For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

## 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 208) separately.

## 4 Valve stations

F/FW: D-sub connector (25 pins)			P: Flat ribbon cable (26 pins)		
Symbol	Stations	Note	Symbol	Stations	Note
02	2 stations	Double wiring Note 1)	02	2 stations	Double wiring Note 1)
⋮	⋮		⋮	⋮	
12	12 stations	Specified layout Note 2) (Available up to 24 solenoids)	12	12 stations	Specified layout Note 2) (Available up to 24 solenoids)
02	2 stations		02	2 stations	
⋮	⋮		⋮	⋮	
24	24 stations		24	24 stations	

PG: Flat ribbon cable (20 pins)			PH: Flat ribbon cable (10 pins)		
Symbol	Stations	Note	Symbol	Stations	Note
02	2 stations	Double wiring Note 1)	02	2 stations	Double wiring Note 1)
⋮	⋮		⋮	⋮	
09	9 stations	Specified layout Note 2) (Available up to 18 solenoids)	04	4 stations	Specified layout Note 2) (Available up to 8 solenoids)
02	2 stations		02	2 stations	
⋮	⋮		⋮	⋮	
18	18 stations		08	8 stations	

J/G: PC wiring (20 pins)		
Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
08	8 stations	Specified layout Note 2) (Available up to 16 solenoids)
02	2 stations	
⋮	⋮	
16	16 stations	

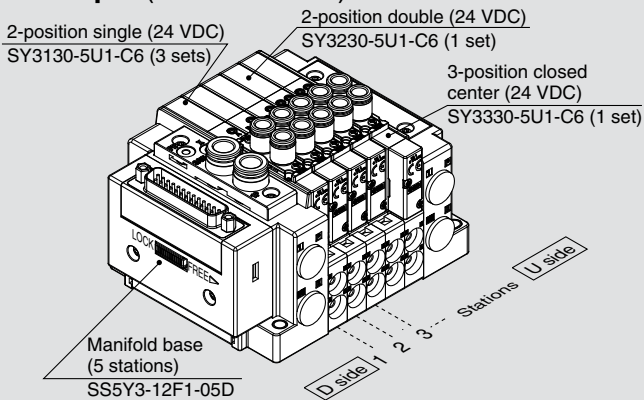
Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 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.)

Note 3) This also includes the number of blanking plate assembly.

## 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 center 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 SUP/EXH block assembly

Nil	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

Nil	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.

Note) Refer to page 247 for the fixation of DIN rail mounting type manifold.

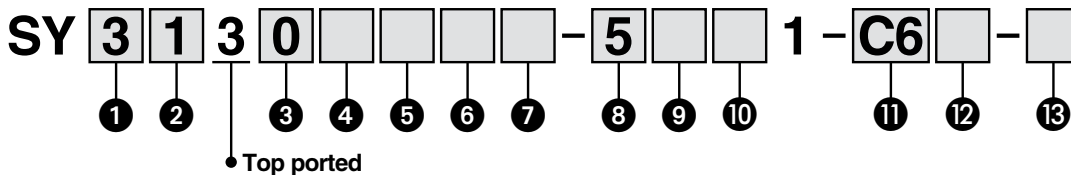
## 7 P, E port size (One-touch fittings)

Symbol	SY3000	SY5000	SY7000
Nil	ø8	ø10	ø12
N	ø5/16"	ø3/8"	ø1/2"

\* For N, sizes are in inches.



**How to Order Valves (With mounting screw)** Refer to page 3 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 center
4		Exhaust center
5		Pressure center
A*	4-position dual	N.C./N.C.
B*		N.O./N.O.
C*		3-port

\* 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**

Nil	Internal pilot
R	External pilot

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

Nil	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 232 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**

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

**7 Coil type**

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

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

\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

**8 Rated voltage**

5	24 VDC
6	12 VDC

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

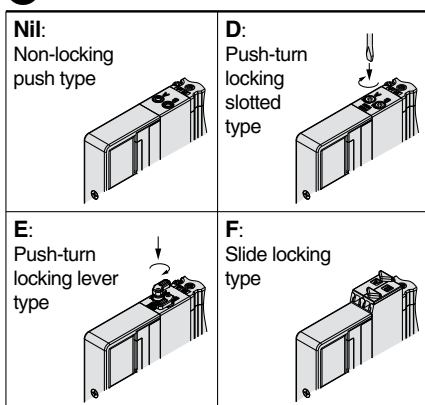
**9 Light/surge voltage suppressor and common specification**

Symbol	With light	Surge voltage suppressor	Common specification
Nil	—	—	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 14 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
01	1/8	SY5000
02	1/4	SY7000

**One-touch fitting (Metric)**

Symbol	A, B port	SY3000	SY5000	SY7000
C2	ø2	●	—	—
C3	ø3.2	●	—	—
C4	ø4	●	●	—
C6	ø6	●	●	●
C8	ø8	—	●	●
C10	ø10	—	—	●
C12	ø12	—	—	●

**One-touch fitting (Inch)**

Symbol	A, B port	SY3000	SY5000	SY7000
N1	ø1/8"	●	—	—
N3	ø5/32"	●	●	—
N7	ø1/4"	●	●	●
N9	ø5/16"	—	●	●
N11	ø3/8"	—	—	●

**12 Thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

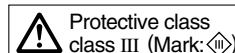
**13 Type of mounting screw**

Nil	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 220 for part numbers of the base gasket and mounting screw.

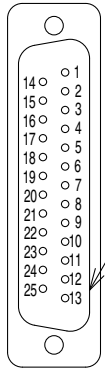
\* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.



# 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.

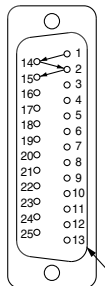
Connector terminal no.

Station	SOL. a	SOL. b	Terminal no.	Polarity	Positive common	Negative common
Station 1	SOL.a	1	(-)	(+)		
	SOL.b	14	(-)	(+)		
Station 2	SOL.a	2	(-)	(+)		
	SOL.b	15	(-)	(+)		
Station 3	SOL.a	3	(-)	(+)		
	SOL.b	16	(-)	(+)		
Station 4	SOL.a	4	(-)	(+)		
	SOL.b	17	(-)	(+)		
Station 5	SOL.a	5	(-)	(+)		
	SOL.b	18	(-)	(+)		
Station 6	SOL.a	6	(-)	(+)		
	SOL.b	19	(-)	(+)		
Station 7	SOL.a	7	(-)	(+)		
	SOL.b	20	(-)	(+)		
Station 8	SOL.a	8	(-)	(+)		
	SOL.b	21	(-)	(+)		
Station 9	SOL.a	9	(-)	(+)		
	SOL.b	22	(-)	(+)		
Station 10	SOL.a	10	(-)	(+)		
	SOL.b	23	(-)	(+)		
Station 11	SOL.a	11	(-)	(+)		
	SOL.b	24	(-)	(+)		
Station 12	SOL.a	12	(-)	(+)		
	SOL.b	25	(-)	(+)		
COM.		13	(+)	(-)		

Note) When using a valve with no polarity, either positive common or negative common can be used.

### Specified Layout

(25 pins)



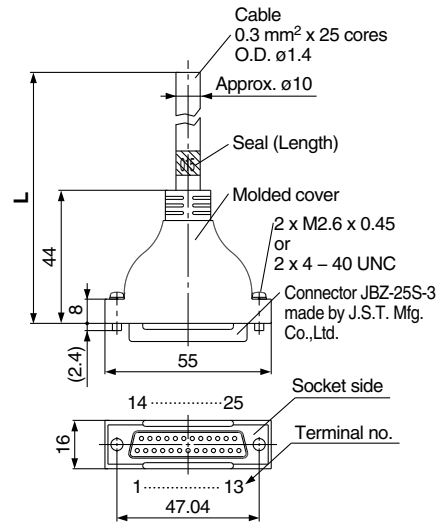
Mixed wiring of single and double wiring can be specified on the manifold specification sheet. The maximum number of stations is determined according to the number of solenoids. The total number of solenoids should be 24 or less. 1 solenoid is required for 2-position single, and 2 solenoids for 2-position double, 3-position and 4-position.

COM.

## Cable Assembly

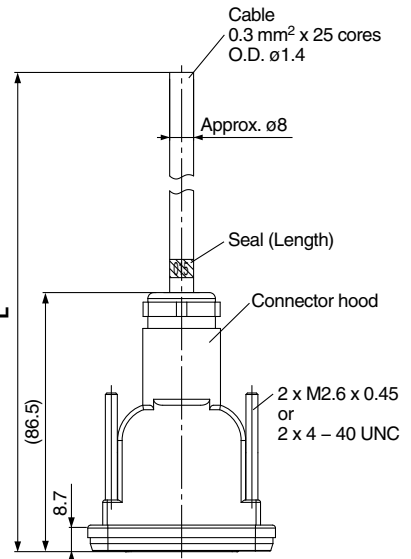
015  
AXT100-DS25-030 (N) [IP40]  
050

Nil: Metric  
N: Inch



015  
SY30M-DS25-030 (N) [IP67]  
050

Nil: Metric  
N: Inch



### D-sub connector cable assembly [IP40]

Cable length (L)	Assembly part no.	Note
1.5 m	AXT100-DS25-015	Cable 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.

### D-sub connector cable assembly [IP67]

Cable length (L)	Assembly part no.	Note
1.5 m	SY30M-DS25-015	Cable 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 Ω/km, 68°F (20°C)	65 or less
Voltage limit V, 1 minute, AC	1000
Insulation resistance MΩ/km, 68°F (20°C)	5 or more

Note) The minimum bending radius of the D-sub connector cable is 20 mm.

### Connector Manufacturers' Example

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

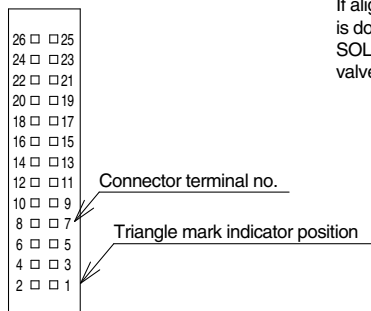
### D-sub connector cable assembly terminal numbers

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 color	Black	Brown	Red	Orange	Yellow	Pink	Blue	Purple	Gray	White	White	Yellow	Red	Orange	Pink	Blue	Purple	Gray	Orange	Red	Brown	Pink	Gray	Black	White
Dot marking	None	None	None	None	None	None	None	White	Black	Black	Red	Red	Red	Black	Black	White	None	None	Black	White	White	Red	Red	White	None



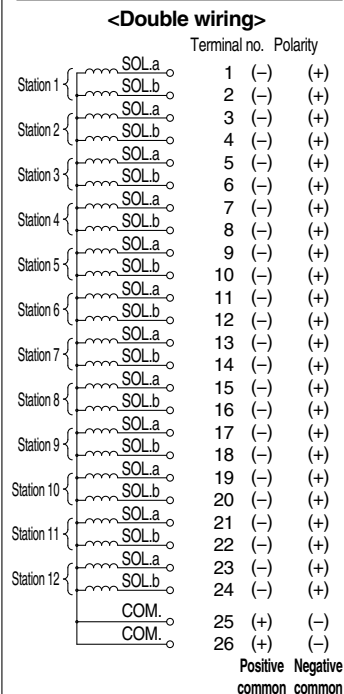
### Electrical Wiring Specifications

#### Flat ribbon cable connector

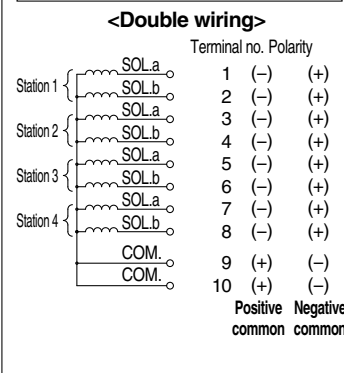


If alignment is not specified, the internal wiring is double wiring (connected to SOL. a and SOL. b) regardless of number of stations, valve and option types.

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

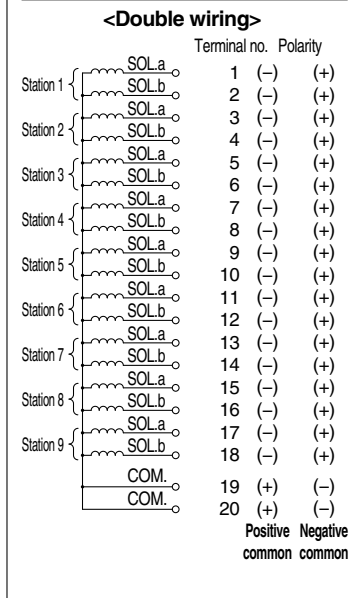


#### PH: Flat ribbon cable (10 pins)

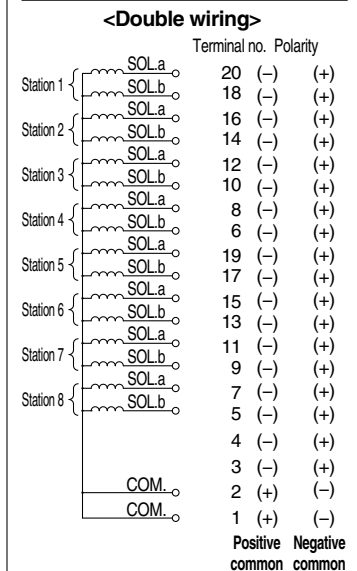


Note) When using a valve with no polarity, either positive common or negative common can be used.

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



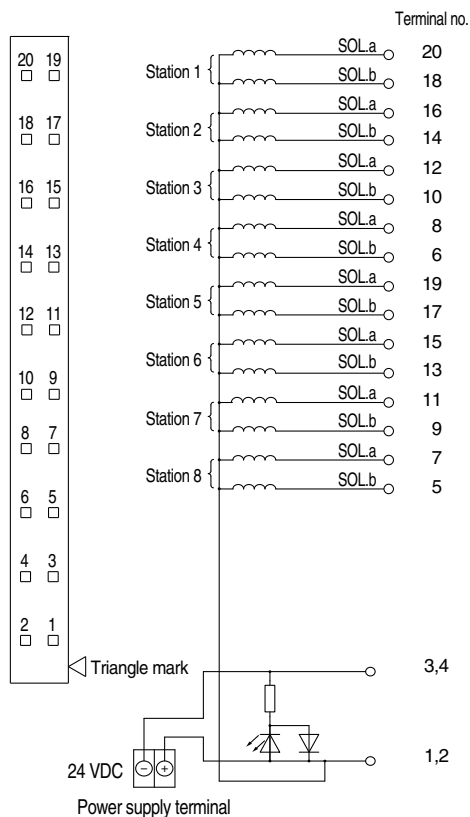
#### J: Flat ribbon cable (20 pins)



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

Note 2) For details on PC wiring system, refer to the **WEB catalog** or the Best Pneumatics No. 1.

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



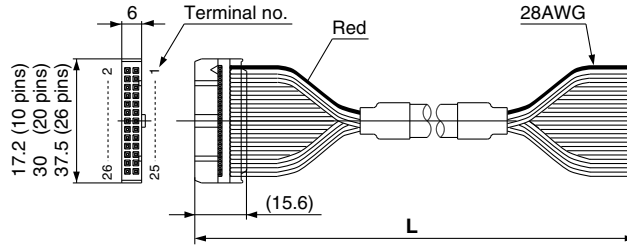
Note 1) This circuits are for the specifications with up to 8 stations of 2-position double, 3-position and 4-position dual 3 port valve. There should be wired in order 20→18→16→14 without skipping or leaving any connectors remaining.

Note 2) For details on PC wiring system, refer to the **WEB catalog** or the Best Pneumatics No. 1.

# Series SY3000/5000/7000

## Flat Ribbon Cable Assembly

AXT100-FC  $\begin{matrix} 10 & 1 \\ 20 & 2 \\ 26 & 3 \end{matrix}$



### Flat ribbon cable connector assembly

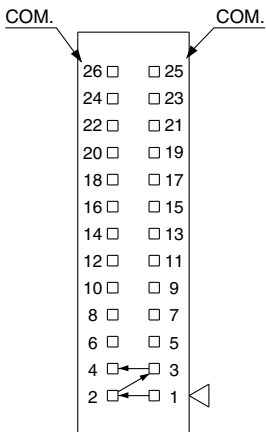
Cable length (L)	Assembly part no.		
	26 pins	20 pins	10 pins
1.5 m	AXT100-FC26-1	AXT100-FC20-1	AXT100-FC10-1
3 m	AXT100-FC26-2	AXT100-FC20-2	AXT100-FC10-2
5 m	AXT100-FC26-3	AXT100-FC20-3	AXT100-FC10-3

- \* 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.

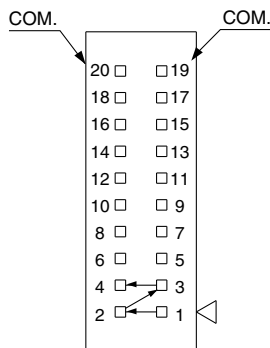
### Connector Manufacturers' Example

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

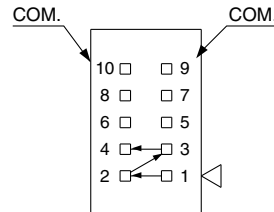
## Specified Layout



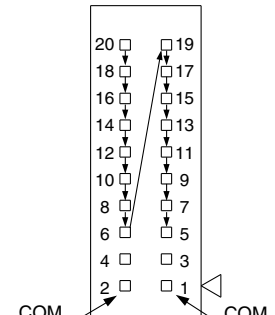
(P: 26 pins)



(PG: 20 pins)



(PH: 10 pins)



(J,G: 20 pins PC wiring)

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

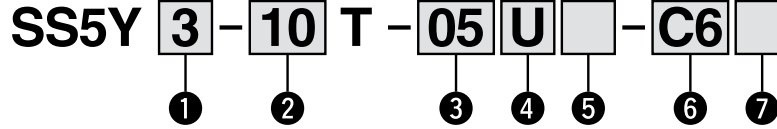
Terminal Block Box



# Series SY3000/5000/7000

## How to Order Manifold

Refer to pages 184 (SY5000) and 185 (SY7000) for dimensions of Type 11/Bottom ported type.



### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type

10	Side ported
11	Bottom ported*

\* 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 189).

### 3 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
10	10 stations	
02	2 stations	Specified layout Note 2) (Available up to 20 solenoids)
⋮	⋮	
20	20 stations	

Note 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.

Note 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.)

Note 3) 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

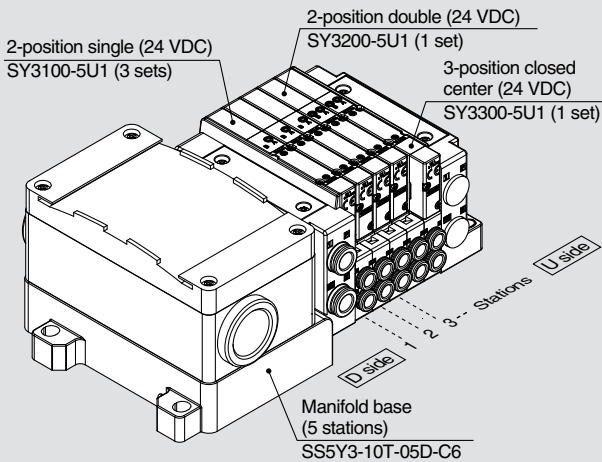
Nil	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

\* 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.

## 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 center 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.

Note) When mixing top ported configurations, select from page 106.  
 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.

Refer to the page on the right for 6

### 6 Mounting and Option

Symbol	Mounting	Option	
		Name plate	Station number
Nil	Direct mounting	—	—
AA		●	●
BA		●	—
D□	DIN rail mounting	—	—
A□		●	●
B□		●	—

Note 1) Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" below.)

Note 2) Only direct mounting is available for Type 11 (Bottom ported).

Note 3) Refer to page 247 for the fixation of DIN rail mounting type manifold.

#### DIN Rail Option

Symbol	Mounting	Direct mounting
		Without DIN rail (with bracket)
0	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>	ø2	●	—	—	—	—		
<b>C3</b>	ø3.2	●	—	—	—	—		
<b>C4</b>	ø4	●	●	—	●	—		
<b>C6</b>	ø6	●	●	●	●	●		
<b>C8</b>	ø8	—	●	●	●	●		
<b>C10</b>	ø10	—	—	●	—	●		
<b>C12</b>	ø12	—	—	●	—	●		
<b>CM*</b>	Straight port, mixed sizes	●	●	●	●	●		
<b>L4</b> <b>L6</b> <b>L8</b> <b>L10</b> <b>L12</b>	Upward	ø4	●	●	—	—		
		ø6	●	●	●	—		—
		ø8	—	●	●	—		—
	Downward	ø10	—	—	●	—		—
		ø12	—	—	●	—		—
		ø4	●	●	—	—		—
<b>B4</b> <b>B6</b> <b>B8</b> <b>B10</b> <b>B12</b>	Downward	ø6	●	●	●	—		
		ø8	—	●	●	—		—
	Downward	ø10	—	—	●	—		—
		ø12	—	—	●	—		—
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	●	●	●	—	—		
<b>P, E port size (One-touch fittings)</b>		ø8	ø10	ø12	ø10	ø12		

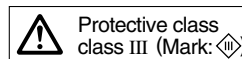
**A, B port size (Inch/One-touch fitting)**

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported				
		SY3000	SY5000	SY7000	SY5000	SY7000			
<b>N1</b>	ø1/8"	●	—	—	—	—			
<b>N3</b>	ø5/32"	●	●	—	●	—			
<b>N7</b>	ø1/4"	●	●	●	●	●			
<b>N9</b>	ø5/16"	—	●	●	●	●			
<b>N11</b>	ø3/8"	—	—	●	—	●			
<b>CM*</b>	Straight port, mixed sizes	●	●	●	●	●			
<b>LN3</b> <b>LN7</b> <b>LN9</b> <b>LN11</b>	Upward	ø5/32"	●	—	—	—			
		ø1/4"	●	●	—	—		—	
		ø5/16"	—	●	—	—		—	
<b>BN3</b> <b>BN7</b> <b>BN9</b> <b>BN11</b>	Downward	ø5/32"	●	—	—	—			
		ø1/4"	●	●	—	—			—
		ø5/16"	—	●	—	—			—
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	ø3/8"	—	—	●	—	—		
		ø3/8"	—	—	●	—	—		
<b>P, E port size (One-touch fittings)</b>		ø5/16"	ø3/8"	ø1/2"	ø3/8"	ø1/2"			

Note) To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 226 to 228).

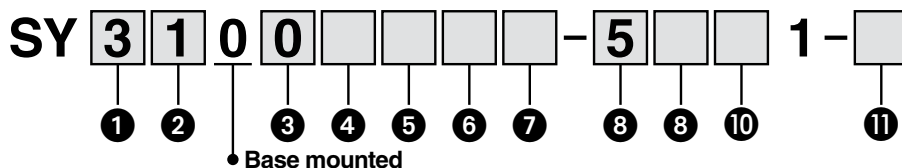
\* Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

\* 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.



## How to Order Valves (With mounting screw)

Refer to page 3 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 center
4		Exhaust center
5		Pressure center
A*	4-position dual 3-port	N.C./N.C.
B*		N.O./N.O.
C*		N.C./N.O.

\* 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

Nil	Internal pilot
R	External pilot

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

Nil	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 232 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

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

### 7 Coil type

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

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

\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

### 8 Rated voltage

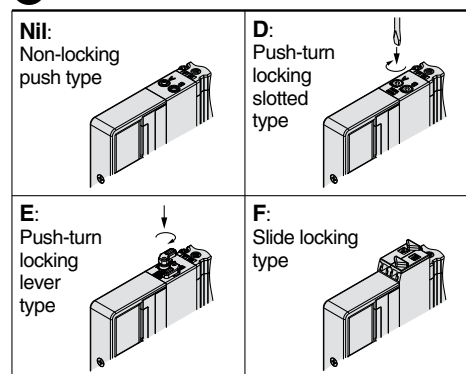
5	24 VDC
6	12 VDC

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

Symbol	With light	Surge voltage suppressor	Common specification
Nil	—	—	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.

### 10 Manual override



\* Refer to page 14 for with the safety slide locking manual override.

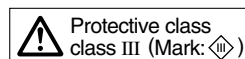
### 11 Type of mounting screw

Nil	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 220 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.







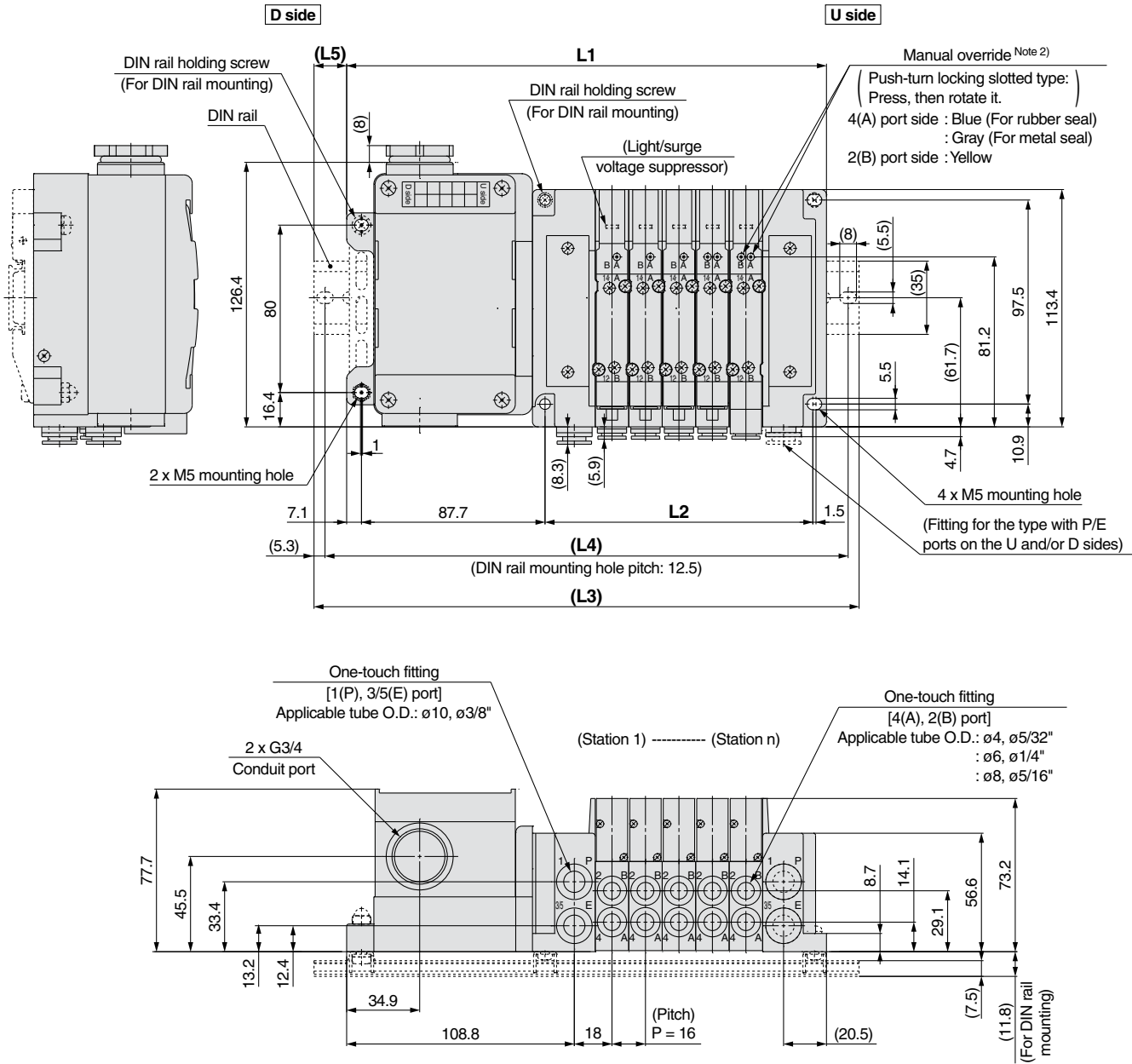
# Series SY3000/5000/7000

## Plug-in Connector Connecting Base

Type 10/Side Ported  
Terminal Block Box

### Dimensions: Series SY5000

SS5Y5-10T- **Stations**  $\begin{matrix} \text{U} & \text{C4, N3} \\ \text{D} & \text{C6, N7 (D)} \\ \text{B} & \text{C8, N9} \end{matrix}$



Note 1) These figures show the "SS5Y5-10T-05D-C8".

Note 2) Refer to page 182 for dimensions of external pilot, silencer, elbow fittings and side locking manual override.

Note 3) Refer to page 187 for dimensions of A or B port top-ported type.

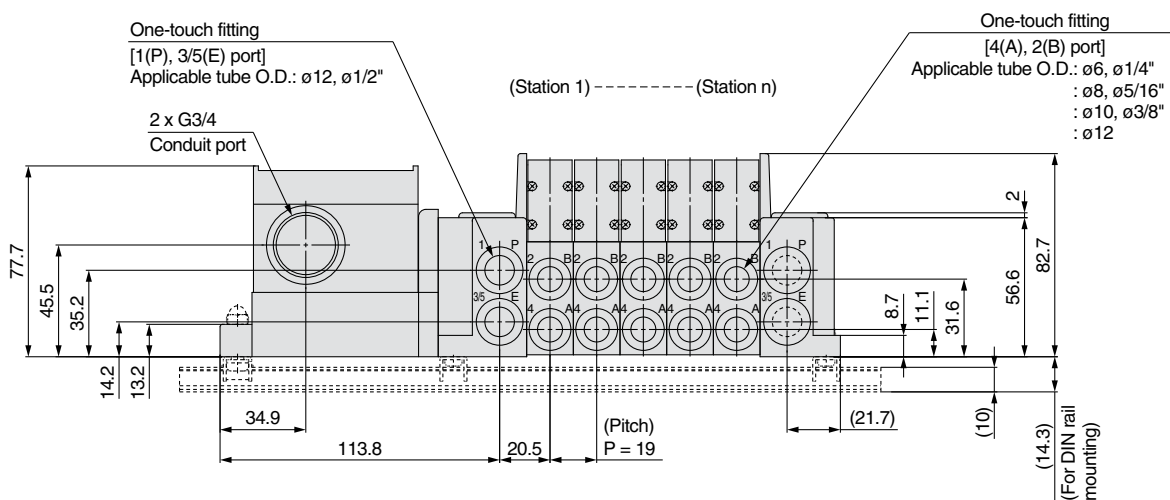
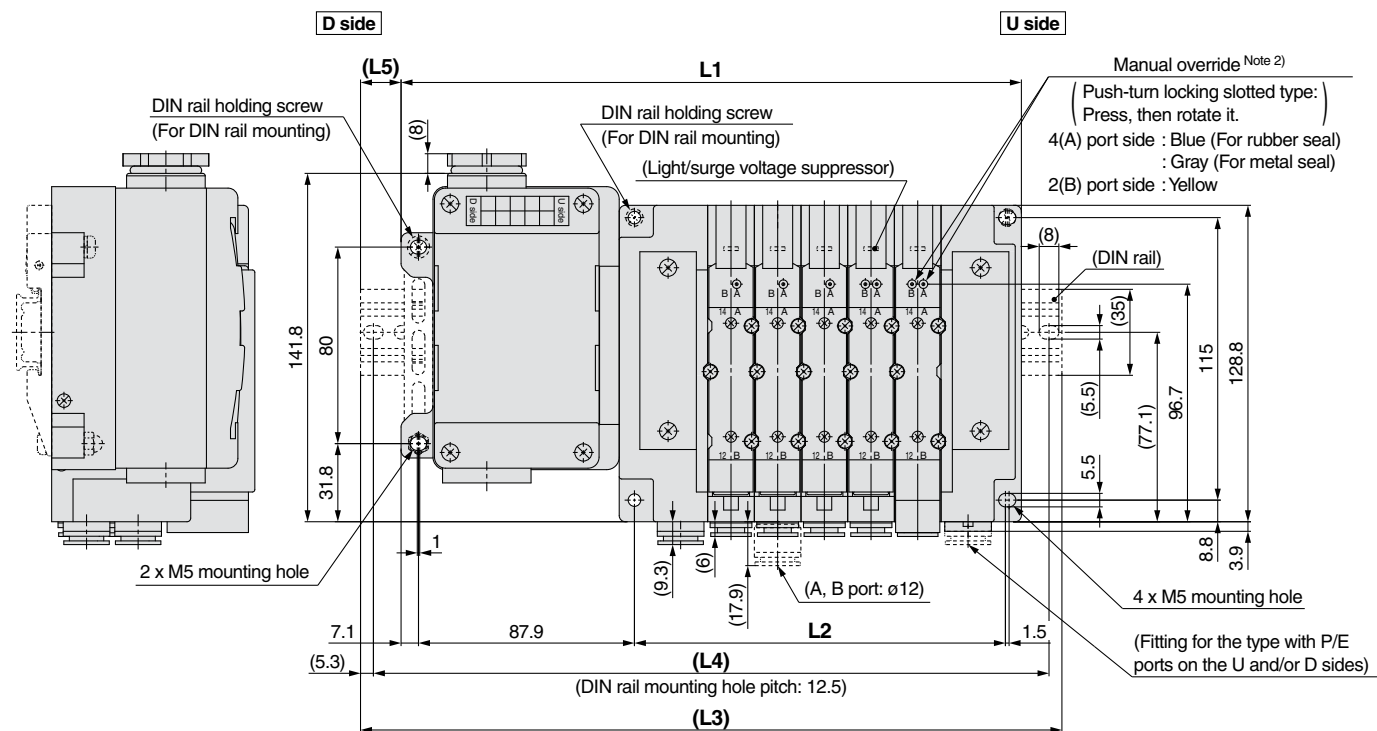
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
<b>L1</b>	181.3	197.3	213.3	229.3	245.3	261.3	277.3	293.3	309.3	325.3	341.3	357.3	373.3	389.3	405.3	421.3	437.3	453.3	469.3
<b>L2</b>	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368
<b>L3</b>	210.5	223	248	260.5	273	285.5	310.5	323	335.5	360.5	373	385.5	398	423	435.5	448	460.5	485.5	498
<b>L4</b>	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
<b>L5</b>	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

SS5Y7-10T- Stations  $\begin{matrix} U \\ D \\ B \end{matrix}$   $\begin{matrix} C6, N7 \\ C8, N9 \\ C10, N11 (D) \\ C12 \end{matrix}$



Note 1) These figures show the "SS5Y7-10T-05D-C10".  
Note 2) Refer to page 183 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
Note 3) Refer to page 188 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
<b>L1</b>	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
<b>L2</b>	94	113	132	151	170	189	208	227	246	265	284	303	322	341	360	379	398	417	436
<b>L3</b>	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
<b>L4</b>	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
<b>L5</b>	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

Valve

Sub-plate

Metal Base

Type 50, 51, 52  
Manifold Exploded View

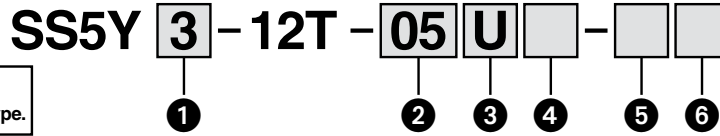
Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

### How to Order Manifold



Refer to pages 186 to 188 for dimensions of Type 12/Top ported type.

#### 1 Series

3	SY3000
5	SY5000
7	SY7000

#### 3 P, E port entry

U <small>Note</small>	U side (2 to 10 stations)
D <small>Note</small>	D side (2 to 10 stations)
B	Both sides (2 to 20 stations)

Note) 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 <small>Note 1</small> )
⋮	⋮	
10	10 stations	
02	2 stations	Specified layout <small>Note 2</small> ) (Available up to 20 solenoids)
⋮	⋮	
20	20 stations	

Note 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.

Note 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.)

Note 3) This also includes the number of blanking plate assembly.

#### 4 SUP/EXH block assembly

Nil	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.

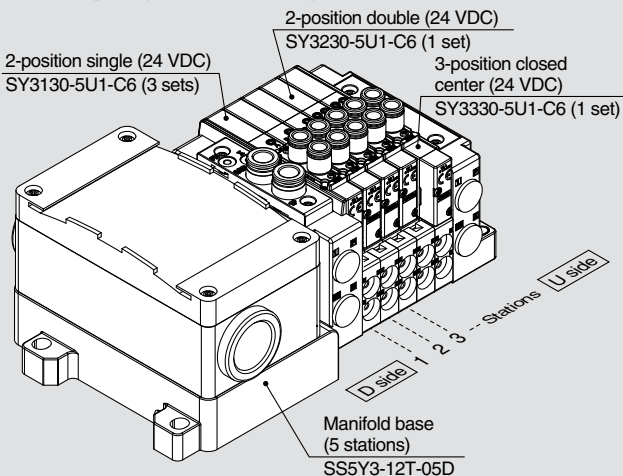
#### 5 P, E port size (One-touch fittings)

Symbol	SY3000	SY5000	SY7000
Nil	ø8	ø10	ø12
N	ø5/16"	ø3/8"	ø1/2"

\* 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 center 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.

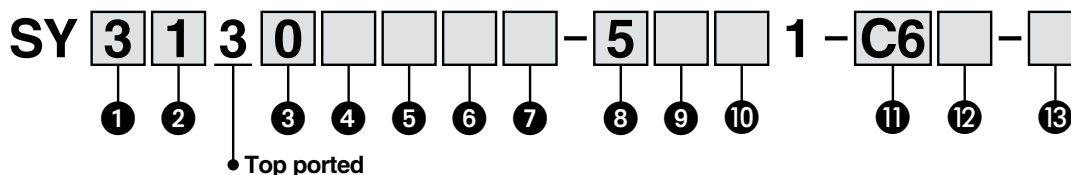
#### 6 Mounting

Nil	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	For 3 stations
⋮	⋮
D20	For 20 stations

Specify a longer rail than the standard length.

Note) Refer to page 247 for the fixation of DIN rail mounting type manifold.

**How to Order Valves (With mounting screw)** Refer to page 3 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 center
4		Exhaust center
5		Pressure center
A*	4-position dual 3-port	N.C./N.C.
B*		N.O./N.O.
C*		N.C./N.O.

\* 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**

Nil	Internal pilot
R	External pilot

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

Nil	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 232 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**

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

**7 Coil type**

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

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

\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

**8 Rated voltage**

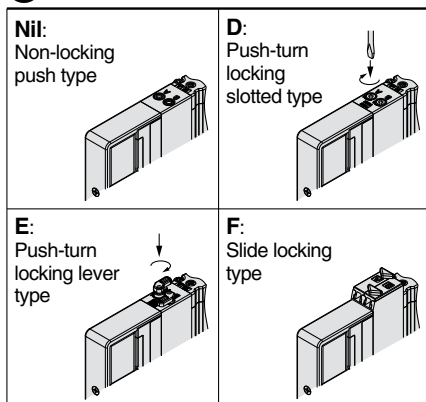
5	24 VDC
6	12 VDC

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

Symbol	With light	Surge voltage suppressor	Common specification
Nil	—	—	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 14 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	ø2	●	—	—
C3	ø3.2	●	—	—
C4	ø4	●	●	—
C6	ø6	●	●	●
C8	ø8	—	●	●
C10	ø10	—	—	●
C12	ø12	—	—	●

**One-touch fitting (Inch)**

Symbol	A, B port	SY3000	SY5000	SY7000
N1	ø1/8"	●	—	—
N3	ø5/32"	●	●	—
N7	ø1/4"	●	●	●
N9	ø5/16"	—	●	●
N11	ø3/8"	—	—	●

**12 Thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

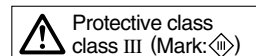
**13 Type of mounting screw**

Nil	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 220 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.

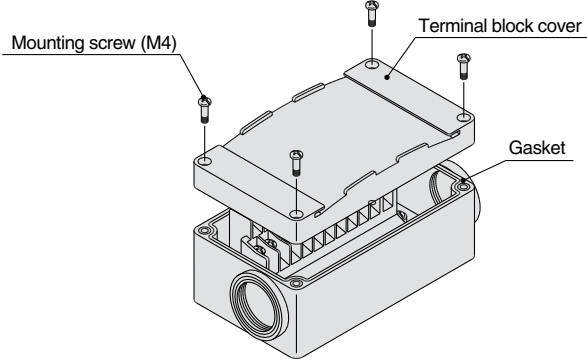


# Series SY3000/5000/7000

## 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

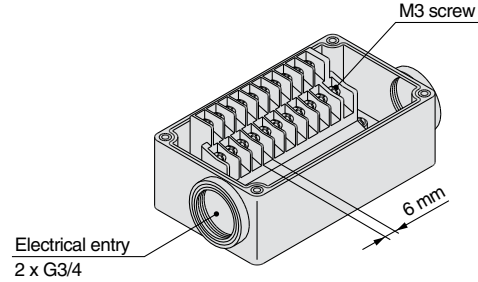
Securely tighten the screws to the torque shown in the below table only after confirming that the gasket is installed correctly.

Proper tightening torque
0.52 to 0.89 lbf-ft (0.7 to 1.2N-m)

### Step 2. The below diagram shows the terminal block wiring.

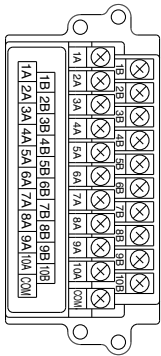
**All stations are provided with double wiring regardless of the mounted valves.**

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 G3/4): AXT100-B06A

## Electrical Wiring Specifications (IP67 compatible)



### 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.	(+)	(-)

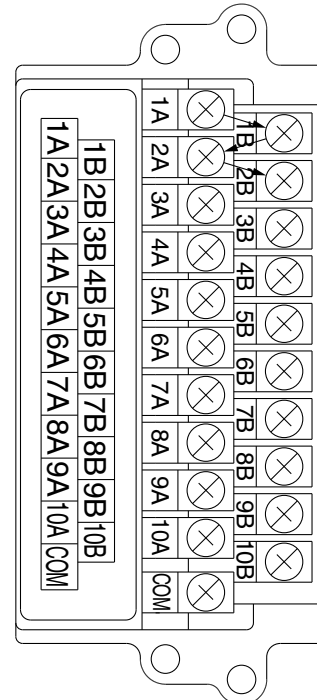
Positive common Negative common

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.

Note) 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 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

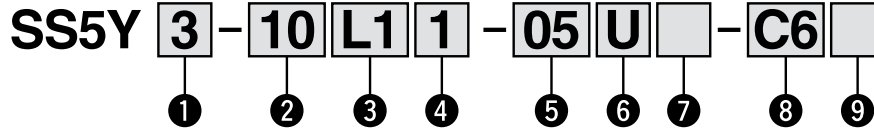
Lead Wire



# Series SY3000/5000/7000

## How to Order Manifold

Refer to pages 184 (SY5000) and 185 (SY7000) for dimensions of Type 11/Bottom ported type.



### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type

10	Side ported
11	Bottom ported*

\* 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 189).

### 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 <sup>Note 1)</sup>
:	:	
16	16 stations	Specified layout <sup>Note 2)</sup> (Available up to 32 solenoids)
02	2 stations	
:	:	
24	24 stations	

#### (L2□)

Symbol	Stations	Note
02	2 stations	Double wiring <sup>Note 1)</sup>
:	:	
08	8 stations	Specified layout <sup>Note 2)</sup> (Available up to 16 solenoids)
02	2 stations	
:	:	
16	16 stations	

#### (L3□)

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

Note 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.

Note 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.)

Note 3) This also includes the number of blanking plate assembly.

### 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

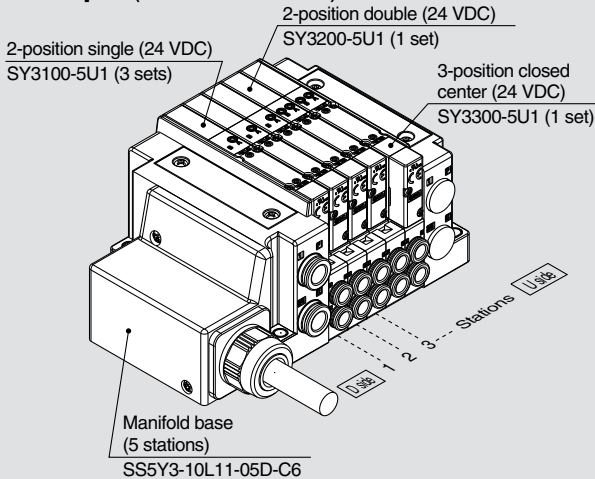
Nil	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

\* 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.

## 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 center 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.

Note) When mixing top ported configurations, select from page 116.

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.



## 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>	ø2	●	—	—	—	—		
<b>C3</b>	ø3.2	●	—	—	—	—		
<b>C4</b>	ø4	●	●	—	●	—		
<b>C6</b>	ø6	●	●	●	●	●		
<b>C8</b>	ø8	—	●	●	●	●		
<b>C10</b>	ø10	—	—	●	—	●		
<b>C12</b>	ø12	—	—	●	—	●		
<b>CM*</b>	Straight port, mixed sizes	●	●	●	●	●		
<b>L4</b> <b>L6</b> <b>L8</b> <b>L10</b> <b>L12</b>	Upward	ø4	●	●	—	—		
		ø6	●	●	●	—		—
		ø8	—	●	●	—		—
	Downward	ø10	—	—	●	—		—
		ø12	—	—	●	—		—
		ø4	●	●	—	—		—
<b>B4</b> <b>B6</b> <b>B8</b> <b>B10</b> <b>B12</b>	Downward	ø6	●	●	●	—		
		ø8	—	●	●	—		—
	ø10	—	—	●	—	—		
	ø12	—	—	●	—	—		
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	●	●	●	—	—		
P, E port size (One-touch fittings)		ø8	ø10	ø12	ø10	ø12		

## 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>	ø1/8"	●	—	—	—	—		
<b>N3</b>	ø5/32"	●	●	—	●	—		
<b>N7</b>	ø1/4"	●	●	●	●	●		
<b>N9</b>	ø5/16"	—	●	●	●	●		
<b>N11</b>	ø3/8"	—	—	●	—	●		
<b>CM*</b>	Straight port, mixed sizes	●	●	●	●	●		
<b>LN3</b> <b>LN7</b> <b>LN9</b> <b>LN11</b> <b>BN3</b> <b>BN7</b> <b>BN9</b> <b>BN11</b>	Upward	ø5/32"	●	—	—	—		
		ø1/4"	●	●	—	—		—
		ø5/16"	—	●	—	—		—
	Downward	ø3/8"	—	—	●	—		—
		ø5/32"	●	—	—	—		—
		ø1/4"	●	●	—	—		—
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	ø5/16"	—	●	—	—		
		ø3/8"	—	—	●	—	—	
P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø1/2"	ø3/8"	ø1/2"		

Note) To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 226 to 228).

\* 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.

## 9 Mounting and Option

Symbol	Mounting	Option		DIN Rail Option	
		Name plate	Station number	Nil	Direct mounting
<b>Nil</b>	Direct mounting	—	—	<b>0</b>	Without DIN rail (with bracket)
<b>AA</b>		●	●	<b>3</b>	For 3 stations
<b>BA</b>		●	—	<b>:</b>	:
<b>D□</b>	DIN rail mounting	—	—	<b>24</b>	For 24 stations
<b>A□</b>		●	●	Specify a longer rail than the total length of specified stations.	
<b>B□</b>		●	—		

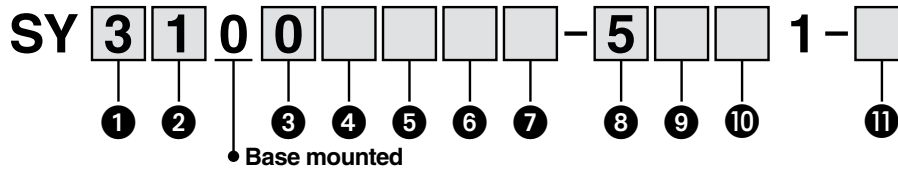
Note 1) Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" above.)

Note 2) Only direct mounting is available for Type 11 (Bottom ported).

Note 3) Refer to page 247 for the fixation of DIN rail mounting type manifold.

## How to Order Valves (With mounting screw)

Refer to page 3 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 center
4		Exhaust center
5		Pressure center
A*	4-position dual 3-port	N.C./N.C.
B*		N.O./N.O.
C*		N.C./N.O.

\* 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

Nil	Internal pilot
R	External pilot

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

Nil	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 232 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

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

### 7 Coil type

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

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

\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

### 8 Rated voltage

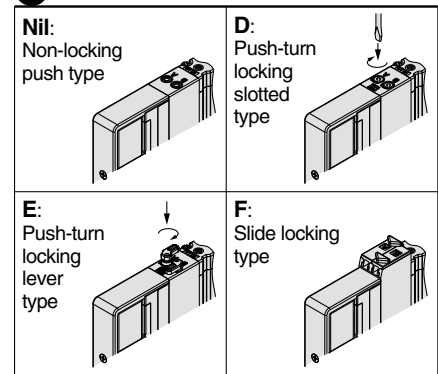
5	24 VDC
6	12 VDC

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

Symbol	With light	Surge voltage suppressor	Common specification
Nil	—	—	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 14 for with the safety slide locking manual override.

### 11 Type of mounting screw

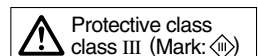
Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* 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 220 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.

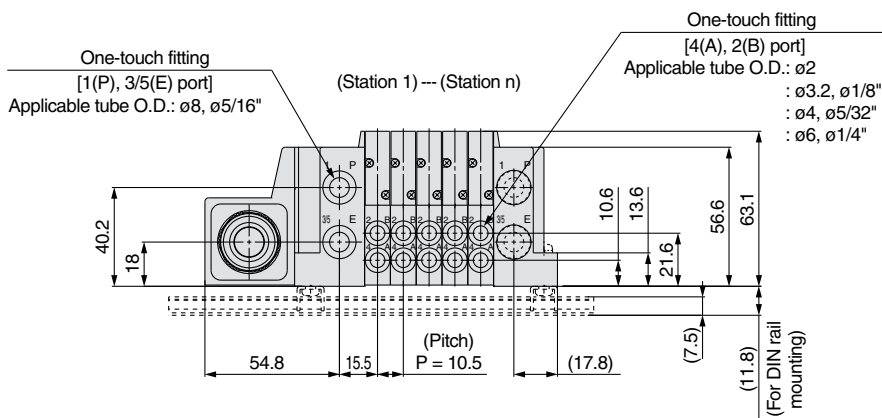
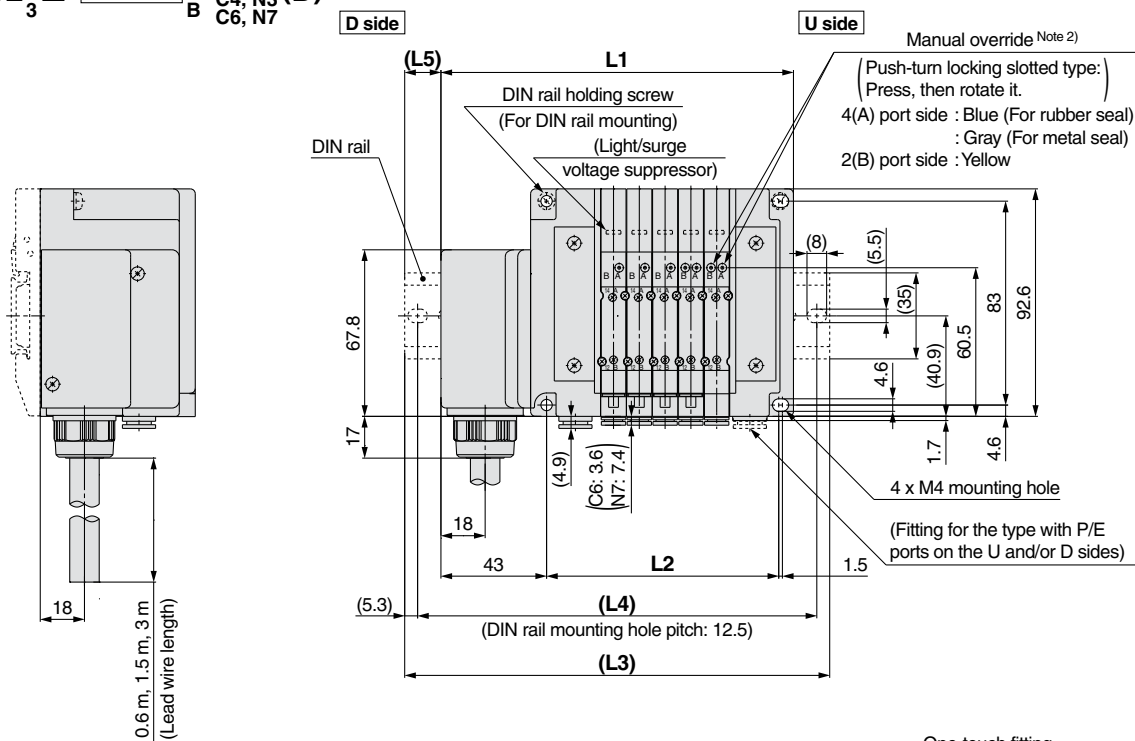


Dimensions: Series **SY3000**

Plug-in  
Connector Connecting Base

Type 10/Side Ported  
Lead Wire

SS5Y3-10L  $\frac{1}{2}$  □ - Stations  $\frac{U}{D}$  - C2, C3, N1 (D)  
 $\frac{3}{B}$  C4, N3 (D)  
C6, N7



Note 1) These figures show the "SS5Y3-10L1□-05D-C6".  
Note 2) Refer to page 181 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
Note 3) Refer to page 186 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>	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
<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	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
<b>L4</b>	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
<b>L5</b>	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

Valve  
Plug-in Sub-plate  
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

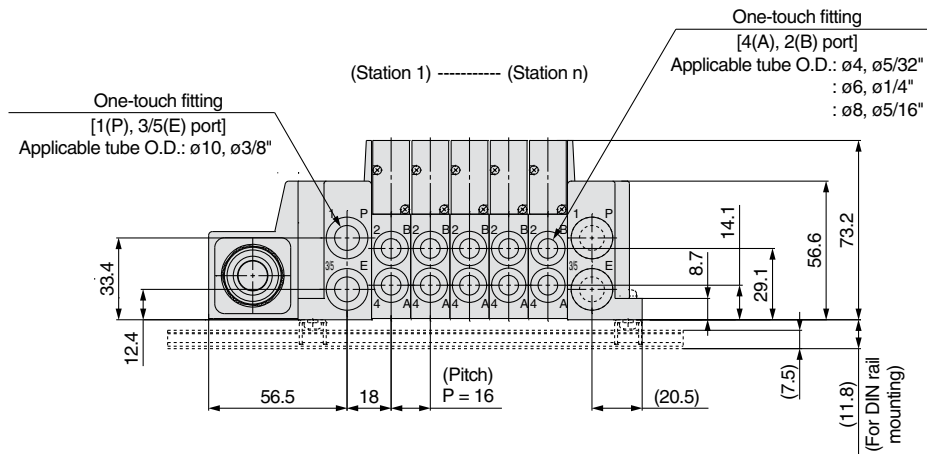
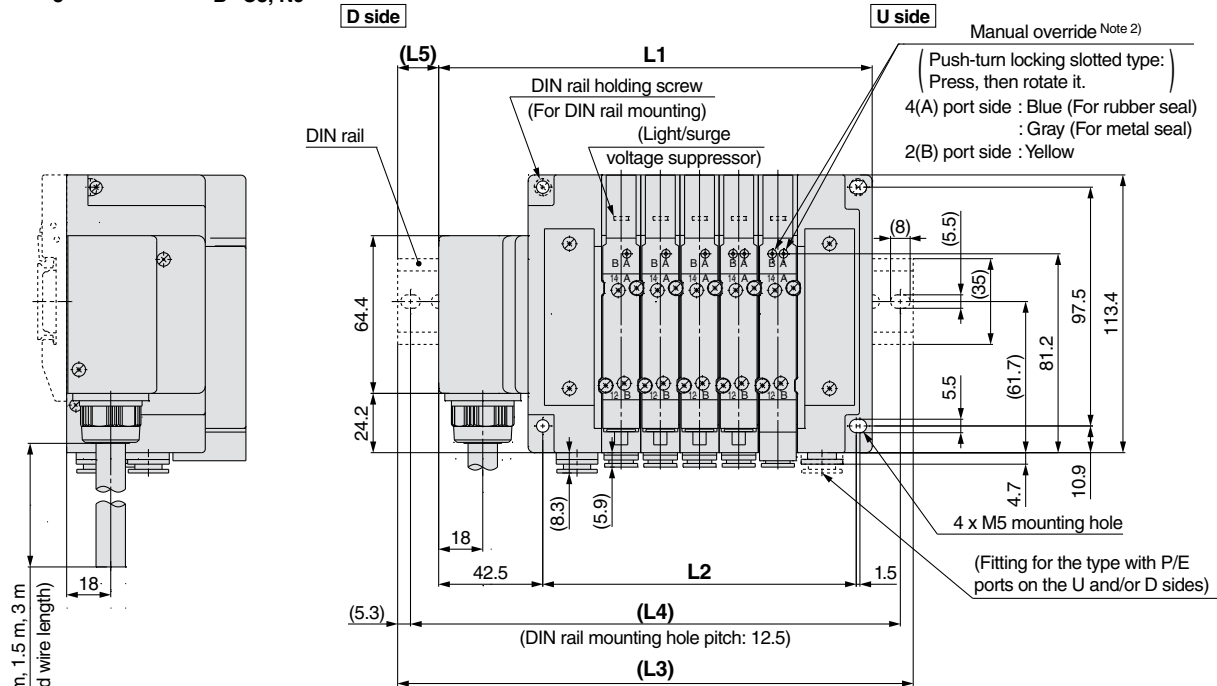
# Series SY3000/5000/7000

## Plug-in Connector Connecting Base

Type 10/Side Ported  
Lead Wire

### Dimensions: Series SY5000

SS5Y5-10L<sub>2</sub><sup>1</sup>□-Stations<sub>3</sub><sup>U</sup> C4, N3  
<sup>D</sup> C6, N7 (D)  
<sup>B</sup> C8, N9



Note 1) These figures show the "SS5Y5-10L1□-05D-C8".

Note 2) Refer to page 182 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 187 for dimensions of A or B port top-ported type.

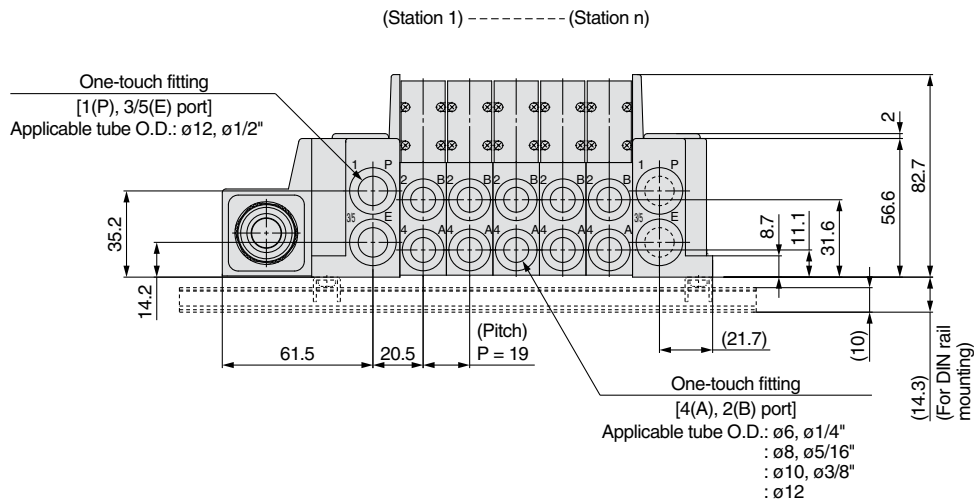
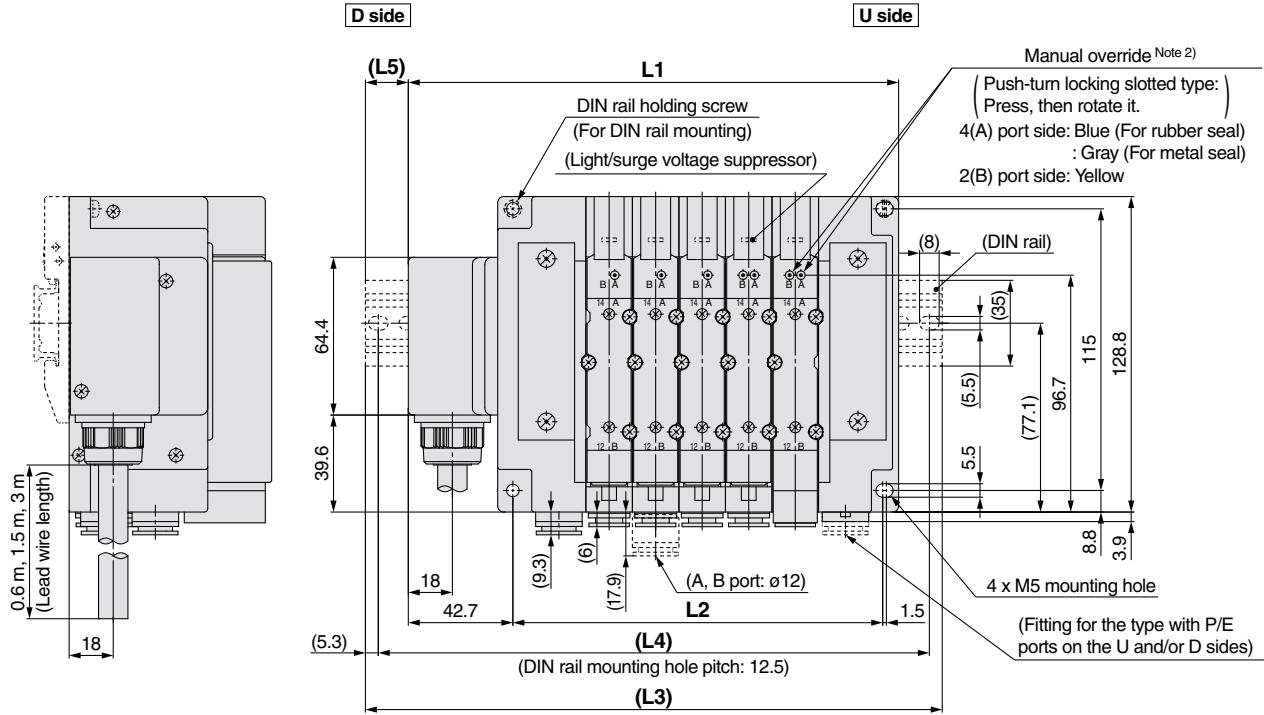
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	129	145	161	177	193	209	225	241	257	273	289	305	321	337	353	369	385	401	417	433	449	465	481
L2	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432
L3	160.5	173	185.5	210.5	223	235.5	260.5	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

SS5Y7-10L<sub>2</sub><sup>1</sup>□-Stations<sub>3</sub><sup>U</sup><sub>D</sub> C6, N7  
C8, N9  
C10, N11 (D)  
C12



Note 1) These figures show the "SS5Y7-10L1□-05D-C10".

Note 2) Refer to page 183 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 188 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

Type 12  
Top Ported

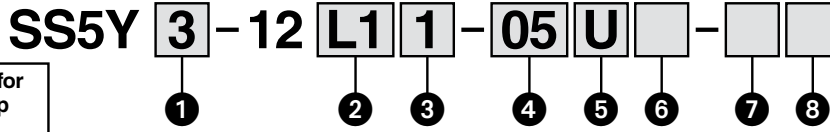
# Plug-in Connector Connecting Base

Lead Wire

# Series SY3000/5000/7000



## How to Order Manifold



Refer to pages 186 to 188 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 <sup>Note)</sup>	U side (2 to 10 stations)
D <sup>Note)</sup>	D side (2 to 10 stations)
B	Both sides (2 to 24 stations)

Note) 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 <sup>Note 1)</sup>
⋮	⋮	
16	16 stations	Specified layout <sup>Note 2)</sup> (Available up to 32 solenoids)
02	2 stations	
⋮	⋮	
24	24 stations	

#### (L3□)

Symbol	Stations	Note
02	2 stations	Double wiring <sup>Note 1)</sup>
⋮	⋮	
04	4 stations	Specified layout <sup>Note 2)</sup> (Available up to 8 solenoids)
02	2 stations	
⋮	⋮	
08	8 stations	

#### (L2□)

Symbol	Stations	Note
02	2 stations	Double wiring <sup>Note 1)</sup>
⋮	⋮	
08	8 stations	Specified layout <sup>Note 2)</sup> (Available up to 16 solenoids)
02	2 stations	
⋮	⋮	
16	16 stations	

Note 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.

Note 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.)

Note 3) This also includes the number of blanking plate assembly.

### 6 SUP/EXH block assembly

Nil	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
Nil	ø8	ø10	ø12
N	ø5/16"	ø3/8"	ø1/2"

\* For N, sizes are in inches.

### 8 Mounting

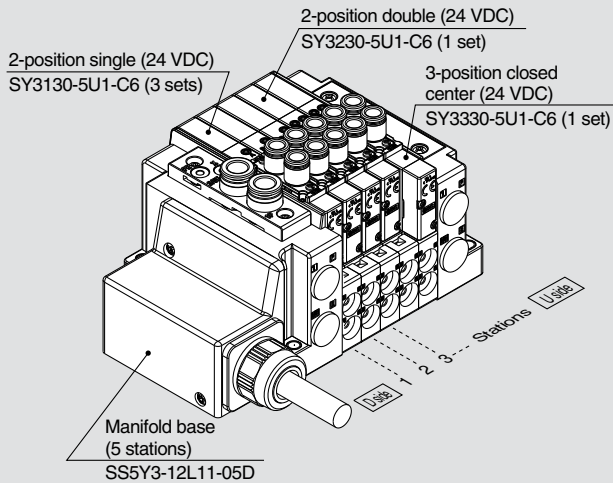
Symbol	Mounting
Nil	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	For 3 stations
⋮	⋮
D24	For 24 stations

Specify a longer rail than the standard length.

Note) Refer to page 247 for the fixation of DIN rail mounting type manifold.

## How to Order Manifold Assembly

### Example (SS5Y3-12L11-□)



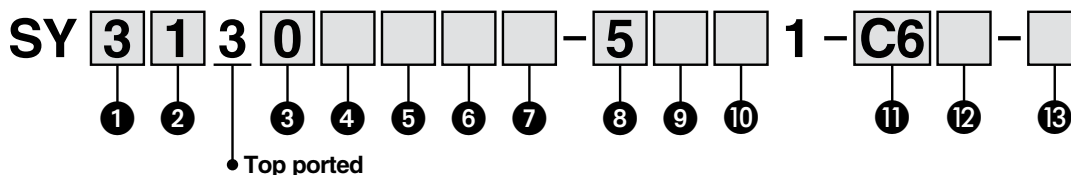
SS5Y3-12L11-05D ...1 set (Type 12 5-station manifold base part no.)  
 \*SY3130-5U1-C6 .....3 sets (2-position single part no.)  
 \*SY3230-5U1-C6 .....1 set (2-position double part no.)  
 \*SY3330-5U1-C6 .....1 set (3-position closed center part no.)

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 3 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 center
4		Exhaust center
5		Pressure center
A*	4-position dual 3-port	N.C./N.C.
B*		N.O./N.O.
C*		N.C./N.O.

\* 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**

Nil	Internal pilot
R	External pilot

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

Nil	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 232 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**

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

**7 Coil type**

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

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

\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

**8 Rated voltage**

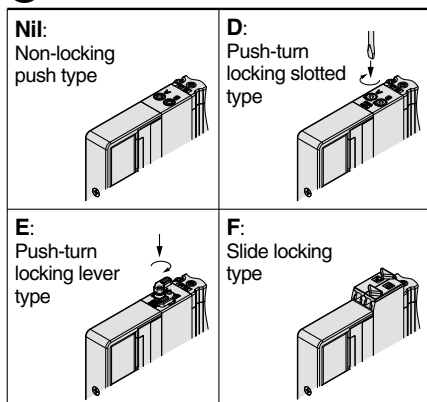
5	24 VDC
6	12 VDC

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

Symbol	With light	Surge voltage suppressor	Common specification
Nil	—	—	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 14 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	ø2	●	—	—
C3	ø3.2	●	—	—
C4	ø4	●	●	—
C6	ø6	●	●	●
C8	ø8	—	●	●
C10	ø10	—	—	●
C12	ø12	—	—	●

**One-touch fitting (Inch)**

Symbol	A, B port	SY3000	SY5000	SY7000
N1	ø1/8"	●	—	—
N3	ø5/32"	●	●	—
N7	ø1/4"	●	●	●
N9	ø5/16"	—	●	●
N11	ø3/8"	—	—	●

**12 Thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

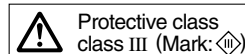
**13 Type of mounting screw**

Nil	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 220 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.



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



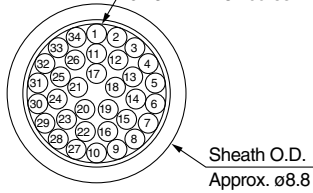
# Series SY3000/5000/7000

## Electrical Wiring Specifications

### Lead wire

34 cores

Lead wire  
0.18 mm<sup>2</sup> x 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 $\Omega/\text{km}$ , 68°F (20°C)	143 or less
Voltage limit V, 1 minute, AC	2000
Insulation resistance $M\Omega/\text{km}$ , 68°F (20°C)	10 or more

Note) Cannot be used for movable wiring.  
The minimum bending radius of the cable is 55 mm.

Station	Lead wire no.	Polarity	Printed mark (Both sides)		
			Type	Color	
Station 1	SOL.a 1	(-)	(+)	Orange	Red
	SOL.b 2	(-)	(+)	Black	Black
Station 2	SOL.a 3	(-)	(+)	Light gray	Red
	SOL.b 4	(-)	(+)	Black	Black
Station 3	SOL.a 5	(-)	(+)	White	Red
	SOL.b 6	(-)	(+)	Black	Black
Station 4	SOL.a 7	(-)	(+)	Yellow	Red
	SOL.b 8	(-)	(+)	Black	Black
Station 5	SOL.a 9	(-)	(+)	Pink	Red
	SOL.b 10	(-)	(+)	Black	Black
Station 6	SOL.a 11	(-)	(+)	Orange	Red
	SOL.b 12	(-)	(+)	Black	Black
Station 7	SOL.a 13	(-)	(+)	Light gray	Red
	SOL.b 14	(-)	(+)	Black	Black
Station 8	SOL.a 15	(-)	(+)	White	Red
	SOL.b 16	(-)	(+)	Black	Black
Station 9	SOL.a 17	(-)	(+)	Yellow	Red
	SOL.b 18	(-)	(+)	Black	Black
Station 10	SOL.a 19	(-)	(+)	Pink	Red
	SOL.b 20	(-)	(+)	Black	Black
Station 11	SOL.a 21	(-)	(+)	Orange	Red
	SOL.b 22	(-)	(+)	Black	Black
Station 12	SOL.a 23	(-)	(+)	Light gray	Red
	SOL.b 24	(-)	(+)	Black	Black
Station 13	SOL.a 25	(-)	(+)	White	Red
	SOL.b 26	(-)	(+)	Black	Black
Station 14	SOL.a 27	(-)	(+)	Yellow	Red
	SOL.b 28	(-)	(+)	Black	Black
Station 15	SOL.a 29	(-)	(+)	Pink	Red
	SOL.b 30	(-)	(+)	Black	Black
Station 16	SOL.a 31	(-)	(+)	Orange	Red
	SOL.b 32	(-)	(+)	Black	Black
	COM. 33	(+)	(-)	Light gray	Red
	COM. 34	(+)	(-)	Black	Black

Positive common    Negative common

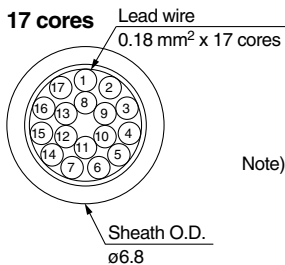
Note) For negative common specification, a valve for negative common or a valve without polarity should be used.

### 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**



Note) Cannot be used for movable wiring.  
The minimum bending radius of the cable is 45 mm.

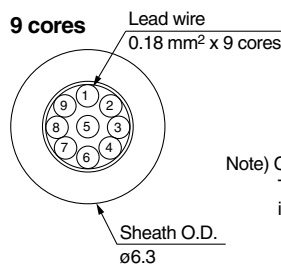
Station	Lead wire no.	Polarity	Lead wire color	Printed mark (Both sides)	
				Type	Color
Station 1	SOL.a	1 (-)	Orange	-	Red
	SOL.b	2 (-)		-	Black
Station 2	SOL.a	3 (-)	Light gray	-	Red
	SOL.b	4 (-)		-	Black
Station 3	SOL.a	5 (-)	White	-	Red
	SOL.b	6 (-)		-	Black
Station 4	SOL.a	7 (-)	Yellow	-	Red
	SOL.b	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 gray	-	Red
	SOL.b	14 (-)		-	Black
Station 8	SOL.a	15 (-)	White	-	Red
	SOL.b	16 (-)		-	Black
	COM.	17 (+)		-	Red

Positive common    Negative common

Note) For negative common specification, a valve for negative common or a valve without polarity should be used.

**Electrical characteristics**

Item	Property
Conductor resistance Ω/km, 68°F (20°C)	143 or less
Voltage limit V, 1 minute, AC	2000
Insulation resistance MΩ/km, 68°F (20°C)	10 or more



Note) Cannot be used for movable wiring.  
The minimum bending radius of the cable is 40 mm.

Station	Lead wire no.	Polarity	Lead wire color	Printed mark (Both sides)	
				Type	Color
Station 1	SOL.a	1 (-)	Orange	-	Red
	SOL.b	2 (-)		-	Black
Station 2	SOL.a	3 (-)	Light gray	-	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

Sub-plate

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

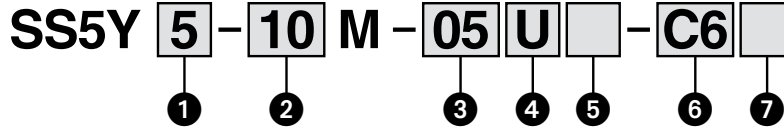
Circular Connector

# Series SY3000/5000/7000



## How to Order Manifold

Refer to pages 184 (SY5000) and 185 (SY7000) for dimensions of Type 11/Bottom ported type.



### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type

10	Side ported
11	Bottom ported*

\* 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 189).

### 3 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring <i>Note 1)</i>
⋮	⋮	
12	12 stations	
02	2 stations	Specified layout <i>Note 2)</i> (Available up to 24 solenoids)
⋮	⋮	
24	24 stations	

Note 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.

Note 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.)

Note 3) 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

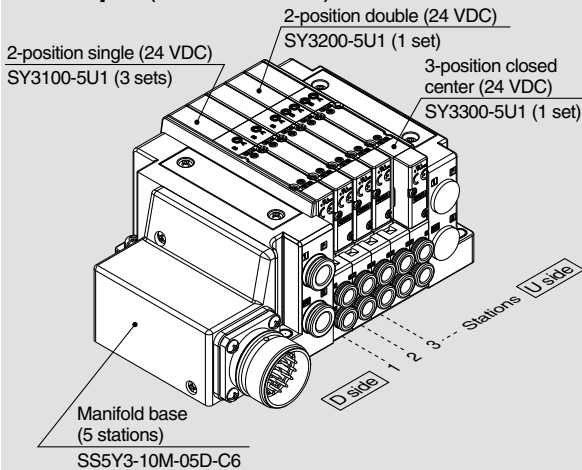
Nil	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

\* 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 center 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.

Note) When mixing top ported configurations, select from page 126.

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
Nil	Direct mounting	—	—
AA		●	●
BA		●	—
D□	DIN rail mounting	—	—
A□		●	●
B□		●	—

Note 1) Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" below.)

Note 2) Only direct mounting is available for Type 11 (Bottom ported).

Note 3) Refer to page 247 for the fixation of DIN rail mounting type manifold.

#### DIN Rail Option

Nil	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	
Straight	C2	ø2	●	—	—	—	
	C3	ø3.2	●	—	—	—	
	C4	ø4	●	●	—	●	
	C6	ø6	●	●	●	●	
	C8	ø8	—	●	●	●	
	C10	ø10	—	—	●	—	
	C12	ø12	—	—	●	—	
CM*	Straight port, mixed sizes	●	●	●	●	●	
Upward	L4	ø4	●	●	—	—	
	L6	ø6	●	●	●	—	
	L8	ø8	—	●	●	—	
	L10	ø10	—	—	●	—	
Downward	B4	ø4	●	●	—	—	
	B6	ø6	●	●	●	—	
	B8	ø8	—	●	●	—	
	B10	ø10	—	—	●	—	
B12	ø12	—	—	●	—		
LM*	Elbow port, mixed sizes (Including upward and downward piping)	●	●	●	—	—	
P, E port size (One-touch fittings)		ø8	ø10	ø12	ø10	ø12	

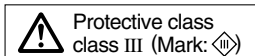
### A, B port size (Inch/One-touch fitting)

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported			
		SY3000	SY5000	SY7000	SY5000	SY7000		
Straight	N1	ø1/8"	●	—	—	—		
	N3	ø5/32"	●	●	—	—		
	N7	ø1/4"	●	●	●	●		
	N9	ø5/16"	—	●	●	●		
	N11	ø3/8"	—	—	●	—		
	CM*	Straight port, mixed sizes	●	●	●	●		●
Upward	LN3	ø5/32"	●	—	—	—		
	LN7	ø1/4"	●	●	—	—		
	LN9	ø5/16"	—	●	—	—		
	LN11	ø3/8"	—	—	●	—		
	Downward	BN3	ø5/32"	●	—	—		—
		BN7	ø1/4"	●	●	—		—
BN9		ø5/16"	—	●	—	—		
BN11	ø3/8"	—	—	●	—			
LM*	Elbow port, mixed sizes (Including upward and downward piping)	●	●	●	—	—		
P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø1/2"	ø3/8"	ø1/2"		

Note) To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 226 to 228).

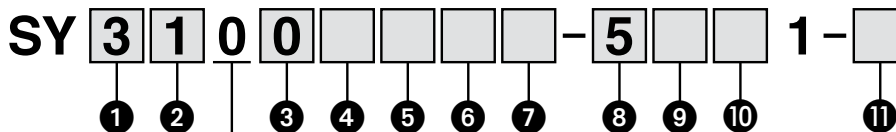
\* Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

\* 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.



## How to Order Valves (With mounting screw)

Refer to page 3 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 center
4		Exhaust center
5		Pressure center
A*	4-position dual 3-port	N.C./N.C.
B*		N.O./N.O.
C*		N.C./N.O.

\* 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

Nil	Internal pilot
R	External pilot

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

Nil	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 232 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

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

### 7 Coil type

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

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

\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

### 8 Rated voltage

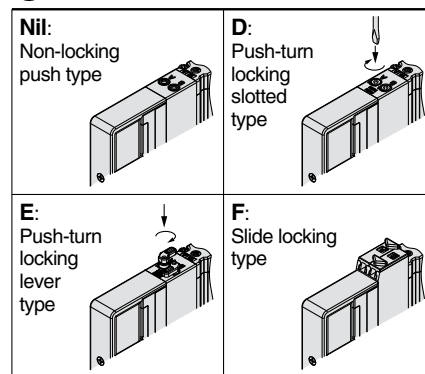
5	24 VDC
6	12 VDC

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

Symbol	With light	Surge voltage suppressor	Common specification
Nil	—	—	Non-polar
R	—	●	
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 14 for with the safety slide locking manual override.

### 11 Type of mounting screw

Nil	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.

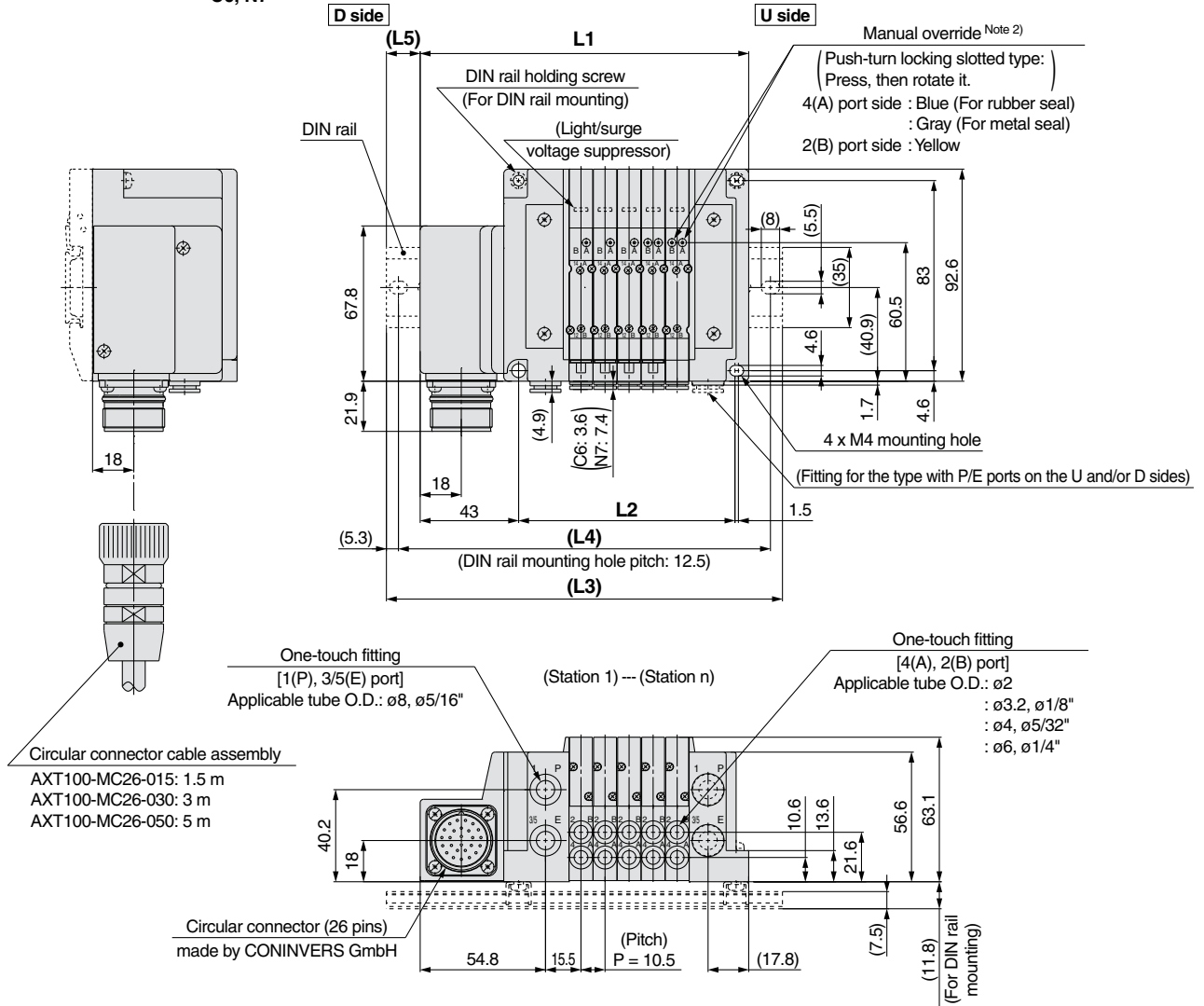
Refer to page 220 for part numbers of the base gasket and mounting screw.

\* "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.

**Plug-in Connector Connecting Base**  
 Type 10/Side Ported  
 Circular Connector

Dimensions: Series **SY3000**

SS5Y3-10M- Stations  $\begin{matrix} U \\ D \\ B \end{matrix}$   $\begin{matrix} C2 \\ C3, N1 \\ C4, N3 \\ C6, N7 \end{matrix}$  (D)



Note 1) These figures show the "SS5Y3-10M-05D-C6".  
 Note 2) Refer to page 181 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
 Note 3) Refer to page 186 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>	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
<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	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
<b>L4</b>	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
<b>L5</b>	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

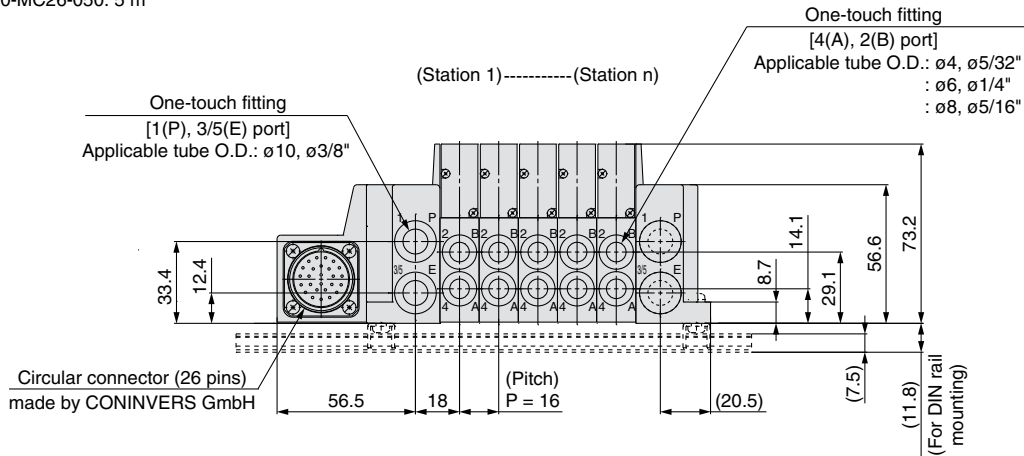
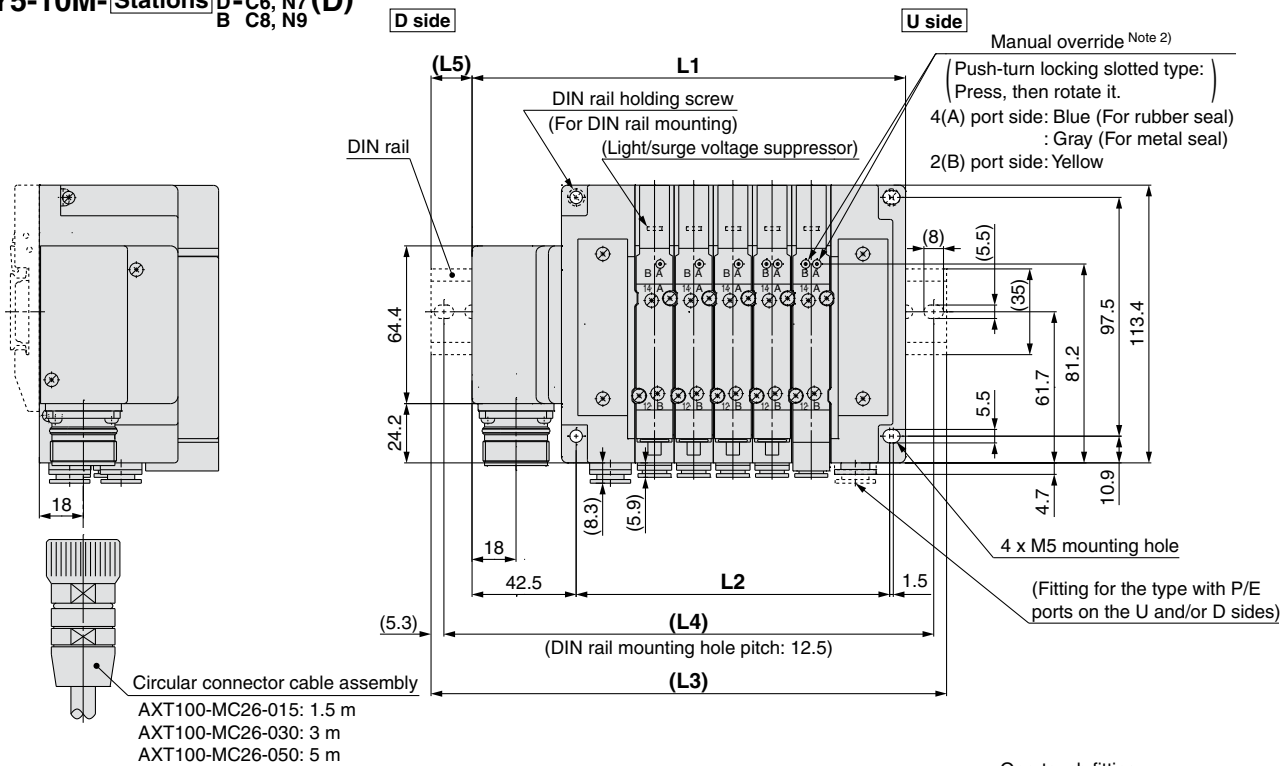
## Plug-in Connector Connecting Base

Type 10/Side Ported

Circular Connector

### Dimensions: Series SY5000

SS5Y5-10M-Stations  $\begin{matrix} \text{U} & \text{C4, N3} \\ \text{D} & \text{C6, N7 (D)} \\ \text{B} & \text{C8, N9} \end{matrix}$



Note 1) These figures show the "SS5Y5-10M-05D-C8".

Note 2) Refer to page 182 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 187 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

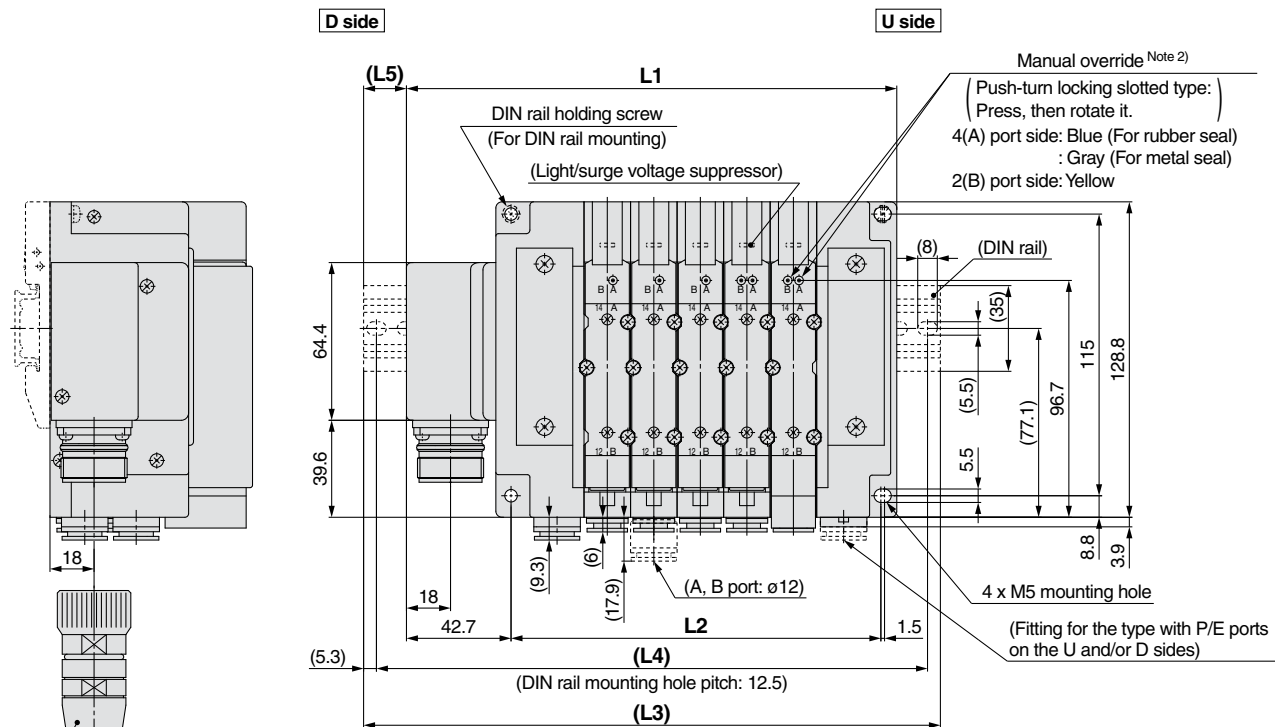


Dimensions: Series **SY7000**

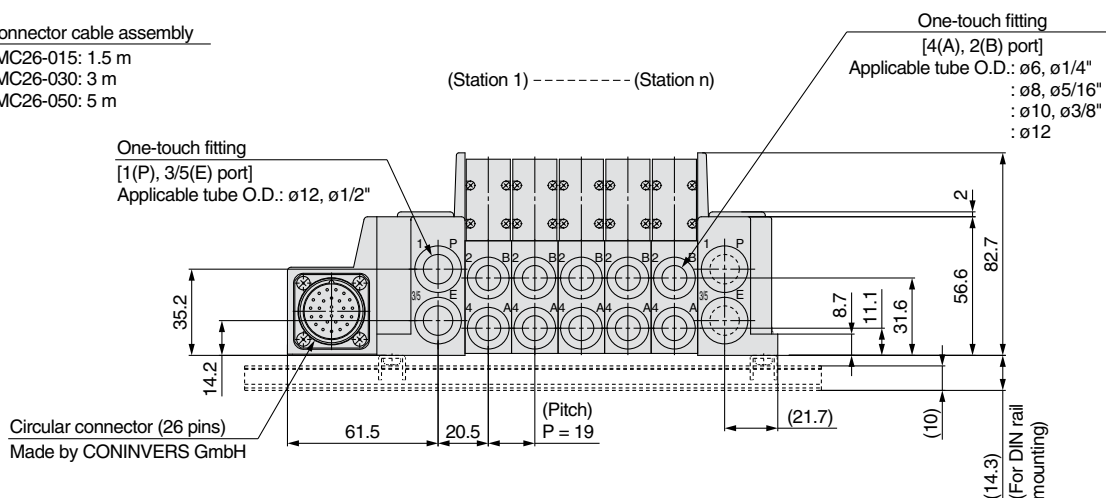
Plug-in  
Connector Connecting Base

Type 10/Side Ported  
Circular Connector

SS5Y7-10M-**Stations**  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix} \begin{matrix} \text{C6, N7} \\ \text{C8, N9} \\ \text{C10, N11} \end{matrix} \text{(D)}$



Circular connector cable assembly  
AXT100-MC26-015: 1.5 m  
AXT100-MC26-030: 3 m  
AXT100-MC26-050: 5 m



Note 1) These figures show the "SS5Y7-10M-05D-C10".  
Note 2) Refer to page 183 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
Note 3) Refer to page 188 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

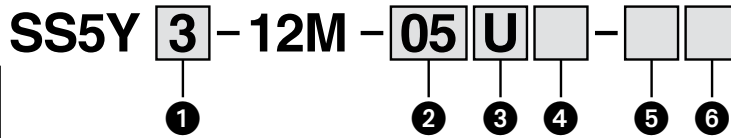
## Circular Connector

Type 12  
Top Ported

# Series SY3000/5000/7000



### How to Order Manifold



Refer to pages 186 to 188 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 <sup>Note 1)</sup>
⋮	⋮	
12	12 stations	
02	2 stations	Specified layout <sup>Note 2)</sup> (Available up to 24 solenoids)
⋮	⋮	
24	24 stations	

Note 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.

Note 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.)

Note 3) This also includes the number of blanking plate assembly.

#### 3 P, E port entry

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

Note) <sup>Ⓜ</sup>For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

#### 4 SUP/EXH block assembly

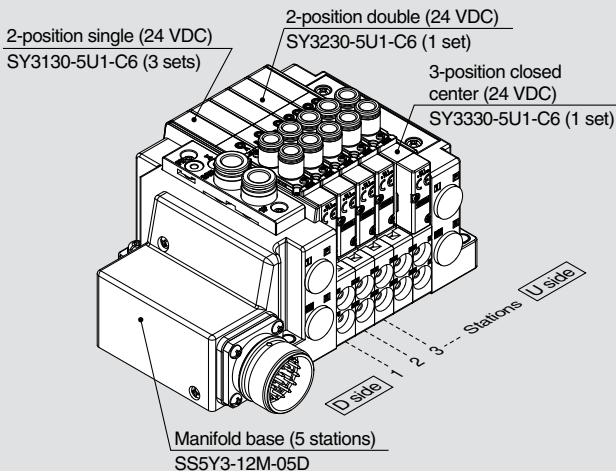
<b>Nil</b>	Internal pilot
<b>S</b>	Internal pilot, Built-in silencer
<b>R</b>	External pilot

\* 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 center 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
<b>Nil</b>	ø8	ø10	ø12
<b>N</b>	ø5/16"	ø3/8"	ø1/2"

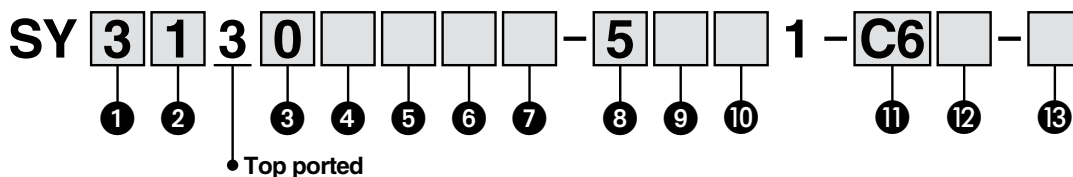
\* For N, sizes are in inches.

#### 6 Mounting

<b>Nil</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>D24</b>	For 24 stations

Note) Refer to page 247 for the fixation of DIN rail mounting type manifold.

**How to Order Valves (With mounting screw)** Refer to page 3 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 center
4		Exhaust center
5		Pressure center
A*	4-position dual 3-port	N.C./N.C.
B*		N.O./N.O.
C*		N.C./N.O.

\* 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**

Nil	Internal pilot
R	External pilot

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

Nil	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 232 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**

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

**7 Coil type**

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

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

\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

**8 Rated voltage**

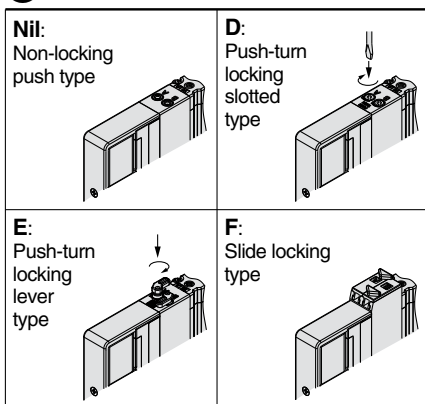
5	24 VDC
6	12 VDC

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

Symbol	With light	Surge voltage suppressor	Common specification
Nil	—	—	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 14 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	ø2	●	—	—
C3	ø3.2	●	—	—
C4	ø4	●	●	—
C6	ø6	●	●	●
C8	ø8	—	●	●
C10	ø10	—	—	●
C12	ø12	—	—	●

**One-touch fitting (Inch)**

Symbol	A, B port	SY3000	SY5000	SY7000
N1	ø1/8"	●	—	—
N3	ø5/32"	●	●	—
N7	ø1/4"	●	●	●
N9	ø5/16"	—	●	●
N11	ø3/8"	—	—	●

**12 Thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

**13 Type of mounting screw**

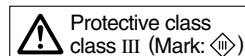
Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* 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.

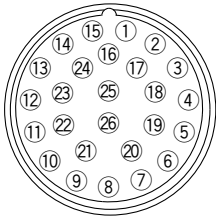
Refer to page 220 for part numbers of the base gasket and mounting screw.

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



## 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 (+)	(-)

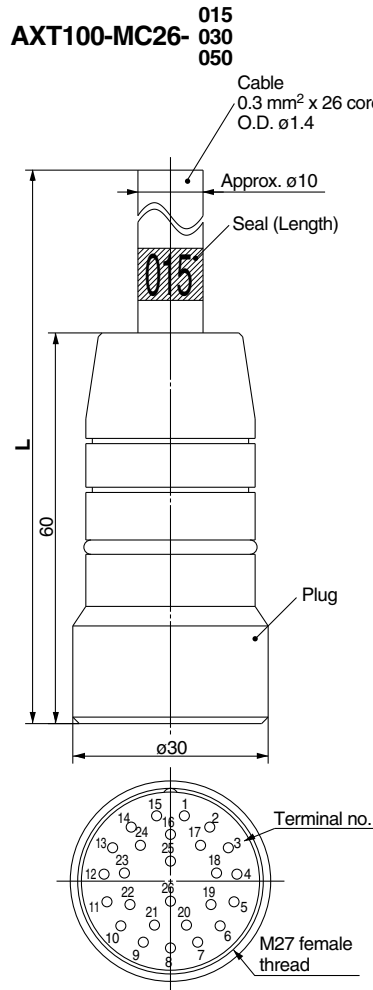
**Positive common**   **Negative common**

Note) 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



### Lead wire color for circular connector cable assembly by terminal number

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

### Electrical characteristics

Item	Property
Conductor resistance Ω/km, 68°F (20°C)	65 or less
Voltage limit V, 1 minute, AC	1000
Insulation resistance MΩ/km, 68°F (20°C)	5 or more

Note) The minimum bending radius of the circular connector cable is 20 mm.

### Circular connector cable assembly

Cable length (L)	Assembly part no.
	26 pins
1.5 m	AXT100-MC26-015
3 m	AXT100-MC26-030
5 m	AXT100-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

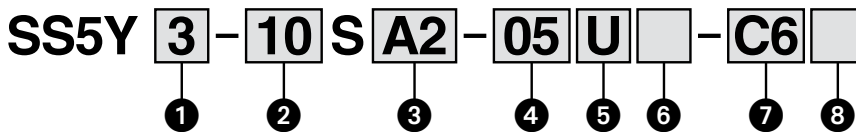
EX500



# Series SY3000/5000/7000

## How to Order Manifold

Refer to pages 184 (SY5000) and 185 (SY7000) for dimensions of Type 11/Bottom ported type.



### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type

10	Side ported
11	Bottom ported*

\* 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 189).

### 3 SI unit

0	Without SI unit
A2	DeviceNet™/PROFIBUS DP/ EtherNet/IP™ (Positive common)
A2N	DeviceNet™/PROFIBUS DP/ EtherNet/IP™ (Negative common)

Note) Ensure a match with the common specification of the valve to be used.

### 4 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
:	:	
08	8 stations	Specified layout Note 2) (Available up to 16 solenoids)
02	2 stations	
:	:	
16	16 stations	

Note 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.

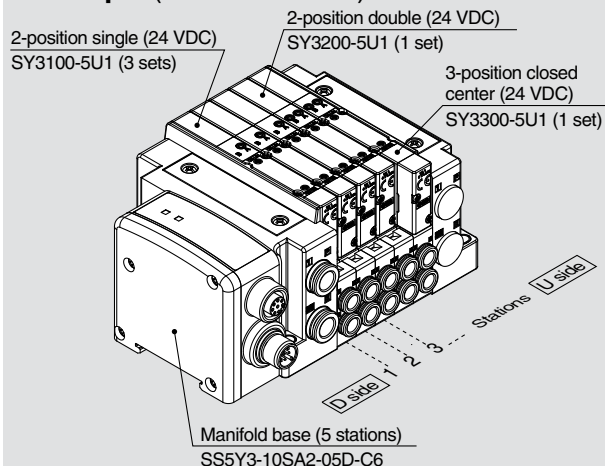
Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

Note 3) This also includes the number of blanking plate assembly.

Note 4) 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 (SS5Y3-10SA2-□)



### 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

Nil	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.

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 center 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.

Note) When mixing top ported configurations, select from page 136.

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.

For details about the EX500 Gateway-type Serial Transmission System, refer to the **WEB catalog** or the Best Pneumatics No. 1 and the Operation Manual. For details about part numbers of SI units to be mounted, refer to page 212 in this catalog. Please download the Operation Manual via SMC website, <http://www.smcworld.com>



**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
<b>C2</b>	ø2	●	—	—	—	—
<b>C3</b>	ø3.2	●	—	—	—	—
<b>C4</b>	ø4	●	●	—	●	—
<b>C6</b>	ø6	●	●	●	●	●
<b>C8</b>	ø8	—	●	●	●	●
<b>C10</b>	ø10	—	—	●	—	●
<b>C12</b>	ø12	—	—	●	—	●
<b>CM*</b>	Straight port, mixed sizes	●	●	●	●	●
<b>L4</b> <b>L6</b> <b>L8</b> <b>L10</b> <b>L12</b>	Upward	ø4	●	●	—	—
		ø6	●	●	●	—
		ø8	—	●	●	—
		ø10	—	—	●	—
		ø12	—	—	●	—
<b>B4</b> <b>B6</b> <b>B8</b> <b>B10</b> <b>B12</b>	Downward	ø4	●	●	—	—
		ø6	●	●	●	—
		ø8	—	●	●	—
		ø10	—	—	●	—
		ø12	—	—	●	—
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	●	●	●	—	—
P, E port size (One-touch fittings)		ø8	ø10	ø12	ø10	ø12

**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>	ø1/8"	●	—	—	—	—
<b>N3</b>	ø5/32"	●	●	—	●	—
<b>N7</b>	ø1/4"	●	●	●	●	●
<b>N9</b>	ø5/16"	—	●	●	●	●
<b>N11</b>	ø3/8"	—	—	●	—	●
<b>CM*</b>	Straight port, mixed sizes	●	●	●	●	●
<b>LN3</b> <b>LN7</b> <b>LN9</b> <b>LN11</b>	Upward	ø5/32"	●	—	—	—
		ø1/4"	●	●	—	—
		ø5/16"	—	●	—	—
		ø3/8"	—	—	●	—
		ø5/32"	●	—	—	—
<b>BN3</b> <b>BN7</b> <b>BN9</b> <b>BN11</b>	Downward	ø5/32"	●	—	—	—
		ø1/4"	●	●	—	—
		ø5/16"	—	●	—	—
		ø3/8"	—	—	●	—
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	●	●	●	—	—
P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø1/2"	ø3/8"	ø1/2"

Note) To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 226 to 228).

\* 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.

**8 Mounting and Option**

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

Note 1) Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" below.)

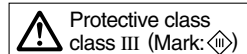
Note 2) Only direct mounting is available for Type 11 (Bottom ported).

Note 3) Refer to page 247 for the fixation of DIN rail mounting type manifold.

**DIN Rail Option**

Symbol	Option
<b>Nil</b>	Direct mounting
<b>0</b>	Without DIN rail (with bracket)
<b>3</b>	For 3 stations
<b>:</b>	Specify a longer rail than the total length of specified stations.
<b>16</b>	For 16 stations

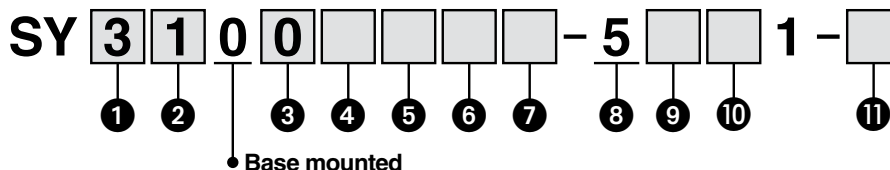
\* When it is necessary to mount a DIN rail without an SI unit, select D0 and order DIN rail length separately, referring to L3 in the dimensions. (Refer to page 225 for part numbers of DIN rail.)





## How to Order Valves (With mounting screw)

Refer to page 3 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 center
4		Exhaust center
5		Pressure center
A*	4-position dual 3-port	N.C./N.C.
B*		N.O./N.O.
C*		N.C./N.O.

\* 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

Nil	Internal pilot
R	External pilot

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

Nil	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 232 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

Nil	Standard (102psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

### 7 Coil type

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

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

\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

### 8 Rated voltage

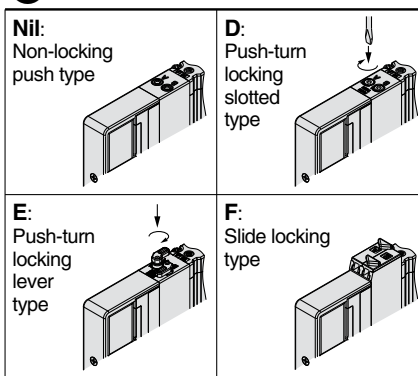
5	24 VDC
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### 9 Light/surge voltage suppressor and common specification

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

\* 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 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 14 for with the safety slide locking manual override.

### 11 Type of mounting screw

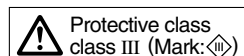
Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* 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 220 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.



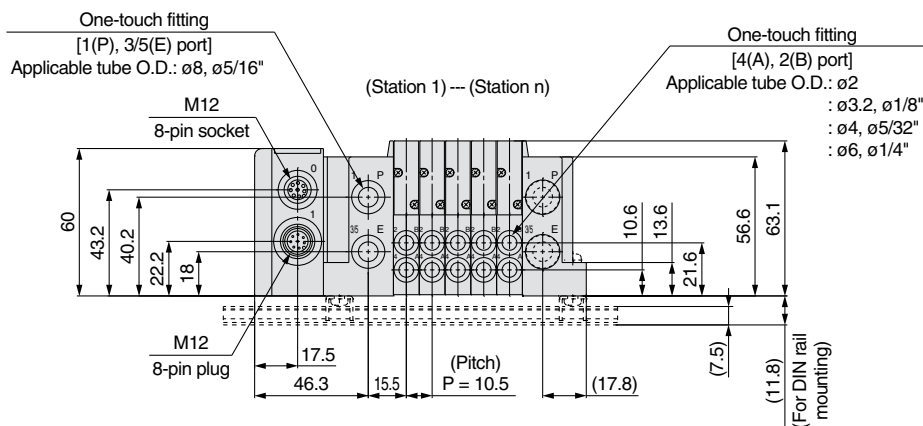
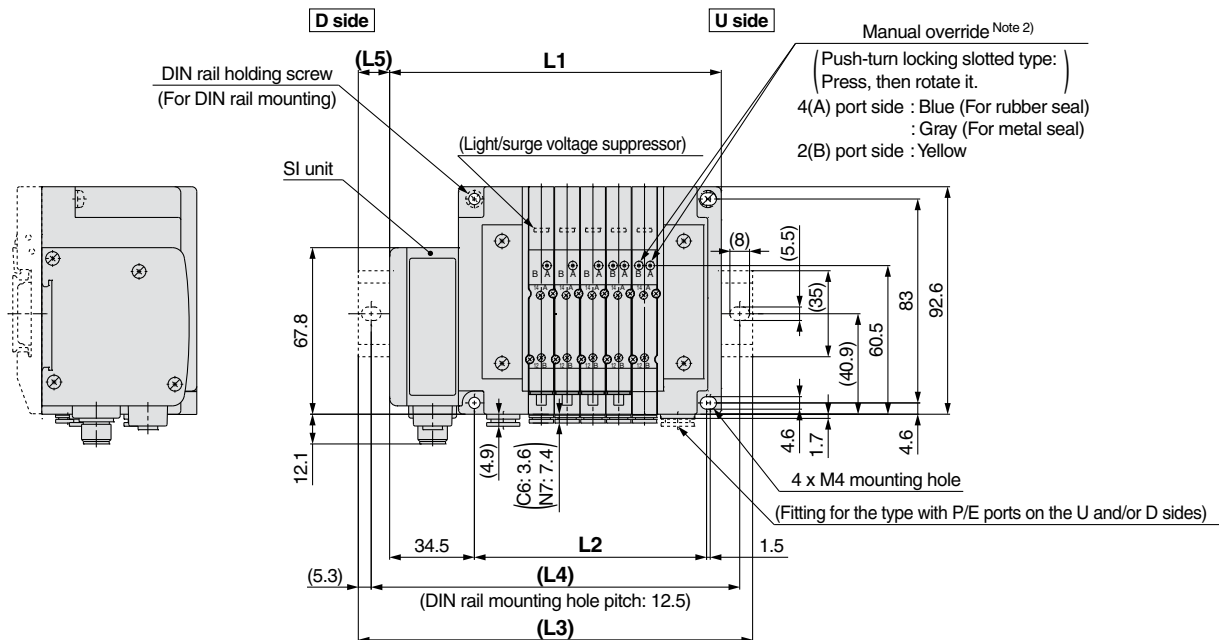
Plug-in  
Connector Connecting Base

Type 10/Side Ported

EX500

Dimensions: Series **SY3000**

SS5Y3-10SA2- Stations  $\begin{matrix} U \\ D \\ B \end{matrix}$   $\begin{matrix} C2 \\ C3, N1 \\ C4, N3 \\ C6, N7 \end{matrix}$  (D)



Note 1) These figures show the "SS5Y3-10SA2-05D-C6".

Note 2) Refer to page 181 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 186 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

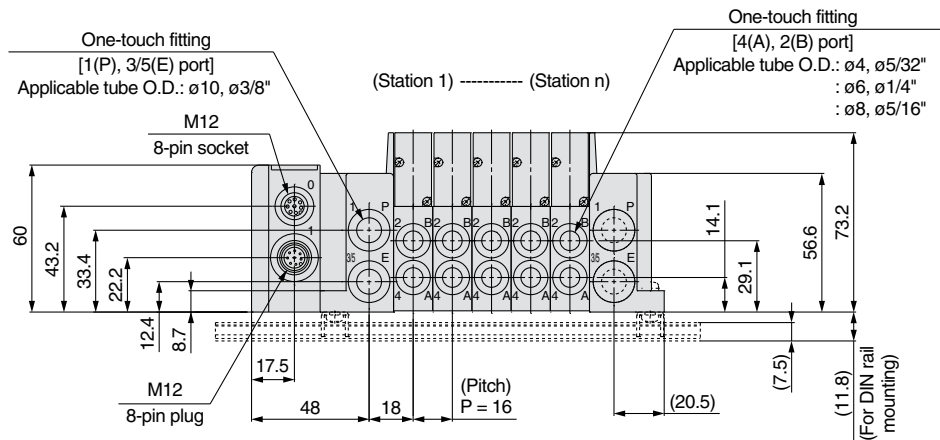
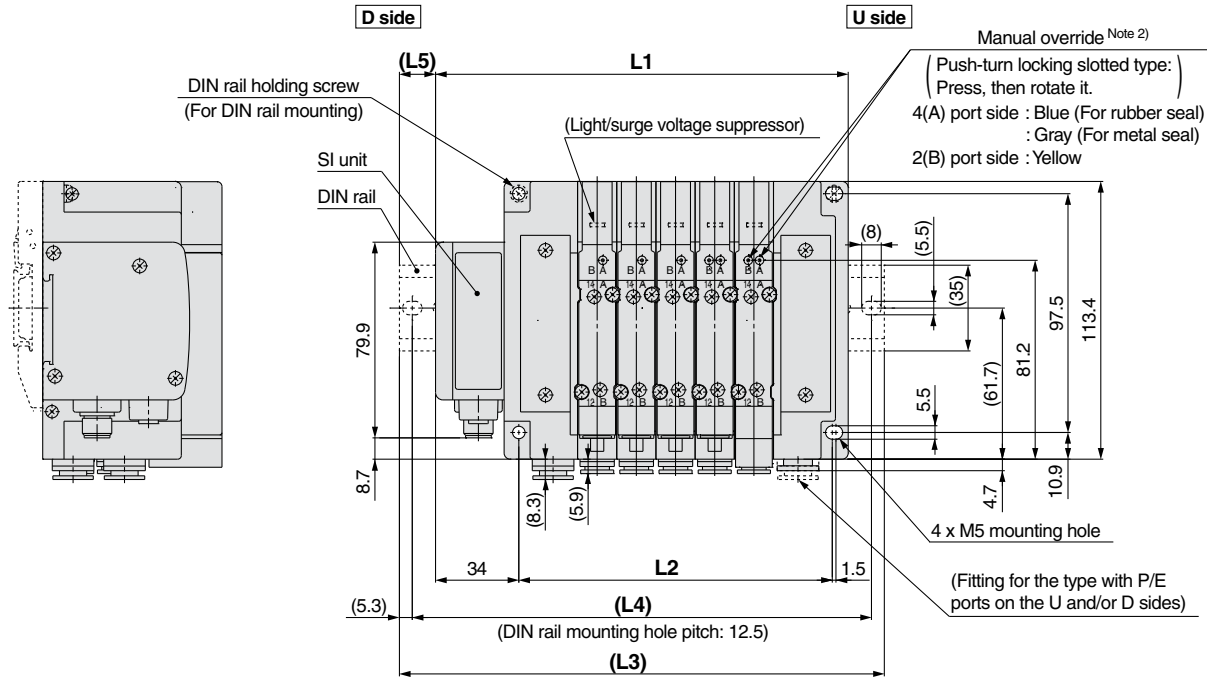
# Series SY3000/5000/7000

## Plug-in Connector Connecting Base

Type 10/Side Ported  
EX500

### Dimensions: Series SY5000

SS5Y5-10SA2-**Stations**  $\begin{matrix} \text{U} & \text{C4, N3} \\ \text{D} & \text{C6, N7 (D)} \\ \text{B} & \text{C8, N9} \end{matrix}$



Note 1) These figures show the "SS5Y5-10SA2-05D-C8".

Note 2) Refer to page 182 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 187 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

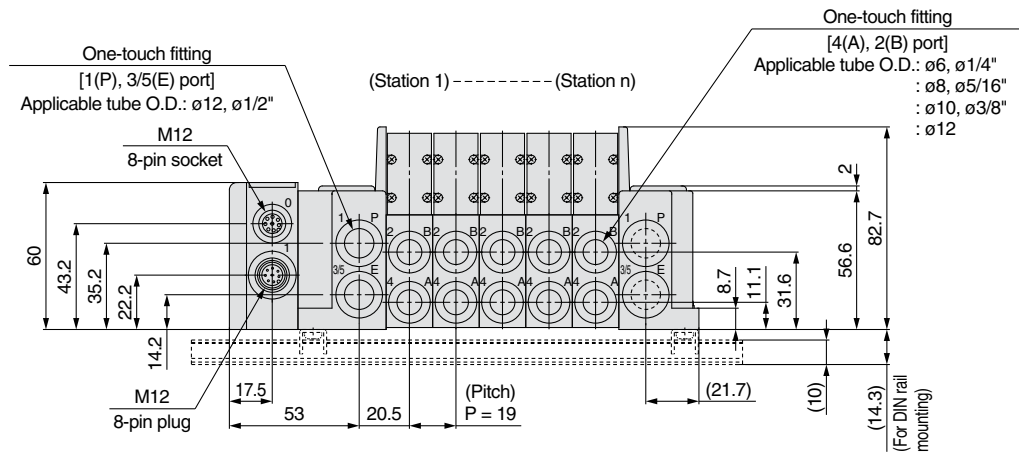
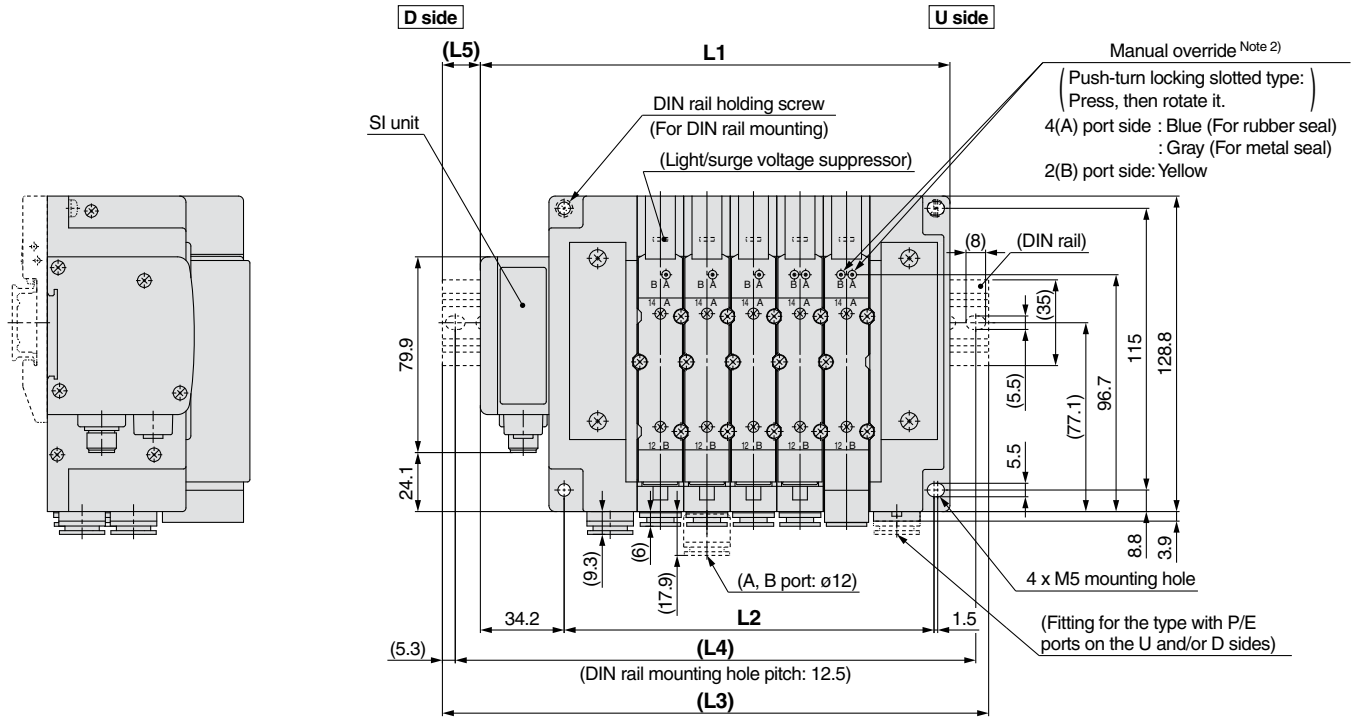
Dimensions: Series **SY7000**

Plug-in  
Connector Connecting Base

Type 10/Side Ported

EX500

SS5Y7-10SA2- Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix}$  C6, N7  
C8, N9  
C10, N11 (D)  
C12



Note 1) These figures show the "SS5Y7-10SA2-05D-C10".

Note 2) Refer to page 183 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 188 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
<b>L1</b>	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
<b>L2</b>	94	113	132	151	170	189	208	227	246	265	284	303	322	341	360
<b>L3</b>	160.5	185.5	198	223	235.5	260.5	273	298	310.5	335.5	348	373	398	410.5	435.5
<b>L4</b>	150	175	187.5	212.5	225	250	262.5	287.5	300	325	337.5	362.5	387.5	400	425
<b>L5</b>	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

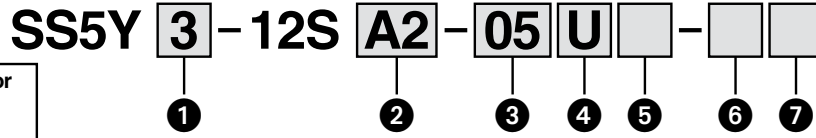
EX500

# Series SY3000/5000/7000



## How to Order Manifold

Type 12  
Top Ported



Refer to pages 186 to 188 for dimensions of Type 12/Top ported type.

### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 SI unit

0	Without SI unit
A2	DeviceNet™/PROFIBUS DP/ EtherNet/IP™ (Positive common)
A2N	DeviceNet™/PROFIBUS DP/ EtherNet/IP™ (Negative common)

Note) Ensure a match with the common specification of the valve to be used.

### 4 P, E port entry

U (Note)	U side (2 to 10 stations)
D (Note)	D side (2 to 10 stations)
B	Both sides (2 to 16 stations)

Note) For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

### 5 SUP/EXH block assembly

Nil	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 (Note 1)
:	:	
08	8 stations	Specified layout (Note 2) (Available up to 16 solenoids)
02	2 stations	
:	:	
16	16 stations	

Note 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.

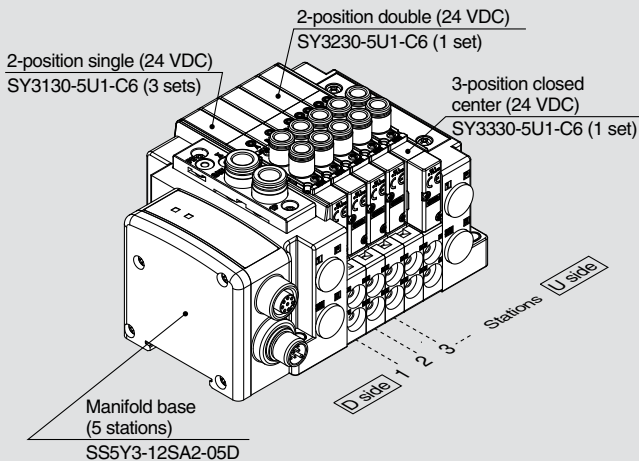
Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

Note 3) This also includes the number of blanking plate assembly.

Note 4) 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 (SS5Y3-12SA2-□)



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 center 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
Nil	ø8	ø10	ø12
N	ø5/16"	ø3/8"	ø1/2"

\* For N, sizes are in inches.

### 7 Mounting

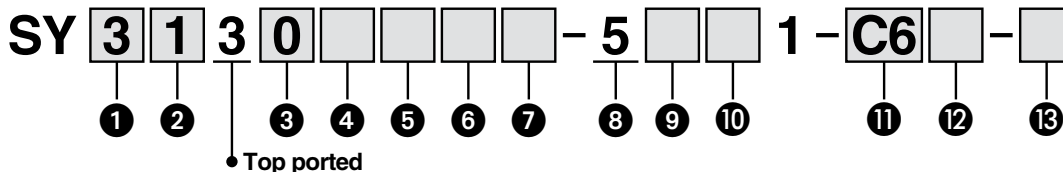
Nil	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	For 3 stations
:	:
D16	For 16 stations

Note 1) 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 225 for the DIN rail part number.)

Note 2) Refer to page 247 for the fixation of DIN rail mounting type manifold.

For details about the EX500 Gateway-type Serial Transmission System, refer to the **WEB catalog** or the Best Pneumatics No. 1 and the Operation Manual. For details about part numbers of SI units to be mounted, refer to page 212 in this catalog. Please download the Operation Manual via SMC website, <http://www.smcworld.com>

**How to Order Valves (With mounting screw)** Refer to page 3 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 center
4		Exhaust center
5		Pressure center
A*	4-position dual 3-port	N.C./N.C.
B*		N.O./N.O.
C*		N.C./N.O.

\* 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**

Nil	Internal pilot
R	External pilot

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

Nil	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 232 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**

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

**7 Coil type**

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

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

\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

**8 Rated voltage**

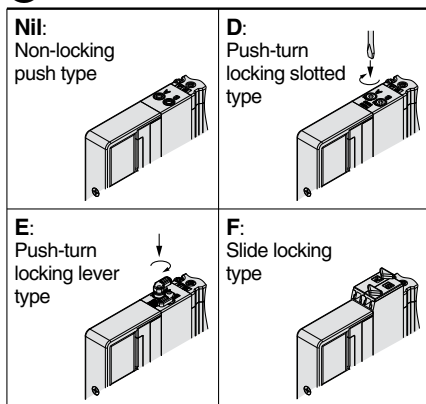
5	24 VDC
---	--------

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

Symbol	With light	Surge voltage suppressor	Common specification
R	—	●	Non-polar
U	●		Positive common
S	—		
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 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 14 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	ø2	●	—	—
C3	ø3.2	●	—	—
C4	ø4	●	●	—
C6	ø6	●	●	●
C8	ø8	—	●	●
C10	ø10	—	—	●
C12	ø12	—	—	●

**One-touch fitting (Inch)**

Symbol	A, B port	SY3000	SY5000	SY7000
N1	ø1/8"	●	—	—
N3	ø5/32"	●	●	—
N7	ø1/4"	●	●	●
N9	ø5/16"	—	●	●
N11	ø3/8"	—	—	●

**12 Thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

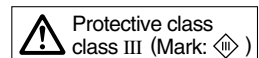
**13 Type of mounting screw**

Nil	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 220 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

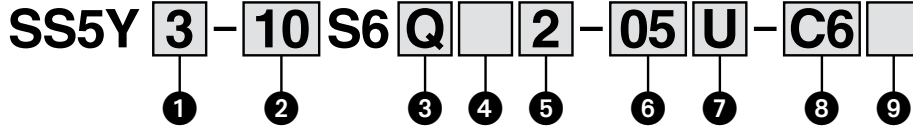
# Plug-in Connector Connecting Base



EX600

# Series SY3000/5000/7000

## How to Order Manifold



Refer to pages 184 (SY5000) and 185 (SY7000) for dimensions of Type 11/Bottom ported type.

### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type

10	Side ported
11	Bottom ported*

\* 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 189).

### 3 SI unit

0	Without SI unit
Q	DeviceNet™
N	PROFIBUS DP
V	CC-Link
ZE	EtherNet/IP™
D	EtherCAT
F	PROFINET

Note 1) I/O unit cannot be mounted without SI unit.

Note 2) Valve plate which connects manifold and SI unit is not mounted to a valve without SI unit. Refer to the EX600 catalog (CAT.E02-24) 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
Without SI unit	Nil	
SI unit positive common	2	3
SI unit negative common	4	5

Note 1) Ensure a match with the common specification of the valve to be used.

Note 2) Without SI unit, the symbol is nil.

### 5 I/O unit stations

Nil	None
1	1 station
:	:
9	9 stations

Note 1) Without SI unit, the symbol is nil.

Note 2) SI unit is not included in I/O unit stations.

Note 3) 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 Note 1)
:	:	
16	16 stations	
02	2 stations	Specified layout Note 2) (Available up to 32 solenoids)
:	:	
24	24 stations	

Note 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.

Note 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.)

Note 3) This also includes the number of blanking plate assembly.

### 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.

### 9 Mounting and Option

Symbol	Mounting	Option	
		Name plate	Station number
Nil	Direct mounting	—	—
AA		●	●
BA		●	—
D□	DIN rail mounting	—	—
A□		●	●
B□		●	—

Note 1) Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" below.)

Note 2) Only direct mounting is available for Type 11 (Bottom ported).

Note 3) Refer to page 247 for the fixation of DIN rail mounting type manifold.

#### DIN Rail Option

Nil	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 225 for the DIN rail part number.)

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 catalog** or the Best Pneumatics No. 1 and the Operation Manual. For details about part numbers of SI units to be mounted, refer to pages 213 and 214 in this catalog. (IP40 specifications may be required according to the I/O unit to be selected.) Please download the Operation Manual via SMC website, <http://www.smcworld.com>



**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>	ø2	●	—	—	—	—
<b>C3</b>	ø3.2	●	—	—	—	—
<b>C4</b>	ø4	●	●	—	●	—
<b>C6</b>	ø6	●	●	●	●	●
<b>C8</b>	ø8	—	●	●	●	●
<b>C10</b>	ø10	—	—	●	—	●
<b>C12</b>	ø12	—	—	●	—	●
<b>CM*</b>	Straight port, mixed sizes	●	●	●	●	●
<b>L4</b>	Upward	ø4	●	●	—	—
<b>L6</b>		ø6	●	●	●	—
<b>L8</b>		ø8	—	●	●	—
<b>L10</b>		ø10	—	—	●	—
<b>L12</b>	ø12	—	—	●	—	
<b>B4</b>	Downward	ø4	●	●	—	—
<b>B6</b>		ø6	●	●	●	—
<b>B8</b>		ø8	—	●	●	—
<b>B10</b>		ø10	—	—	●	—
<b>B12</b>	ø12	—	—	●	—	
<b>LM*</b>	Elbow port, mixed sizes (including upward and downward piping)	●	●	●	—	—
P, E port size (One-touch fittings)		ø8	ø10	ø12	ø10	ø12

**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>	ø1/8"	●	—	—	—	—
<b>N3</b>	ø5/32"	●	●	—	●	—
<b>N7</b>	ø1/4"	●	●	●	●	●
<b>N9</b>	ø5/16"	—	●	●	●	●
<b>N11</b>	ø3/8"	—	—	●	—	●
<b>CM*</b>	Straight port, mixed sizes	●	●	●	●	●
<b>LN3</b>	Upward	ø5/32"	●	—	—	—
<b>LN7</b>		ø1/4"	●	●	—	—
<b>LN9</b>		ø5/16"	—	●	—	—
<b>LN11</b>	ø3/8"	—	—	●	—	
<b>BN3</b>	Downward	ø5/32"	●	—	—	—
<b>BN7</b>		ø1/4"	●	●	—	—
<b>BN9</b>		ø5/16"	—	●	—	—
<b>BN11</b>		ø3/8"	—	—	●	—
<b>LM*</b>	Elbow port, mixed sizes (including upward and downward piping)	●	●	●	—	—
P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø1/2"	ø3/8"	ø1/2"

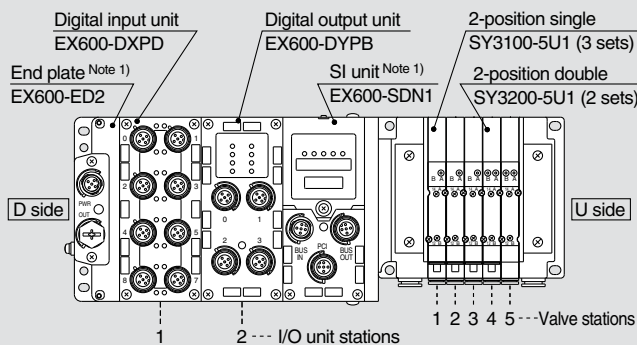
Note) To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 226 to 228).

\* 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.

**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-DXP .....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.

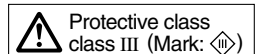
- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted, then the I/O units in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

Note 1) Do not enter the SI unit part number and the end plate part number together.

Note 2) When mixing top ported configurations, select from page 148.

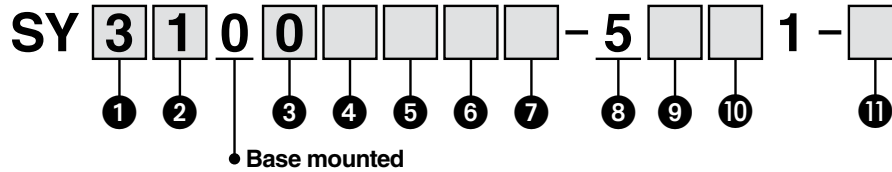
In this case, use caution as there is also output on the A and B port on base side.

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 3 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 center
4		Exhaust center
5		Pressure center
A*	4-position dual 3-port	N.C./N.C.
B*		N.O./N.O.
C*		N.C./N.O.

\* 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

Nil	Internal pilot
R	External pilot

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

Nil	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 232 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

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

### 7 Coil type

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

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

\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

### 8 Rated voltage

5	24 VDC
---	--------

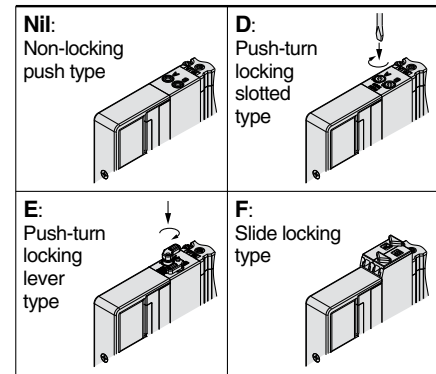
### 9 Light/surge voltage suppressor and common specification

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 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 14 for with the safety slide locking manual override.

### 11 Type of mounting screw

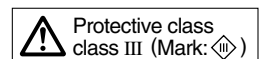
Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* 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 220 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.



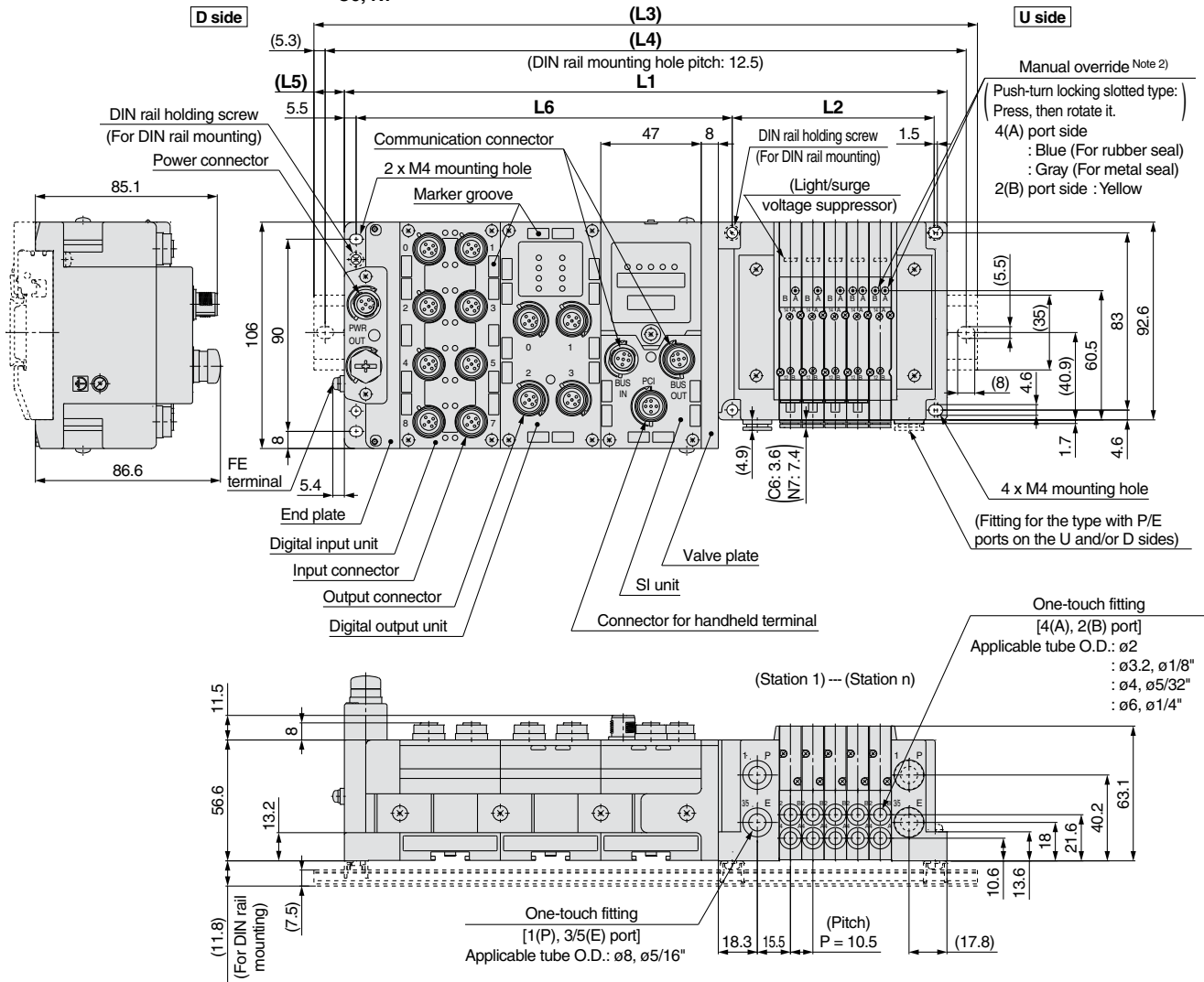
# Plug-in Connector Connecting Base Series SY3000/5000/7000

## Dimensions: Series SY3000

### Plug-in Connector Connecting Base

Type 10/Side Ported  
EX600 (M12 Connector)

SS5Y3-10S6□<sub>4</sub>□<sub>4</sub> - Stations U<sub>D</sub> C<sub>2</sub> C<sub>3</sub> N<sub>1</sub> (D)  
B C<sub>4</sub> N<sub>3</sub> C<sub>6</sub> N<sub>7</sub>



$L1 = 10.5 \times n1 + 135.5 + 47 \times n2$   
 $L2 = 10.5 \times n1 + 42$   
 $L4 = L3 - 10.5$   
 $L5 = (L3 - L1)/2$   
 $L6 = 47 \times n2 + 82$

n1: Valve stations  
n2: I/O unit stations

Note 1) These figures show the "SS5Y3-10S6Q22-05D-C6".  
 Note 2) Refer to page 181 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
 Note 3) Refer to page 186 for dimensions of A or B port top-ported type.

### L3: DIN Rail Overall Length

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	460.5
2	285.5	285.5	298	310.5	323	335.5	348	360.5	373	385.5	398	410.5	410.5	423	435.5	448	460.5	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	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	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	648	660.5	660.5
6	473	473	485.5	498	510.5	523	535.5	548	560.5	573	585.5	598	610.5	610.5	623	635.5	648	660.5	673	685.5	698	710.5	723	735.5
7	510.5	523	535.5	548	560.5	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
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	748	760.5	773	785.5	798	810.5	823
9	610.5	623	635.5	635.5	648	660.5	673	685.5	698	698	710.5	723	735.5	748	760.5	773	785.5	798	810.5	823	835.5	848	860.5	873

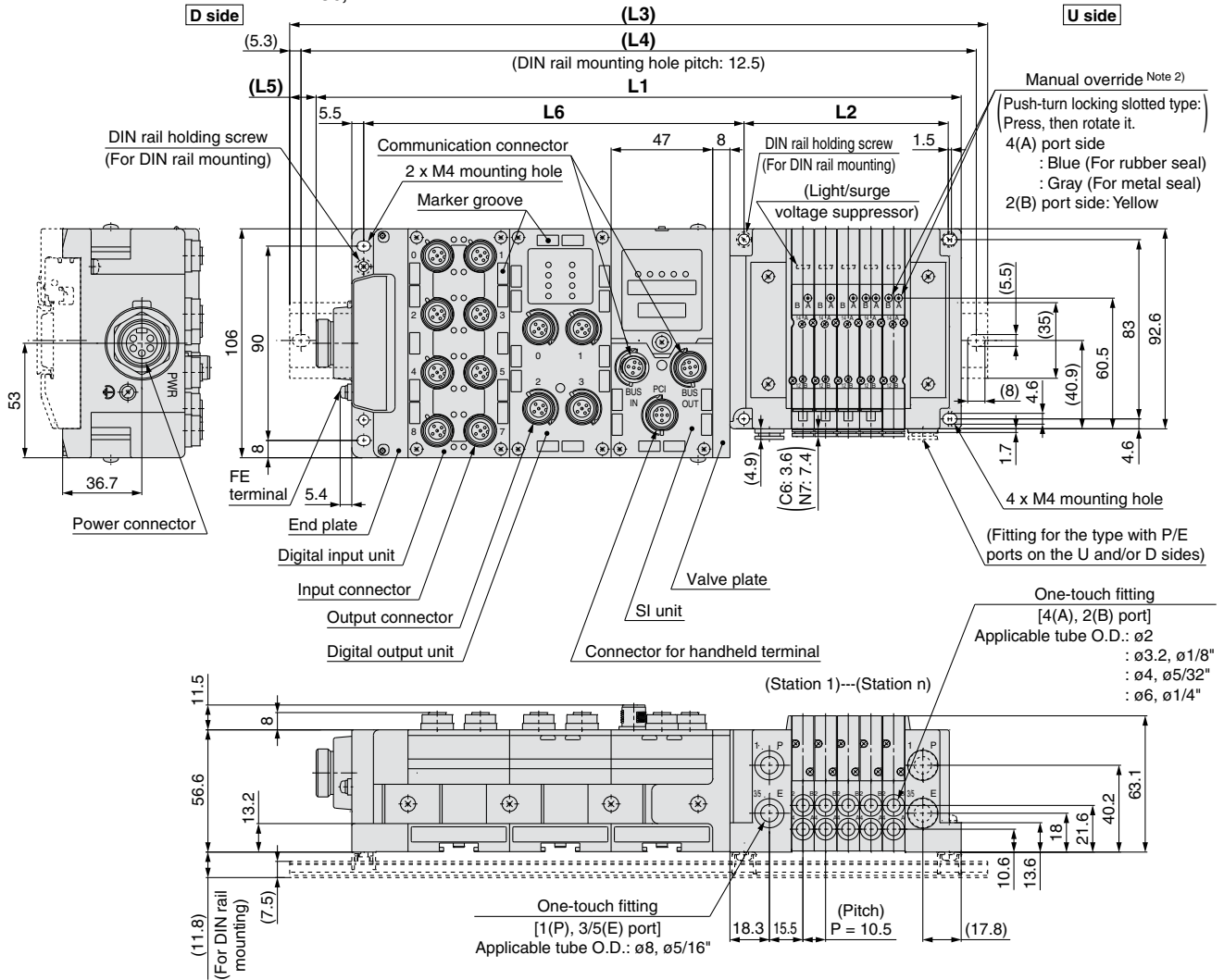
# Series SY3000/5000/7000

## Plug-in Connector Connecting Base

## Type 10/Side Ported EX600 (7/8 Inch Connector)

### Dimensions: Series SY3000

SS5Y3-10S6  $\square$ <sub>3</sub>  $\square$  - 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)



$$\begin{aligned} L1 &= 10.5 \times n1 + 152 + 47 \times n2 \\ L2 &= 10.5 \times n1 + 42 \\ L4 &= L3 - 10.5 \\ L5 &= (L3 - L1)/2 \\ L6 &= 47 \times n2 + 82 \end{aligned}$$

n1: Valve stations  
n2: I/O unit stations

#### L3: DIN Rail Overall Length

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	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	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

Note 1) These figures show the "SS5Y3-10S6Q32-05D-C6".

Note 2) Refer to page 181 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

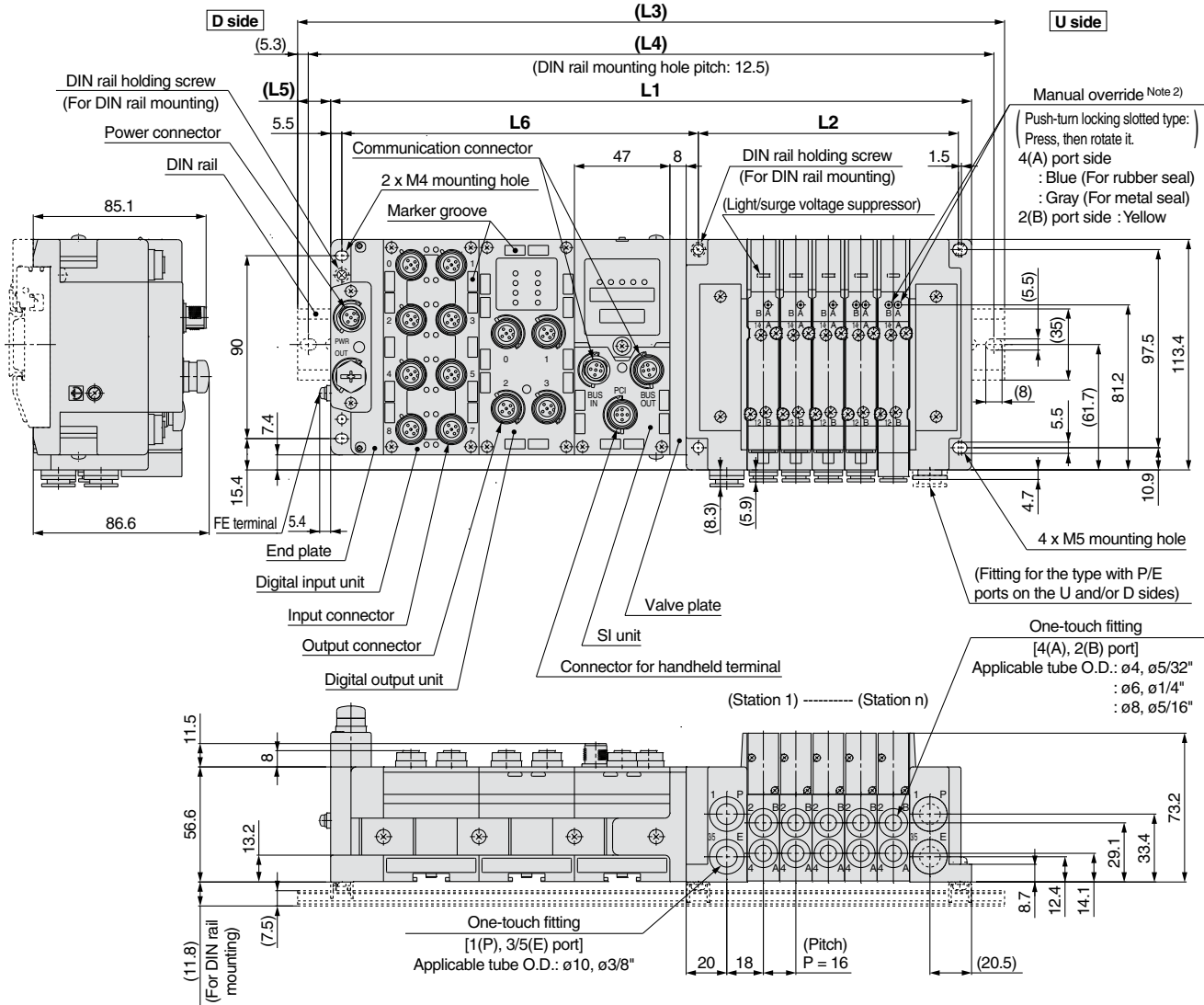
Note 3) Refer to page 186 for dimensions of A or B port top-ported type.

Dimensions: Series **SY5000**

Plug-in Connector Connecting Base

Type 10/Side Ported  
EX600 (M12 Connector)

SS5Y5-10S6□□□ - Stations  $\frac{U}{D}$  C4, N3  
C6, N7 (D)  
C8, N9



L1 = 16 x n1 + 141.5 + 47 x n2  
L2 = 16 x n1 + 48  
L4 = L3 - 10.5  
L5 = (L3 - L1)/2  
L6 = 47 x n2 + 81.5

Note 1) These figures show the "SS5Y5-10S6Q22-05D-C8".  
Note 2) Refer to page 182 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
Note 3) Refer to page 187 for dimensions of A or B port top-ported type.

n1: Valve stations  
n2: I/O unit stations

**L3: DIN Rail Overall Length**

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	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

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

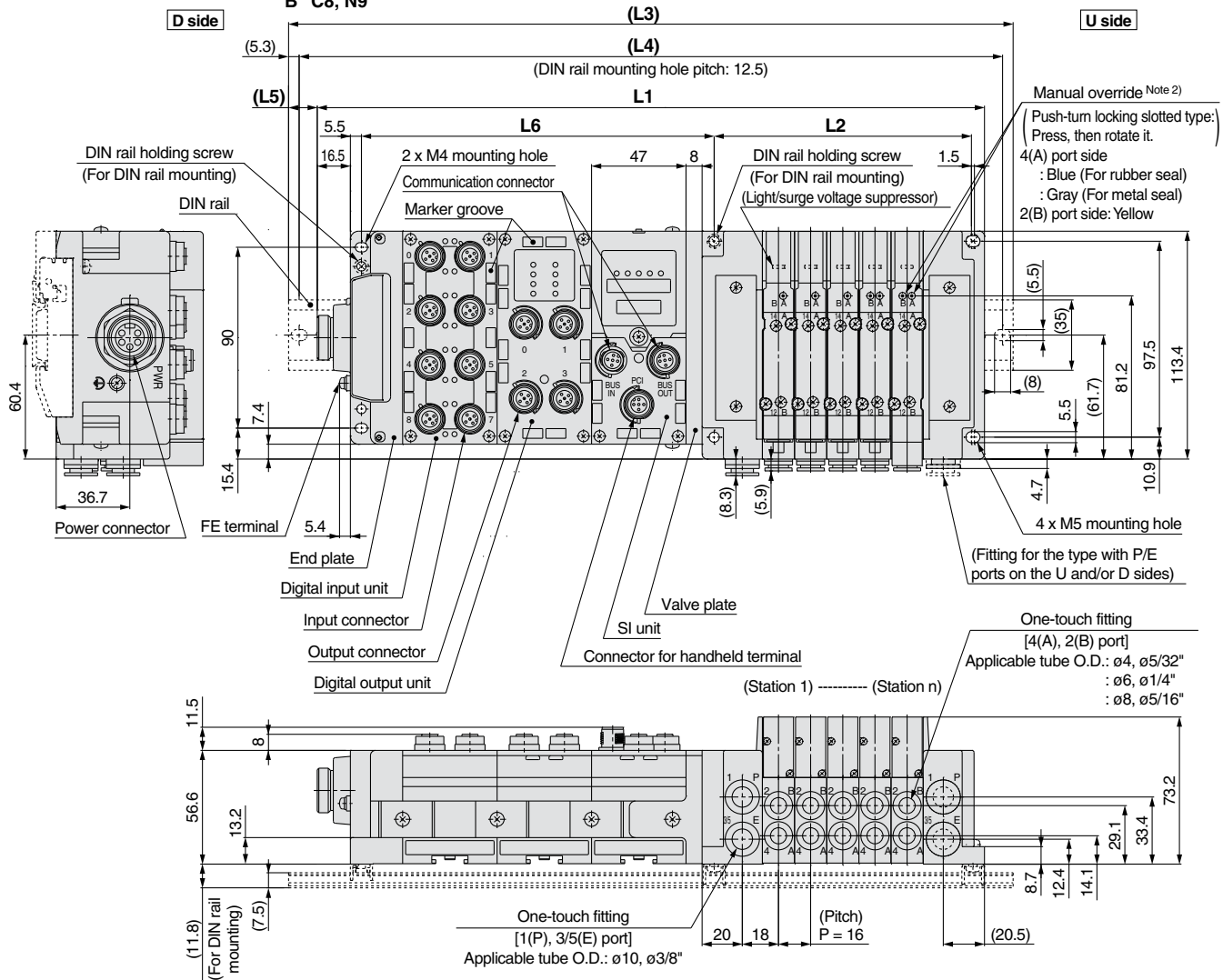
## Plug-in Connector Connecting Base

Type 10/Side Ported

EX600 (7/8 Inch Connector)

### Dimensions: Series SY5000

SS5Y5-10S6□□□ - Stations U C4, N3  
D C6, N7 (D)  
B C8, N9



$L1 = 16 \times n1 + 158 + 47 \times n2$   
 $L2 = 16 \times n1 + 48$   
 $L4 = L3 - 10.5$   
 $L5 = (L3 - L1)/2$   
 $L6 = 47 \times n2 + 81.5$

n1: Valve stations  
n2: I/O unit stations

Note 1) These figures show the "SS5Y5-10S6Q32-05D-C8".

Note 2) Refer to page 182 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 187 for dimensions of A or B port top-ported type.

### L3: DIN Rail Overall Length

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	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	548	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	735.5	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	—	

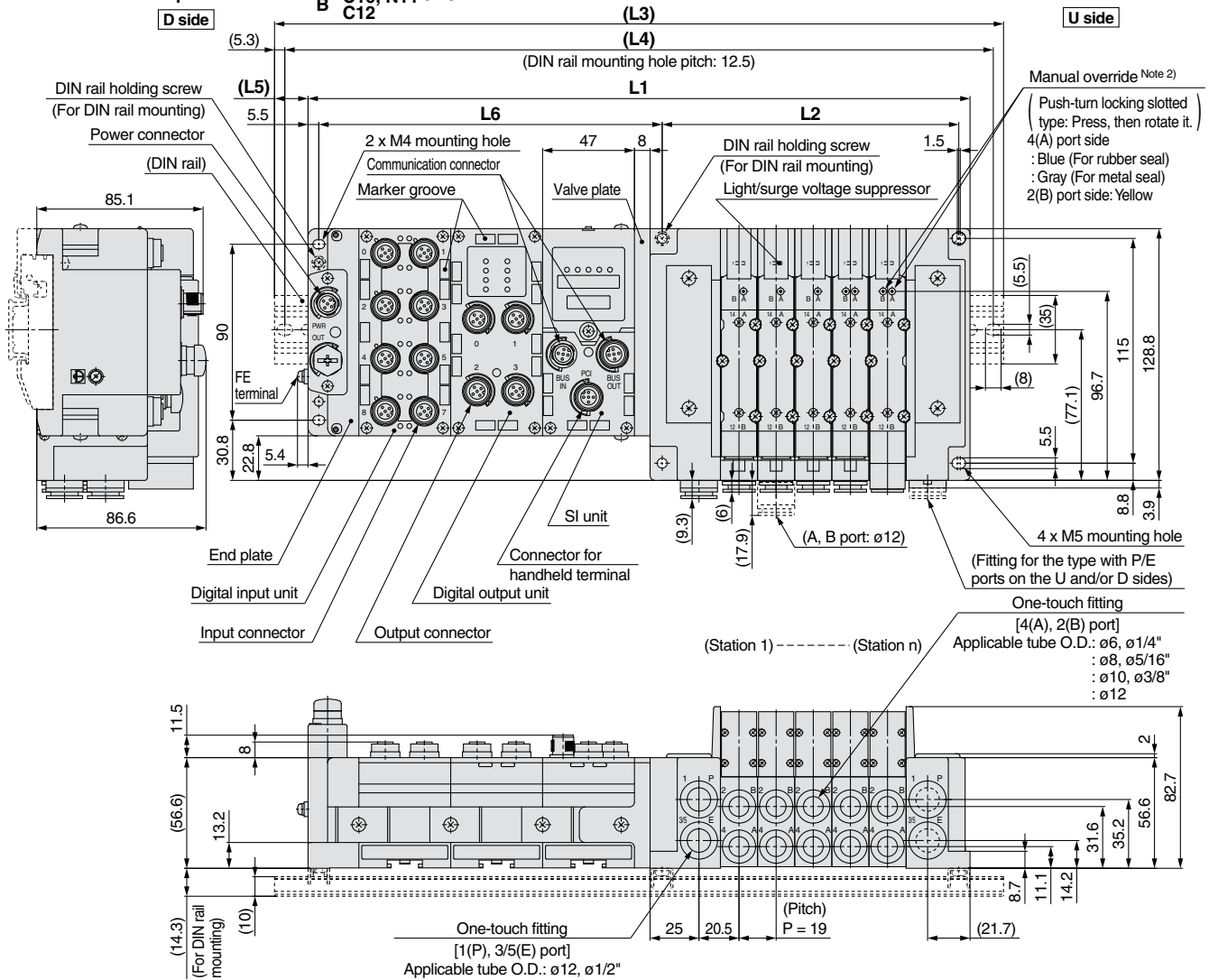
Dimensions: Series **SY7000**

Plug-in  
Connector Connecting Base

Type 10/Side Ported

EX600 (M12 Connector)

SS5Y7-10S6 □ 4 □ - Stations  $\frac{U}{D}$  C6, N7  
C8, N9  
C10, N11 (D)  
B C12



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

Note 1) These figures show the "SS5Y7-10S6Q22-05D-C10".

Note 2) Refer to page 183 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 188 for dimensions of A or B port top-ported type.

**L3: DIN Rail Overall Length**

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	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	-	-	-	-

Valve  
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

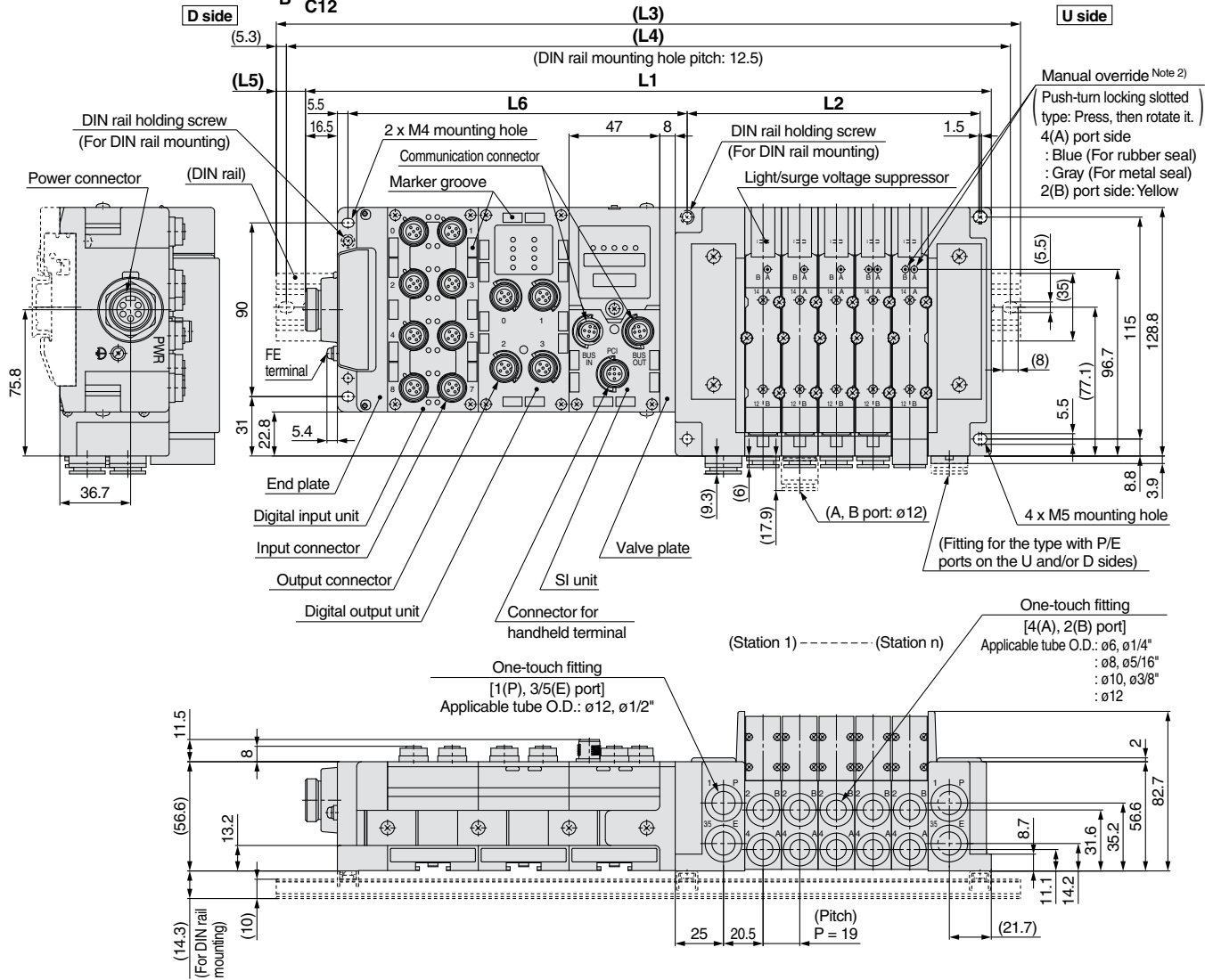
## Plug-in Connector Connecting Base

Type 10/Side Ported

EX600 (7/8 Inch Connector)

### Dimensions: Series SY7000

SS5Y7-10S6□<sub>5</sub>□<sub>3</sub>□ - Stations U C6, N7  
D C8, N9  
B C10, N11 (D)  
C12



$$L1 = 19 \times n1 + 166.2 + 47 \times n2$$

$$L2 = 19 \times n1 + 56$$

$$L4 = L3 - 10.5$$

$$L5 = (L3 - L1)/2$$

$$L6 = 47 \times n2 + 81.7$$

n1: Valve stations  
n2: I/O unit stations

Note 1) These figures show the "SS5Y7-10S6Q32-05D-C10".  
Note 2) Refer to page 183 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
Note 3) Refer to page 188 for dimensions of A or B port top-ported type.

### L3: DIN Rail Overall Length

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	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

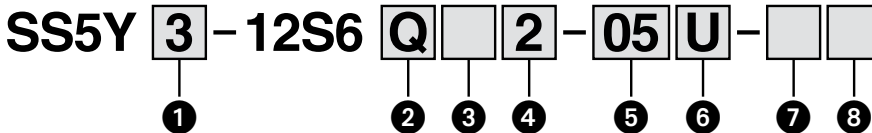


EX600

# Series SY3000/5000/7000

Type 12  
Top Ported

## How to Order Manifold



Refer to pages 186 to 188 for dimensions of Type 12/Top ported type.

### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 SI unit

0	Without SI unit
Q	DeviceNet™
N	PROFIBUS DP
V	CC-Link
ZE	EtherNet/IP™
D	EtherCAT
F	PROFINET

Note 1) I/O unit cannot be mounted without SI unit.

Note 2) Valve plate which connects manifold and SI unit is not mounted to a valve without SI unit. Refer to the EX600 catalog (CAT.E02-24) for mounting.

### 3 SI unit output polarity, end plate type

SI unit output polarity	Power supply with M12 connector	Power supply with 7/8 inch connector
Without SI unit	Nil	
SI unit positive common	2	3
SI unit negative common	4	5

Note 1) Without SI unit, the symbol is nil.

Note 2) Ensure a match with the common specification of the valve to be used.

### 4 I/O unit stations

Nil	None
1	1 stations
⋮	⋮
9	9 stations

Note 1) Without SI unit, the symbol is nil.

Note 2) SI unit is not included in I/O unit stations.

Note 3) When I/O unit is selected, it is shipped separately, and assembled by users. Refer to the attached operation manual for mounting.

### 5 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring <sup>Note 1)</sup>
⋮	⋮	
16	16 stations	Specified layout <sup>Note 2)</sup> (Available up to 32 solenoids)
02	2 stations	
⋮	⋮	
24	24 stations	

Note 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.

Note 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.)

Note 3) This also includes the number of blanking plate assembly.

### 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 <sup>Note)</sup>	G
D side (2 to 10 stations)	D	E <sup>Note)</sup>	H
Both sides (2 to 24 stations)	B	—	J

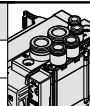
\* For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)

\* When the built-in silencer type is used, keep the exhaust port coming in direct contact with water or other liquids.

Note) For SUP/EXH block assembly specifications, built-in silencer types will have P port entry stipulated.

### 7 P, E port size (One-touch fittings)

Symbol	SY3000	SY5000	SY7000
Nil	ø8	ø10	ø12
N	ø5/16"	ø3/8"	ø1/2"



\* For N, sizes are in inches.

### 8 Mounting

Nil	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.
⋮	⋮	
D24	For 24 stations	

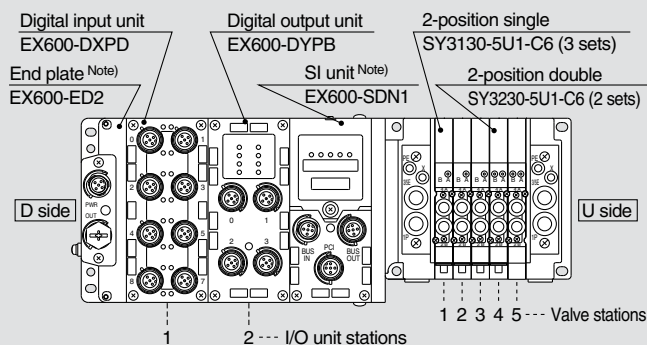
Note 1) When it is necessary to mount a DIN rail without an SI unit, select D0 and order DIN rail length separately, referring to L3 in the dimensions. (Refer to page 225 for part numbers of DIN rail.)

Note 2) Refer to page 247 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 catalog** or the Best Pneumatics No. 1 and the Operation Manual. For details about part numbers of SI units to be mounted, refer to pages 213 and 214 in this catalog. (IP40 specifications may be required according to the I/O unit to be selected.) Please download the Operation Manual via SMC website, <http://www.smcworld.com>

## How to Order Manifold Assembly

### Example (SS5Y3-12S6□-□)



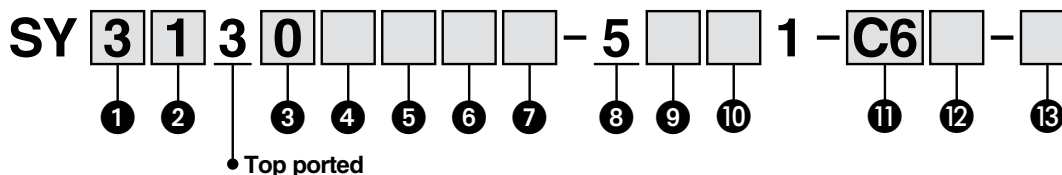
SS5Y3-12S6Q42-05B .....1 set (Type 12 5-station manifold base part no.)  
\*SY3130-5U1-C6 .....3 sets (2-position single part no.)  
\*SY3230-5U1-C6 .....2 sets (2-position double part no.)  
\*EX600-DXPD .....1 set I/O unit part number (Station 1)  
\*EX600-DYPB .....1 set I/O unit part number (Station 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.

Note) 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 3 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 center
4		Exhaust center
5		Pressure center
A*	4-position dual 3-port	N.C./N.C.
B*		N.O./N.O.
C*		N.C./N.O.

\* 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**

Nil	Internal pilot
R	External pilot

**5 Back pressure check valve**

Nil	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 232 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**

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

**7 Coil type**

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

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

\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

**8 Rated voltage**

5	24 VDC
---	--------

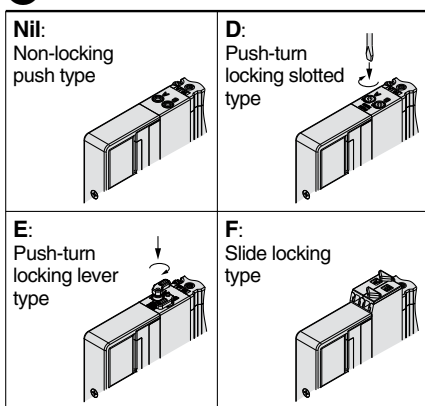
**9 Light/surge voltage suppressor and common specification**

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 14 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	ø2	●	—	—
C3	ø3.2	●	—	—
C4	ø4	●	●	—
C6	ø6	●	●	●
C8	ø8	—	●	●
C10	ø10	—	—	●
C12	ø12	—	—	●

**One-touch fitting (Inch)**

Symbol	A, B port	SY3000	SY5000	SY7000
N1	ø1/8"	●	—	—
N3	ø5/32"	●	●	—
N7	ø1/4"	●	●	●
N9	ø5/16"	—	●	●
N11	ø3/8"	—	—	●

**12 Thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

**13 Type of mounting screw**

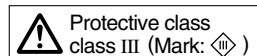
Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* 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 220 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

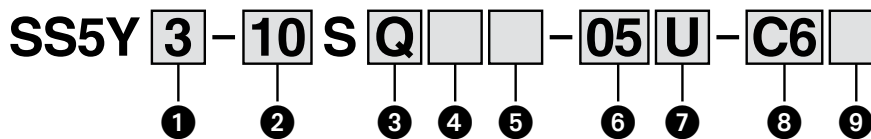


EX250

# Series SY3000/5000/7000

## How to Order Manifold

Refer to pages 184 (SY5000) and 185 (SY7000) for dimensions of Type 11/Bottom ported type.



### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type

10	Side ported
11	Bottom ported*

\* 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 189).

### 4 Input block stations

Nil	None
1	1 station
⋮	⋮
8	8 stations

Note) Without SI unit, the symbol is nil. 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 (Negative common)	2 power supply systems	8 in/8 out, 31 slave modes
TB		4 in/4 out, 31 slave modes	
TC		1 power supply 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)		

Note 1) Ensure a match with the common specification of the valve to be used.  
 Note 2) Input block cannot be mounted without SI unit.  
 Note 3) 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 input (Positive common)	NPN input (Negative common)
Without input block	Nil	
M12, 2 inputs	A	D
M12, 4 inputs	B	E
M8, 4 inputs	C	F

Note) Without SI unit, the symbol is nil.

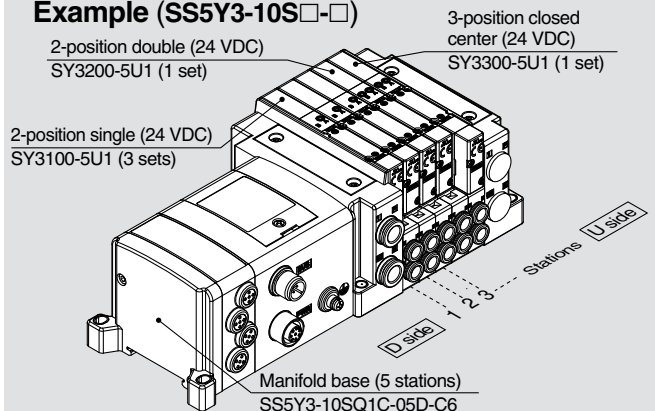
### 6 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
16	16 stations	Specified layout Note 2) (Available up to 32 solenoids)
02	2 stations	
⋮	⋮	
24	24 stations	

Note 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.  
 Note 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  
 Note 3) This also includes the number of blanking plate assembly.  
 Note 4) 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 center 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.

Note) When mixing top ported configurations, select from page 156. 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.

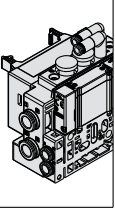
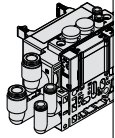
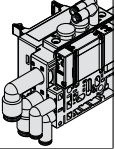
### 7 P, E port entry, SUP/EXH block assembly

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

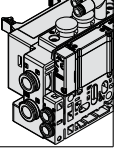
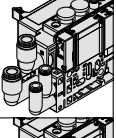
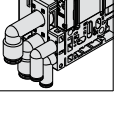
\* 3/5(E) port is plugged for the built-in silencer type.  
 \* When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

For details about the EX250 Integrated-type (For Input/Output) Serial Transmission System, refer to the WEB catalog or the Best Pneumatics No. 1 and the Operation Manual. For details about part numbers of SI units to be mounted, refer to page 215 in this catalog. Please download the Operation Manual via SMC website, <http://www.smcworld.com>

## 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>	ø2	●	—	—	—	—		
<b>C3</b>	ø3.2	●	—	—	—	—		
<b>C4</b>	ø4	●	●	—	●	—		
<b>C6</b>	ø6	●	●	●	●	●		
<b>C8</b>	ø8	—	●	●	●	●		
<b>C10</b>	ø10	—	—	●	—	●		
<b>C12</b>	ø12	—	—	●	—	●		
<b>CM*</b>	Straight port, mixed sizes	●	●	●	●	●		
<b>L4</b>	Upward	ø4	●	●	—	—		
<b>L6</b>		ø6	●	●	—	—		
<b>L8</b>		ø8	—	●	●	—		—
<b>L10</b>		ø10	—	—	●	—		—
<b>L12</b>	ø12	—	—	●	—	—		
<b>B4</b>	Downward	ø4	●	●	—	—		
<b>B6</b>		ø6	●	●	●	—		—
<b>B8</b>		ø8	—	●	●	—		—
<b>B10</b>		ø10	—	—	●	—		—
<b>B12</b>		ø12	—	—	●	—		—
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	●	●	●	—	—		
P, E port size (One-touch fittings)		ø8	ø10	ø12	ø10	ø12		

## 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>	ø1/8"	●	—	—	—	—		
<b>N3</b>	ø5/32"	●	●	—	●	—		
<b>N7</b>	ø1/4"	●	●	●	●	●		
<b>N9</b>	ø5/16"	—	●	●	●	●		
<b>N11</b>	ø3/8"	—	—	●	—	●		
<b>CM*</b>	Straight port, mixed sizes	●	●	●	●	●		
<b>LN3</b>	Upward	ø5/32"	●	—	—	—		
<b>LN7</b>		ø1/4"	●	●	—	—		—
<b>LN9</b>		ø5/16"	—	●	—	—		—
<b>LN11</b>	ø3/8"	—	—	●	—	—		
<b>BN3</b>	Downward	ø5/32"	●	—	—	—		
<b>BN7</b>		ø1/4"	●	●	—	—		—
<b>BN9</b>		ø5/16"	—	●	—	—		—
<b>BN11</b>		ø3/8"	—	—	●	—		—
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	●	●	●	—	—		
P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø1/2"	ø3/8"	ø1/2"		

Note) To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 226 to 228).

\* 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.

## 9 Mounting and Option

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

### DIN Rail Option

Nil	Direct mounting
<b>0</b>	Without DIN rail (with bracket)
<b>3</b>	For 3 stations
<b>:</b>	<b>:</b>
<b>24</b>	For 24 stations

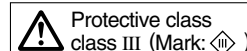
Specify a longer rail than the total length of specified stations.

Note 1) Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" above.)

Note 2) Only direct mounting is available for Type 11 (Bottom ported).

Note 3) Refer to page 247 for the fixation of DIN rail mounting type manifold.

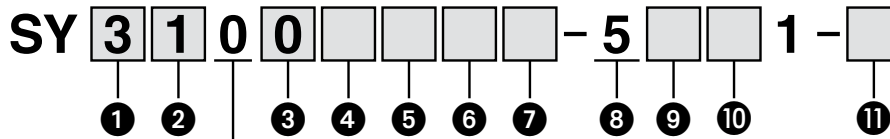
\* When it is necessary to mount a DIN rail without an SI unit, select D0 and order DIN rail length separately, referring to L3 in the dimensions. (Refer to page 225 for part numbers of DIN rail.)





## How to Order Valves (With mounting screw)

Refer to page 3 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 center
4		Exhaust center
5		Pressure center
A*	4-position dual 3-port	N.C./N.C.
B*		N.O./N.O.
C*		N.C./N.O.

\* 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

Nil	Internal pilot
R	External pilot

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

Nil	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 232 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

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

### 7 Coil type

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

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

\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

### 8 Rated voltage

5	24 VDC
---	--------

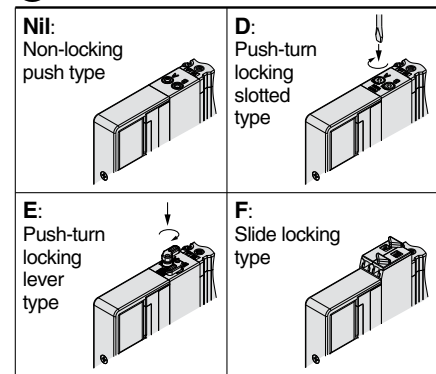
### 9 Light/surge voltage suppressor and common specification

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

\* "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 14 for with the safety slide locking manual override.

### 11 Type of mounting screw

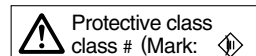
Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* 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 220 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.



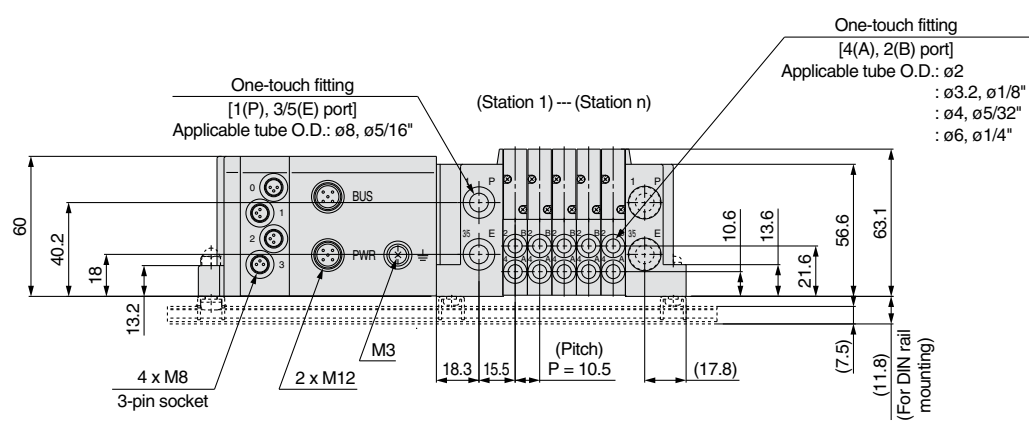
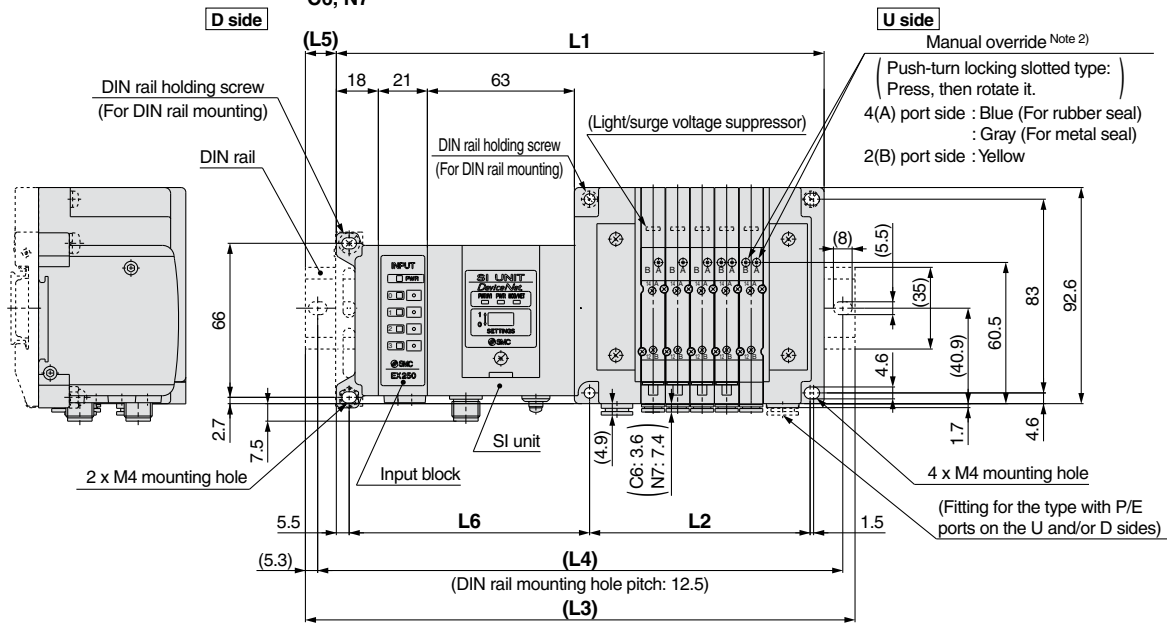


**Plug-in Connector Connecting Base**

Type 10/Side Ported  
EX250

**Dimensions: Series SY3000**

SS5Y3-10S□□□-Stations  $\begin{matrix} U \\ D \\ B \end{matrix}$   $\begin{matrix} C2 \\ C3, N1 \\ C4, N3 \\ C6, N7 \end{matrix}$  (D)



$L1 = 10.5 \times n1 + 135.5 + 21 \times n2$   
 $L2 = 10.5 \times n1 + 42$   
 $L4 = L3 - 10.5$   
 $L5 = (L3 - L1)/2$   
 $L6 = 21 \times n2 + 82$

n1: Valve stations  
n2: Input block stations

Note 1) These figures show the "SS5Y3-10SQ1A-05D-C6".  
 Note 2) Refer to page 181 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
 Note 3) Refer to page 186 for dimensions of A or B port top-ported type.

**L3: DIN Rail Overall Length**

Input block stations (n2) \ Valve stations (n1)	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	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	

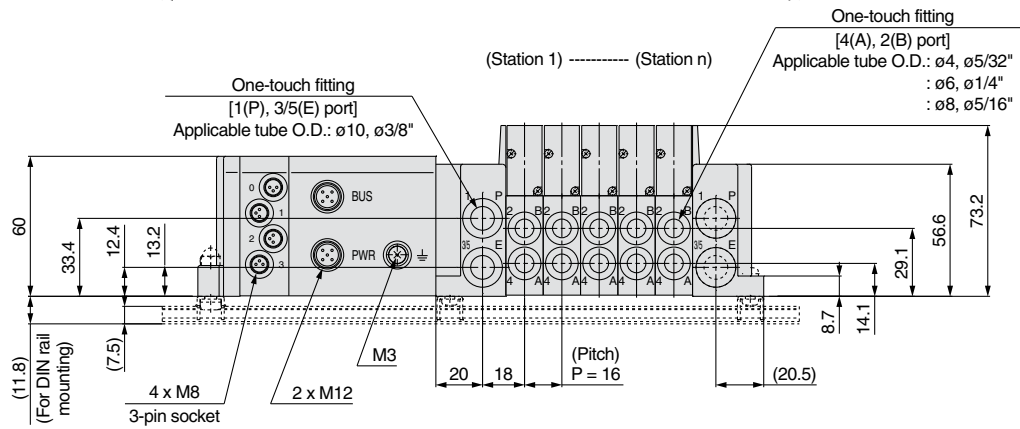
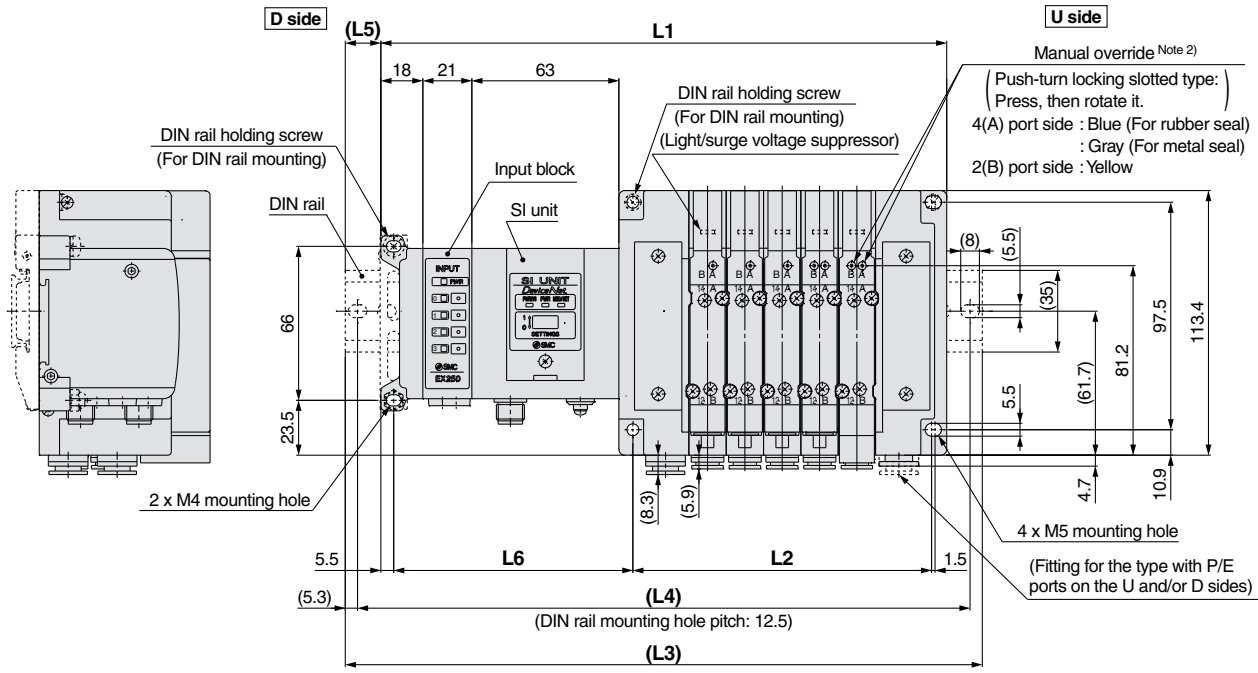
Valve  
Sub-plate  
Metal Base  
Type 50, 51, 52  
Manifold Exploded View  
Type 10, 11, 12  
Manifold Exploded View  
One-touch Fittings/  
Plug Assembly Part No.  
Manifold Options

# Series SY3000/5000/7000

<b>Plug-in Connector Connecting Base</b>	Type 10/Side Ported
	EX250

## Dimensions: Series SY5000

SS5Y5-10S□□□□-Stations  $\begin{matrix} \text{U} & \text{C4, N3} \\ \text{D} & \text{C6, N7} \\ \text{B} & \text{C8, N9} \end{matrix}$  (D)



L1 = 16 x n1 + 141.5 + 21 x n2  
 L2 = 16 x n1 + 48  
 L4 = L3 - 10.5  
 L5 = (L3 - L1)/2  
 L6 = 21 x n2 + 81.5

Note 1) These figures show the "SS5Y5-10SQ1A-05D-C8".  
 Note 2) Refer to page 182 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
 Note 3) Refer to page 187 for dimensions of A or B port top-ported type.

n1: Valve stations  
 n2: Input block stations

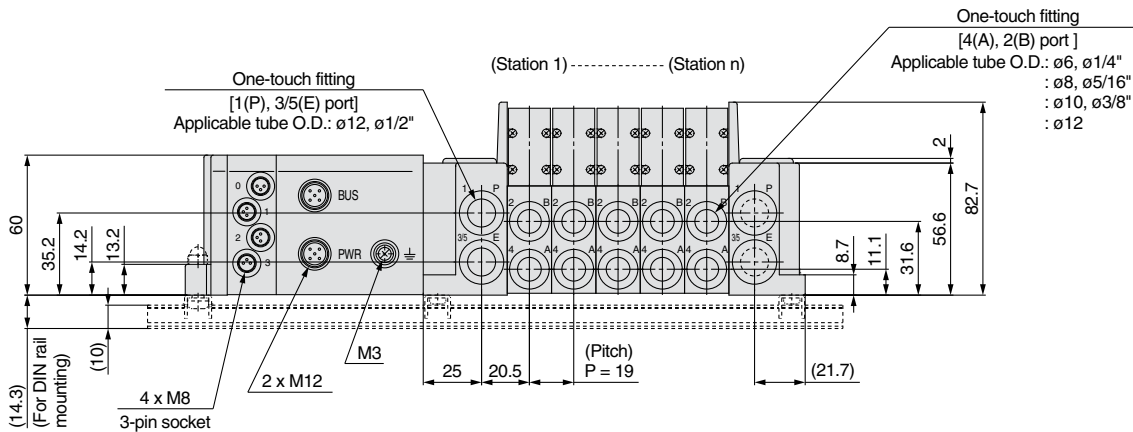
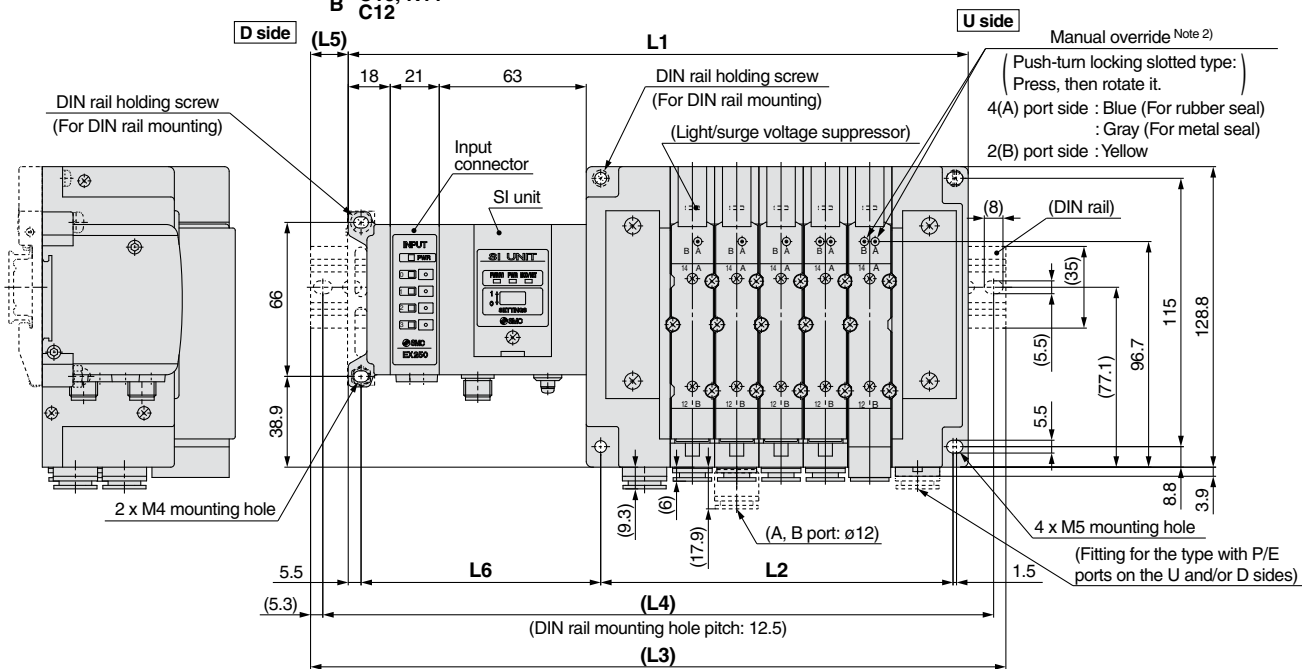
### L3: DIN Rail Overall Length

Input block 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	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	573	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	585.5	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

**Plug-in Connector Connecting Base** Type 10/Side Ported  
EX250

**Dimensions: Series SY7000**

SS5Y7-10S□□□□-Stations  $\begin{matrix} U \\ D \\ B \end{matrix}$  C6, N7  
C8, N9  
C10, N11 (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

Note 1) These figures show the "SS5Y7-10SQ1A-05D-C10".  
Note 2) Refer to page 183 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
Note 3) Refer to page 188 for dimensions of A or B port top-ported type.

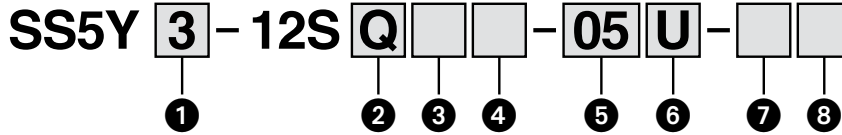
n1: Valve stations  
n2: Input block stations

**L3: DIN Rail Overall Length**

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	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

Valve  
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 Manifold



Refer to pages 186 to 188 for dimensions of Type 12/Top ported type.

### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 3 Input block stations

Nil	None
1	1 station
:	:
8	8 stations

Note) Without SI unit, the symbol is nil. The maximum number of stations is limited for the AS-Interface applicable SI unit.

### 4 Input block type

	PNP input (Positive common)	NPN input (Negative common)
Without input block	Nil	
M12, 2 inputs	A	D
M12, 4 inputs	B	E
M8, 4 inputs	C	F

Note) Without SI unit, the symbol is nil.

### 2 SI unit

0	Without SI unit		
Q	DeviceNet™ (Negative common)		
N	PROFIBUS DP (Negative common)		
V	CC-Link (Positive common)		
TA	AS-Interface (Negative common)	2 power supply systems	8 in/8 out, 31 slave modes
TB		1 power supply systems	4 in/4 out, 31 slave modes
TC			8 in/8 out, 31 slave modes
TD		4 in/4 out, 31 slave modes	
Y	CANopen (Negative common)		
ZE	EtherNet/IP™ (Negative common)		

Note 1) Ensure a match with the common specification of the valve to be used.

Note 2) Input block cannot be mounted without SI unit.

Note 3) 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 Note 1)
:	:	
16	16 stations	Specified layout Note 2) (Available up to 32 solenoids)
02	2 stations	
:	:	
24	24 stations	

Note 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.

Note 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.

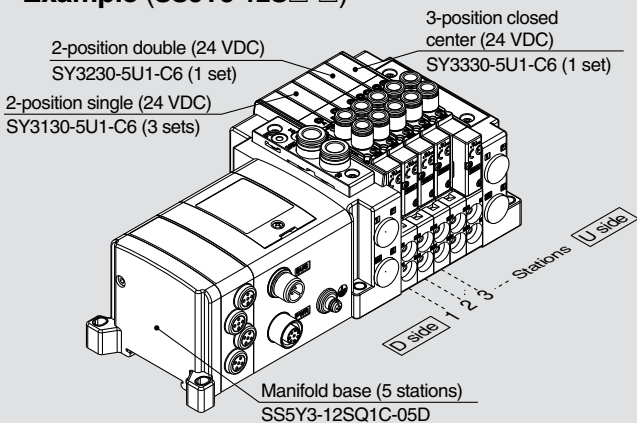
- 8 in/8 out specification: Max. 8 solenoids
- 4 in/4 out specification: Max. 4 solenoids

Note 3) This also includes the number of blanking plate assembly.

Note 4) 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 center 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, Built-in silencer	External pilot
U side (2 to 10 stations)	U	C Note)	G
D side (2 to 10 stations)	D	E Note)	H
Both sides (2 to 24 stations)	B	—	J

\* 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.

Note) For SUP/EXH block assembly specifications, built-in silencer types will have P port entry stipulated.

### 7 P, E port size (One-touch fittings)

Symbol	SY3000	SY5000	SY7000
Nil	ø8	ø10	ø12
N	ø5/16"	ø3/8"	ø1/2"

\* For N, sizes are in inches.

### 8 Mounting

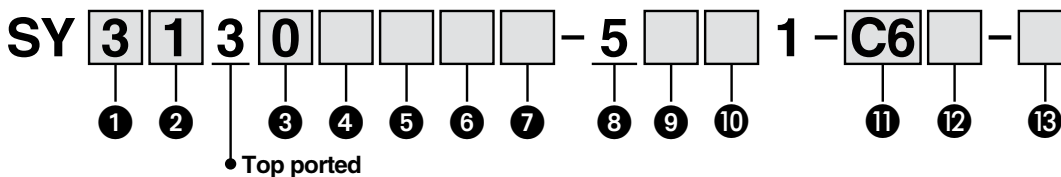
Symbol	Mounting
Nil	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	For 3 stations
:	:
D24	For 24 stations

Note 1) 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 225 for the DIN rail part number.)

Note 2) Refer to page 247 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 catalog or the Best Pneumatics No. 1 and the Operation Manual. For details about part numbers of SI units to be mounted, refer to page 215 in this catalog. Please download the Operation Manual via SMC website, <http://www.smcworld.com>

**How to Order Valves (With mounting screw)** Refer to page 3 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 center
4		Exhaust center
5		Pressure center
A*	4-position dual 3-port	N.C./N.C.
B*		N.O./N.O.
C*		N.C./N.O.

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

**3 Seal type**

0	Metal seal
1	Rubber seal

**4 Pilot type**

Nil	Rubber seal
R	Metal seal

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

Nil	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 232 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**

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

**7 Coil type**

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

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

\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

**8 Rated voltage**

5	24 VDC
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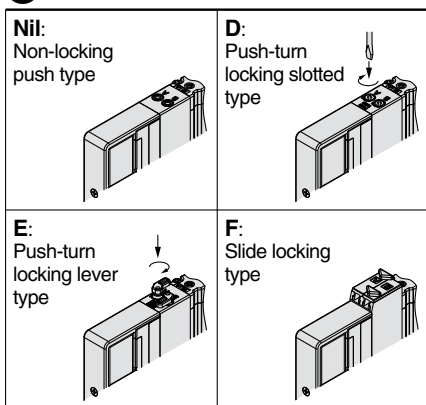
**9 Light/surge voltage suppressor and common specification**

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

\* "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 14 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	ø2	●	—	—
C3	ø3.2	●	—	—
C4	ø4	●	●	—
C6	ø6	●	●	●
C8	ø8	—	●	●
C10	ø10	—	—	●
C12	ø12	—	—	●

**One-touch fitting (Inch)**

Symbol	A, B port	SY3000	SY5000	SY7000
N1	ø1/8"	●	—	—
N3	ø5/32"	●	●	—
N7	ø1/4"	●	●	●
N9	ø5/16"	—	●	●
N11	ø3/8"	—	—	●

**12 Thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

**13 Type of mounting screw**

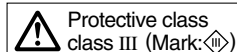
Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* 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 220 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

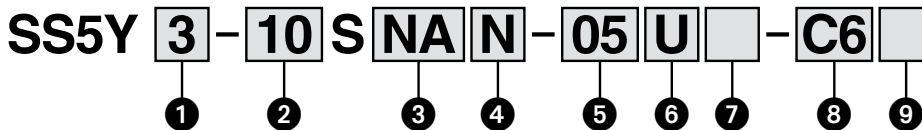
EX260

# Series SY3000/5000/7000



## How to Order Manifold

Refer to pages 184 (SY5000) and 185 (SY7000) for dimensions of Type 11/Bottom ported type.



### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type

10	Side ported
11	Bottom ported*

\* The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to "Plug-in Mixed Type Manifold" (from page 189).

### 3 SI unit specifications

Symbol	Protocol	Number of outputs	Communication connector
0	Without SI unit		
QA	DeviceNet™	32	M12
QB		16	
NA	PROFIBUS DP	32	M12
NB		16	
NC		32	
ND		16	
VA	CC-Link	32	M12
VB		16	
DA	EtherCAT	32	M12
DB		16	
FA	PROFINET	32	M12
FB		16	
EA	EtherNet/IP™	32	M12
EB		16	

Note) IP40 for the D-sub applicable communication connector specification. DIN rail cannot be mounted without SI unit.

### 4 SI unit output polarity

Nil	Positive common (NPN)
N	Negative common (PNP)

Note 1) Ensure a match with the common specification of the valve to be used.

Note 2) Without SI unit, the symbol is nil.

### 5 Valve stations

In the case of the 32-output SI unit

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
16	16 stations	Specified layout Note 2) (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 Note 1)
⋮	⋮	
08	8 stations	Specified layout Note 2) (Available up to 16 solenoids)
02	2 stations	
⋮	⋮	
16	16 stations	

Note 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

Note 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.)

Note 3) This also includes the number of blanking plate assembly.

Note 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.

### 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

Nil	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 8

### 9 Mounting and Option

Symbol	Mounting	Option	
		Name plate	Station number
Nil	Direct mounting	—	—
AA		●	●
BA		●	—
D□	DIN rail mounting	—	—
A□		●	●
B□		●	—

Note 1) Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" below.)

Note 2) Only direct mounting is available for Type 11 (Bottom ported).

Note 3) Refer to page 247 for the fixation of DIN rail mounting type manifold.

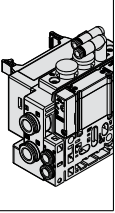
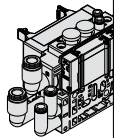
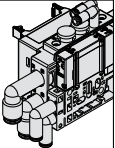
#### DIN Rail Option

Nil	Standard length	
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	

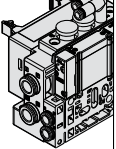
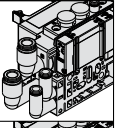
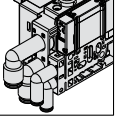
\* When it is necessary to mount a DIN rail without an SI unit, select D0 and order DIN rail length separately, referring to L3 in the dimensions. (Refer to page 225 for part numbers of DIN rail.)

For details about the EX260 Integrated-type (For Output) Serial Transmission System, refer to the **WEB catalog** or the Best Pneumatics No. 1 and the Operation Manual. For details about part numbers of SI units to be mounted, refer to page 216 in this catalog. Please download the Operation Manual via SMC website, <http://www.smcworld.com>

### 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	ø2	●	—	—	—	—	
C3	ø3.2	●	—	—	—	—	
C4	ø4	●	●	—	●	—	
C6	ø6	●	●	●	●	●	
C8	ø8	—	●	●	●	●	
C10	ø10	—	—	●	—	●	
C12	ø12	—	—	●	—	●	
CM*	Straight port, mixed sizes	●	●	●	●	●	
L4	ø4	●	●	—	—	—	
L6		●	●	●	—	—	
L8		—	●	●	—	—	
L10		—	—	●	—	—	
L12		—	—	●	—	—	
B4	ø4	●	●	—	—	—	
B6		●	●	—	—	—	
B8		—	●	●	—	—	
B10		—	—	●	—	—	
B12		—	—	●	—	—	
LM*	Elbow port, mixed sizes (including upward and downward piping)	●	●	●	—	—	
P, E port size (One-touch fittings)		ø8	ø10	ø12	ø10	ø12	

### 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	ø1/8"	●	—	—	—	—	
N3	ø5/32"	●	●	—	●	—	
N7	ø1/4"	●	●	●	●	●	
N9	ø5/16"	—	●	●	●	●	
N11	ø3/8"	—	—	●	—	●	
CM*	Straight port, mixed sizes	●	●	●	●	●	
LN3	ø5/32"	●	—	—	—	—	
LN7		ø1/4"	●	●	—	—	
LN9		ø5/16"	—	●	—	—	
LN11	ø3/8"	—	—	●	—	—	
BN3	ø5/32"	●	—	—	—	—	
BN7		ø1/4"	●	●	—	—	
BN9		ø5/16"	—	●	—	—	
BN11	ø3/8"	—	—	●	—	—	
LM*	Elbow port, mixed sizes (including upward and downward piping)	●	●	●	—	—	
P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø1/2"	ø3/8"	ø1/2"	

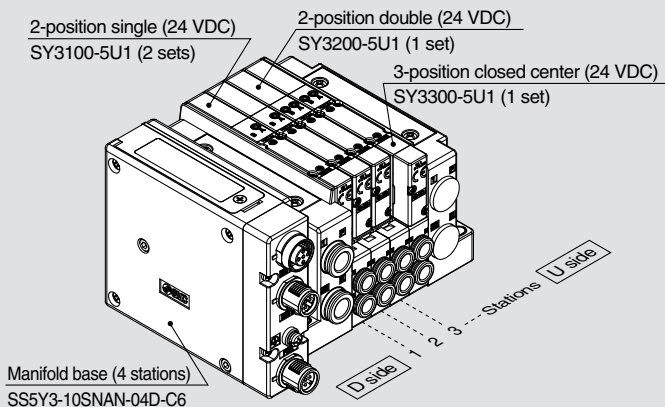
Note) To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 226 to 228).

\* 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.

## 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.)

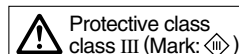
\*SY3200-5U1.....1 set (2-position double part no.)

\*SY3300-5U1.....1 set (3-position closed center 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.

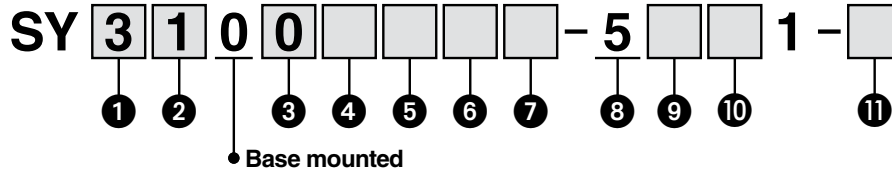
Note) When mixing top ported configurations, select from page 164.  
Specify on a manifold specification sheet if plugs are required on the A and B port on the manifold.





## How to Order Valves (With mounting screw)

Refer to page 3 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 center
4		Exhaust center
5		Pressure center
A*	4-position dual 3-port	N.C./N.C.
B*		N.O./N.O.
C*		N.C./N.O.

\* 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

Nil	Internal pilot
R	External pilot

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

Nil	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 232 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

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

### 7 Coil type

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

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

\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

### 8 Rated voltage

5	24 VDC
---	--------

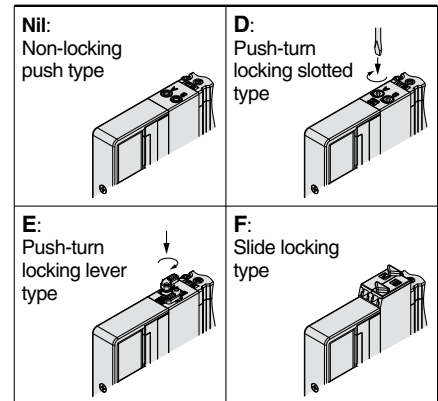
### 9 Light/surge voltage suppressor and common specification

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

\* Select a valve from R, U, S or Z when the SI unit output polarity is Nil (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 14 for with the safety slide locking manual override.

### 11 Type of mounting screw

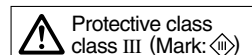
Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* 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 220 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.

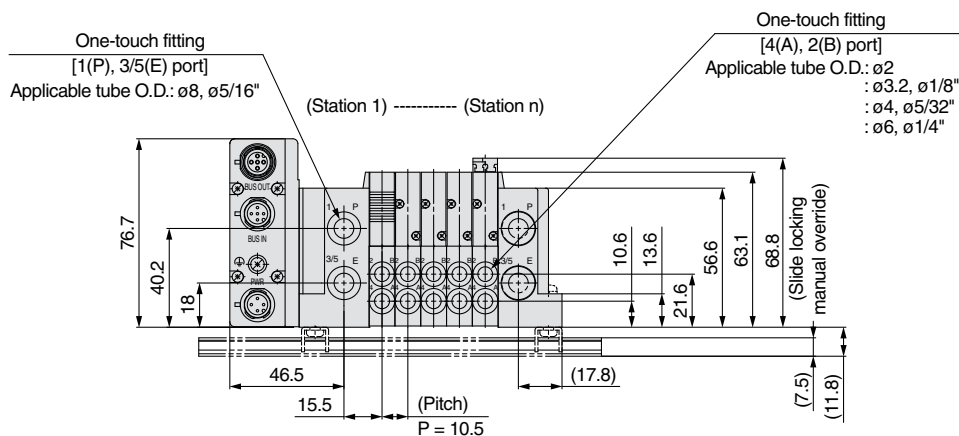
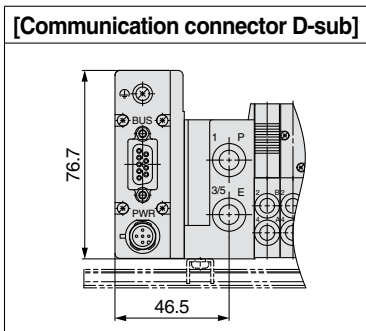
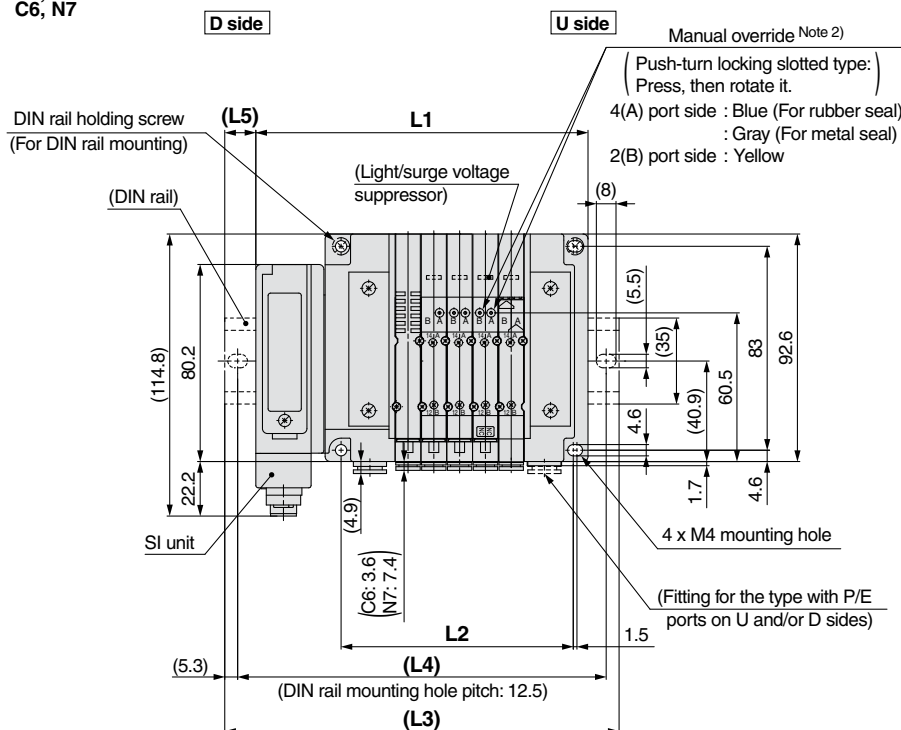
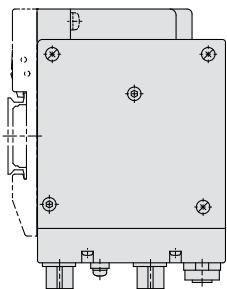


Dimensions: Series **SY3000**

Plug-in  
Connector Connecting Base

Type 10/Side Ported  
EX260

SS5Y3-10S□□ - Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix}$  -  $\begin{matrix} \text{C2} \\ \text{C3}, \text{N1} \\ \text{C4}, \text{N3} \\ \text{C6}, \text{N7} \end{matrix}$  (D)



Note 1) These figures show the "SS5Y3-10SQA-05D-C6".  
Note 2) Refer to page 181 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
Note 3) Refer to page 186 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

Valve  
Sub-plate  
Metal Base  
Type 50, 51, 52  
Manifold Exploded View  
Connector Connecting Base  
Type 10, 11, 12  
Manifold Exploded View  
One-touch Fittings/  
Plug Assembly Part No.  
Manifold Options

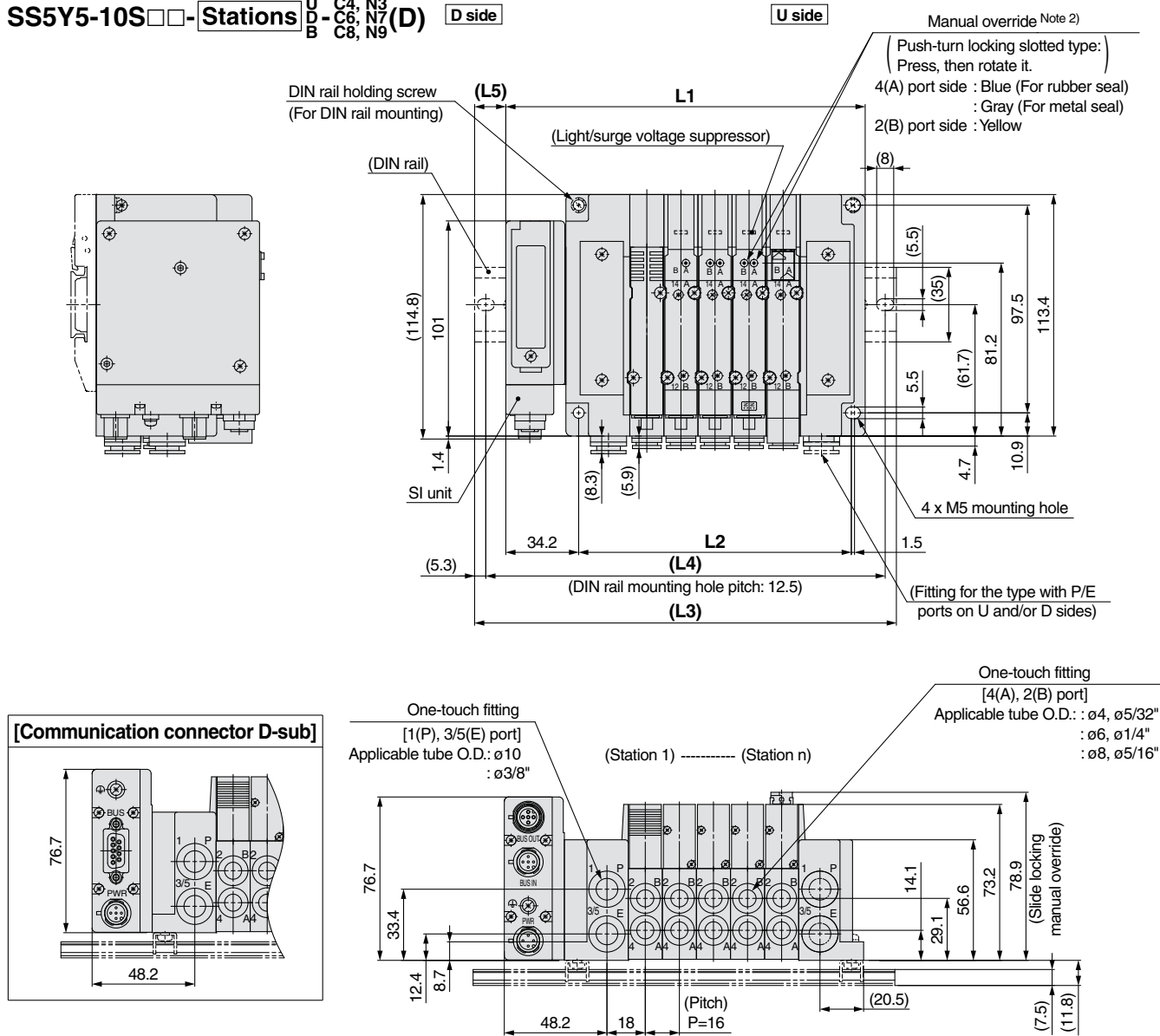
# Series SY3000/5000/7000

## Plug-in Connector Connecting Base

Type 10/Side Ported  
EX260

### Dimensions: Series SY5000

SS5Y5-10S□□-Stations  $\begin{matrix} \text{U} & \text{C4, N3} \\ \text{D} & \text{C6, N7(D)} \\ \text{B} & \text{C8, N9} \end{matrix}$  D side



Note 1) These figures show the "SS5Y5-10SQA-05D-C8".

Note 2) Refer to page 182 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 187 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

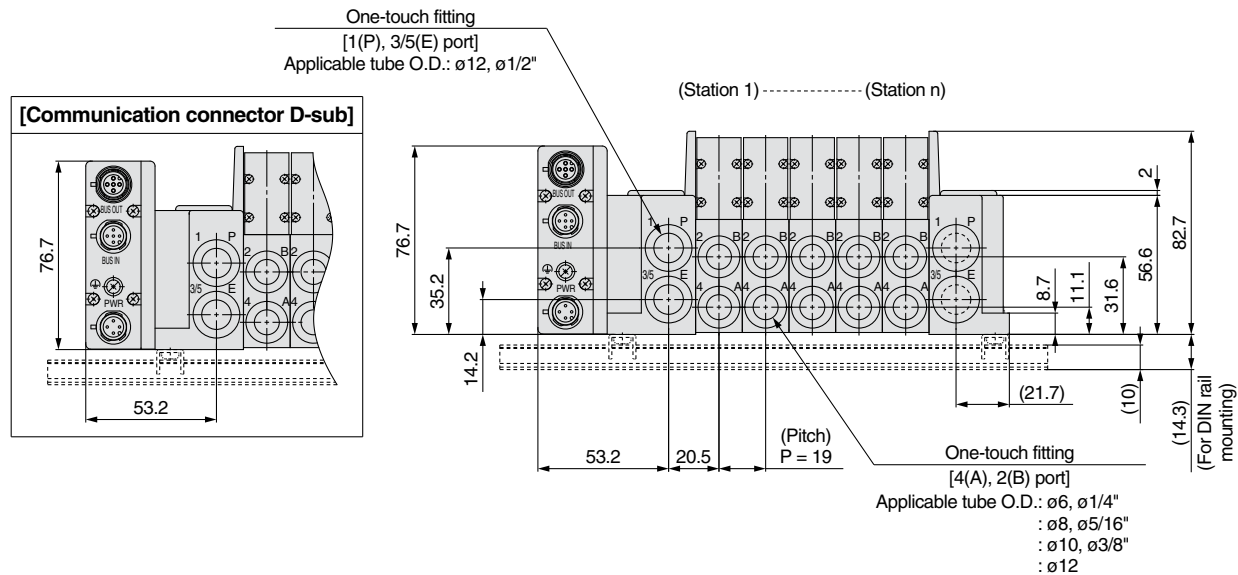
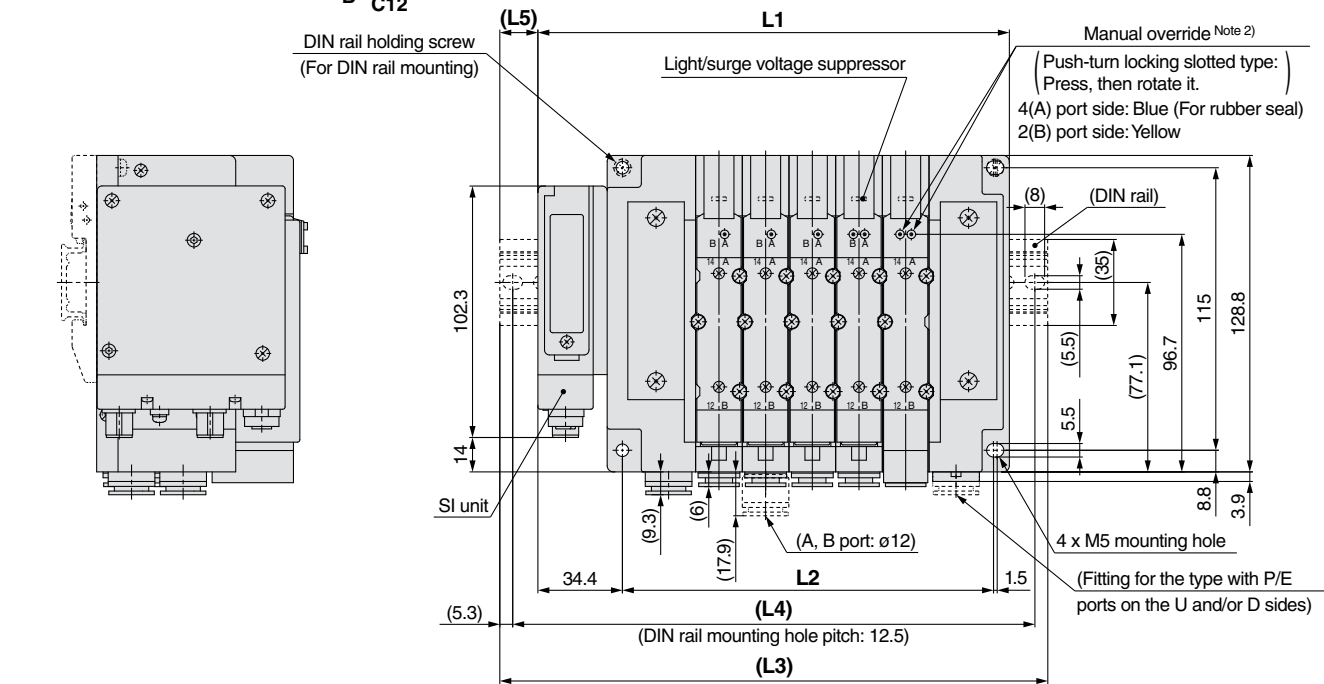
n: Stations	18	19	20	21	22	23	24
L1	376.7	392.7	408.7	424.7	440.7	456.7	472.7
L2	336	352	368	384	400	416	432
L3	410.5	423	435.5	448	473	485.5	498
L4	400	412.5	425	437.5	462.5	475	487.5
L5	17	15	13.5	11.5	16	14.5	12.5

Dimensions: Series **SY7000**

Plug-in  
Connector Connecting Base

Type 10/Side Ported  
EX260

SS5Y7-10S□□-Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix}$  C6, N7  
C8, N9  
C10, N11 (D) D side

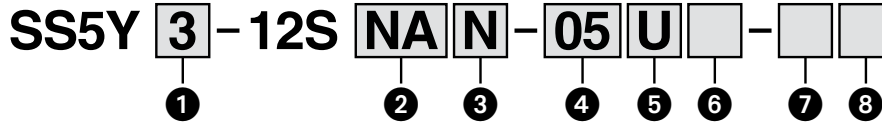


Note 1) These figures show the "SS5Y7-10SQA-05D-C10".  
 Note 2) Refer to page 183 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
 Note 3) Refer to page 188 for dimensions of A or B port top-ported type.

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

## How to Order Manifold

Refer to pages 186 to 188 for Type 12/Top ported dimensions.



### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 SI unit specifications

Symbol	Protocol	Number of outputs	Communication connector
0	Without SI unit		
QA	DeviceNet™	32	M12
QB		16	
NA	PROFIBUS DP	32	M12
NB		16	
NC		32	D-sub <sup>Note)</sup>
ND		16	
VA	CC-Link	32	M12
VB		16	
DA	EtherCAT	32	M12
DB		16	
FA	PROFINET	32	M12
FB		16	
EA	EtherNet/IP™	32	M12
EB		16	

Note) IP40 for the D-sub applicable communication connector specification.  
DIN rail cannot be mounted without SI unit.

### 3 SI unit output polarity

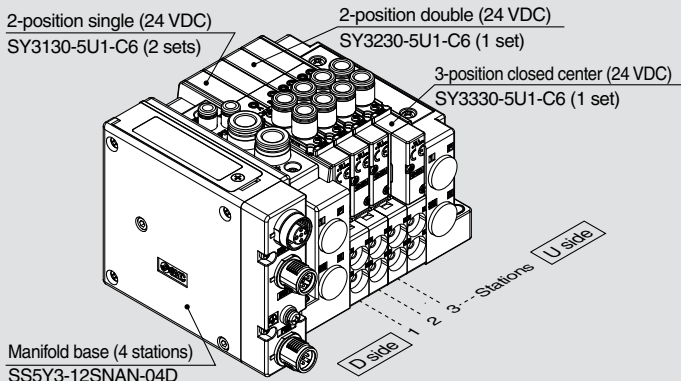
Nil	Positive common (NPN)
N	Negative common (PNP)

Note 1) Ensure a match with the common specification of the valve to be used.  
Note 2) Without SI unit, the symbol is nil.

For details about the EX260 Integrated-type (For Output) Serial Transmission System, refer to the **WEB catalog** or the Best Pneumatics No. 1 and the Operation Manual. For details about part numbers of SI units to be mounted, refer to page 216 in this catalog. Please download the Operation Manual via SMC website, <http://www.smcworld.com>

## 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 center 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.

### 4 Valve stations

In the case of the 32-output SI unit

Symbol	Stations	Note
02	2 stations	Double wiring <sup>Note 1)</sup>
⋮	⋮	
16	16 stations	Specified layout <sup>Note 2)</sup> (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 <sup>Note 1)</sup>
⋮	⋮	
08	8 stations	Specified layout <sup>Note 2)</sup> (Available up to 16 solenoids)
02	2 stations	
⋮	⋮	
16	16 stations	

Note 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.

Note 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.)

Note 3) This also includes the number of blanking plate assembly.

Note 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 <sup>Note)</sup>	U side (2 to 10 stations)
D <sup>Note)</sup>	D side (2 to 10 stations)
B	Both sides (2 to 24 stations)

Note) 6 For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

### 6 SUP/EXH block assembly

Nil	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
Nil	ø8	ø10	ø12
N	ø5/16"	ø3/8"	ø1/2"

\* For N, sizes are in inches.

### 8 Mounting

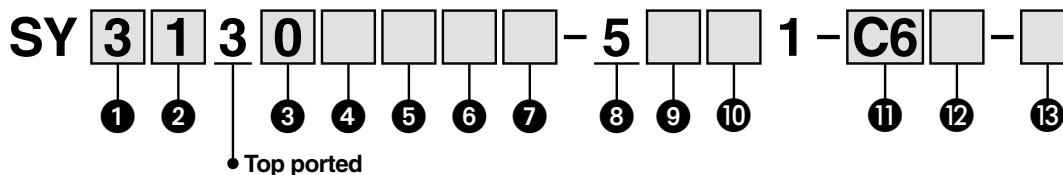
Nil	Direct mounting	
D	DIN rail mounting (With DIN rail)	
D0	DIN rail mounting (Without DIN rail)	
D3	For 3 stations	Specify a longer rail than the standard length.
⋮	⋮	
D24	For 24 stations	

Note 1) 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 225 for part numbers of DIN rail.

Note 2) Refer to page 247 for the fixation of DIN rail mounting type manifold.



**How to Order Valves (With mounting screw)** Refer to page 3 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 center
4		Exhaust center
5		Pressure center
A*	4-position dual 3-port	N.C./N.C.
B*		N.O./N.O.
C*		N.C./N.O.

\* 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**

Nil	Internal pilot
R	External pilot

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

Nil	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 232 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**

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

**7 Coil type**

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

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

\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

**8 Rated voltage**

5	24 VDC
---	--------

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

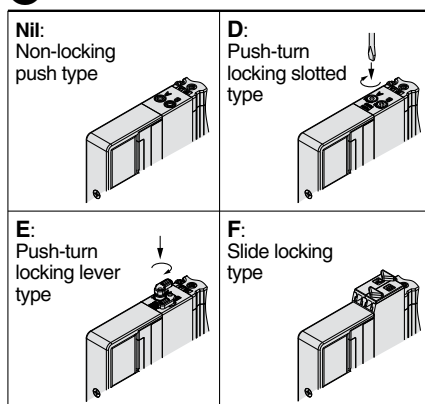
Symbol	With light	Surge voltage suppressor	Common specification	
R	—	●	Non-polar	
U	●		●	Positive common
S	—			
Z	●			
NS	—	Negative common		
NZ	●			

\* Select a valve from R, U, S or Z when the SI unit output polarity is Nil (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 14 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	ø2	●	—	—
C3	ø3.2	●	—	—
C4	ø4	●	●	—
C6	ø6	●	●	●
C8	ø8	—	●	●
C10	ø10	—	—	●
C12	ø12	—	—	●

**One-touch fitting (Inch)**

Symbol	A, B port	SY3000	SY5000	SY7000
N1	ø1/8"	●	—	—
N3	ø5/32"	●	●	—
N7	ø1/4"	●	●	●
N9	ø5/16"	—	●	●
N11	ø3/8"	—	—	●

**12 Thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

**13 Type of mounting screw**

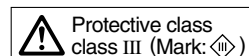
Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* 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 220 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

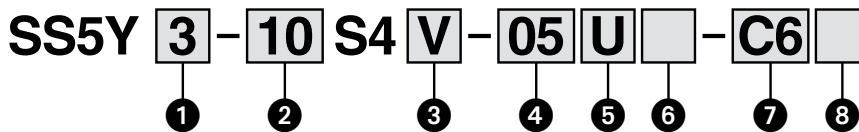


EX126

# Series SY3000/5000/7000

## How to Order Manifold

Refer to pages 184 (SY5000) and 185 (SY7000) for dimensions of Type 11/Bottom ported type.



### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type

10	Side ported
11	Bottom ported*

\* 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 189).

### 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 <i>Note 1)</i>
:	:	
08	8 stations	Specified layout <i>Note 2)</i> (Available up to 16 solenoids)
02	2 stations	
:	:	
16	16 stations	

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

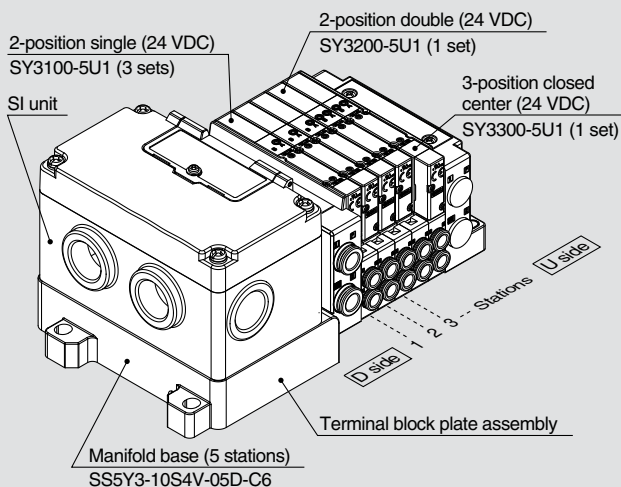
Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

*Note 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.)

*Note 3)* This also includes the number of blanking plate assembly.

## How to Order Manifold Assembly

### Example (SS5Y3-10S4V-□-□)



### 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

Nil	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.

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 center 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.

*Note)* 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.

For details about the EX126 Integrated-type (For Output) Serial Transmission System, refer to **the WEB catalog** or the Best Pneumatics No. 1 and the Operation Manual. For details about part numbers of SI units to be mounted, refer to page 217 in this catalog. Please download the Operation Manual via SMC website, <http://www.smcworld.com>

**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 C3 C4 C6 C8 C10 C12 CM*	Straight	ø2	●	—	—	—			
		ø3.2	●	—	—	—			
		ø4	●	●	—	●		—	
		ø6	●	●	●	●		●	
		ø8	—	●	●	●		●	
		ø10	—	—	●	—		●	
		ø12	—	—	●	—		●	
L4 L6 L8 L10 L12 B4 B6 B8 B10 B12 LM*	Upward	Elbow (Note)	ø4	●	●	—	—		
			ø6	●	●	●	—		—
			ø8	—	●	●	—		—
			ø10	—	—	●	—		—
			ø12	—	—	●	—		—
			ø12	—	—	●	—		—
	Downward	Elbow (Note)	ø4	●	●	—	—		
			ø6	●	●	●	—		—
			ø8	—	●	●	—		—
			ø10	—	—	●	—		—
			ø12	—	—	●	—		—
			ø12	—	—	●	—		—
LM*	Elbow port, mixed sizes (Including upward and downward piping)	●	●	●	—	—			
P, E port size (One-touch fittings)		ø8	ø10	ø12	ø10	ø12			

**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 N3 N7 N9 N11 CM*	Straight	ø1/8"	●	—	—	—					
		ø5/32"	●	●	—	●		—			
		ø1/4"	●	●	●	●		●			
		ø5/16"	—	●	●	●		●			
		ø3/8"	—	—	●	—		●			
		Straight port, mixed sizes		●	●	●		●	●		
		LN3 LN7 LN9 LN11 BN3 BN7 BN9 BN11 LM*	Upward	Elbow (Note)	ø5/32"	●		—	—	—	
ø1/4"	●				●	—	—	—			
ø5/16"	—				●	—	—	—			
ø3/8"	—				—	●	—	—			
Downward	Elbow (Note)				ø5/32"	●	—	—	—		
					ø1/4"	●	●	—	—		
			ø5/16"	—	●	—	—	—			
Elbow port, mixed sizes (Including upward and downward piping)	LM*		●	●	●	—	—				
			P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø1/2"	ø3/8"	ø1/2"		

Note) To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 226 to 228).

\* 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.

**8 Mounting and Option**

Symbol	Mounting	Option	
		Name plate	Station number
Nil	Direct mounting	—	—
AA		●	●
BA		●	—
D□	DIN rail mounting	—	—
A□		●	●
B□		●	—

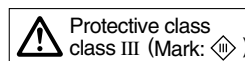
Note 1) Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" below.)

Note 2) Only direct mounting is available for Type 11 (Bottom ported).

Note 3) Refer to page 247 for the fixation of DIN rail mounting type manifold.

**DIN Rail Option**

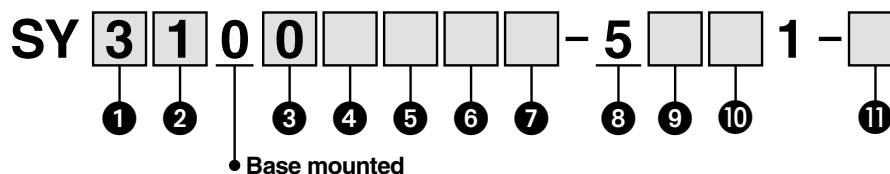
Nil	Direct mounting	
0	Without DIN rail (with bracket)	
3	For 3 stations	Specify a longer rail than the total length of specified stations.
⋮	⋮	
16	For 16 stations	



Valve  
Sub-plate  
Metal Base  
Type 50, 51, 52 Manifold Exploded View  
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 3 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 center
4		Exhaust center
5		Pressure center
A*	4-position dual 3-port	N.C./N.C.
B*		N.O./N.O.
C*		N.C./N.O.

\* 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

Nil	Internal pilot
R	External pilot

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

Nil	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 232 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

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

### 7 Coil type

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

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

\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

### 8 Rated voltage

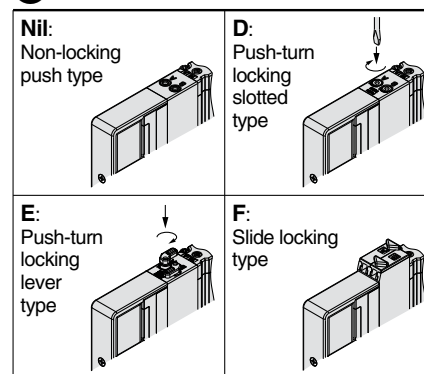
5	24 VDC
---	--------

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

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

\* Only "Z" type is available for with the power saving circuit.

### 10 Manual override



\* Refer to page 14 for with the safety slide locking manual override.

### 11 Type of mounting screw

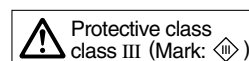
Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* 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 220 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.

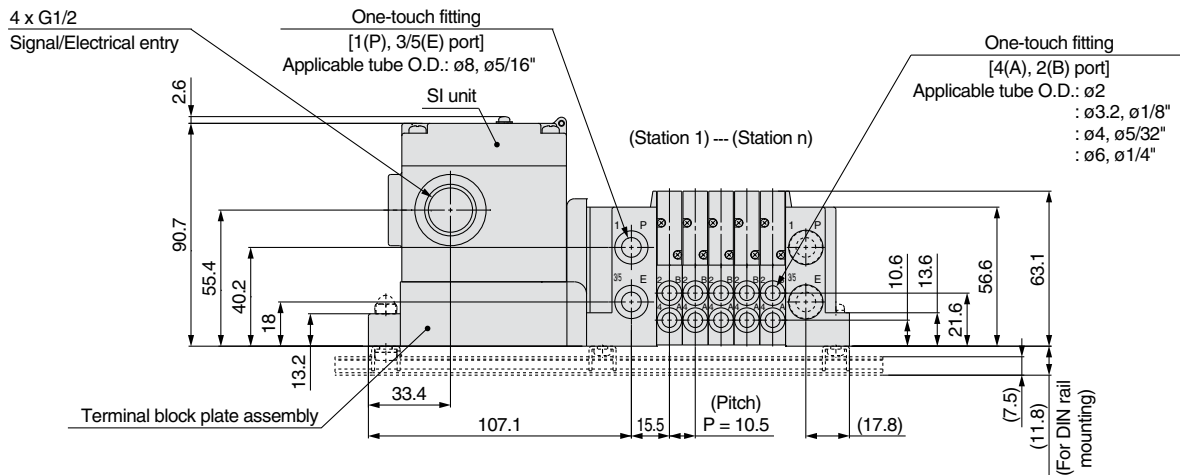
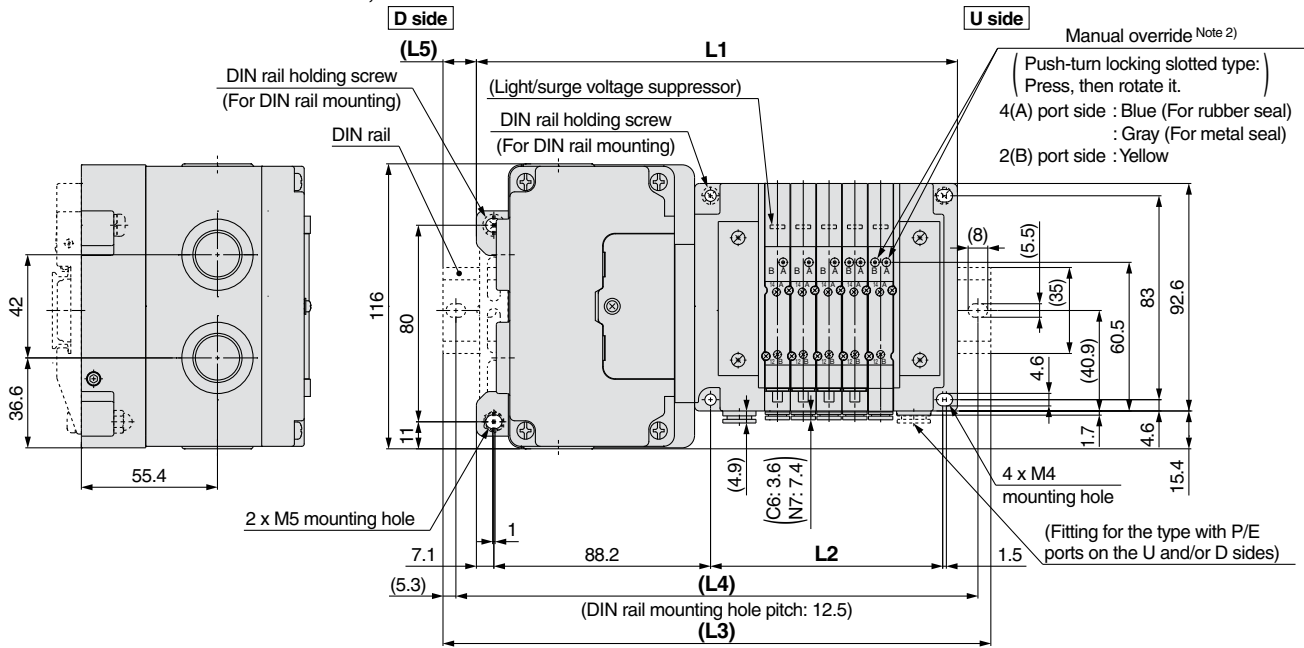


Dimensions: Series **SY3000**

Plug-in  
Connector Connecting Base

Type 10/Side Ported  
EX126

SS5Y3-10S4V - Stations  $\begin{matrix} U \\ D \\ B \end{matrix}$   $\begin{matrix} C2 \\ C3, N1 \\ C4, N3 \\ C6, N7 \end{matrix}$  (D)



Note 1) These figures show the "SS5Y3-10S4V-05D-C6".

Note 2) Refer to page 181 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 186 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

## Plug-in Connector Connecting Base

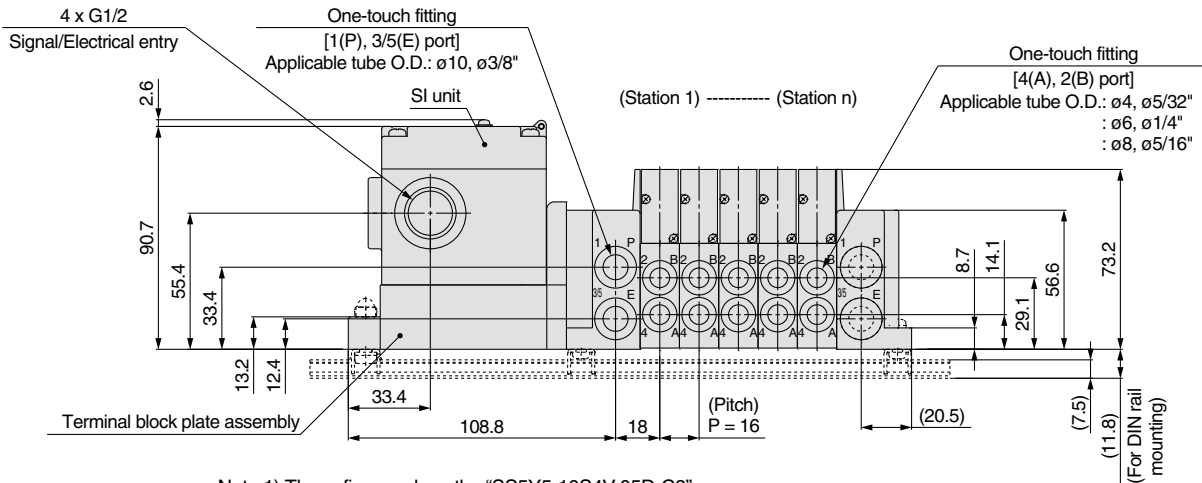
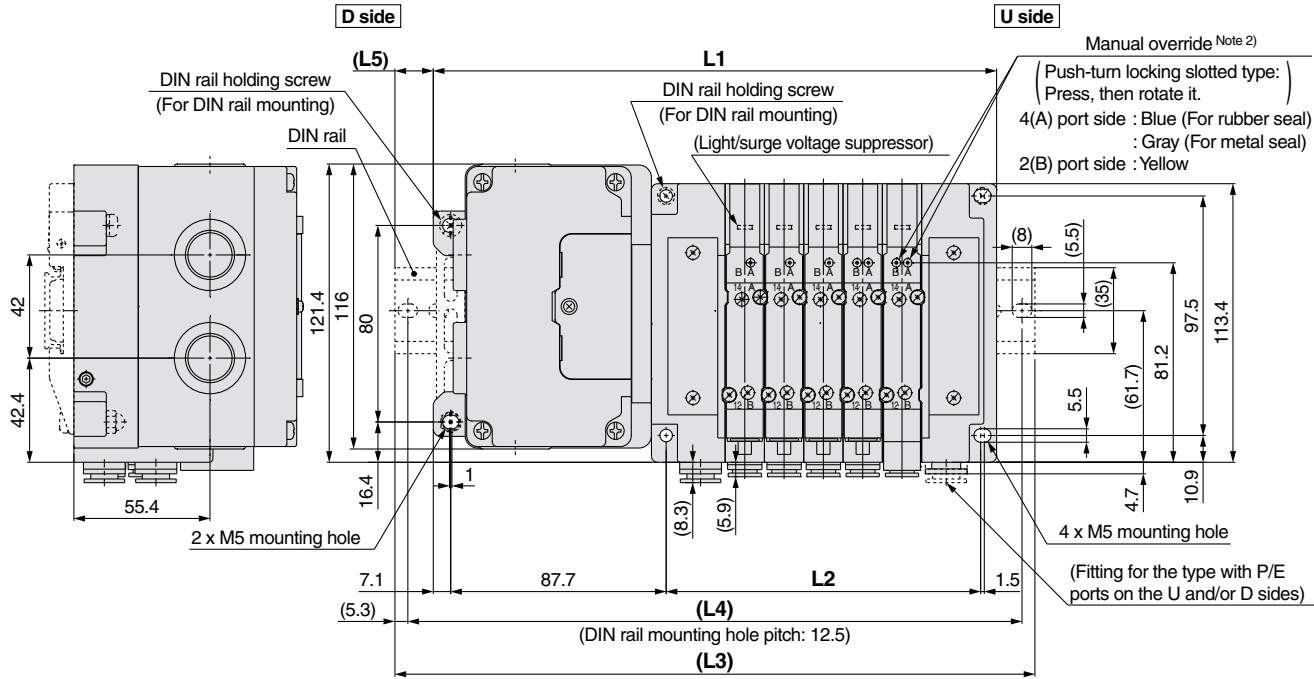
Type 10/Side Ported

EX126

### Dimensions: Series SY5000

SS5Y5-10S4V - Stations 

U	C4, N3
D	C6, N7 (D)
B	C8, N9



Note 1) These figures show the "SS5Y5-10S4V-05D-C8".

Note 2) Refer to page 182 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 187 for dimensions of A or B port top-ported type.

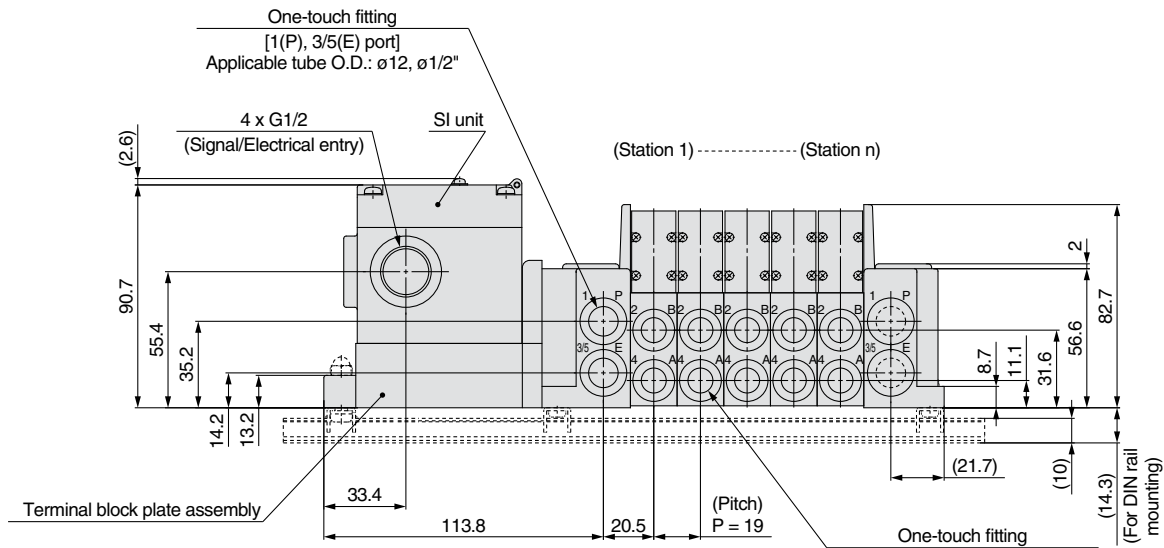
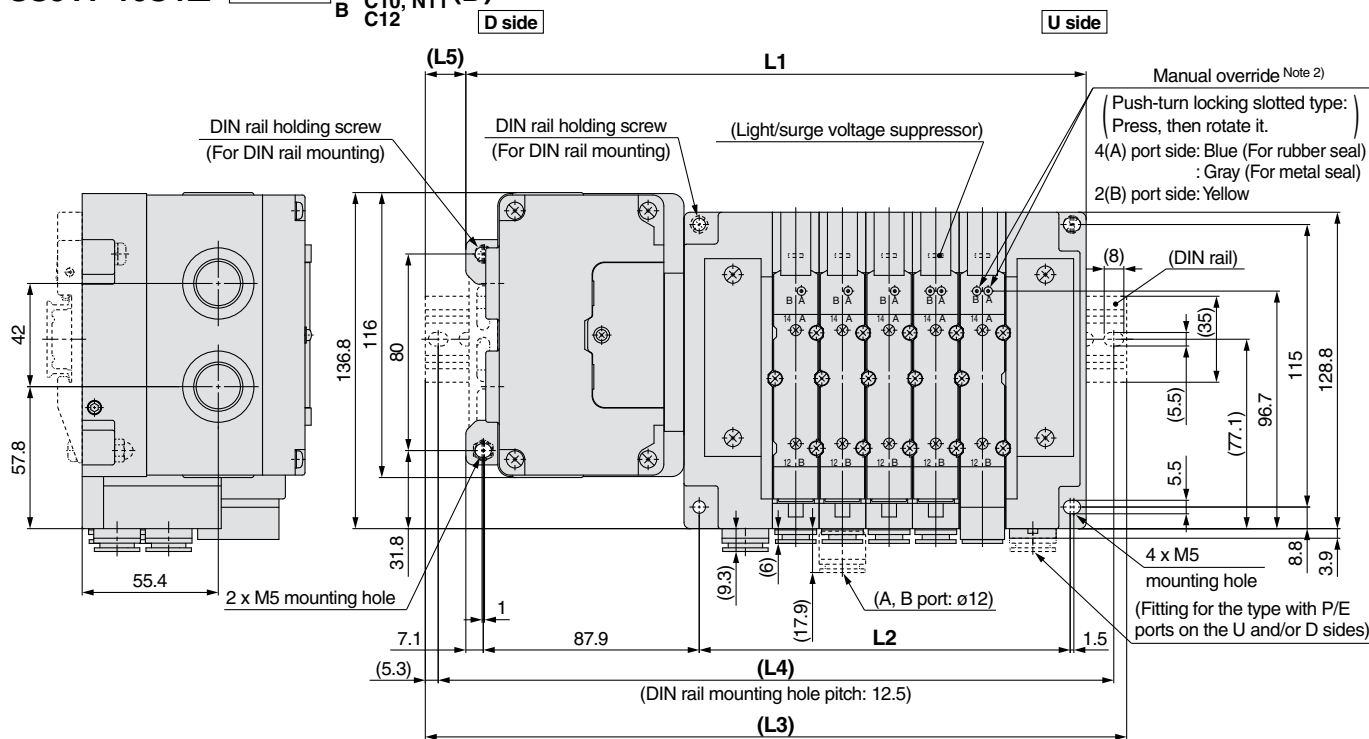
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>L1</b>	181.3	197.3	213.3	229.3	245.3	261.3	277.3	293.3	309.3	325.3	341.3	357.3	373.3	389.3	405.3
<b>L2</b>	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304
<b>L3</b>	210.5	223	248	260.5	273	285.5	310.5	323	335.5	360.5	373	385.5	398	423	435.5
<b>L4</b>	200	212.5	237.5	250	262.5	275	300	312.5	325	350	362.5	375	387.5	412.5	425
<b>L5</b>	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  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix}$  C6, N7  
C8, N9  
C10, N11 (D)  
C12



Note 1) These figures show the "SS5Y7-10S4V-05D-C10".

Note 2) Refer to page 183 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 188 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



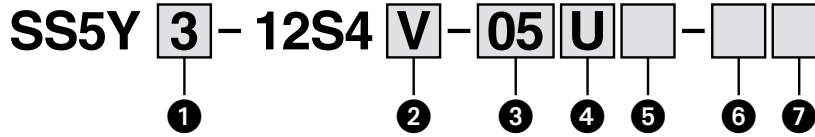
EX126

Type 12  
Top Ported

# Series SY3000/5000/7000

## How to Order Manifold

Refer to pages 186 to 188 for dimensions of Type 12/Top ported type.



### 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 <sup>Note 1)</sup>
:	:	
08	8 stations	
02	2 stations	Specified layout <sup>Note 2)</sup> (Available up to 16 solenoids)
:	:	
16	16 stations	

Note 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.

Note 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.)

Note 3) This also includes the number of blanking plate assembly.

### 4 P, E port entry

U <sup>Note)</sup>	U side (2 to 10 stations)
D <sup>Note)</sup>	D side (2 to 10 stations)
B	Both sides (2 to 16 stations)

Note) ⑩ For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

### 5 SUP/EXH block assembly

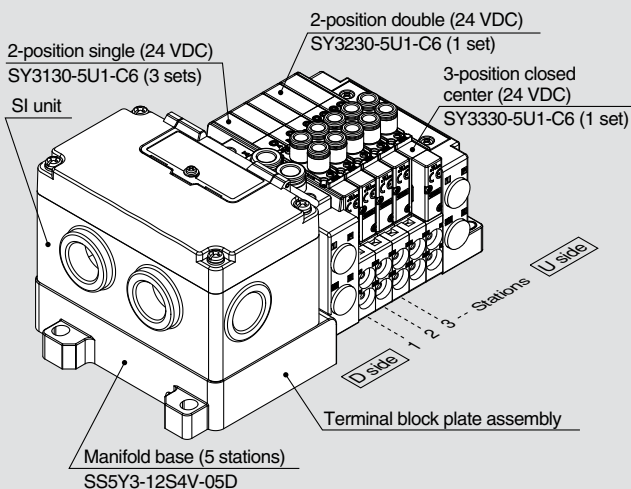
Nil	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

\* 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 center 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
Nil	ø8	ø10	ø12
N	ø5/16"	ø3/8"	ø1/2"

\* For N, sizes are in inches.

### 7 Mounting

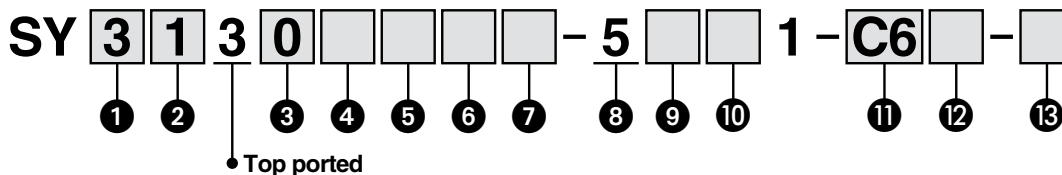
Nil	Direct mounting	
D	DIN rail mounting (With DIN rail)	
D0	DIN rail mounting (Without DIN rail)	
D3	For 3 stations	Specify a longer rail than the standard length.
:	:	
D16	For 16 stations	

Note) Refer to page 247 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 catalog** or the Best Pneumatics No. 1 and the Operation Manual. For details about part numbers of SI units to be mounted, refer to page 217 in this catalog. Please download the Operation Manual via SMC website, <http://www.smcworld.com>

## How to Order Valves (With mounting screw)

Refer to page 3 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 center
4		Exhaust center
5		Pressure center
A*	4-position dual 3-port	N.C./N.C.
B*		N.O./N.O.
C*		N.C./N.O.

\* 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

Nil	Internal pilot
R	External pilot

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

Nil	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 232 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

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

### 7 Coil type

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

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

\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

### 8 Rated voltage

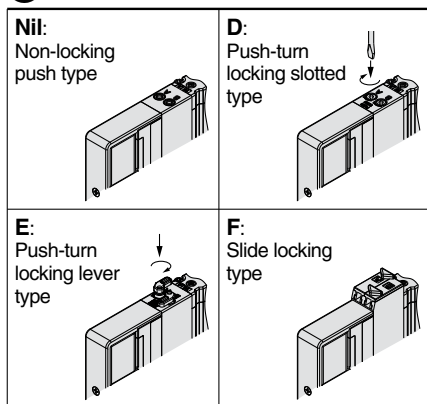
5	24 VDC
---	--------

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

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

\* Only "Z" type is available for with the power saving circuit.

### 10 Manual override



\* Refer to page 14 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	ø2	●	—	—
C3	ø3.2	●	—	—
C4	ø4	●	●	—
C6	ø6	●	●	●
C8	ø8	—	●	●
C10	ø10	—	—	●
C12	ø12	—	—	●

#### One-touch fitting (Inch)

Symbol	A, B port	SY3000	SY5000	SY7000
N1	ø1/8"	●	—	—
N3	ø5/32"	●	●	—
N7	ø1/4"	●	●	●
N9	ø5/16"	—	●	●
N11	ø3/8"	—	—	●

### 12 Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

### 13 Type of mounting screw

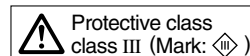
Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* 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 220 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

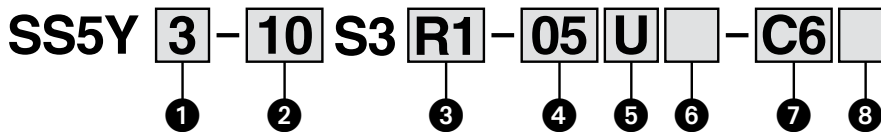


EX120

# Series SY3000/5000/7000

## How to Order Manifold

Refer to pages 184 (SY5000) and 185 (SY7000) for dimensions of Type 11/Bottom ported type.



### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type

10	Side ported
11	Bottom ported*

\* 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 189).

### 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 <sup>Note 2)</sup>	CompoNet™	Positive common NPN
ZBN <sup>Note 2)</sup>		Negative common PNP

Note 1) Ensure a match with the common specification of the valve to be used.

Note 2) The communication connector (for the opposite side) is not provided. Please order it separately.

### 4 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring <sup>Note 1)</sup>
:	:	
08	8 stations	Specified layout <sup>Note 2)</sup> (Available up to 16 solenoids)
02	2 stations	
:	:	
16	16 stations	

Note 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.

Note 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.)

Note 3) This also includes the number of blanking plate assembly.

Note 4) Since R2 type SI unit has 8 outputs, note that up to 8 solenoids can be accommodated.

### 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)

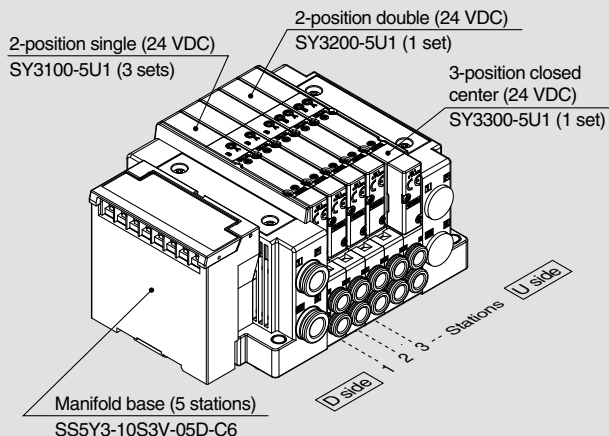
### 6 SUP/EXH block assembly

Nil	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

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

## 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 center 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.

Note) 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.

For details about the EX120 Integrated-type (For Output) Serial Transmission System, refer to the **WEB catalog** or the Best Pneumatics No. 1 and the Operation Manual. For details about part numbers of SI units to be mounted, refer to page 218 in this catalog. Please download the Operation Manual via SMC website, <http://www.smcworld.com>

**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
<b>C2</b>	ø2	●	—	—	—	—
<b>C3</b>	ø3.2	●	—	—	—	—
<b>C4</b>	ø4	●	●	—	●	—
<b>C6</b>	ø6	●	●	●	●	●
<b>C8</b>	ø8	—	●	●	●	●
<b>C10</b>	ø10	—	—	●	—	●
<b>C12</b>	ø12	—	—	●	—	●
<b>CM*</b>	Straight port, mixed sizes	●	●	●	●	●
<b>L4</b> <b>L6</b> <b>L8</b> <b>L10</b> <b>L12</b>	Upward	ø4	●	●	—	—
		ø6	●	●	●	—
		ø8	—	●	●	—
		ø10	—	—	●	—
		ø12	—	—	●	—
<b>B4</b> <b>B6</b> <b>B8</b> <b>B10</b> <b>B12</b>	Downward	ø4	●	●	—	—
		ø6	●	●	●	—
		ø8	—	●	●	—
		ø10	—	—	●	—
		ø12	—	—	●	—
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	●	●	●	—	—
<b>P, E port size (One-touch fittings)</b>		ø8	ø10	ø12	ø10	ø12

**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>	ø1/8"	●	—	—	—	—
<b>N3</b>	ø5/32"	●	●	—	●	—
<b>N7</b>	ø1/4"	●	●	●	●	●
<b>N9</b>	ø5/16"	—	●	●	●	●
<b>N11</b>	ø3/8"	—	—	●	—	●
<b>CM*</b>	Straight port, mixed sizes	●	●	●	●	●
<b>LN3</b> <b>LN7</b> <b>LN9</b> <b>LN11</b>	Upward	ø5/32"	●	—	—	—
		ø1/4"	●	●	—	—
		ø5/16"	—	●	—	—
<b>BN3</b> <b>BN7</b> <b>BN9</b> <b>BN11</b>	Downward	ø5/32"	●	—	—	—
		ø1/4"	●	●	—	—
		ø5/16"	—	●	—	—
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	ø3/8"	—	—	●	—
		ø1/2"	—	—	—	—
<b>P, E port size (One-touch fittings)</b>		ø5/16"	ø3/8"	ø1/2"	ø3/8"	ø1/2"

Note) To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 226 to 228).

\* 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.

**8 Mounting and Option**

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

Note 1) Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" below.)

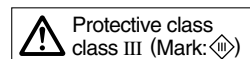
Note 2) Only direct mounting is available for Type 11 (Bottom ported).

Note 3) Refer to page 247 for the fixation of DIN rail mounting type manifold.

**DIN Rail Option**

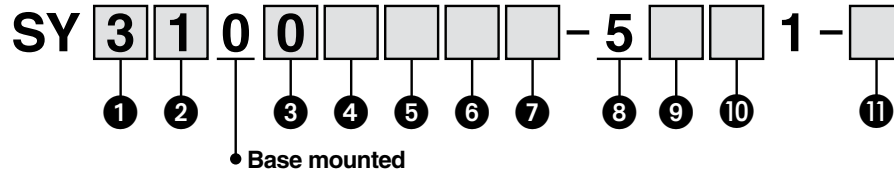
<b>Nil</b>	Direct mounting	
<b>0</b>	Without DIN rail (with bracket)	
<b>3</b>	For 3 stations	Specify a longer rail than the total length of specified stations.
<b>:</b>	:	
<b>16</b>	For 16 stations	

\* 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 225 for part numbers of DIN rail.)



## How to Order Valves (With mounting screw)

Refer to page 3 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 center
4		Exhaust center
5		Pressure center
A*	4-position dual 3-port	N.C./N.C.
B*		N.O./N.O.
C*		N.C./N.O.

\* 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

Nil	Internal pilot
R	External pilot

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

Nil	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 232 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

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

### 7 Coil type

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

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

\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

### 8 Rated voltage

5	24 VDC
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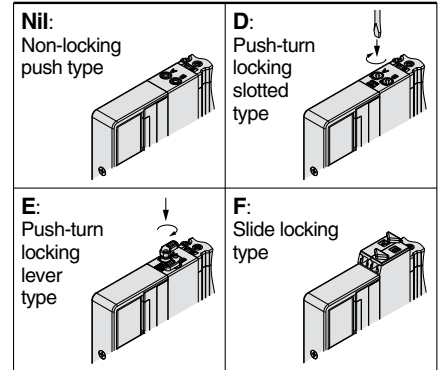
### 9 Light/surge voltage suppressor and common specification

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 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 14 for with the safety slide locking manual override.

### 11 Type of mounting screw

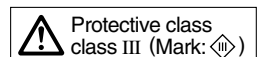
Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* 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 220 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.



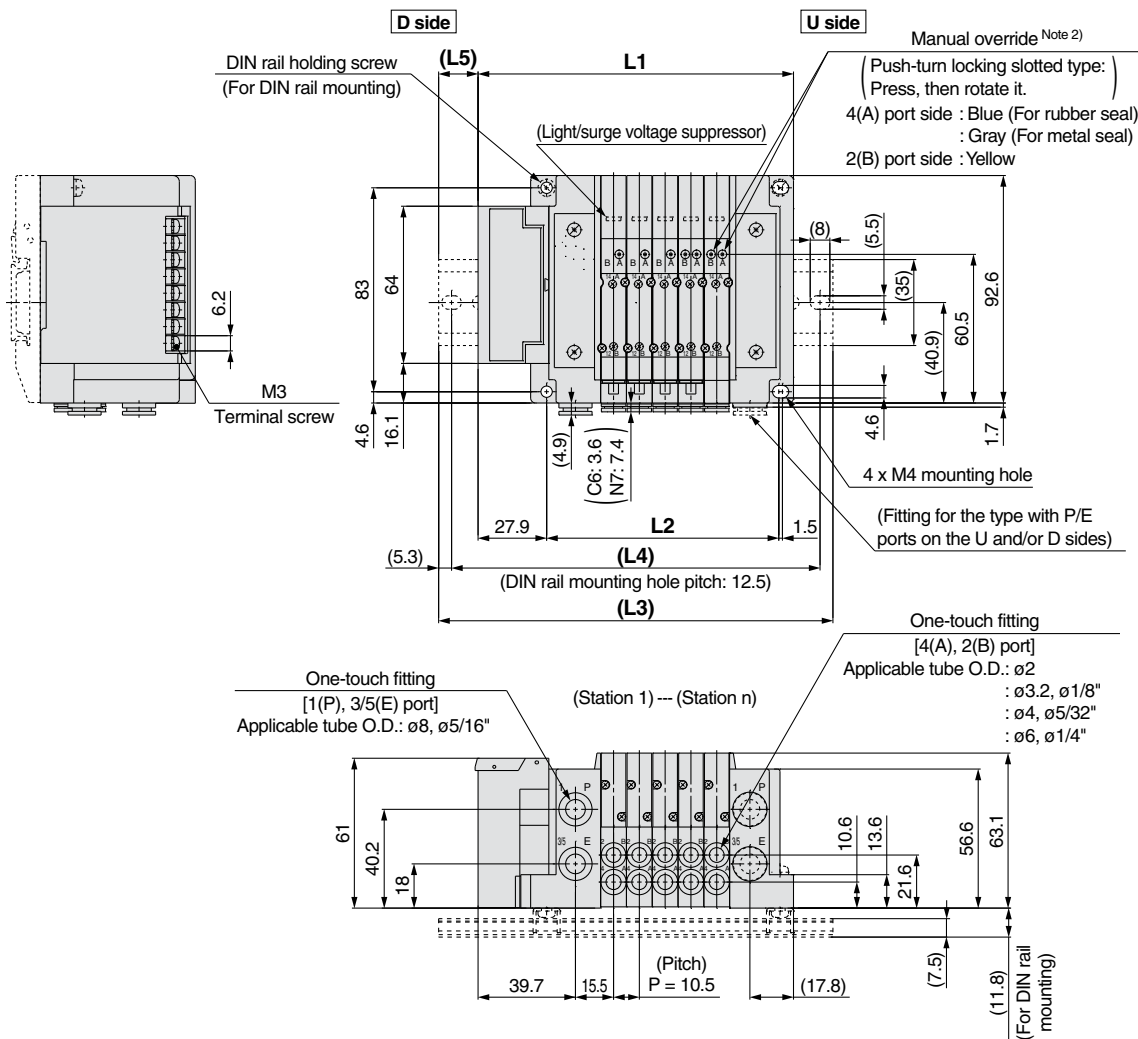
Dimensions: Series **SY3000**

Plug-in  
Connector Connecting Base

Type 10/Side Ported

EX120

SS5Y3-10S3□ - Stations  $\begin{matrix} \text{U} & \text{C2} \\ \text{D} & \text{C3, N1} \\ \text{B} & \text{C4, N3} \end{matrix}$  (D)  
C6, N7



Note 1) These figures show the "SS5Y3-10S3V-05D-C6".

Note 2) Refer to page 181 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 186 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



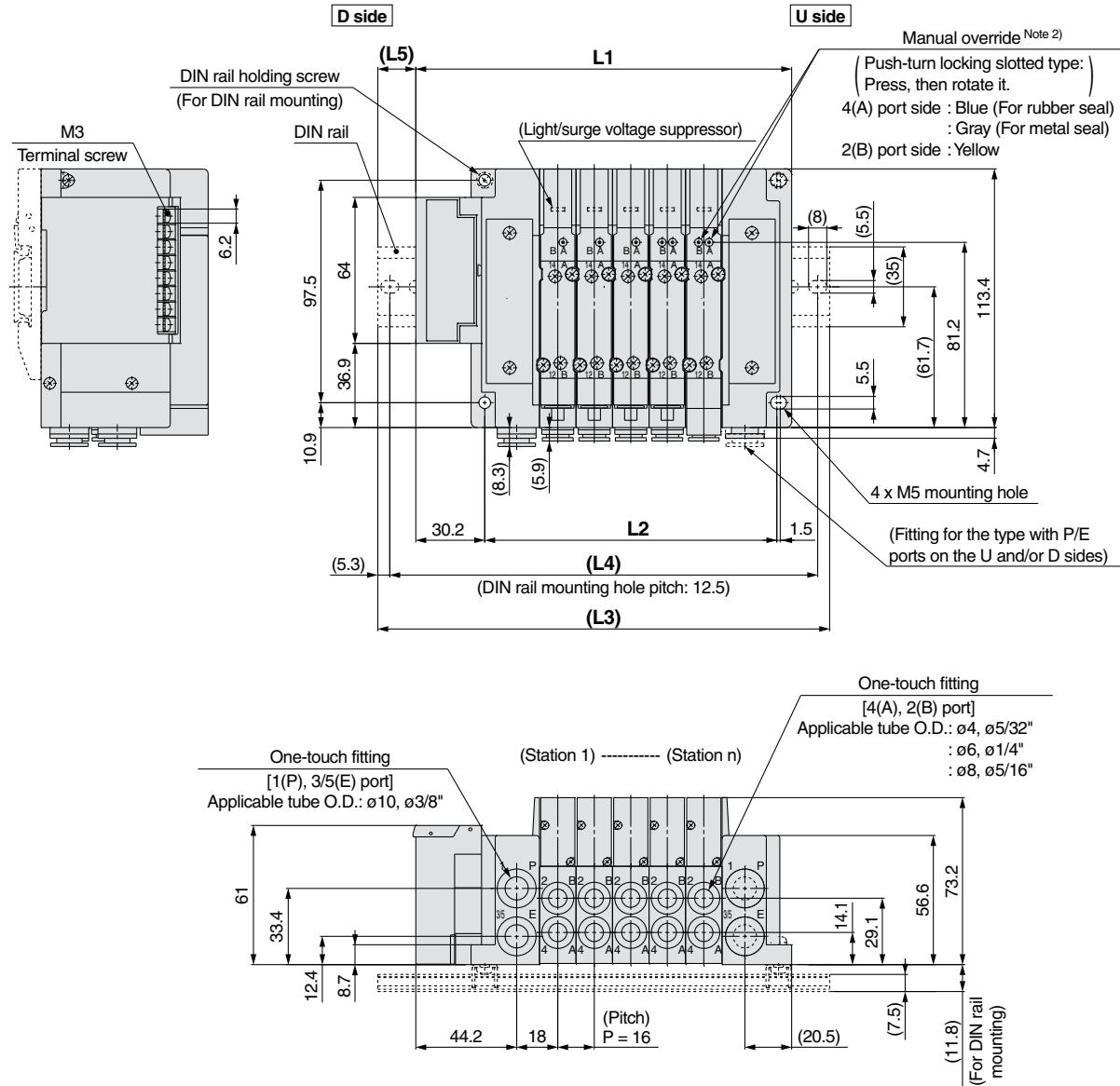
# Series SY3000/5000/7000

## Plug-in Connector Connecting Base

Type 10/Side Ported  
EX120

### Dimensions: Series SY5000

SS5Y5-10S3□ - Stations  $\begin{matrix} \text{U} & \text{C4, N3} \\ \text{D} & \text{C6, N7 (D)} \\ \text{B} & \text{C8, N9} \end{matrix}$



Note 1) These figures show the "SS5Y5-10S3V-05D-C8".

Note 2) Refer to page 182 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 187 for dimensions of A or B port top-ported type.

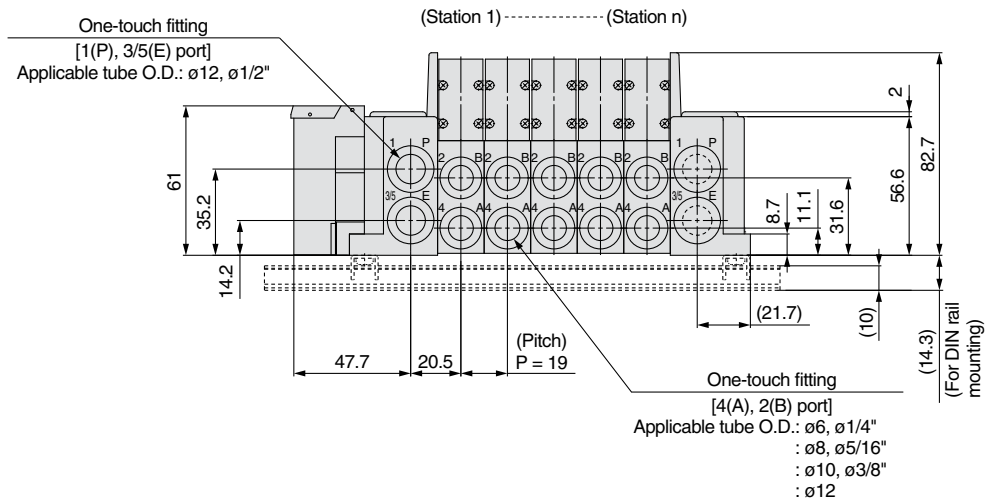
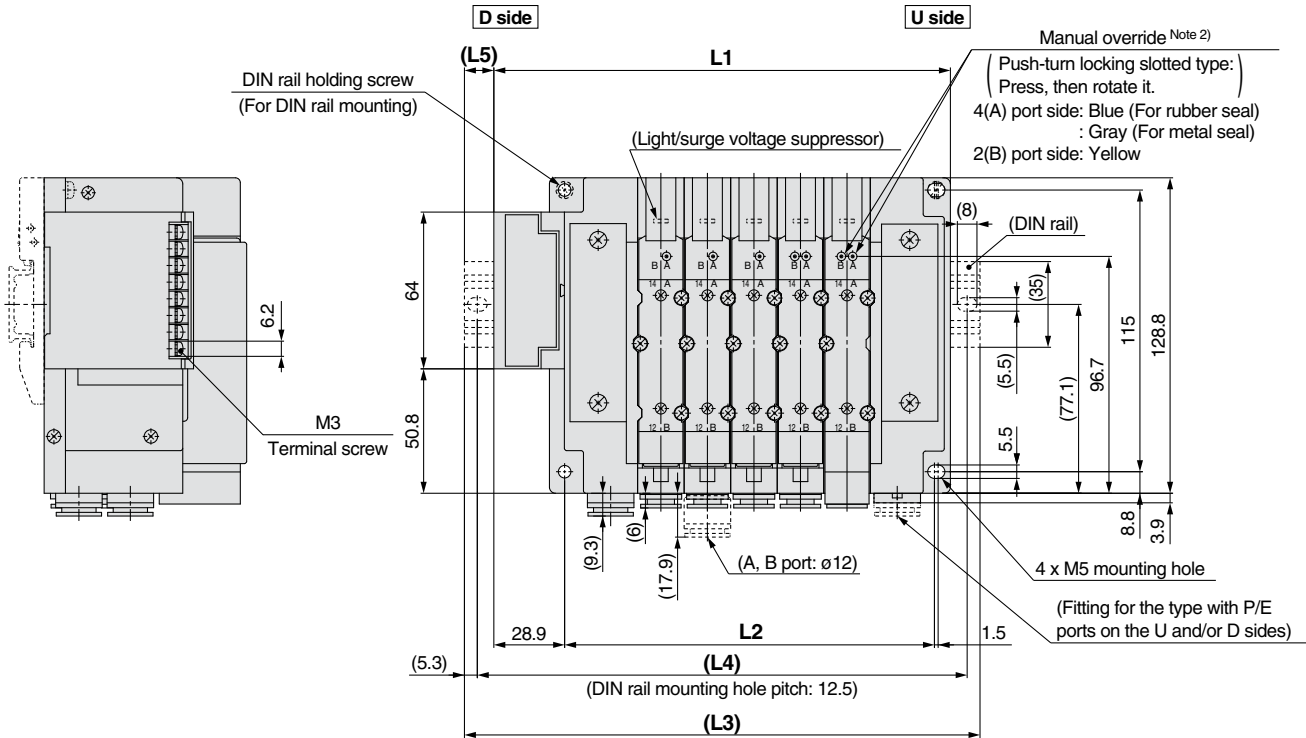
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>L1</b>	116.7	132.7	148.7	164.7	180.7	196.7	212.7	228.7	244.7	260.7	276.7	292.7	308.7	324.7	340.7
<b>L2</b>	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304
<b>L3</b>	148	160.5	173	198	210.5	223	248	260.5	273	285.5	310.5	323	335.5	348	373
<b>L4</b>	137.5	150	162.5	187.5	200	212.5	237.5	250	262.5	275	300	312.5	325	337.5	362.5
<b>L5</b>	15.5	14	12	16.5	15	13	17.5	16	14	12.5	17	15	13.5	11.5	16

**Plug-in Connector Connecting Base**

Type 10/Side Ported  
EX120

Dimensions: Series **SY7000**

SS5Y7-10S3□ - Stations  $\begin{matrix} U \\ D \\ B \end{matrix}$   $\begin{matrix} C6, N7 \\ C8, N9 \\ C10, N11 \\ C12 \end{matrix}$  (D)



Note 1) These figures show the "SS5Y7-10S3V-05D-C10".

Note 2) Refer to page 183 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 188 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
<b>L1</b>	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
<b>L2</b>	94	113	132	151	170	189	208	227	246	265	284	303	322	341	360
<b>L3</b>	160.5	173	198	210.5	235.5	248	273	285.5	310.5	335.5	348	373	385.5	410.5	423
<b>L4</b>	150	162.5	187.5	200	225	237.5	262.5	275	300	325	337.5	362.5	375	400	412.5
<b>L5</b>	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

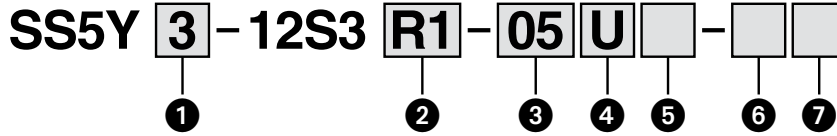
Type 12  
Top Ported

# Series SY3000/5000/7000



## How to Order Manifold

Refer to pages 186 to 188 for dimensions of Type 12/Top ported type.



### 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 <sup>Note 2)</sup>	CompoNet™	Positive common NPN
ZBN <sup>Note 2)</sup>		Negative common PNP

Note 1) Ensure a match with the common specification of the valve to be used.  
Note 2) The communication connector (for the opposite side) is not provided. Please order it separately.

### 3 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring <sup>Note 1)</sup>
:	:	
08	8 stations	
02	2 stations	Specified layout <sup>Note 2)</sup> (Available up to 16 solenoids)
:	:	
16	16 stations	

Note 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.  
Note 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.)  
Note 3) This also includes the number of blanking plate assembly.  
Note 4) Since R2 type SI unit has 8 outputs, note that up to 8 solenoids can be accommodated.

### 4 P, E port entry

U <sup>Note)</sup>	U side (2 to 10 stations)
D <sup>Note)</sup>	D side (2 to 10 stations)
B	Both sides (2 to 16 stations)

Note) ② For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

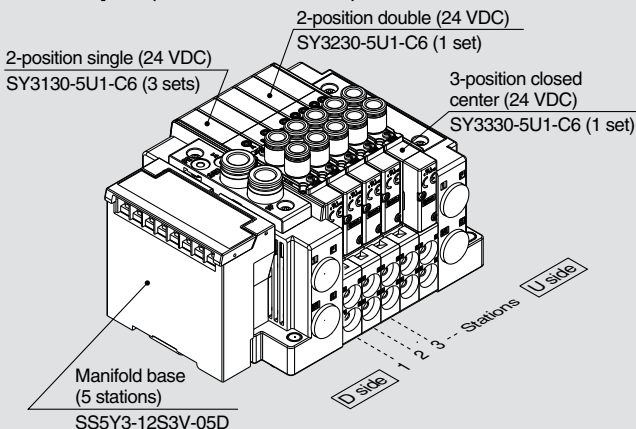
### 5 SUP/EXH block assembly

Nil	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 center 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
Nil	ø8	ø10	ø12
N	ø5/16"	ø3/8"	ø1/2"

\* For N, sizes are in inches.

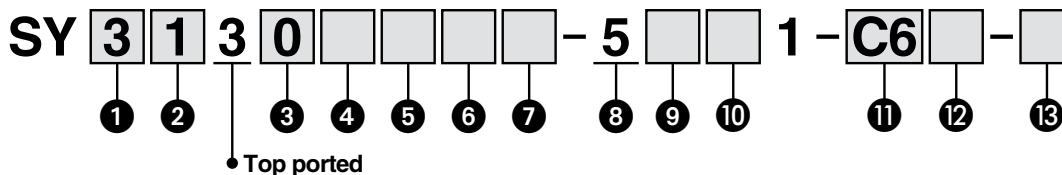
### 7 Mounting

Nil	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	

Note 1) 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 225 for the DIN rail part number.)  
Note 2) Refer to page 247 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 catalog** or the Best Pneumatics No. 1 and the Operation Manual. For details about part numbers of SI units to be mounted, refer to page 218 in this catalog. Please download the Operation Manual via SMC website, <http://www.smcworld.com>

**How to Order Valves (With mounting screw)** Refer to page 3 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 center
4		Exhaust center
5		Pressure center
A*	4-position dual 3-port	N.C./N.C.
B*		N.O./N.O.
C*		N.C./N.O.

\* 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**

Nil	Internal pilot
R	External pilot

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

Nil	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 232 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**

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

**7 Coil type**

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

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

\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

**8 Rated voltage**

5	24 VDC
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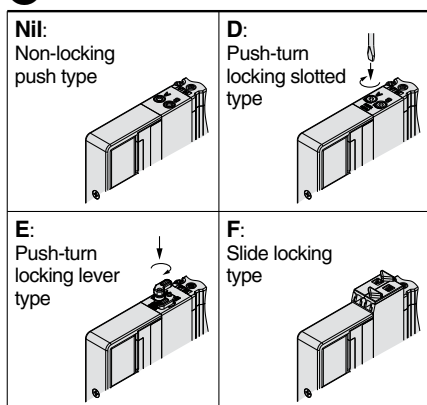
**9 Light/surge voltage suppressor and common specification**

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 14 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	ø2	●	—	—
C3	ø3.2	●	—	—
C4	ø4	●	●	—
C6	ø6	●	●	●
C8	ø8	—	●	●
C10	ø10	—	—	●
C12	ø12	—	—	●

**One-touch fitting (Inch)**

Symbol	A, B port	SY3000	SY5000	SY7000
N1	ø1/8"	●	—	—
N3	ø5/32"	●	●	—
N7	ø1/4"	●	●	●
N9	ø5/16"	—	●	●
N11	ø3/8"	—	—	●

**12 Thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

**13 Type of mounting screw**

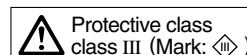
Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* 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 220 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.

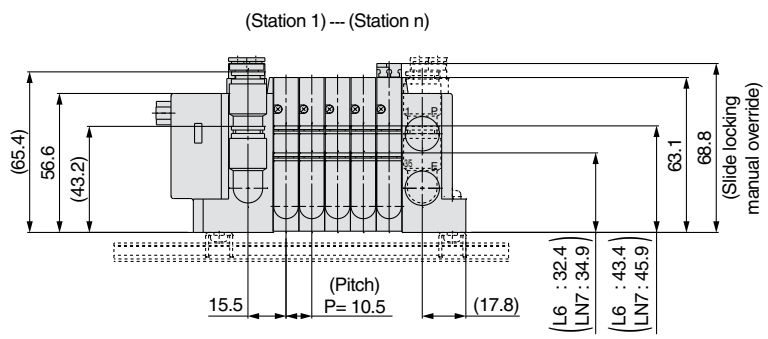
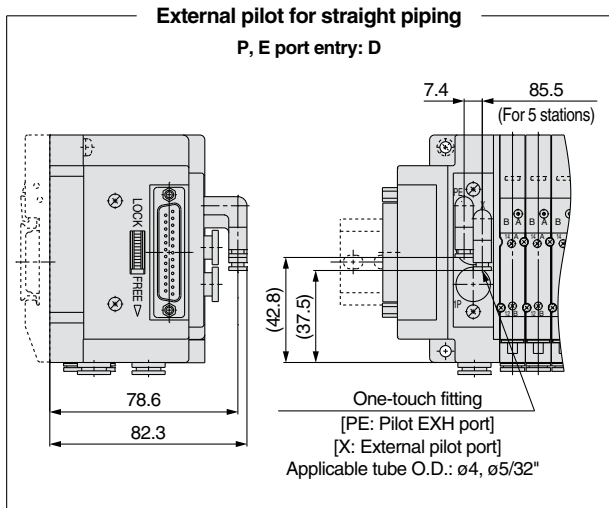
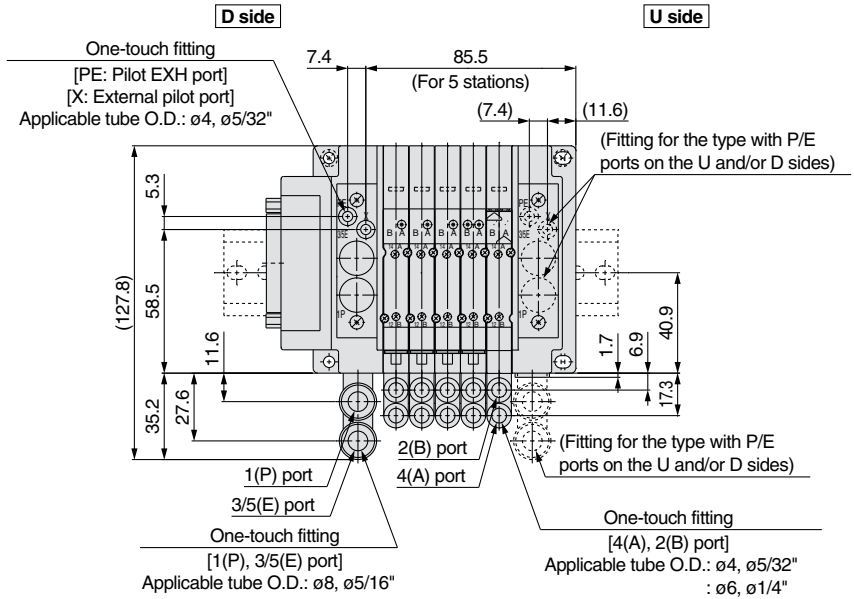
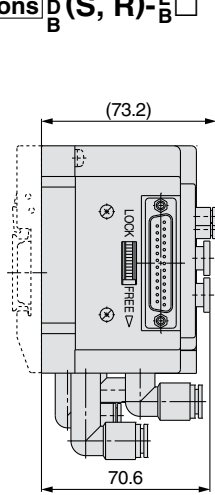


# Series SY3000/5000/7000 Common Dimensions

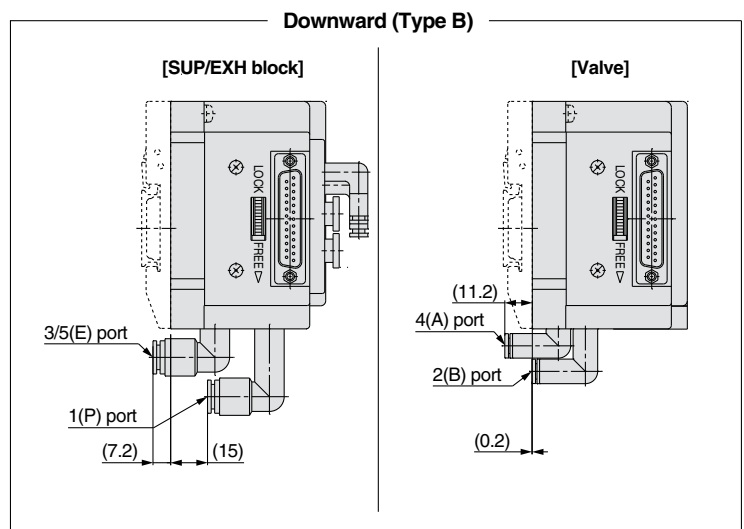
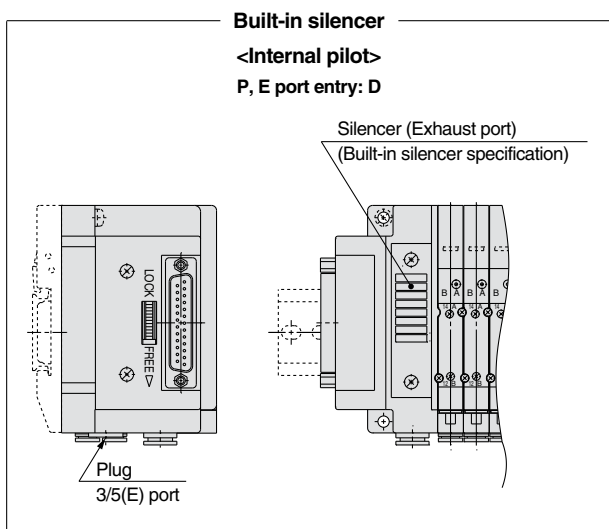
Series SY3000 **Plug-in Connector Connecting Base**

**Type 10/Side Ported**  
External Pilot, Silencer, Elbow Fittings, Slide Locking Manual Override

SS5Y3-10□ - Stations  $\frac{U}{D}$  (S, R) -  $\frac{L}{B}$  □



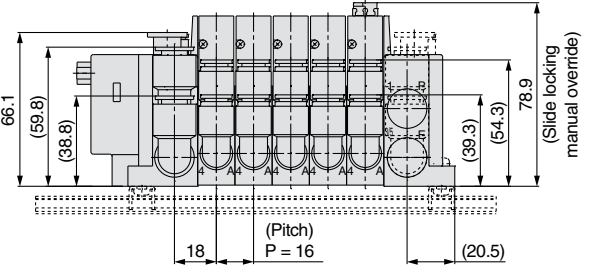
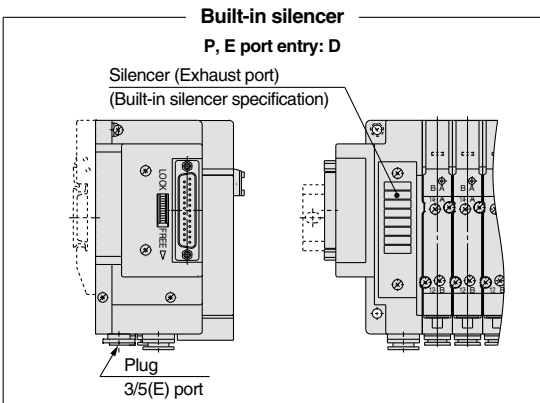
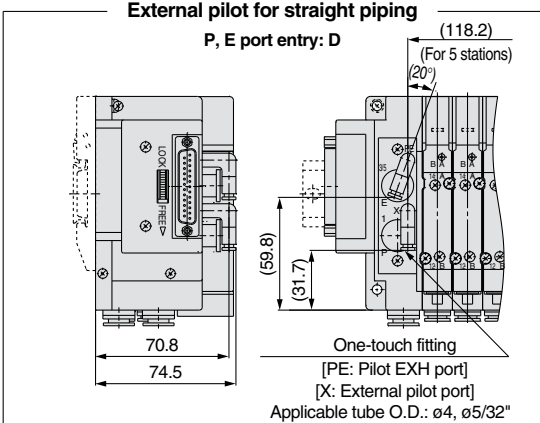
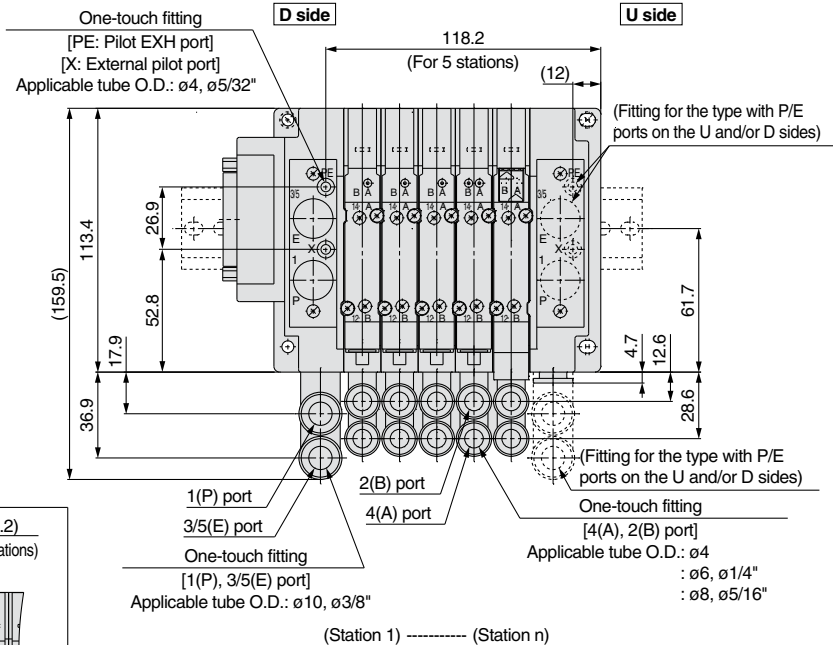
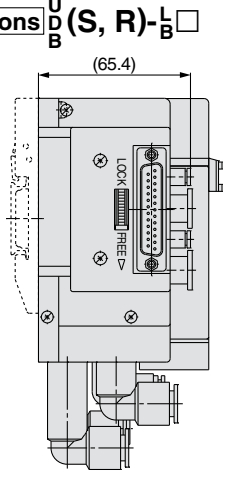
Note) These figures show the "SS5Y3-10F2-05DR-L6".



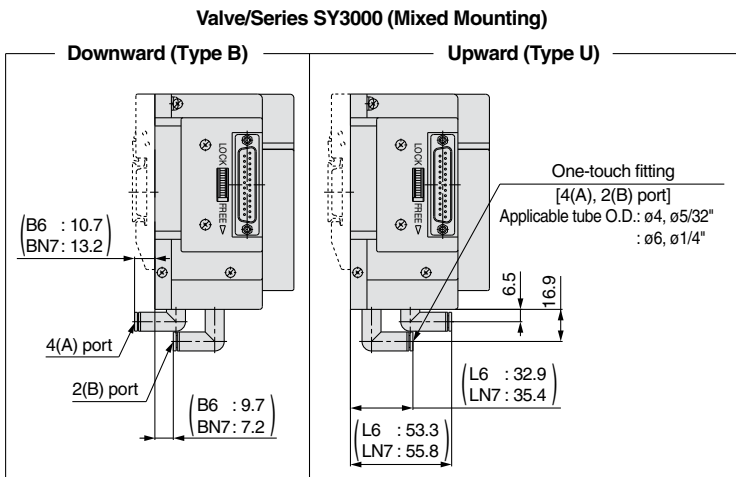
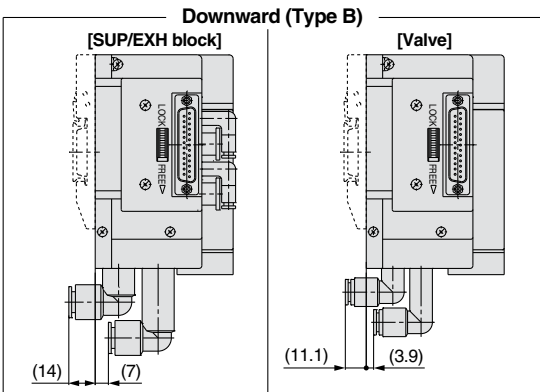
## Series SY5000 Plug-in Connector Connecting Base

## Type 10/Side Ported External Pilot, Silencer, Elbow Fittings, Slide Locking Manual Override

SS5Y5-10□ - Stations  $\frac{U}{D}$  (S, R) -  $\frac{L}{B}$  □



Note) These figures show the "SS5Y5-10F2-05DR-L8".



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.

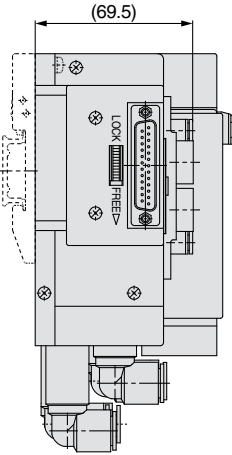
Manifold Options



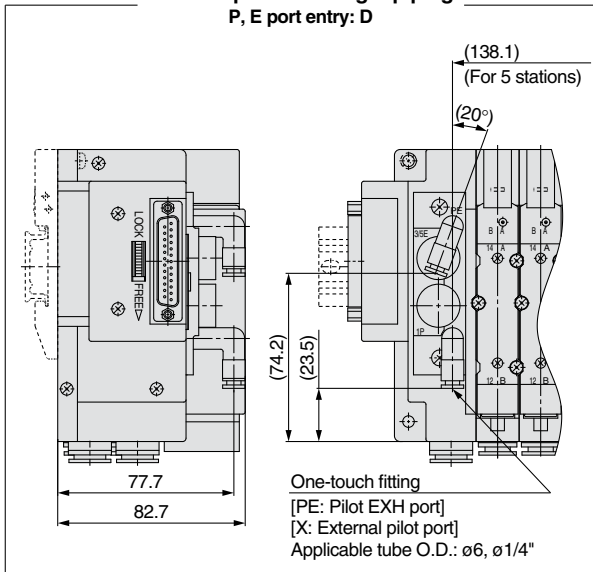
# Series SY3000/5000/7000

## Series SY7000 Plug-in Connector Connecting Base Type 10/Side Ported External Pilot, Silencer, Elbow Fittings, Slide Locking Manual Override

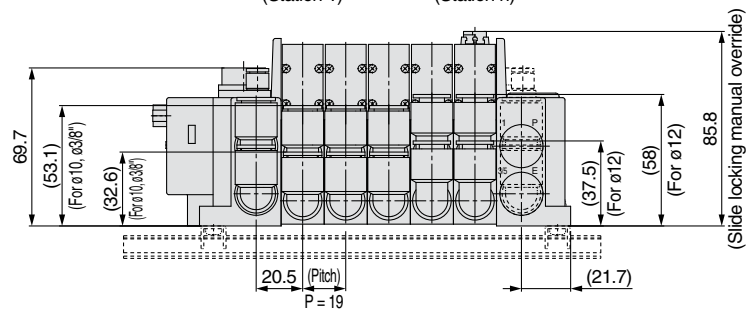
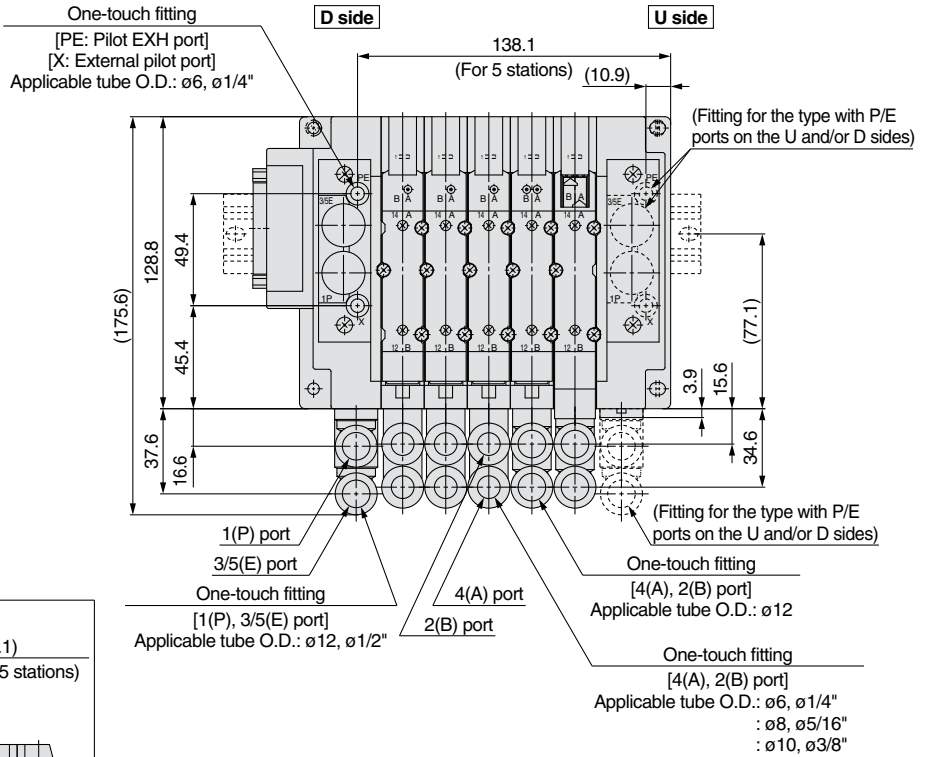
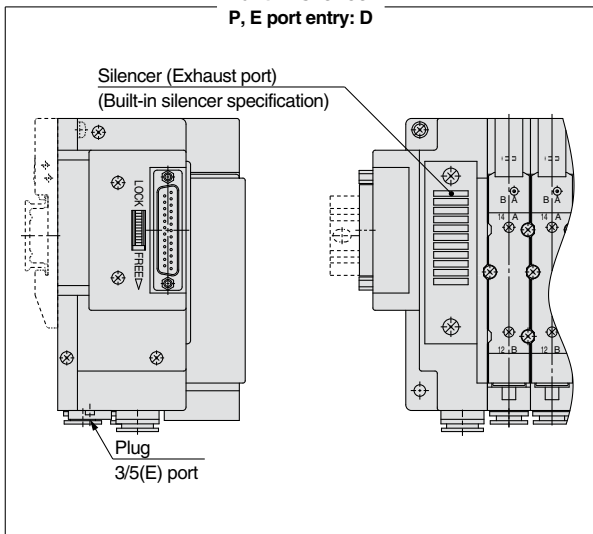
SS5Y7-10□ - Stations  $\frac{U}{D}$  (S, R) -  $\frac{L}{B}$  □



**External pilot for straight piping**  
P, E port entry: D

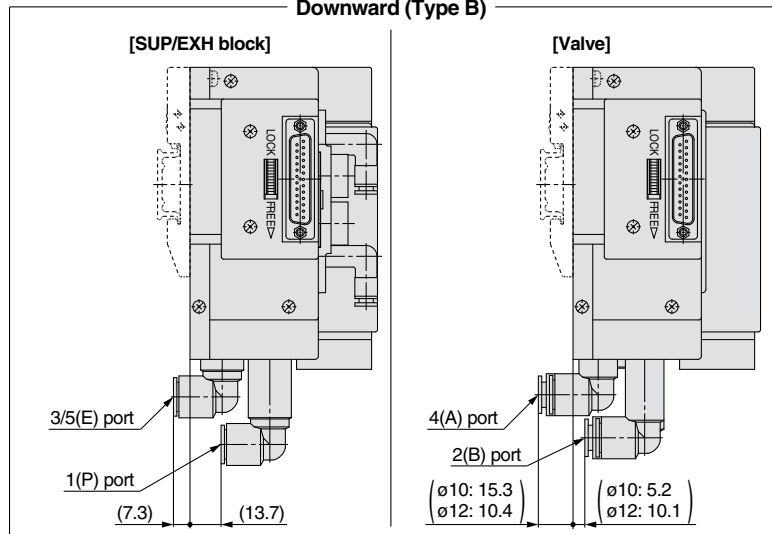


**Built-in silencer**  
P, E port entry: D



Note) These figures show the "SS5Y7-10F2-05DR-LM".

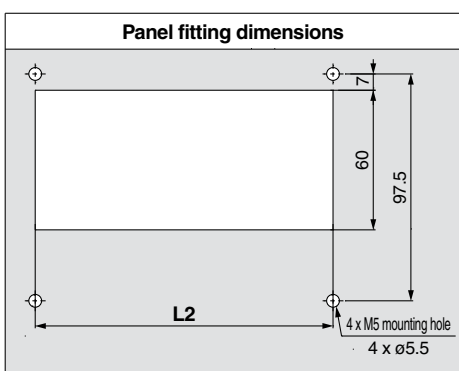
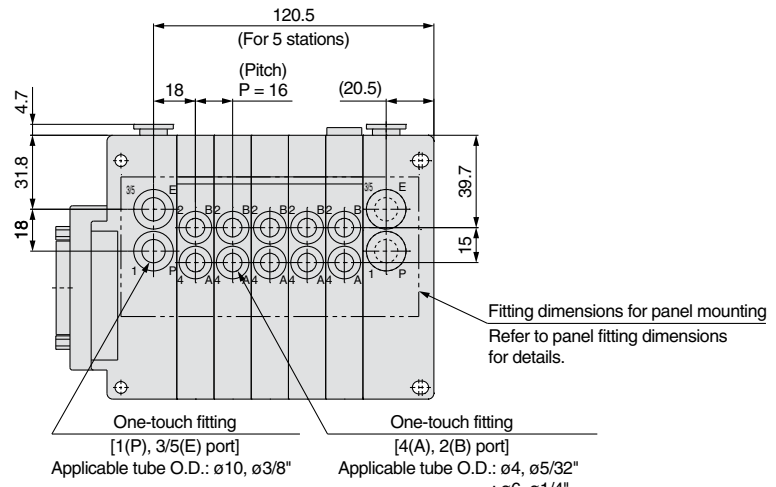
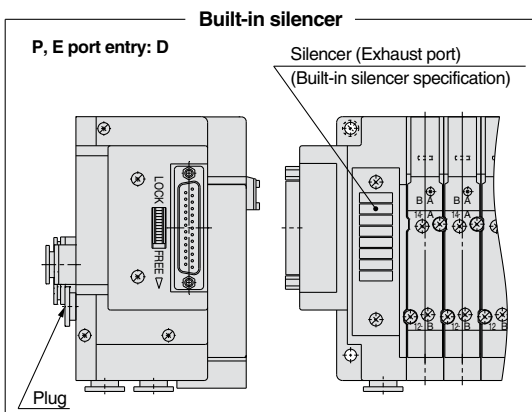
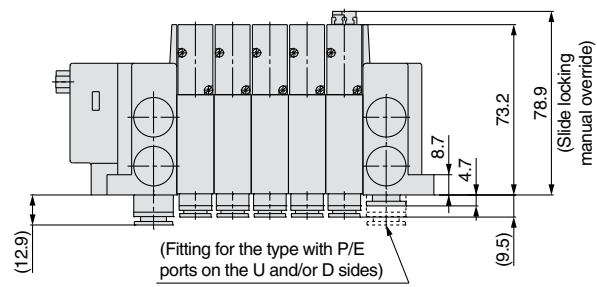
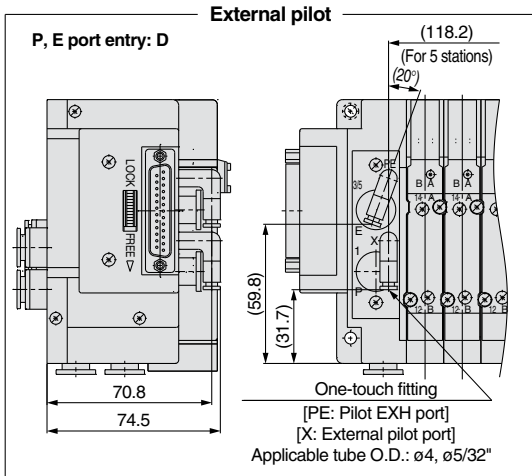
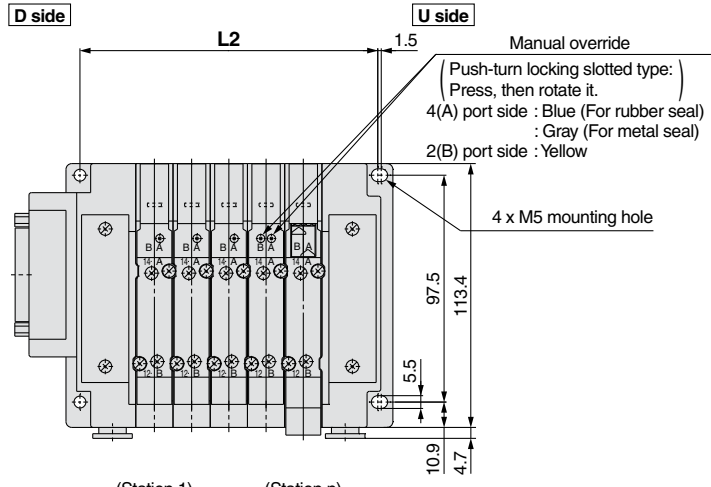
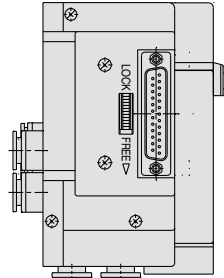
**Downward (Type B)**



Series **SY5000**

**Plug-in Connector Connecting Base** Type 11/Bottom Ported  
All Wirings

SS5Y5-11□ - Stations  $\frac{U}{D}$



Note 1) These figures show the "SS5Y5-11F2-05D-C8".  
 Note 2) Refer to the below pages for L2 dimensions and other dimensions that are not specified in each wiring specification.

- D-sub connector <IP40> : P. 85
- D-sub connector <IP67> : P. 88
- Flat ribbon cable : P. 91
- Terminal block box : P. 103
- Lead wire : P. 113
- Circular connector : P. 123
- EX500 : P. 133
- EX600 : P. 142, 143
- EX250 : P. 153
- EX260 : P. 161
- EX126 : P. 169
- EX120 : P. 177



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

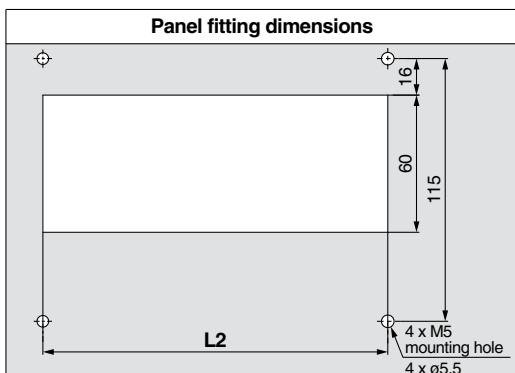
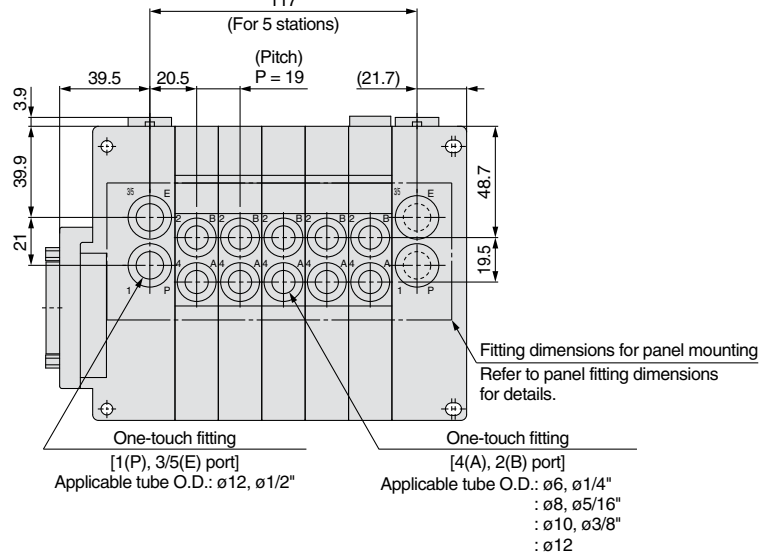
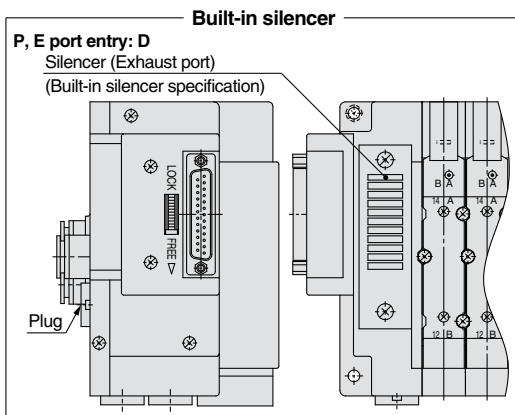
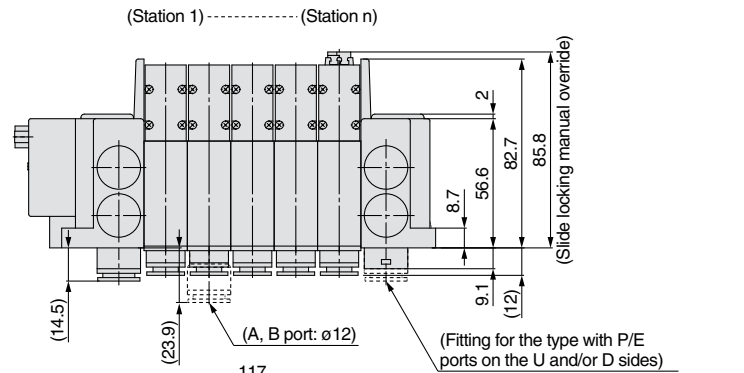
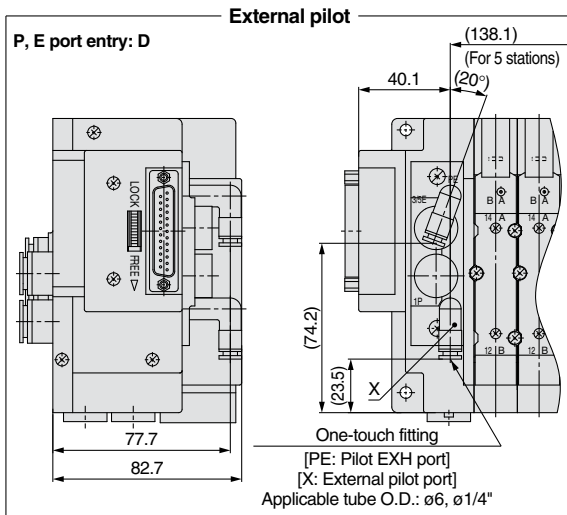
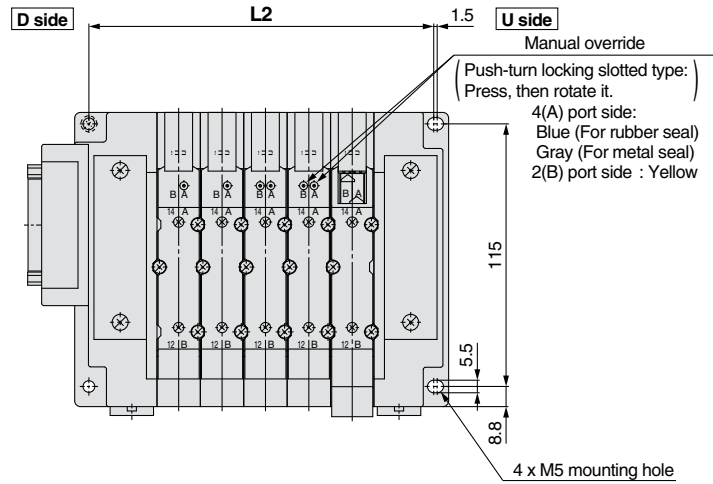
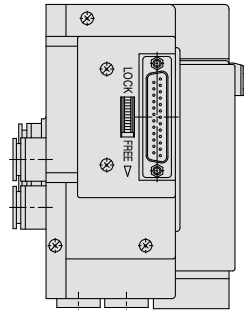
## Series SY7000

SS5Y7-11□ - Stations  $\begin{matrix} U \\ D \\ B \end{matrix}$

### Plug-in Connector Connecting Base

Type 11/Bottom Ported

All Wirings



Note 1) These figures show the "SS5Y7-11F2-05D-C10".  
Note 2) Refer to the below pages for L2 dimensions and other dimensions that are not specified in each wiring specification.

D-sub connector <IP40>	: P. 86
D-sub connector <IP67>	: P. 89
Flat ribbon cable	: P. 92
Terminal block box	: P. 104
Lead wire	: P. 114
Circular connector	: P. 124
EX500	: P. 134
EX600	: P. 144, 145
EX250	: P. 154
EX260	: P. 162
EX126	: P. 170
EX120	: P. 178



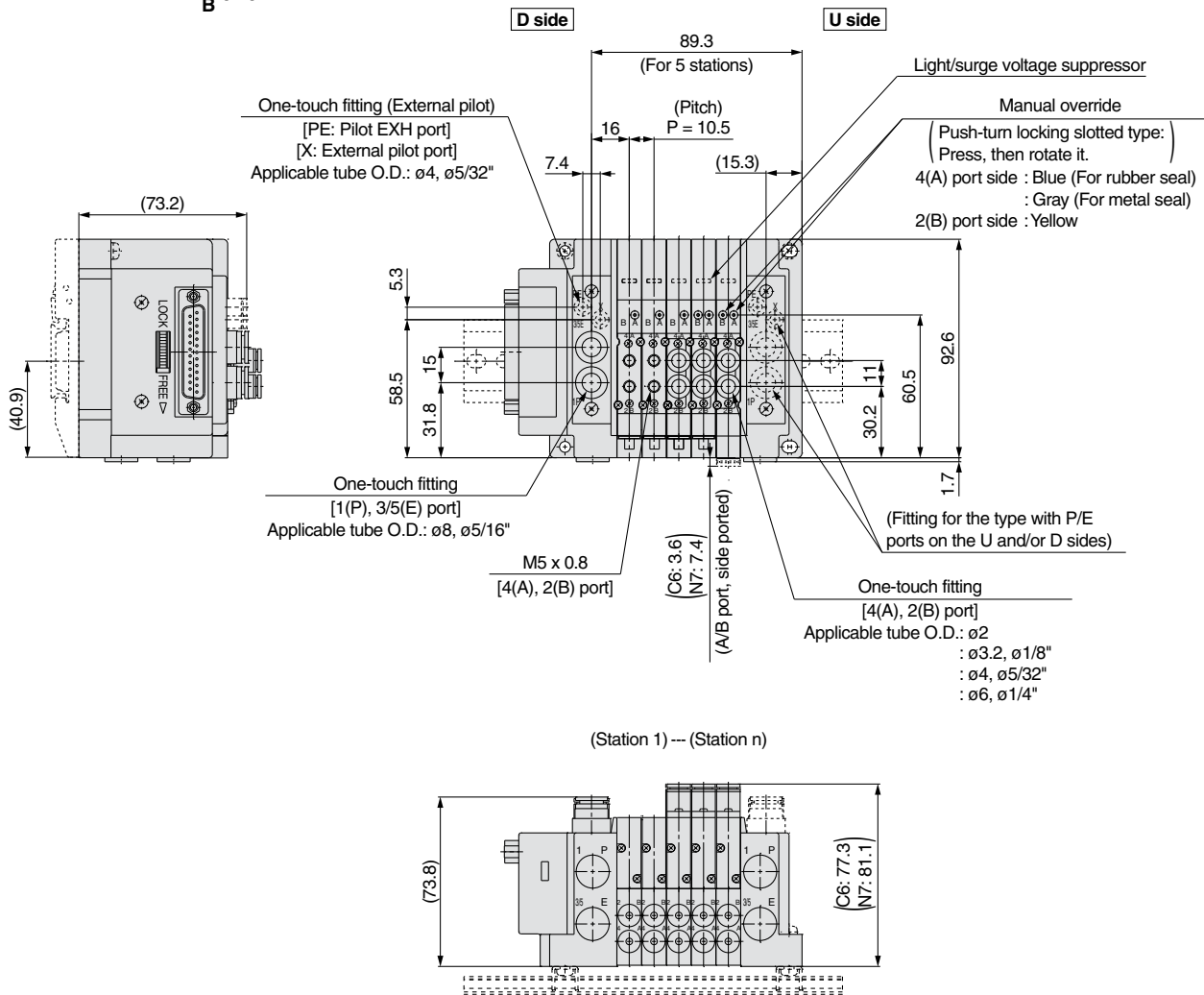
## Series SY3000

### Plug-in Connector Connecting Base

Type 12/Top Ported

All Wirings

SS5Y3-12□ - Stations  $\frac{U}{D}$  (R)



- Note 1) These figures show the "SS5Y3-12F2-05D".
- Note 2) 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 181 for dimensions of silencer.
- Note 3) Refer to the below pages for dimensions that are not specified in each wiring specification.
- |                        |               |
|------------------------|---------------|
| D-sub connector <IP40> | : P. 84       |
| D-sub connector <IP67> | : P. 87       |
| Flat ribbon cable      | : P. 90       |
| Terminal block box     | : P. 102      |
| Lead wire              | : P. 112      |
| Circular connector     | : P. 122      |
| EX500                  | : P. 132      |
| EX600                  | : P. 140, 141 |
| EX250                  | : P. 152      |
| EX260                  | : P. 160      |
| EX126                  | : P. 168      |
| EX120                  | : P. 176      |

# Series SY3000/5000/7000

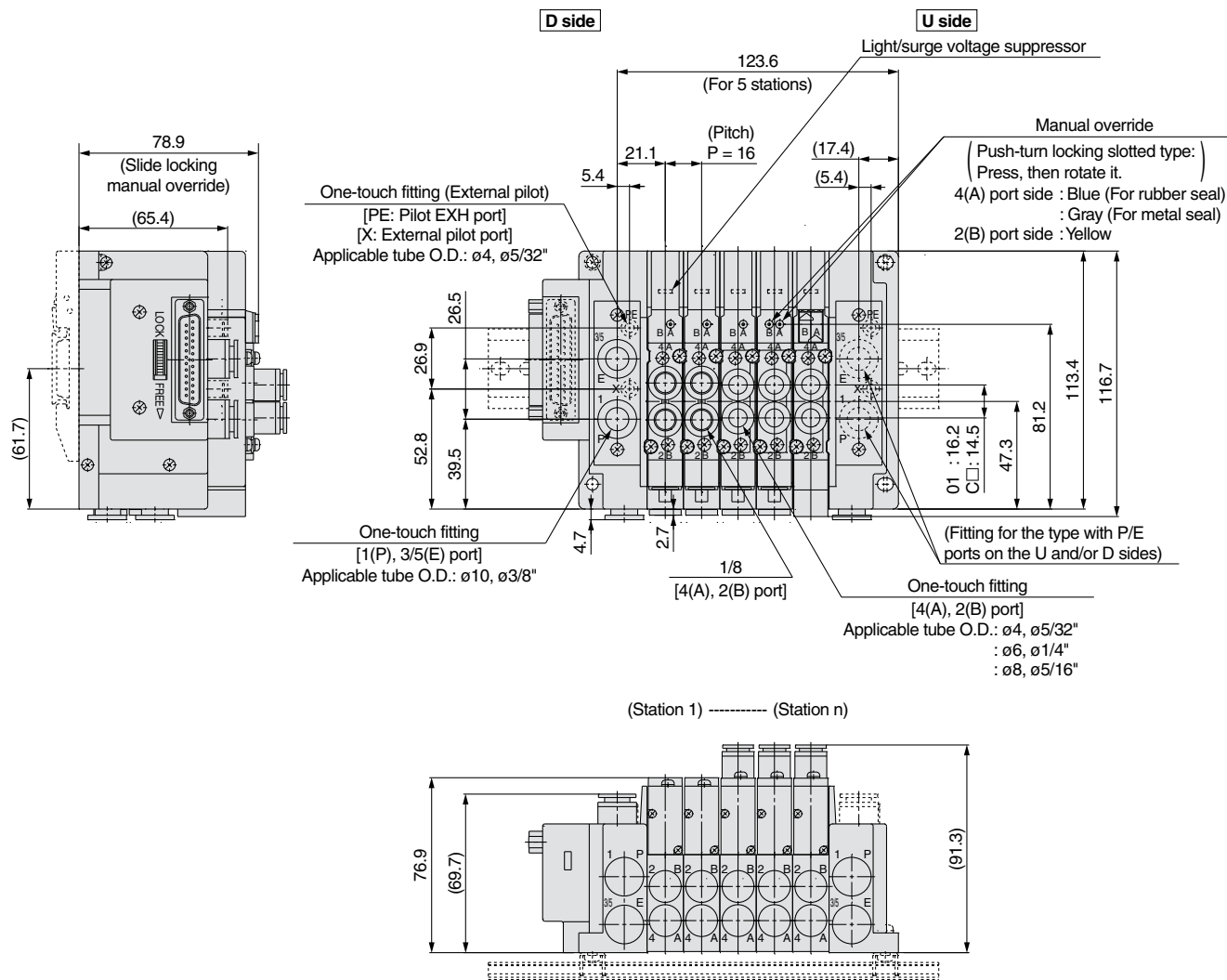
## Series SY5000

### Plug-in Connector Connecting Base

Type 12/Top Ported

All Wirings

SS5Y5-12□ - Stations  $\frac{U}{D}$  (R)



Note 1) These figures show the "SS5Y5-12F2-05D".

Note 2) 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 182 for dimensions of silencer.

Note 3) Refer to the below pages for dimensions that are not specified in each wiring specification.

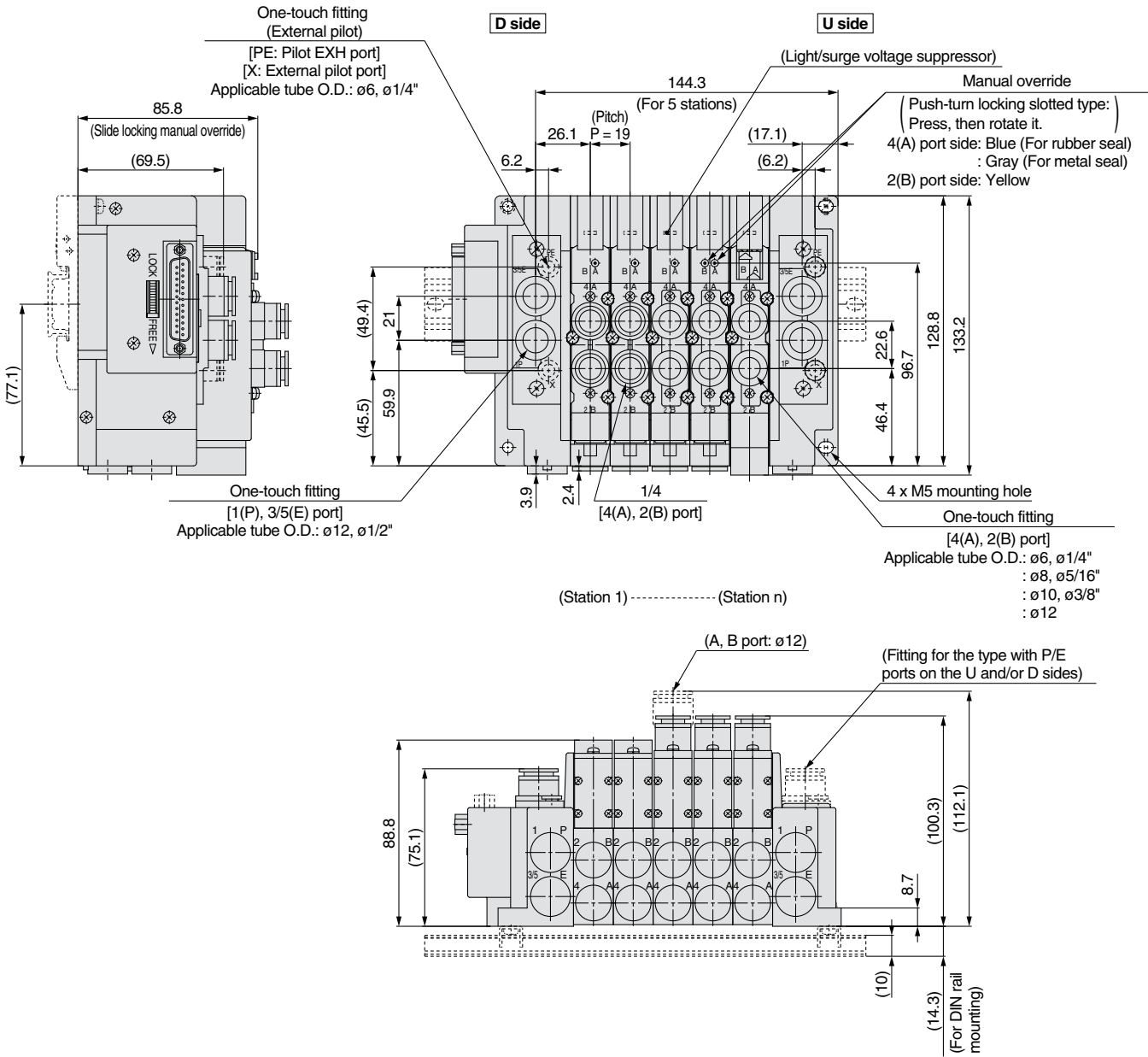
D-sub connector <IP40>	: P. 85
D-sub connector <IP67>	: P. 88
Flat ribbon cable	: P. 91
Terminal block box	: P. 103
Lead wire	: P. 113
Circular connector	: P. 123
EX500	: P. 133
EX600	: P. 142, 143
EX250	: P. 153
EX260	: P. 161
EX126	: P. 169
EX120	: P. 177

## Series SY7000

### Plug-in Connector Connecting Base

Type 12/Top Ported  
All Wirings

SS5Y7-12□-Stations  $\frac{U}{D}$  (R)



Note 1) These figures show the "SS5Y7-12F2-05D".

Note 2) 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 183 for dimensions of silencer.

Note 3) Refer to the below pages for dimensions that are not specified in each wiring specification.

D-sub connector <IP40>	: P. 86
D-sub connector <IP67>	: P. 89
Flat ribbon cable	: P. 92
Terminal block box	: P. 104
Lead wire	: P. 114
Circular connector	: P. 124
EX500	: P. 134
EX600	: P. 144, 145
EX250	: P. 154
EX260	: P. 162
EX126	: P. 170
EX120	: P. 178



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 198 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 8 in the order code. However, the manifold block width should be 12.5 mm.



### 1 Type

10	Side ported
11	Bottom ported

### 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		—
G	PC wiring (20 pins)	With power supply terminal
T	Terminal block box	99
L1	Lead wire	34 cores
L2		17 cores
L3		9 cores
M	Circular connector	119
S□	Serial transmission	EX500
S6□		EX600
S□		EX250
S□		EX260
S4□		EX126
S3□		EX120

\* 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 137 for the EX600 and 7 on page 149 for the EX250.

### 7 Fitting type: One-touch fitting

Symbol	A, B port	
C	Straight	
L	Metric size	Elbow
B		Upward <sup>Note)</sup> Downward <sup>Note)</sup>
N	Inch size	Straight
LN		Elbow
BN		Upward <sup>Note)</sup> Downward <sup>Note)</sup>
CM*	Mixed sizes	Straight
LM*		Elbow (Including upward and downward piping) <sup>Note)</sup>

Note) To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 226 to 228). Elbow fittings are not available for Type 11 (Bottom ported).

\* 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.

\* Elbow fittings: ø2, ø3.2 and ø1.8" are not available for the SY3000 series. ø2, ø3.2, ø1.8" and ø5/32" are not available for the SY5000 series.

**8 SY5000: A, B port size**

(Metric/One-touch fitting)

Symbol	Port size
4	ø4
6	ø6
8	ø8
Nil	For all stations of SY3000

(Inch/One-touch fitting)

Symbol	Port size
3	ø5/32"
7	ø1/4"
9	ø5/16"
Nil	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	ø2
3	ø3.2
4	ø4
6	ø6
8	ø8 (Note)

(Inch/One-touch fitting)

Symbol	Port size
1	ø1/8"
3	ø5/32"
7	ø1/4"
9	ø5/16" (Note)

Note) The valve pitch is the same as the SY5000.

\* No symbol needs to be specified when fitting type "CM", "LM" is selected.

**10 Mounting**

Nil	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. [The SY5000 valve is now at a mountable length (manifold block length of 16 mm).]
⋮	⋮
D24	For 24 stations

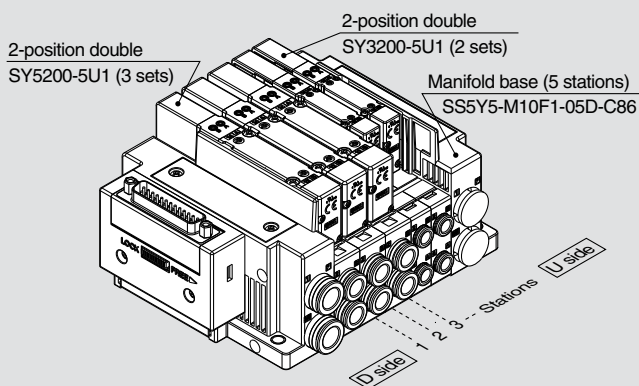
Note 1) Only direct mounting is available for Type 11 (Bottom ported).

Note 2) Refer to page 196 to determine the L3 using "Calculation formula" for the DIN rail length.

Note 3) Refer to page 247 for the fixation of DIN rail mounting type manifold.

**How to Order Manifold Assembly**

**Example (SS5Y5-M10F1-□)**



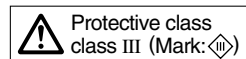
SS5Y5-M10F1-05D-C86 ...1 set (Type M10 5-station manifold base part no.)  
 \*SY5200-5U1 .....3 sets (2-position double part no.)  
 \*SY3200-5U1 .....2 sets (2-position double part no.)

→ 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.

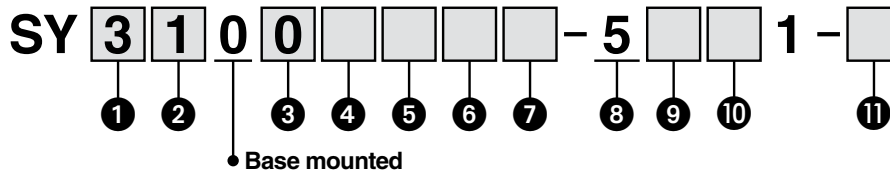
Note) When mixing top ported configurations, select from page 202.

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 3 for valve specifications.



### 1 Series

3	SY3000
5	SY5000

### 2 Type of actuation

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

\* 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

Nil	Internal pilot
R	External pilot

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

Nil	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 232 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

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

### 7 Coil type

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

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

\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

### 8 Rated voltage

5	24 VDC
6	12 VDC

\* Only 24 VDC is available for the serial transmission type.

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

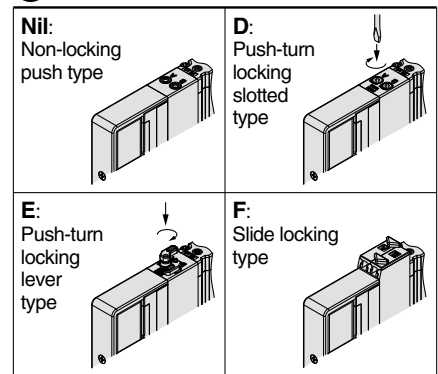
Symbol	With light	Surge voltage suppressor	Common specification
Nil	—	—	Non-polar
R	—	●	
U	●		
S	—		
Z	●		Positive common
NS	—		
NZ	●	Negative common	

\* "Nil" 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. 131 EX600: P. 139 EX250: P. 151  
EX260: P. 159 EX126: P. 167 EX120: P. 175

### 10 Manual override



\* Refer to page 14 for with the safety slide locking manual override.

### 11 Type of mounting screw

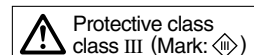
Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* 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 220 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

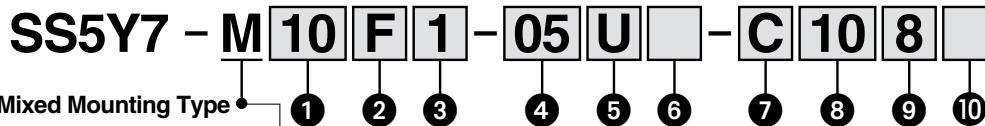
# Series SY5000/7000



The SY5000 can be mounted onto the SY7000 size manifold.

## How to Order Manifold

Refer to page 199 for dimensions of Type 11/Bottom ported type.



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 (25 pins)	81	
FW			IP40
P	Flat ribbon cable	81	
PG			26 pins
PH			20 pins
J	PC wiring (20 pins)	81	
G			10 pins
T	Terminal block box	99	
L1	Lead wire	109	
L2			34 cores
L3			17 cores
M	Circular connector	119	
S□			9 cores
S6□	Serial transmission	173	
S□			EX500
S□			EX600
S□			EX250
S□			EX260
S4□	EX126	165	
S3□	EX120	173	

\* 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 137 for the EX600 and ⑦ on page 149 for the EX250.

### ⑦ Fitting type: One-touch fitting

Symbol	A, B port	
C	Straight	
L	Metric size	Elbow
B		Upward <sup>Note)</sup>
N	Straight	
LN	Inch size	Elbow
BN		Upward <sup>Note)</sup>
CM*	Mixed sizes	Straight
LM*		Elbow (Including upward and downward piping) <sup>Note)</sup>

Note) To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 226 to 228). Elbow fittings are not available for Type 11 (Bottom ported).

\* 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.

\* Elbow fittings:  $\phi 1/4"$  and  $\phi 5/16"$  are not available.

### ⑥ SUP/EXH block assembly

Nil	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

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

\* Refer to page 137 for the EX600 and ⑦ on page 149 for the EX250.

**8 SY7000: A, B port size**

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

Symbol	Port size
<b>6</b>	ø6
<b>8</b>	ø8
<b>10</b>	ø10
<b>12</b>	ø12
<b>Nil</b>	For all stations of SY5000

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

Symbol	Port size
<b>7</b>	ø1/4"
<b>9</b>	ø5/16"
<b>11</b>	ø3/8"
<b>Nil</b>	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
<b>6</b>	ø6
<b>8</b>	ø8
<b>10</b>	ø10
<b>12</b>	ø12

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

Symbol	Port size
<b>7</b>	ø1/4"
<b>9</b>	ø5/16"
<b>11</b>	ø3/8"

Note) 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
<b>Nil</b>	Direct mounting	—	—
<b>AA</b>		●	●
<b>BA</b>		●	—
<b>D</b> □	DIN rail mounting	—	—
<b>A</b> □		●	●
<b>B</b> □		●	—

**DIN Rail Option**

Nil	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	

Note 1) Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" above.)

Note 2) Only direct mounting is available for Type 11 (Bottom ported).

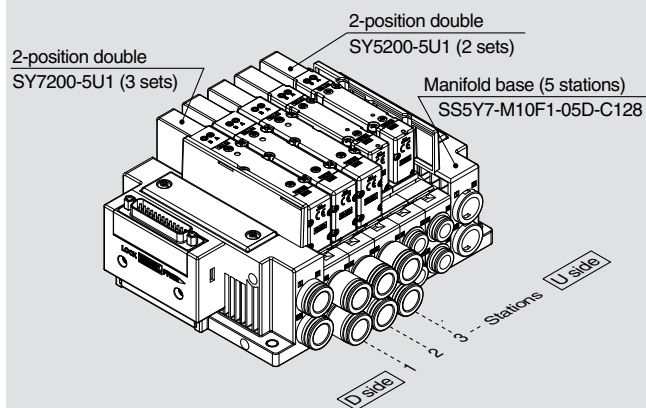
Note 3) Refer to page 196 to determine the L3 using "Calculation formula" for the DIN rail length. (For the SY3000 and SY5000 mixed mounting type)

Note 4) The manifold block width is 19 mm for both the SY5000 and SY7000 sizes.

Note 5) Refer to page 247 for the fixation of DIN rail mounting type manifold.

**How to Order Manifold Assembly**

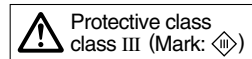
**Example (SS5Y7-M10F1-□)**



**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.

Note) When mixing top ported configurations, select from page 202.  
 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.

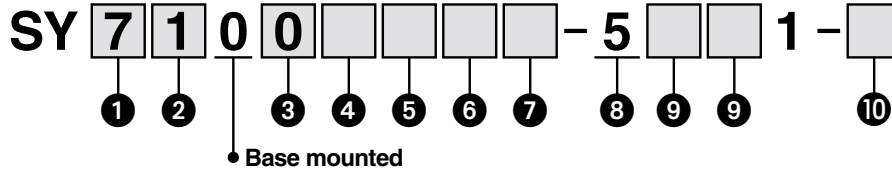


Valve  
 Plug-in Sub-plate  
 Plug-in Metal Base  
 Type 50, 51, 52 Manifold Exploded View  
 Plug-in Connector Connecting Base  
 Type 10, 11, 12 Manifold Exploded View  
 One-touch Fittings/ Plug Assembly Part No.  
 Manifold Options



## How to Order Valves (With mounting screw)

Refer to page 3 for valve specifications.



### 1 Series

5	SY5000
7	SY7000

### 2 Type of actuation

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

\* 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

Nil	Internal pilot
R	External pilot

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

Nil	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 232 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

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

### 7 Coil type

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

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

\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

### 8 Rated voltage

5	24 VDC
6	12 VDC

\* Only 24 VDC is available for the serial transmission type.

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

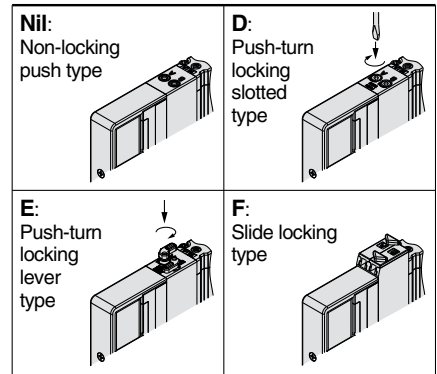
Symbol	With light	Surge voltage suppressor	Common specification
Nil	—	—	Non-polar
R	—	●	
U	●		
S	—		
Z	●		●
NS	—		Negative common
NZ	●		

\* "Nil" 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. 131 EX600: P. 139 EX250: P. 151  
EX260: P. 159 EX126: P. 167 EX120: P. 175

### 10 Manual override



\* Refer to page 14 for with the safety slide locking manual override.

### 11 Type of mounting screw

Nil	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 220 for part numbers of the base gasket and mounting screw.

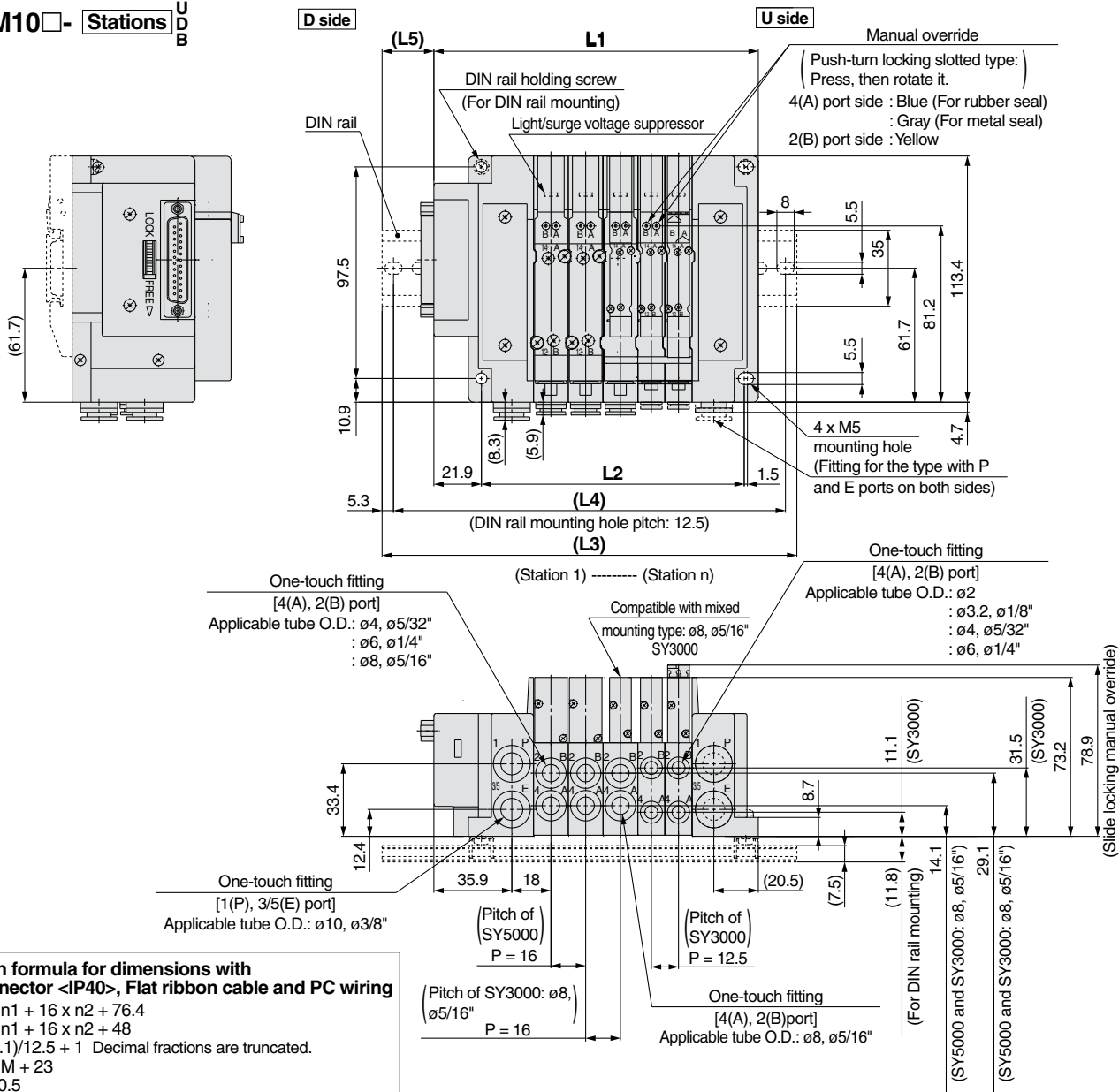
\* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

Dimensions: Series **SY3000/5000**

Plug-in  
Connector Connecting Base

Type 10/Side Ported  
Mixed Mounting Type

SS5Y5-M10  $\square$  - Stations  $\frac{U}{D}$



**Calculation formula for dimensions with D-sub connector <IP40>, Flat ribbon cable and PC wiring**

$L1 = 12.5 \times n1 + 16 \times n2 + 76.4$   
 $L2 = 12.5 \times n1 + 16 \times n2 + 48$   
 $M = (L1 + 6.1) / 12.5 + 1$  Decimal fractions are truncated.  
 $L3 = 12.5 \times M + 23$   
 $L4 = L3 - 10.5$   
 $L5 = (L3 - L1 + 6.1) / 2$

n1: Number of valve stations of the SY3000  
n2: Number of valve stations of the SY5000  
(Including the stations of the SY3000:  $\phi 8, \phi 5/16"$ )

**Calculation formula for dimensions with D-sub connector <IP67>, Terminal block box, Lead wire, Circular connector, EX500/600/250/260/126/120 serial transmission**

$L1 = 12.5 \times n1 + 16 \times n2 + a + b \times n3$   
 $L2 = 12.5 \times n1 + 16 \times n2 \times 48$   
 $M = L1 / 12.5 + 1$  Decimal fractions are truncated.  
 $L3 = 12.5 \times M + 23$   
 $L4 = L3 - 10.5$   
 $L5 = (L3 - L1) / 2$   
 $L6 = b \times n3 + c$

n1: Number of valve stations of the SY3000  
n2: Number of valve stations of the SY5000  
(Including the stations of the SY3000:  $\phi 8, \phi 5/16"$ )  
n3: Number of I/O units or input block stations

Note) Refer to pages 142 to 143 for dimensions of the EX600 serial transmission with I/O unit and page 153 for the EX250 serial transmission with input block when L6, b and c are used for the calculation formula.

Note) Refer to pages 181 and 182 for dimensions of external pilot, built-in silencer and elbow fittings.

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	—	—
Serial transmission: EX500	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	—	—

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

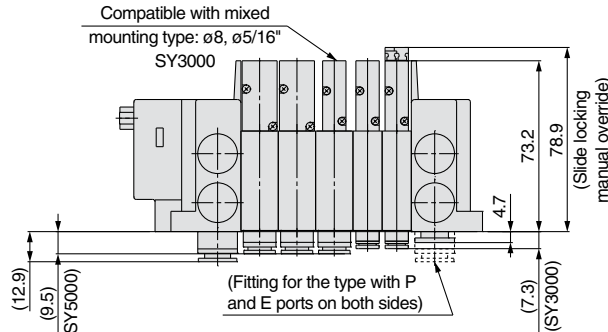
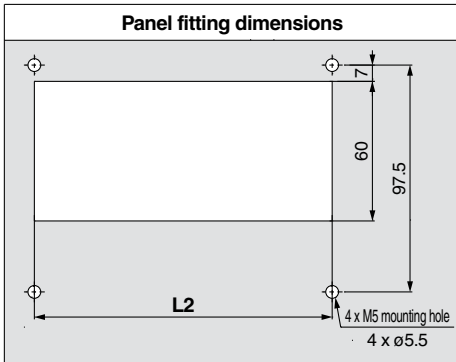
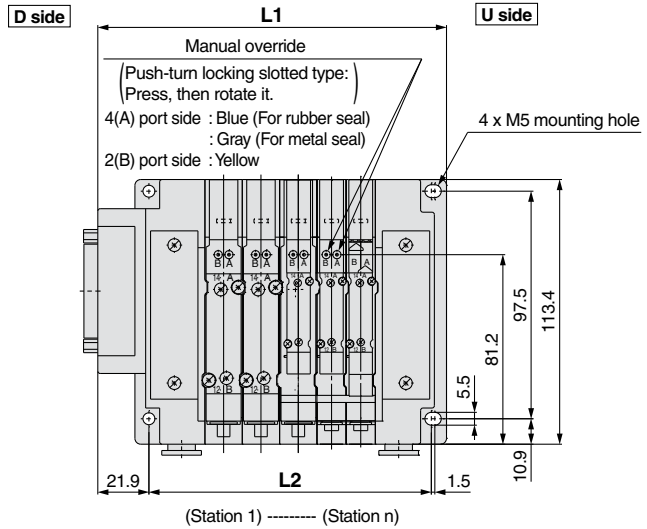
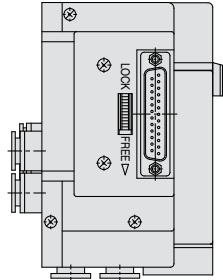


Dimensions: Series **SY3000/5000**

Plug-in  
Connector Connecting Base

Type 11/Bottom Ported  
Mixed Mounting Type

SS5Y5-M11 □ - Stations  $\frac{U}{D}$



Calculation formula for dimensions

$$L1 = 12.5 \times n1 + 16 \times n2 + a + b \times n3$$

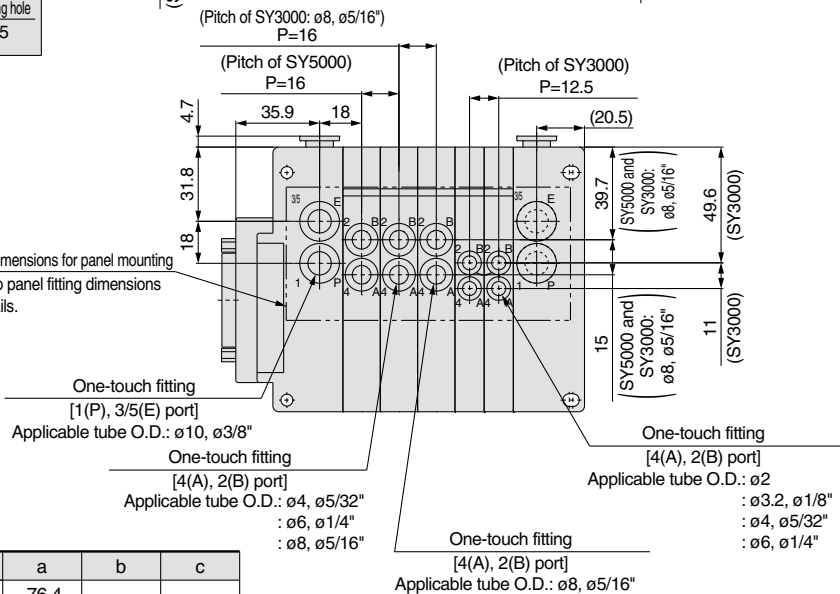
$$L2 = 12.5 \times n1 + 16 \times n2 + 48$$

$$L6 = b \times n3 + c$$

n1: Number of valve stations of the SY3000  
n2: Number of valve stations of the SY5000  
(Including the stations of the SY3000: ø8, ø5/16")  
n3: Number of I/O units or input block stations

Note) Refer to pages 142 and 143 for dimensions of the EX600 serial transmission with I/O unit and page 153 for the EX250 serial transmission with input block when L6, b and c are used for the calculation formula.

Fitting dimensions for panel mounting  
Refer to panel fitting dimensions for details.



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	—	—
Serial transmission: EX500	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	—	—

Note) Refer to page 184 for dimensions of external pilots and built-in silencers.

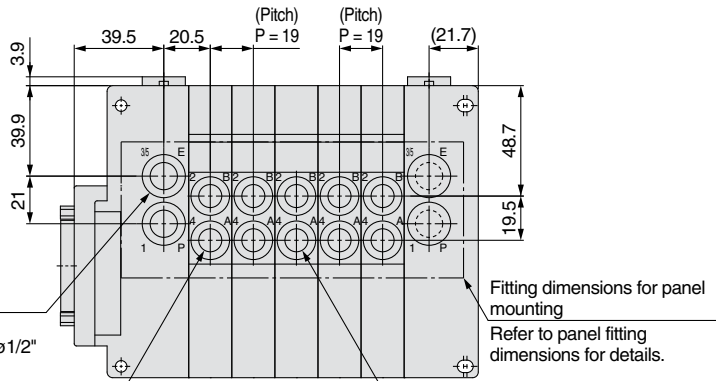
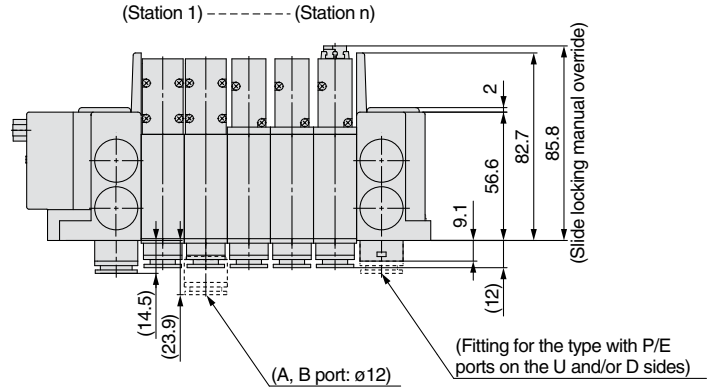
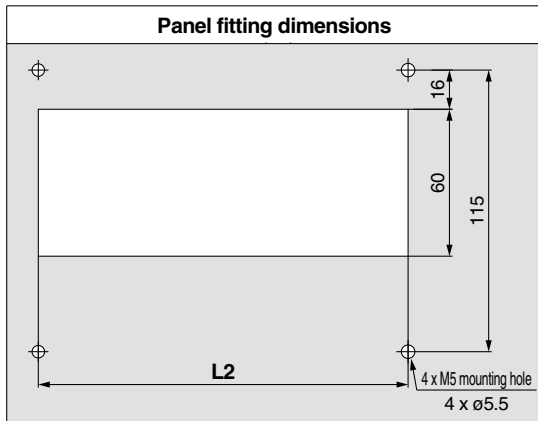
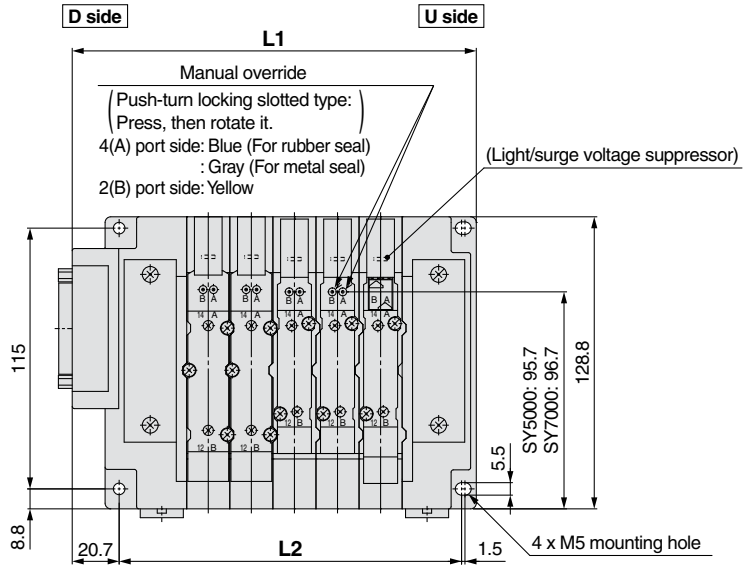
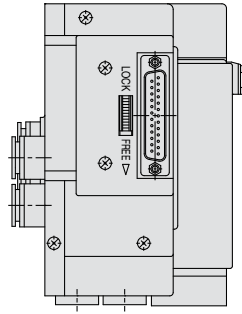
# Series SY3000/5000/7000

## Plug-in Connector Connecting Base

## Type 11/Bottom Ported Mixed Mounting Type

### Dimensions: Series SY5000/7000

SS5Y7-M11 □ - Stations  $\begin{matrix} U \\ D \\ B \end{matrix}$



Note 1) Refer to page 185 for dimensions of external pilots and built-in silencers.

Note 2) 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. 185
D-sub connector <IP40>	: P. 86
D-sub connector <IP67>	: P. 89
Flat ribbon cable	: P. 92
Terminal block box	: P. 104
Lead wire	: P. 114
Circular connector	: P. 124
EX500	: P. 134
EX600	: P. 144, 145
EX250	: P. 154
EX260	: P. 162
EX126	: P. 170
EX120	: P. 178

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

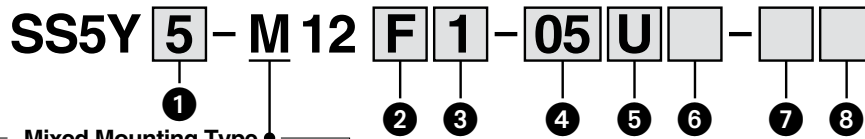
# Series SY3000/5000/7000



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 187 and 188 for dimensions of Type 12/Top ported type.



### 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 ø8 or ø5/16" 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.

### 2 Connector type

Symbol	Type	Page
<b>F</b>	D-sub connector (25 pins)	IP40
<b>FW</b>		IP67
<b>P</b>	Flat ribbon cable	26 pins
<b>PG</b>		20 pins
<b>PH</b>		10 pins
<b>J</b>	PC wiring (20 pins)	—
<b>G</b>		With power supply terminal
<b>T</b>	Terminal block box	105
<b>L1</b>	Lead wire	34 cores
<b>L2</b>		17 cores
<b>L3</b>		9 cores
<b>M</b>	Circular connector	125
<b>S□</b>	Serial transmission	EX500
<b>S6□</b>		EX600
<b>S□</b>		EX250
<b>S□</b>		EX260
<b>S4□</b>		EX126
<b>S3□</b>		EX120
<b>S3□</b>		EX120

\* Refer to the pages shown in the table above for details.

### 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 "Connector type" for details.
⋮	⋮	
<b>24</b>	24 stations	

### 5 P, E port entry

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

\* Refer to page 147 for the EX600 and ◊ on page 155 for the EX250.

Note) For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

### 6 SUP/EXH block assembly

<b>Nil</b>	Internal pilot
<b>S</b>	Internal pilot, Built-in silencer
<b>R</b>	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.)

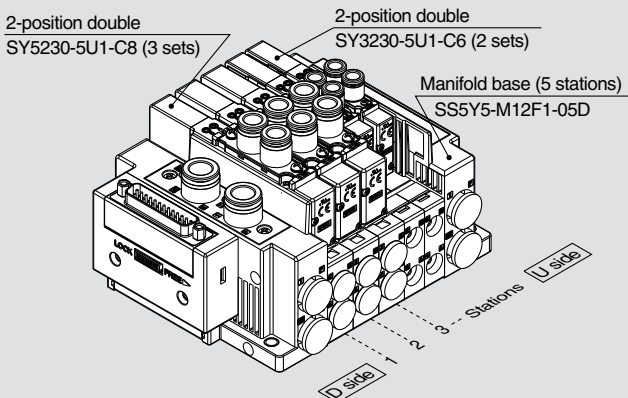
\* Refer to page 147 for the EX600 and ◊ on page 155 for the EX250.

### 7 P, E port size (One-touch fittings)

Symbol	SY5000	SY7000	Note
<b>Nil</b>	ø10	ø12	Metric size
<b>N</b>	ø3/8"	ø1/2"	Inch size

## 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 above. If the arrangement becomes complicated, specify on a manifold specification sheet.

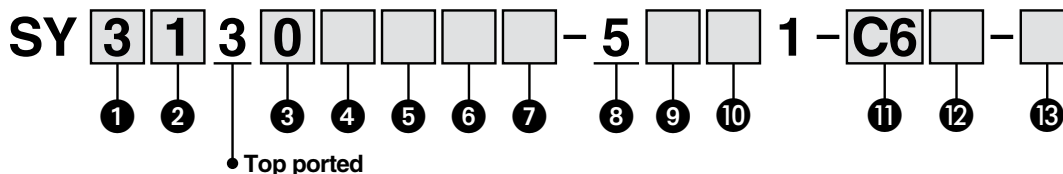
### 8 Mounting

<b>Nil</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	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).]
⋮	⋮	
<b>D24</b>	For 24 stations	

Note 1) Refer to page 203 to determine the L3 using "Calculation formula" for the DIN rail length. (For the SY3000 and SY5000 mixed mounting type)

Note 2) Refer to page 247 for the fixation of DIN rail mounting type manifold.

**How to Order Valves (With mounting screw)** Refer to page 3 for valve specifications.



**1 Series**

3	SY3000
5	SY5000
7	SY7000

**2 Type of actuation**

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

\* 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**

Nil	Internal pilot
R	External pilot

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

Nil	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 232 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**

Nil	Standard (102 psi (0.7 MPa))
B	Quick response type (102 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

**7 Coil type**

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

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

\* Be careful of the energizing time when the power saving circuit is selected. Refer to page 244 for details.

**8 Rated voltage**

5	24 VDC
6	12 VDC

\* Only 24 VDC is available for the serial transmission type.

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

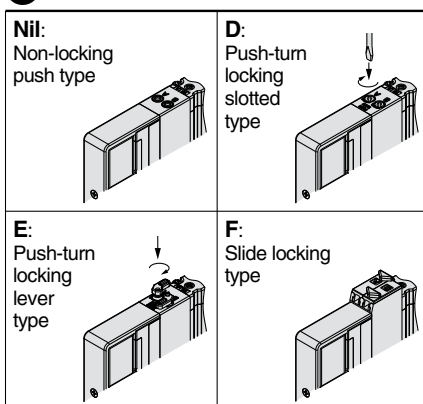
Symbol	With light	Surge voltage suppressor	Common specification
Nil	—	—	Non-polar
R	—	●	
U	●		
S	—		
Z	●		Positive common
NS	—		
NZ	●	Negative common	

\* "Nil" 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. 136 EX600: P. 148 EX250: P. 156  
EX260: P. 164 EX126: P. 172 EX120: P. 180

**10 Manual override**



\* Refer to page 14 for with the safety slide locking manual override.

**11 A, B port size**

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	ø2	●	—	—
C3	ø3.2	●	—	—
C4	ø4	●	●	—
C6	ø6	●	●	●
C8	ø8	—	●	●
C10	ø10	—	—	●
C12	ø12	—	—	●

**One-touch fitting (Inch)**

Symbol	A, B port	SY3000	SY5000	SY7000
N1	ø1/8"	●	—	—
N3	ø5/32"	●	●	—
N7	ø1/4"	●	●	●
N9	ø5/16"	—	●	●
N11	ø3/8"	—	—	●

**12 Thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

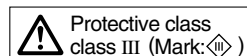
**13 Type of mounting screw**

Nil	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 220 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.



Valve  
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



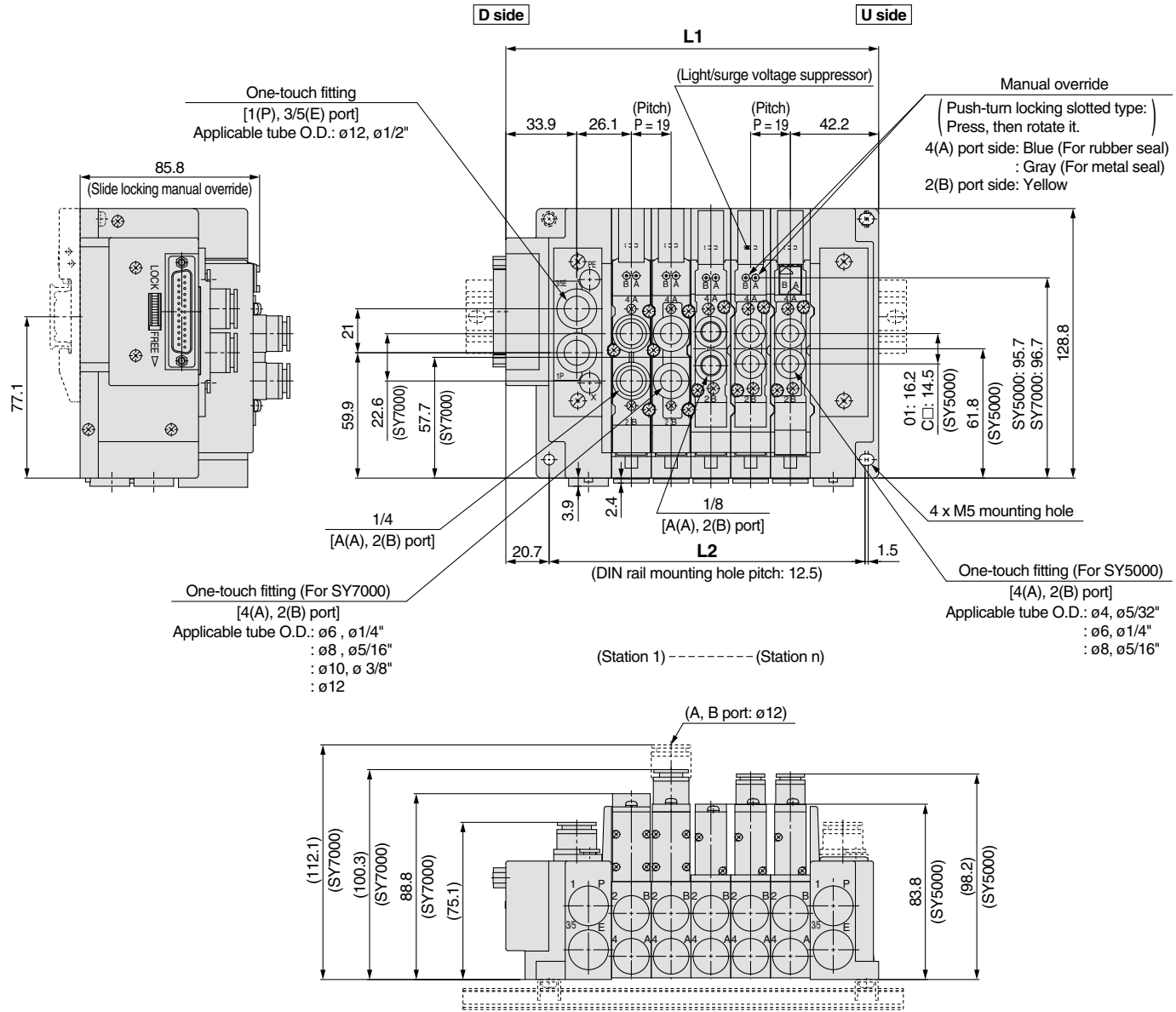
Dimensions: Series **SY7000**

Plug-in  
Connector Connecting Base

Type 12/Top Ported

Mixed Mounting Type

SS5Y7-M12□- Stations  $\frac{U}{D}$   
 $\frac{B}{B}$



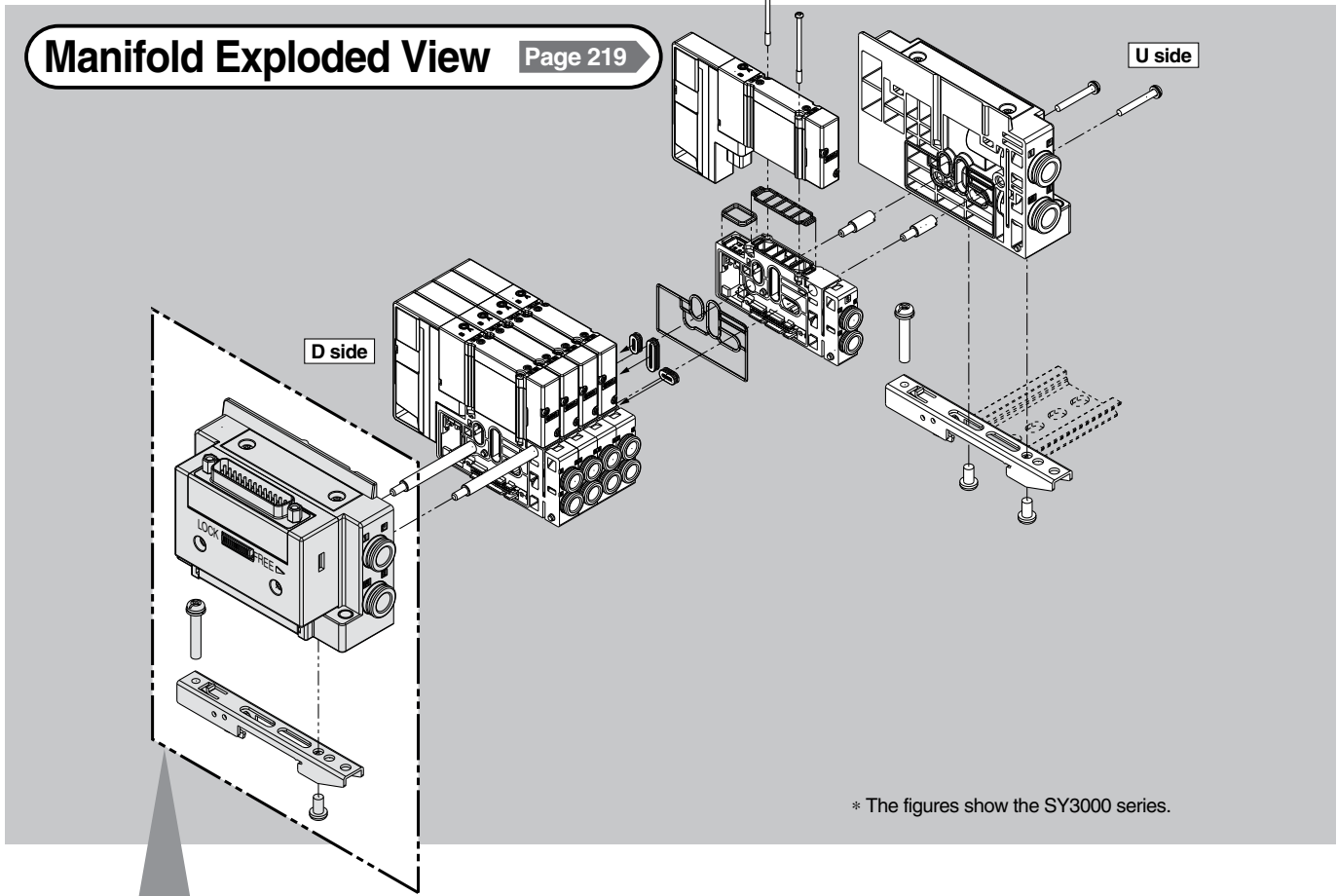
Note 1) Refer to page 183 for dimensions of external pilot and elbow fittings.

Note 2) 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. 188
D-sub connector <IP40>	: P. 86
D-sub connector <IP67>	: P. 89
Flat ribbon cable	: P. 92
Terminal block box	: P. 104
Lead wire	: P. 114
Circular connector	: P. 124
EX500	: P. 134
EX600	: P. 144, 145
EX250	: P. 154
EX260	: P. 162
EX126	: P. 170
EX120	: P. 178



# Series SY3000/5000/7000 Type 10, 11, 12 Connector Connecting Base Manifold Exploded View



## Wiring

	<b>D-sub connector &lt;IP40&gt;/Flat ribbon cable</b> Page 207 	<b>D-sub connector &lt;IP67&gt;</b> Page 208 	<b>Terminal block box</b> Page 209 
<b>Lead wire</b> Page 210 	<b>Circular connector</b> Page 211 	<b>EX500</b> Page 212 	<b>EX600</b> Page 213 
<b>EX250</b> Page 215 	<b>EX260</b> Page 216 	<b>EX126</b> Page 217 	<b>EX120</b> Page 218 

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.

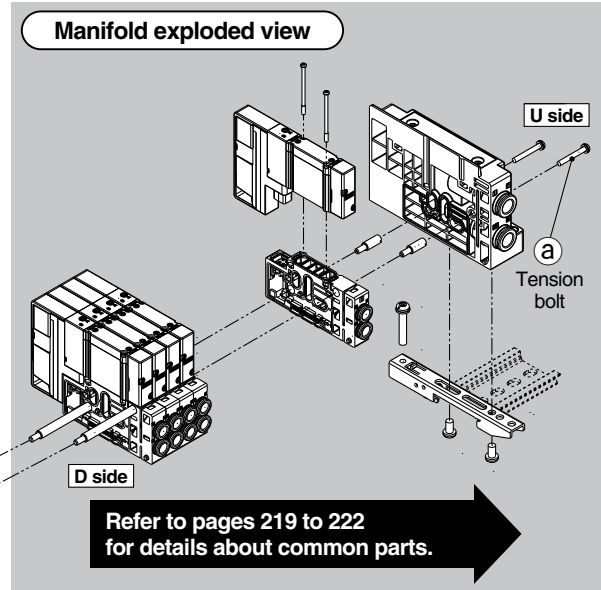
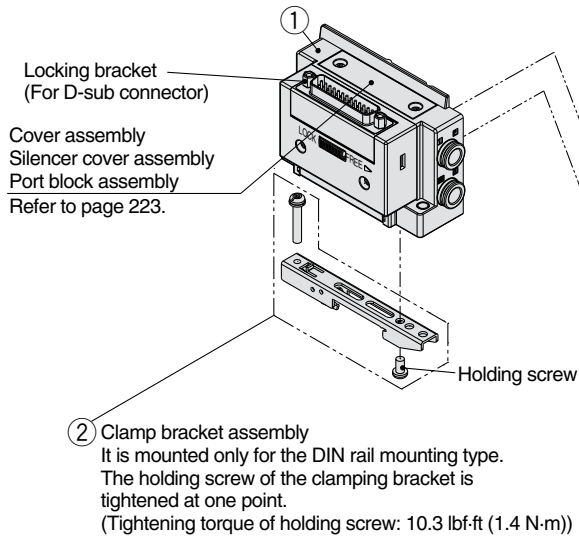
Manifold Options



# Series SY3000/5000/7000

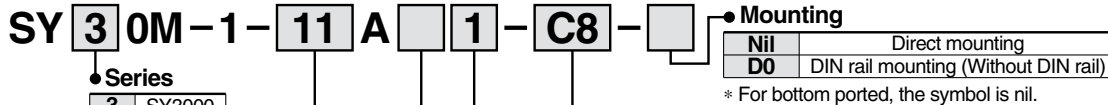
## Wiring

### D-sub Connector <IP40>/Flat Ribbon Cable



## Manifold Parts No.

### ① SUP/EXH block assembly



#### 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)

#### Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
Nil	●	—	—	Side
S	●	—	●	
R	—	●	—	
V	●	—	—	Top
RV	—	●	—	
VP	●	—	●*	
B	●	—	—	Bottom
BS	●	—	●	
BR	—	●	—	

\* For silencer (supply side). E port is plugged.

Note) "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 SY7000
(a) Tension bolt	None Note)	3 pcs.

Note) 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.

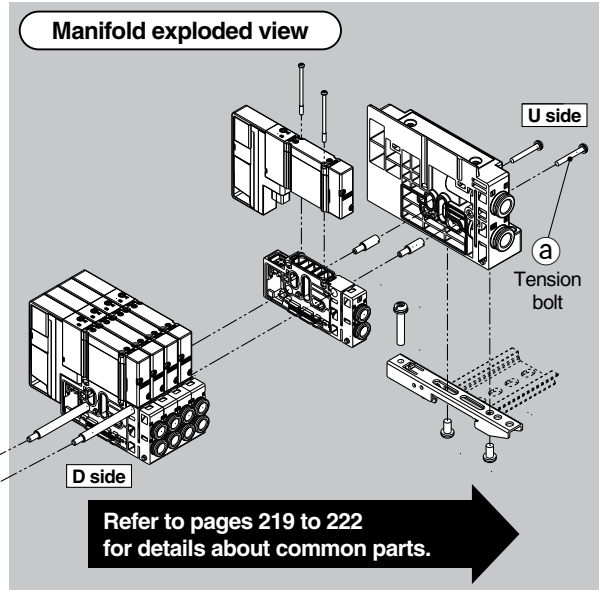
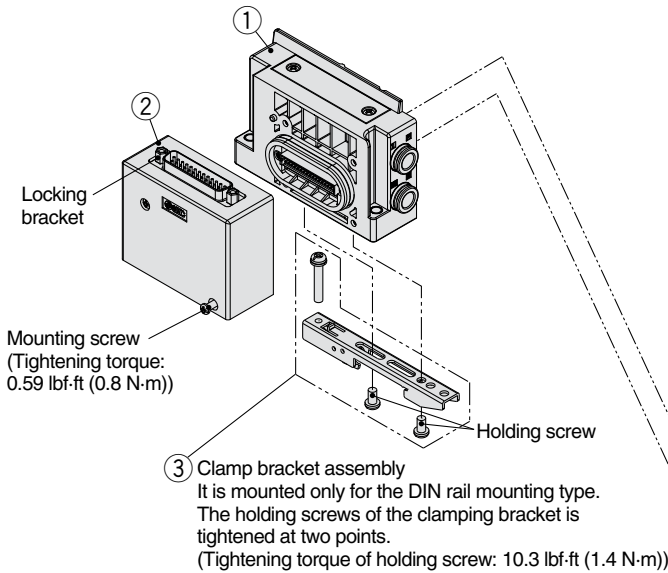
Symbol	P, E port	SY3000	SY5000	SY7000	Note	
C8	ø8	●	—	—	Side/Bottom/Top ported	
C10	ø10	—	●	—	Metric size	
C12	ø12	—	—	●		
N9	ø5/16"	●	—	—	Side/Bottom/Top ported	
N11	ø3/8"	—	●	—	Inch size	
N13	ø1/2"	—	—	●		
L8	ø8	●	—	—	Side ported	
L10		—	●	—		Metric size
L12		—	—	●		
LN9	ø5/16"	●	—	—	Side ported	
LN11	ø3/8"	—	●	—		Inch size
LN13	ø1/2"	—	—	●		
B8	ø8	●	—	—	Side ported	
B10		—	●	—		Metric size
B12		—	—	●		
BN9	ø5/16"	●	—	—	Side ported	
BN11	ø3/8"	—	●	—		Inch size
BN13	ø1/2"	—	—	●		
00 Note 1)	Plug	●	●	●	P/E port entry on one side or Top ported	
00U Note 2)	Plug	●	●	●		

Note 1) It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

Note 2) "00U" is available only for the D-sub connector type and it has an inch size locking bracket.

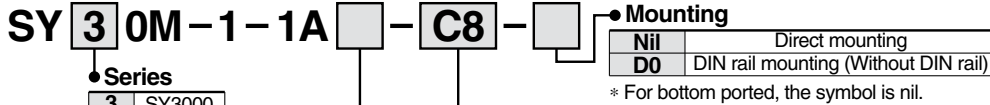
**Wiring**

## D-sub Connector <IP67>



## Manifold Parts No.

### ① SUP/EXH block assembly



• Series

3	SY3000
5	SY5000
7	SY7000

#### • Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
Nil	●	—	—	Side
S	●	—	●	
R	—	●	—	
V	●	—	—	Top
RV	—	●	—	
VP	●	—	●*	
B	●	—	—	Bottom
BS	●	—	●	
BR	—	●	—	

\* For silencer (supply side). E port is plugged.

Note) "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	ø8	●	—	—	Side/Bottom/Top ported Metric size					
C10	ø10	—	●	—						
C12	ø12	—	—	●						
N9	ø5/16"	●	—	—	Side/Bottom/Top ported Inch size					
N11	ø3/8"	—	●	—						
N13	ø1/2"	—	—	●						
L8	ø8	●	—	—	Side ported Metric size					
						L10	ø10	—	●	—
LN9	ø5/16"	●	—	—	Side ported Inch size					
						LN11	ø3/8"	—	●	—
B8	ø8	●	—	—	Side ported Metric size					
						B10	ø10	—	●	—
BN9	ø5/16"	●	—	—	Side ported Inch size					
						BN11	ø3/8"	—	●	—
00 (Note 1)	Plug	●	●	●	P/E port entry on one side or Top ported					
00U (Note 2)	Plug	●	●	●						

Note 1) It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

Note 2) "00U" has an inch size locking bracket.

### SUP/EXH block assembly (D side) accessories and the number of accessories

Accessories	SY3000	SY5000 SY7000
(a) Tension bolt	None (Note)	3 pcs.

Note) 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

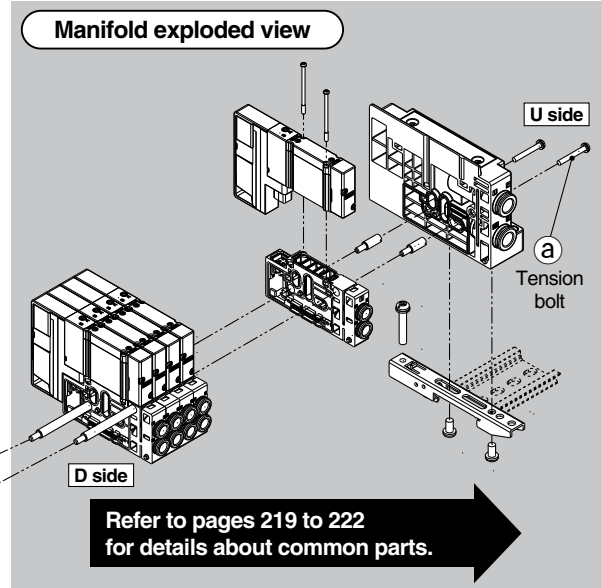
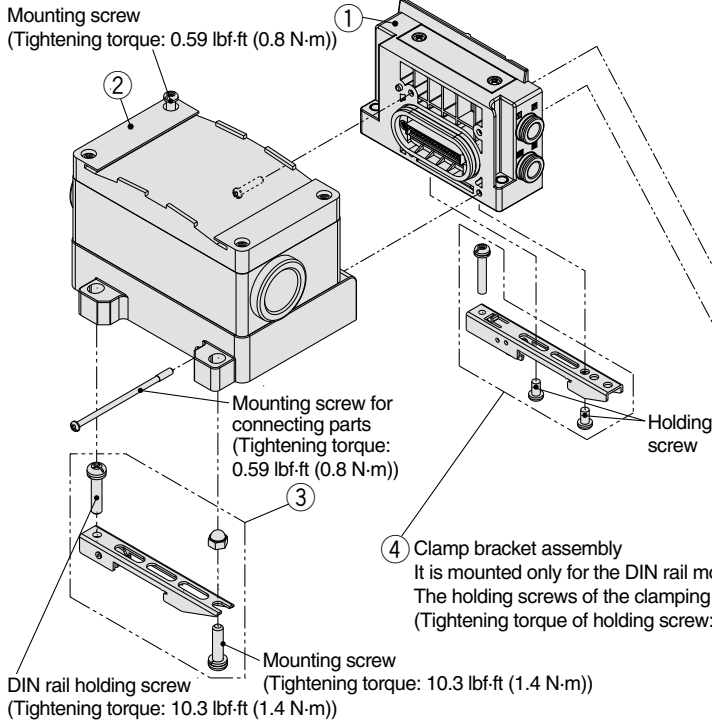
Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

\* Part number is for one assembly.

# Series SY3000/5000/7000

## Wiring

### Terminal Block Box



## Manifold Parts No.

### ① SUP/EXH block assembly

**SY 3 0M-1-1A** - **C8** - **Mounting**

• Series

3	SY3000
5	SY5000
7	SY7000

Nil	Direct mounting
D0	DIN rail mounting (Without DIN rail)

\* For bottom ported, the symbol is nil.

#### • Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
Nil	●	—	—	Side
S	●	—	●	
R	—	●	—	
V	●	—	—	
RV	—	●	—	Top
VP	●	—	●*	
B	●	—	—	Bottom
BS	●	—	●	
BR	—	●	—	

\* For silencer (supply side), E port is plugged.  
Note) "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	ø8	●	—	—	Side/Bottom/Top ported Metric size
C10	ø10	—	●	—	
C12	ø12	—	—	●	
N9	ø5/16"	●	—	—	Side/Bottom/Top ported Inch size
N11	ø3/8"	—	●	—	
N13	ø1/2"	—	—	●	
L8	Upward elbow ø8	●	—	—	Side ported Metric size
L10		ø10	—	●	
L12		ø12	—	—	
LN9	Downward elbow ø5/16"	●	—	—	Side ported Inch size
LN11		ø3/8"	—	●	
LN13		ø1/2"	—	—	
B8	Downward elbow ø8	●	—	—	Side ported Metric size
B10		ø10	—	●	
B12		ø12	—	—	
BN9	Downward elbow ø5/16"	●	—	—	Side ported Inch size
BN11		ø3/8"	—	●	
BN13		ø1/2"	—	—	
00 (Note)	Plug	●	●	●	P/E port entry on one side or Top ported

Note) 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 SY7000
① Tension bolt	None (Note)	3 pcs.

Note) 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.

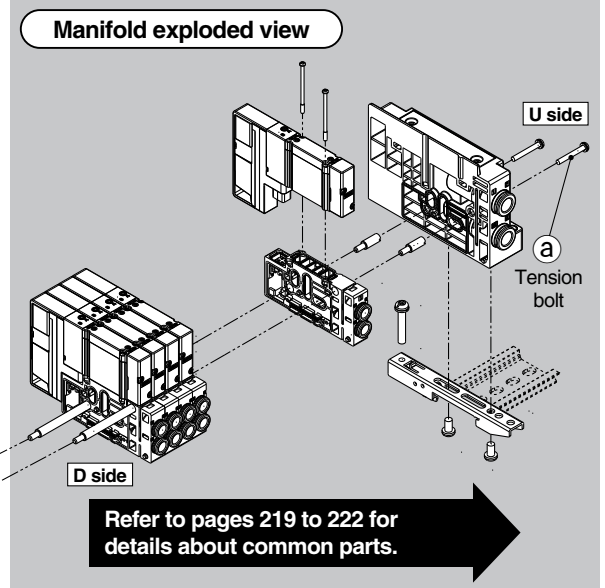
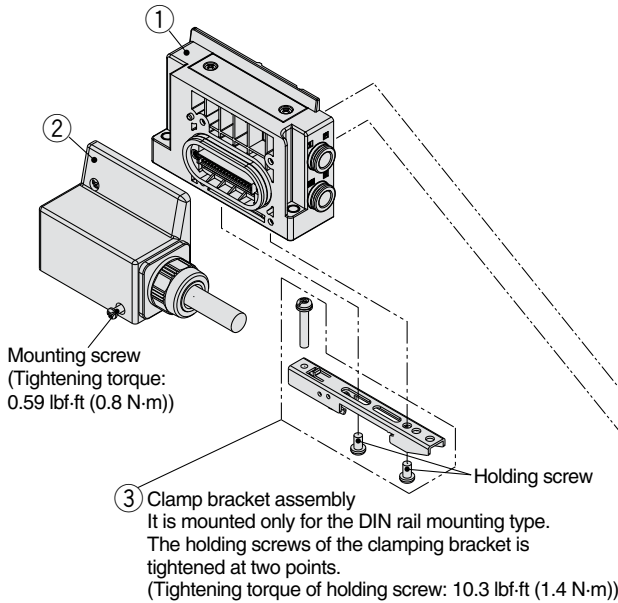
### ④ Clamp bracket assembly

Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

\* Part number is for one assembly.

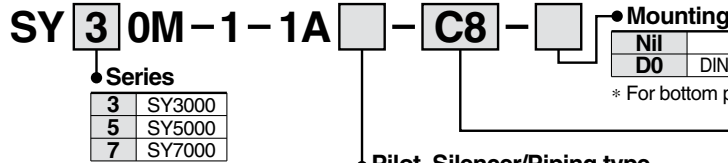
Wiring

Lead Wire



Manifold Parts No.

① SUP/EXH block assembly



● **Series**

3	SY3000
5	SY5000
7	SY7000

● **Pilot, Silencer/Piping type**

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
Nil	●	—	—	Side
S	●	—	●	
R	—	●	—	
V	●	—	—	
RV	—	●	—	Top
VP	●	—	●*	
B	●	—	—	
BS	●	—	●	Bottom
BR	—	●	—	

\* For silencer (supply side). E port is plugged.  
 Note) "B" for bottom ported can be selected for the SY5000/7000 series.

Symbol	P, E port	SY3000	SY5000	SY7000	Note
<b>C8</b>	ø8	●	—	—	Side/Bottom/ Top ported Metric size
<b>C10</b>	ø10	—	●	—	
<b>C12</b>	ø12	—	—	●	Side/Bottom/ Top ported Inch size
<b>N9</b>	ø5/16"	●	—	—	
<b>N11</b>	ø3/8"	—	●	—	
<b>N13</b>	ø1/2"	—	—	●	Side ported Metric size
<b>L8</b>	ø8	●	—	—	
	ø10	—	●	—	
	ø12	—	—	●	
<b>LN9</b>	ø5/16"	●	—	—	
	ø3/8"	—	●	—	
	ø1/2"	—	—	●	
<b>BN9</b>	ø8	●	—	—	
	ø10	—	●	—	
	ø12	—	—	●	
<b>BN11</b>	ø5/16"	●	—	—	
	ø3/8"	—	●	—	
	ø1/2"	—	—	●	
<b>00</b> (Note)	Plug	●	●	●	P/E port entry on one side or Top ported

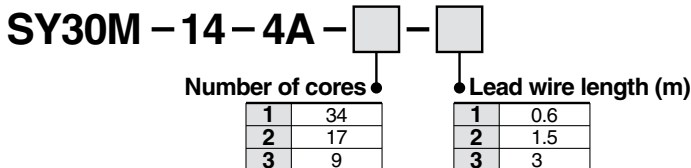
Note) It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

SUP/EXH block assembly (D side) accessories and the number of accessories

Accessories	SY3000	SY5000 SY7000
① Tension bolt	None (Note)	3 pcs.

Note) Since the nuts are embedded in the SUP/EXH block.

② Lead wire connector block assembly



③ Clamp bracket assembly

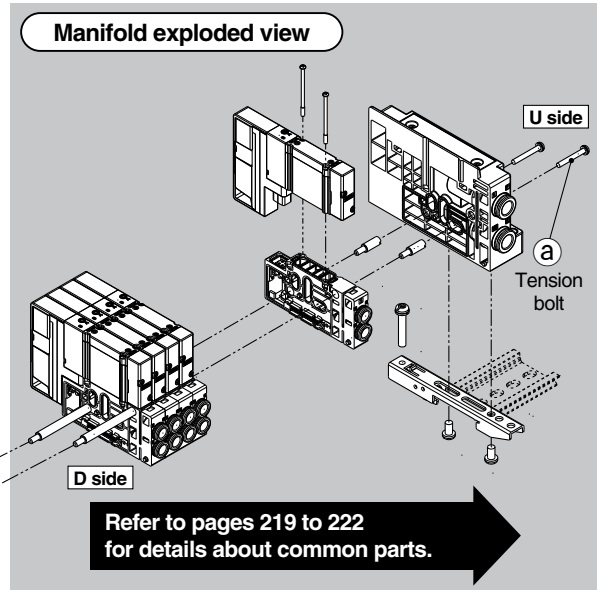
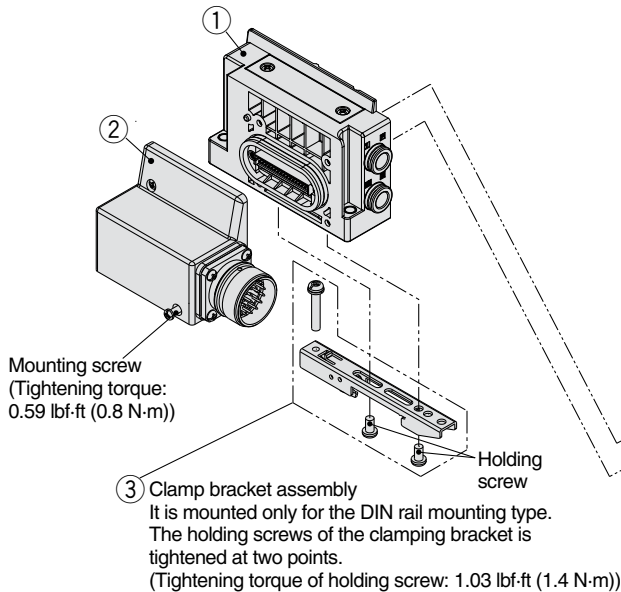
Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

\* Part number is for one assembly.

# Series SY3000/5000/7000

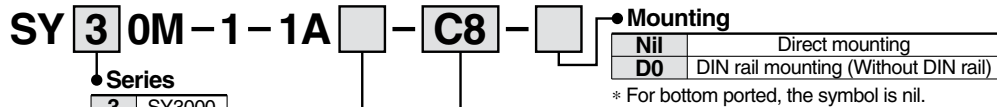
## Wiring

### Circular Connector



## Manifold Parts No.

### ① SUP/EXH block assembly



Series

3	SY3000
5	SY5000
7	SY7000

#### Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
Nil	●	—	—	Side
S	●	—	●	
R	—	●	—	
V	●	—	—	
RV	—	●	—	Top
VP	●	—	●*	
B	●	—	—	Bottom
BS	●	—	●	
BR	—	●	—	

\* For silencer (supply side). E port is plugged.  
Note) "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	ø8	●	—	—	Side/Bottom/Top ported Metric size
C10	ø10	—	●	—	
C12	ø12	—	—	●	Side/Bottom/Top ported Inch size
N9	ø5/16"	●	—	—	
N11	ø3/8"	—	●	—	
N13	ø1/2"	—	—	●	Side ported Metric size
L8	ø8	●	—	—	
L10	ø10	—	●	—	
L12	ø12	—	—	●	
LN9	ø5/16"	●	—	—	Side ported Inch size
LN11	ø3/8"	—	●	—	
LN13	ø1/2"	—	—	●	
B8	ø8	●	—	—	Side ported Metric size
B10	ø10	—	●	—	
B12	ø12	—	—	●	Side ported Inch size
BN9	ø5/16"	●	—	—	
BN11	ø3/8"	—	●	—	
BN13	ø1/2"	—	—	●	
00 (Note)	Plug	●	●	●	P/E port entry on one side or Top ported

Note) 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 SY7000
(a) Tension bolt	None (Note)	3 pcs.

Note) 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

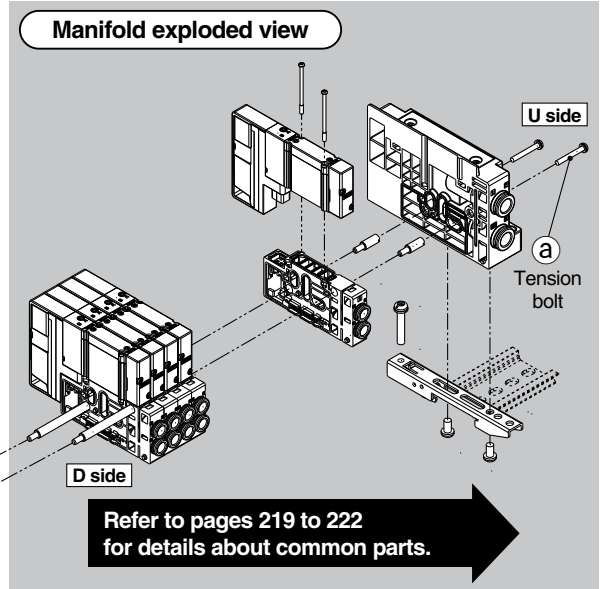
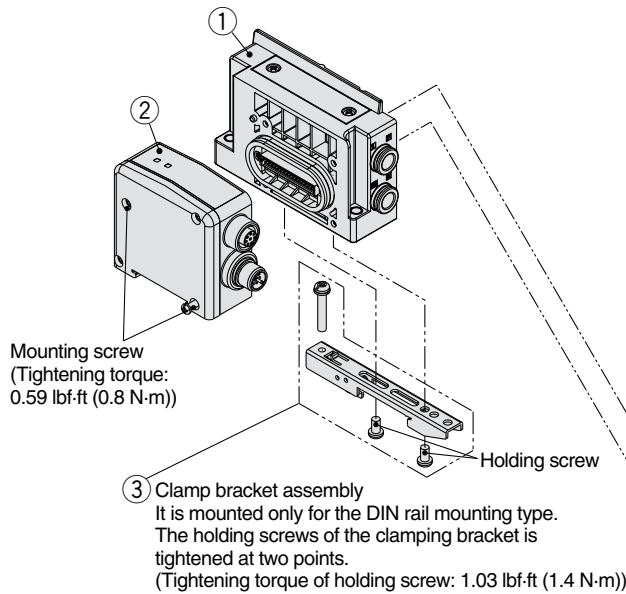
\* Part number is for one assembly.



# Connector Connecting Base Manifold Exploded View Series SY3000/5000/7000

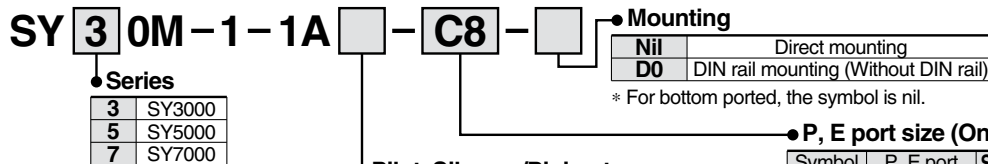
## Wiring

### EX500



## Manifold Parts No.

### ① SUP/EXH block assembly



Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
Nil	●	—	—	Side
S	●	—	●	
R	—	●	—	
V	●	—	—	
RV	—	●	—	Top
VP	●	—	●*	
B	●	—	—	Bottom
BS	●	—	●	
BR	—	●	—	

\* For silencer (supply side). E port is plugged.  
Note) "B" for bottom ported can be selected for the SY5000/7000 series.

Symbol	P, E port	SY3000	SY5000	SY7000	Note	
C8	ø8	●	—	—	Side/Bottom/Top ported	
C10	ø10	—	●	—	Top ported	
C12	ø12	—	—	●	Metric size	
N9	ø5/16"	●	—	—	Side/Bottom/Top ported	
N11	ø3/8"	—	●	—	Top ported	
N13	ø1/2"	—	—	●	Inch size	
L8	Upward elbow ø8	●	—	—	Side ported	
L10		ø10	—	●		Metric size
L12		ø12	—	—		
LN9	Downward elbow ø5/16"	●	—	—	Side ported	
LN11		ø3/8"	—	●		Inch size
LN13		ø1/2"	—	—		
B8	Downward elbow ø8	●	—	—	Side ported	
B10		ø10	—	●		Metric size
B12		ø12	—	—		
BN9	Downward elbow ø5/16"	●	—	—	Side ported	
BN11		ø3/8"	—	●		Inch size
BN13		ø1/2"	—	—		
00 (Note)	Plug	●	●	●	P/E port entry on one side or Top ported	

Note) 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 SY7000
(a) Tension bolt	None (Note)	3 pcs.

Note) 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)

\* Compatible with DeviceNet™, PROFIBUS DP, EtherNet/IP™

### ③ Clamp bracket assembly

Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

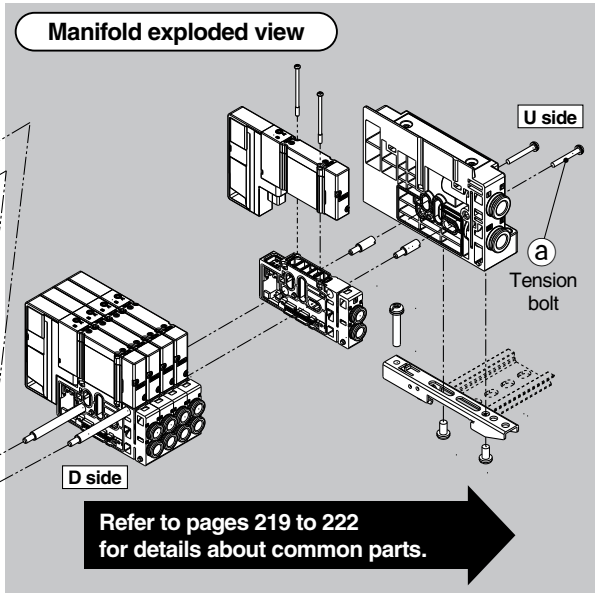
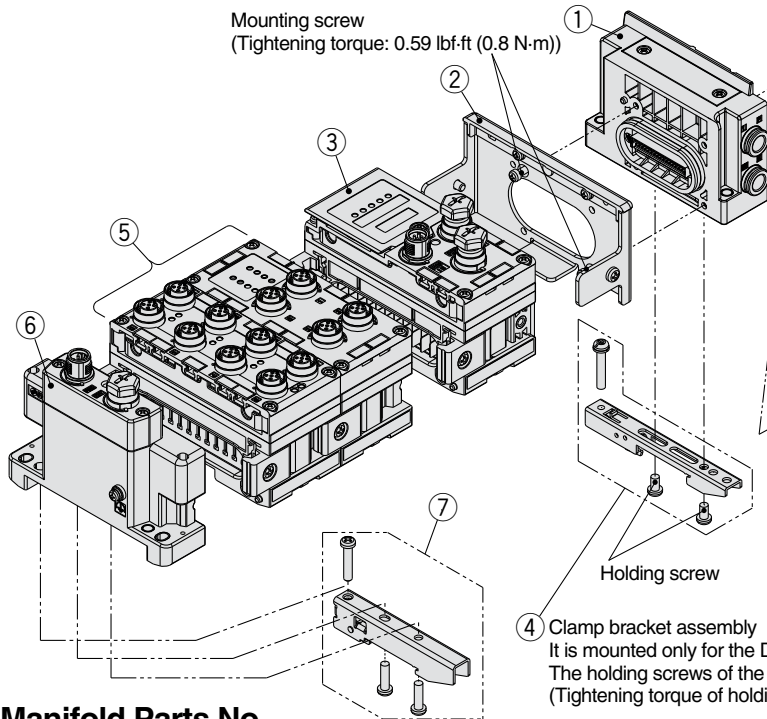
\* Part number is for one assembly.



# Series SY3000/5000/7000

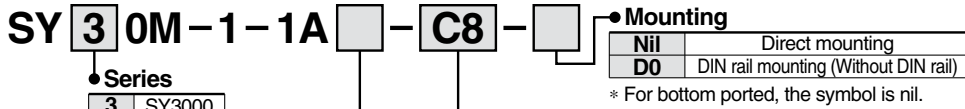
Wiring

## EX600



### Manifold Parts No.

#### ① SUP/EXH block assembly



Series

3	SY3000
5	SY5000
7	SY7000

Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
Nil	●	—	—	Side
S	●	—	●	
R	—	●	—	
V	●	—	—	
RV	—	●	—	Top
VP	—	—	●*	
B	●	—	—	Bottom
BS	●	—	●	
BR	—	●	—	

\* For silencer (supply side), E port is plugged.  
Note) "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
<b>C8</b>	ø8	●	—	—	Side/Bottom/ Top ported Metric size
<b>C10</b>	ø10	—	●	—	
<b>C12</b>	ø12	—	—	●	Side/Bottom/ Top ported Inch size
<b>N9</b>	ø5/16"	●	—	—	
<b>N11</b>	ø3/8"	—	●	—	Side ported Metric size
<b>N13</b>	ø1/2"	—	—	●	
<b>L8</b>	Upward elbow	ø8	●	—	Side ported Metric size
		ø10	—	●	
		ø12	—	—	
<b>LN9</b>	Downward elbow	ø5/16"	●	—	Side ported Inch size
		ø3/8"	—	●	
		ø1/2"	—	—	
		—	—	●	
<b>B8</b>	Downward elbow	ø8	●	—	Side ported Metric size
		ø10	—	●	
		ø12	—	—	
		—	—	●	
<b>BN9</b>	Downward elbow	ø5/16"	●	—	Side ported Inch size
		ø3/8"	—	●	
		ø1/2"	—	—	
<b>00</b> (Note)	Plug	●	●	●	P/E port entry on one side or Top ported

Note) 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 SY7000
(a) Tension bolt	None (Note)	3 pcs.

Note) Since the nuts are embedded in the SUP/EXH block.

#### 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

Protocol

Symbol	Description
PR	PROFIBUS DP
DN	DeviceNet™
MJ	CC-Link
EN	EtherNet/IP™ (Note)
EC	EtherCAT (Note)
PN	PROFINET (Note)

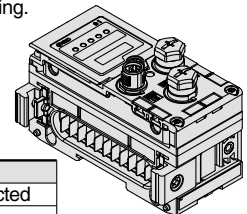
Note) Cannot be communicated with the EX600-HT1-□.

Version

Symbol	Description
Nil	When MJ, EN, EC or PN is selected
A	When PR or DN is selected

Output type

Symbol	Description
1	PNP (Negative common)
2	NPN (Positive common)



**Manifold Parts No.**

⑤ EX600 digital input unit

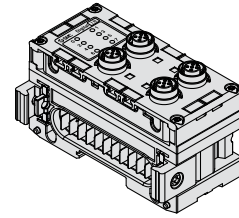
**EX600-DX P B**

Input type

Symbol	Description
P	PNP
N	NPN

Number of inputs, open circuit detection, and connector

Symbol	Number of inputs	Open circuit detection	Connector
B	8	No	M12 connector (5 pins) 4 pcs.
C	8	No	M8 connector (3 pins) 8 pcs.
C1	8	Yes	M8 connector (3 pins) 8 pcs.
D	16	No	M12 connector (5 pins) 8 pcs.
E	16	No	D-sub connector (25 pins) <sup>Note 1) 2)</sup>
F	16	No	Spring type terminal block (32 pins) <sup>Note 1) 2)</sup>



⑤ EX600 digital output unit

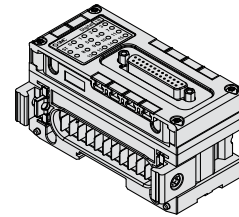
**EX600-DY P B**

Output type

Symbol	Description
P	PNP
N	NPN

Number of outputs and connector

Symbol	Number of outputs	Connector
B	8	M12 connector (5 pins) 4 pcs.
E	16	D-sub connector (25 pins) <sup>Note 1) 2)</sup>
F	16	Spring type terminal block (32 pins) <sup>Note 1) 2)</sup>



⑤ EX600 digital input/output unit

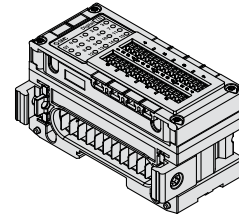
**EX600-DM P E**

Input/Output type

Symbol	Description
P	PNP
N	NPN

Number of inputs/outputs and connector

Symbol	Number of inputs	Number of outputs	Connector
E	8	8	D-sub connector (25 pins) <sup>Note 1) 2)</sup>
F	8	8	Spring type terminal block (32 pins) <sup>Note 1) 2)</sup>



⑤ EX600 analog input/output unit

**EX600-AX A**

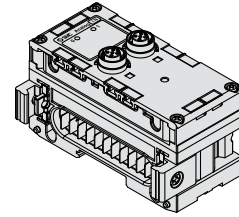
Analog input/output

Symbol	Description
AX	Analog input
AY	Analog output

Number of input channels and connector

Symbol	Number of input channels	Connector
A	2 channels	M12 connector (5 pins) 2 pcs.*

\* Refer to Notes 1) and 2) below for AY.



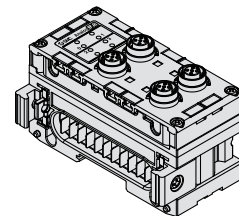
⑤ EX600 analog input/output unit

**EX600-AM B**

Analog input/output

Number of input/output channels and connector

Symbol	Number of input channels	Number of output channels	Connector
B	2 channels	2 channels	M12 connector (5 pins) 4 pcs. <sup>Note 1) 2)</sup>



⑥ EX600 end plate

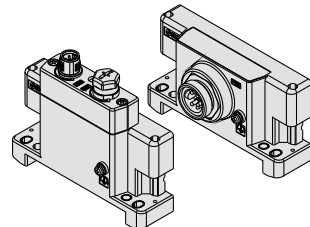
**EX600-ED 2** -

Power connector

Symbol	Connector
2	M12 (5 pins)
3	7/8 inch (5 pins)

Mounting

Symbol	Description
Nil	Without DIN rail mounting bracket
3	With DIN rail mounting bracket

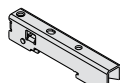


⑦ Clamp bracket for EX600

**EX600-ZMA3**

Enclosed parts

Round head screw with washer (M4 x 20) 1 pc.  
P-tight screw (4 x 14) 2 pcs.



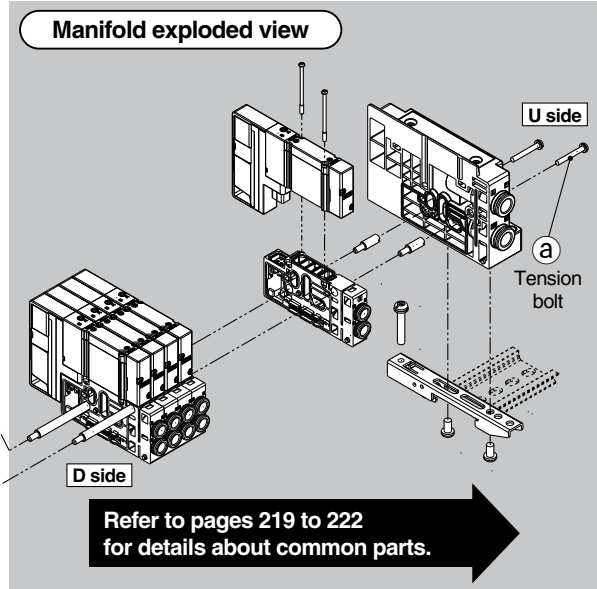
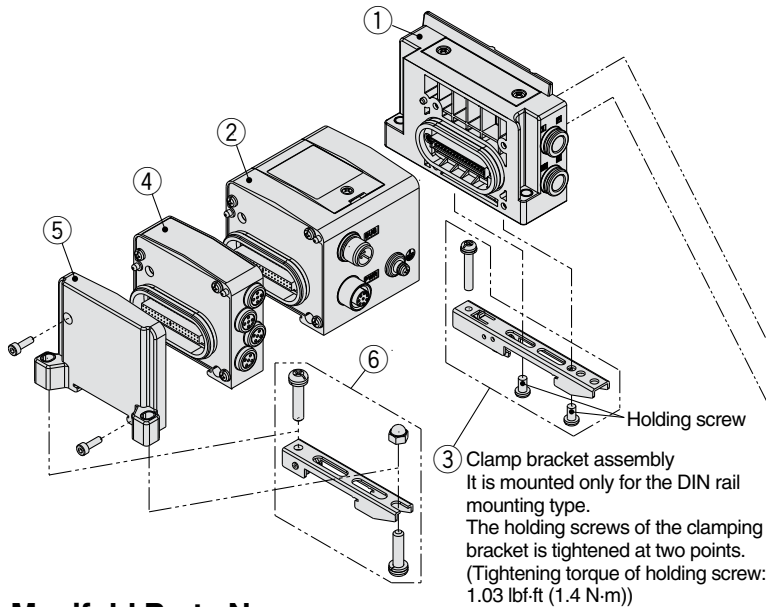
Note 1) Cannot be communicated with the EX600-HT1-□ (Old version of the Handheld Terminal).

Note 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 -

Series

3	SY3000
5	SY5000
7	SY7000

Mounting

Nil	Direct mounting
D0	DIN rail mounting (Without DIN rail)

\* For bottom ported, the symbol is nil.

### ● Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
Nil	●	—	—	Side
S	●	—	●	
R	—	●	—	
V	●	—	—	
RV	—	●	—	Top
VP	●	—	●*	
B	●	—	—	Bottom
BS	●	—	●	
BR	—	●	—	

\* For silencer (supply side). E port is plugged.  
Note) "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	ø8	●	—	—	Side/Bottom/Top ported Metric size
C10	ø10	—	●	—	
C12	ø12	—	—	●	
N9	ø5/16"	●	—	—	Side/Bottom/Top ported Inch size
N11	ø3/8"	—	●	—	
N13	ø1/2"	—	—	●	
L8	Upward elbow ø8	●	—	—	Side ported Metric size
L10		ø10	—	●	
L12		ø12	—	—	●
LN9		ø5/16"	●	—	—
LN11	ø3/8"	—	●	—	
LN13	ø1/2"	—	—	●	
B8	Downward elbow ø8	●	—	—	Side ported Metric size
B10		ø10	—	●	
B12		ø12	—	—	●
BN9		ø5/16"	●	—	—
BN11	ø3/8"	—	●	—	
BN13	ø1/2"	—	—	●	
00 (Note)	Plug	●	●	●	P/E port entry on one side or Top ported

Note) 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 SY7000
① Tension bolt	None (Note)	3 pcs.

Note) 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)

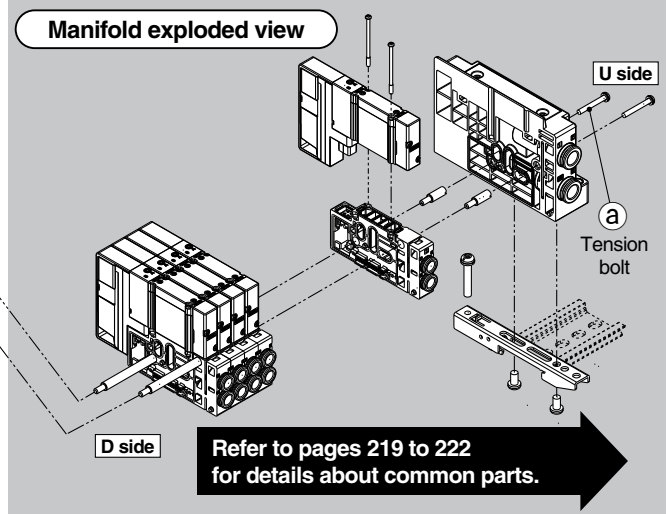
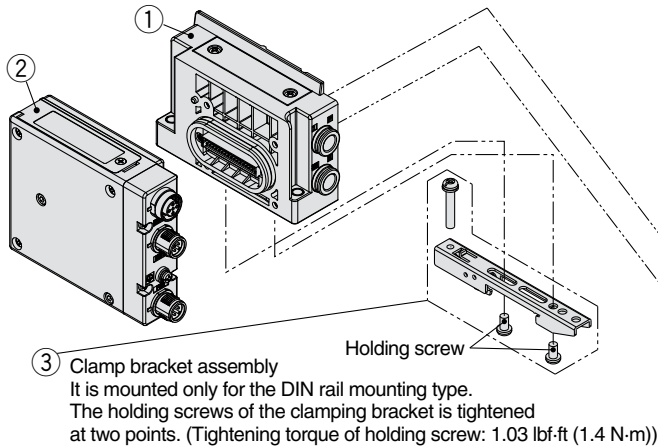
### ⑥ Clamp bracket assembly for EX250 SI unit

SY30M-15-3A

\* Part number is for one assembly.

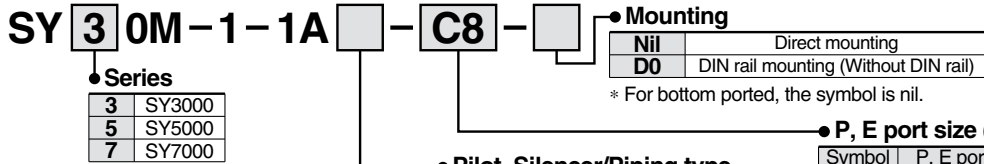
Wiring

EX260



Manifold Parts No.

① SUP/EXH block assembly



● Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
Nil	●	—	—	Side
S	●	—	●	
R	—	●	—	
V	●	—	—	Top
RV	—	●	—	
VP	●	—	●*	
B	●	—	—	Bottom
BS	●	—	●	
BR	—	●	—	

● P, E port size (One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000	Note
C8	ø8	●	—	—	Side/Bottom/Top ported Metric size
C10	ø10	—	●	—	
C12	ø12	—	—	●	
N9	ø5/16"	●	—	—	Side/Bottom/Top ported Inch size
N11	ø3/8"	—	●	—	
N13	ø1/2"	—	—	●	
L8	Upward elbow ø8	●	—	—	Side ported Metric size
L10		ø10	—	●	
L12		ø12	—	—	
LN9	Downward elbow ø5/16"	●	—	—	Side ported Inch size
LN11		ø3/8"	—	●	
LN13		ø1/2"	—	—	
B8	Downward elbow ø8	●	—	—	Side ported Metric size
B10		ø10	—	●	
B12		ø12	—	—	
BN9	Downward elbow ø5/16"	●	—	—	Side ported Inch size
BN11		ø3/8"	—	●	
BN13		ø1/2"	—	—	
00 Note)	Plug	●	●	●	P/E port entry on one side or Top ported

SUP/EXH block assembly (D side) accessories and the number of accessories

Accessories	SY3000	SY5000 SY7000
① Tension bolt	None Note)	3 pcs.

Note) Since the nuts are embedded in the SUP/EXH block.

\* For silencer (supply side). E port is plugged.  
Note) "B" for bottom ported can be selected for the SY5000/7000 series.

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)			EC2			Sink/NPN (Positive common)		DA					
DN3		Source/PNP (Negative common)	16			EC3		Source/PNP (Negative common)	DBN							
DN4		Sink/NPN (Positive common)				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)			PN2			Sink/NPN (Positive common)		FA					
PR3		Source/PNP (Negative common)	16			PN3		Source/PNP (Negative common)	FBN							
PR4		Sink/NPN (Positive common)				PN4		Sink/NPN (Positive common)	FB							
PR5		Source/PNP (Negative common)	32			D-sub Note)		NCN	EN1		EtherNet/IP™	32	Source/PNP (Negative common)	M12	EAN	
PR6		Sink/NPN (Positive common)						NC					Sink/NPN (Positive common)		EA	
PR7		Source/PNP (Negative common)	16			M12		NDN	EN2		16	Source/PNP (Negative common)	M12	EBN		
PR8		Sink/NPN (Positive common)						ND				Sink/NPN (Positive common)			EB	
MJ1	CC-Link	32	Source/PNP (Negative common)	M12	VAN	EN3	16	Source/PNP (Negative common)	M12	EBN						
MJ2			Sink/NPN (Positive common)					VA			Sink/NPN (Positive common)					
MJ3		Source/PNP (Negative common)	16					M12			VBN	EN4	16	Source/PNP (Negative common)	M12	EBN
MJ4		Sink/NPN (Positive common)									VB			Sink/NPN (Positive common)		

Note) 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

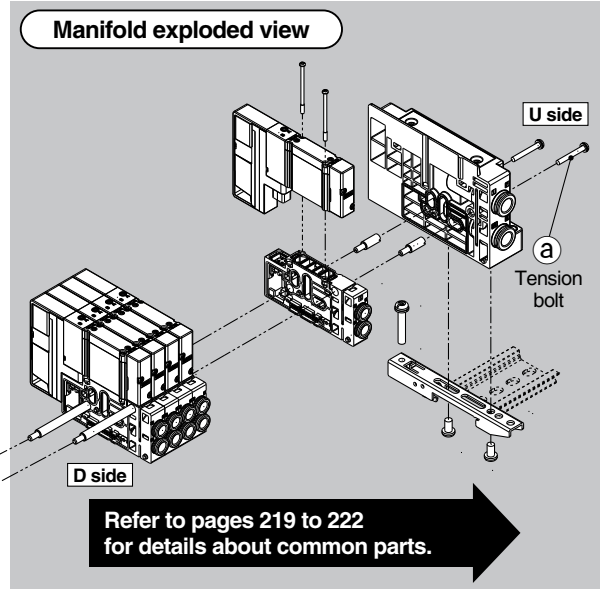
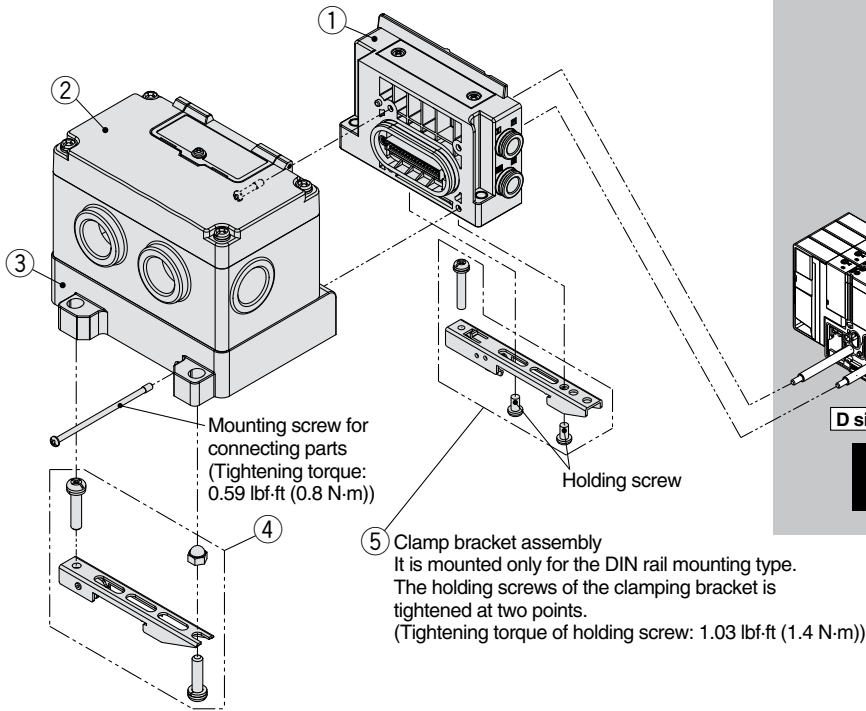
\* Part number is for one assembly.



# 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

Nil	Direct mounting
D0	DIN rail mounting (Without DIN rail)

\* For bottom ported, the symbol is nil.

#### Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
Nil	●	—	—	Side
S	●	—	●	
R	—	●	—	
V	●	—	—	
RV	—	●	—	Top
VP	●	—	●*	
B	●	—	—	Bottom
BS	●	—	●	
BR	—	●	—	

\* For silencer (supply side). E port is plugged.  
Note) "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	ø8	●	—	—	Side/Bottom/Top ported Metric size		
C10	ø10	—	●	—			
C12	ø12	—	—	●			
N9	ø5/16"	●	—	—	Side/Bottom/Top ported Inch size		
N11	ø3/8"	—	●	—			
N13	ø1/2"	—	—	●			
L8	Upward elbow	ø8	●	—	Side ported Metric size		
		ø10	—	●			
		ø12	—	—		●	
LN9	Downward elbow	ø5/16"	●	—	Side ported Inch size		
		ø3/8"	—	●			
		ø1/2"	—	—		●	
		B8	ø8	●		—	Side ported Metric size
		B10	ø10	—		●	
B12	ø12	—	—	●			
BN9	Downward elbow	ø5/16"	●	—	Side ported Inch size		
		ø3/8"	—	●			
		ø1/2"	—	—		●	
00 (Note)	Plug	●	●	●	P/E port entry on one side or Top ported		

Note) 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 SY7000
a) Tension bolt	None (Note)	3 pcs.

Note) 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

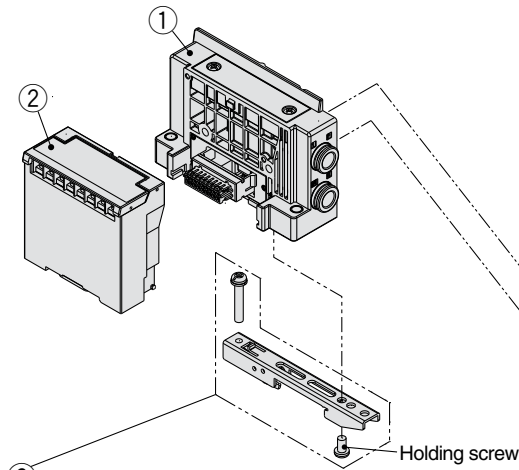
Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

\* Part number is for one assembly.

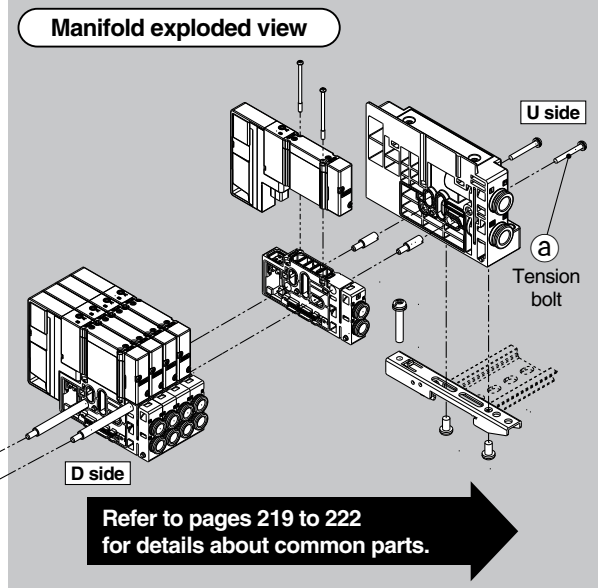
# Connector Connecting Base Manifold Exploded View *Series SY3000/5000/7000*

## Wiring

### EX120



- ③ Clamp bracket assembly  
It is mounted only for the DIN rail mounting type.  
The holding screw of the clamping bracket is tightened at one point.  
(Tightening torque of holding screw: 1.03 lbf-ft (1.4 N-m))



Refer to pages 219 to 222 for details about common parts.

## Manifold Parts No.

### ① SUP/EXH block assembly

SY **3** 0M-1-16A **C8** - **Mounting**

• Series

3	SY3000
5	SY5000
7	SY7000

Nil	Direct mounting
D0	DIN rail mounting (Without DIN rail)

\* For bottom ported, the symbol is nil.

• Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
Nil	●	—	—	Side
S	●	—	●	
R	—	●	—	
V	●	—	—	
RV	—	●	—	Top
VP	●	—	●*	
B	●	—	—	Bottom
BS	●	—	●	
BR	—	●	—	

\* For silencer (supply side). E port is plugged.  
Note) "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	ø8	●	—	—	Side/Bottom/Top ported
C10	ø10	—	●	—	
C12	ø12	—	—	●	Metric size
N9	ø5/16"	●	—	—	Side/Bottom/Top ported
N11	ø3/8"	—	●	—	
N13	ø1/2"	—	—	●	Inch size
L8	Upward elbow ø8	●	—	—	Side ported
L10		ø10	—	●	
L12		ø12	—	—	●
LN9	Downward elbow ø5/16"	●	—	—	Side ported
LN11		ø3/8"	—	●	
LN13		ø1/2"	—	—	●
B8	Downward elbow ø8	●	—	—	Side ported
B10		ø10	—	●	
B12		ø12	—	—	●
BN9	Downward elbow ø5/16"	●	—	—	Side ported
BN11		ø3/8"	—	●	
BN13		ø1/2"	—	—	●
00 (Note)	Plug	●	●	●	P/E port entry on one side or Top ported

Note) It can be selected only if no symbol "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 SY7000
① Tension bolt	None (Note)	3 pcs.

Note) Since the nuts are embedded in the SUP/EXH block.

### 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.



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

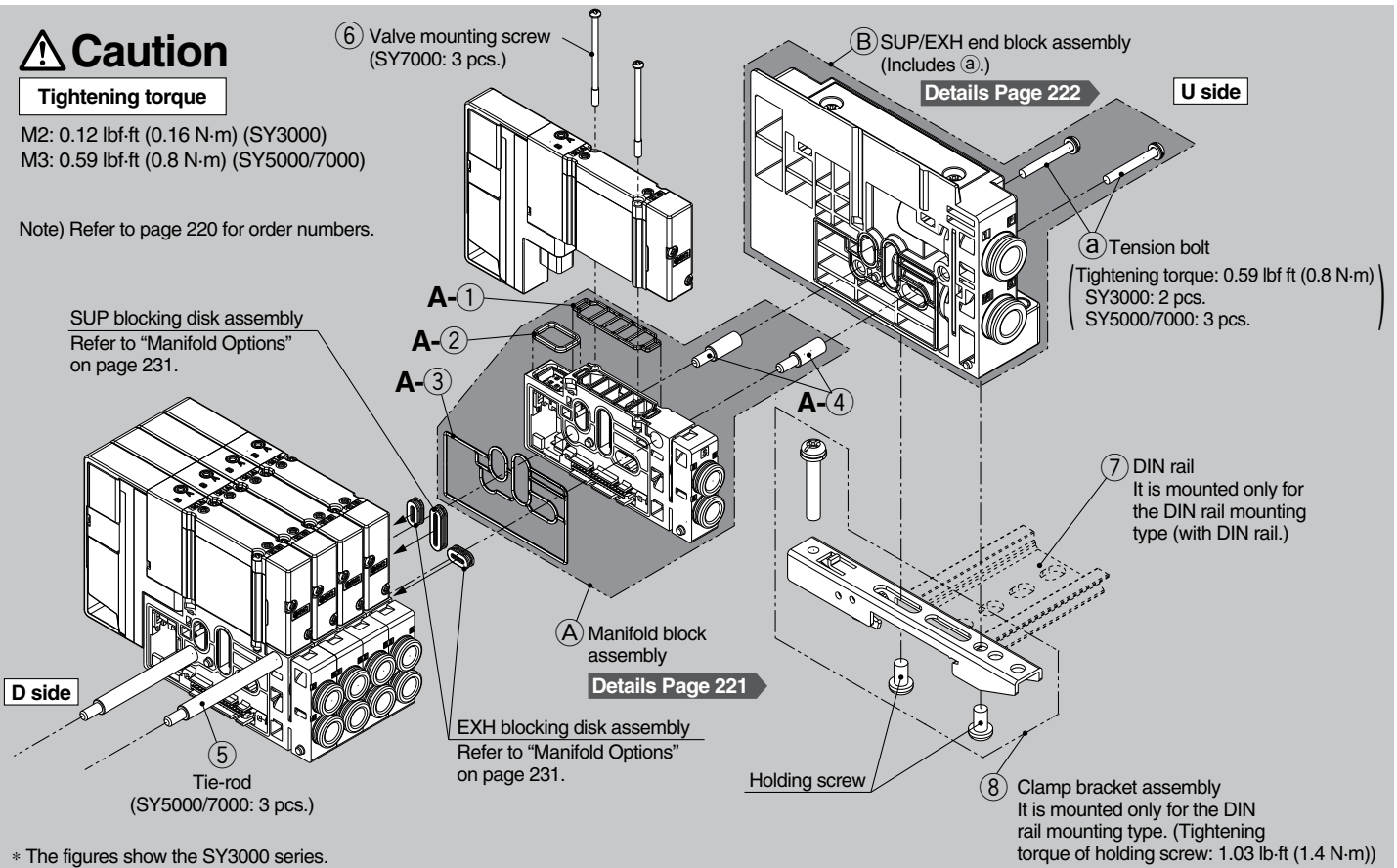
## Manifold Exploded View (Common Parts)

### Caution

#### Tightening torque

M2: 0.12 lbf-ft (0.16 N-m) (SY3000)  
M3: 0.59 lbf-ft (0.8 N-m) (SY5000/7000)

Note) Refer to page 220 for order numbers.



### 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 r tie-rods for additional stations to the t tie-rod of the manifold.  
(Screw them in until there is no gap between the tie-rods.)

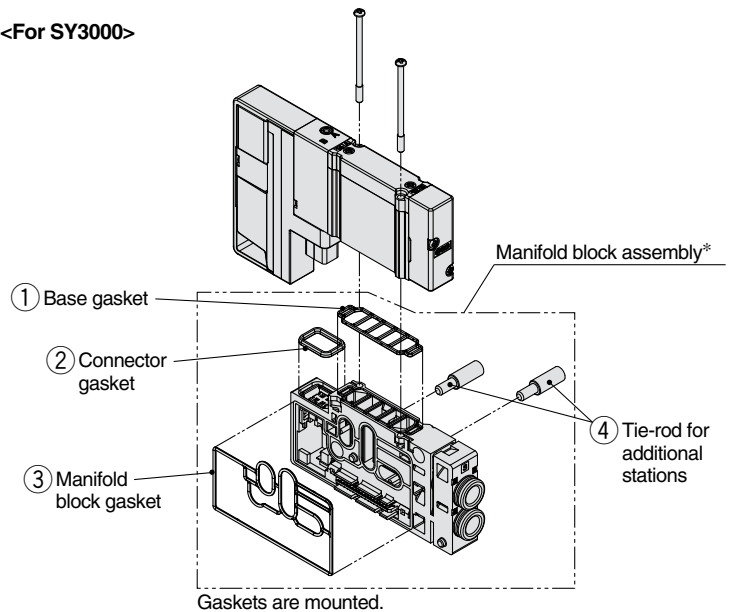
**3** Connect the A manifold block assembly and B SUP/EXH end block assembly to be added, and tighten the tension bolt a.

Tightening torque for tension bolt a (M3): 0.59 lbf ft (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>



#### \* Manifold block assembly

No.	Description	Q'ty	Note
①②③	Gasket	3	For base, connector and manifold block
④	Tie-rod for additional stations	SY3000 2 pcs. SY5000 3 pcs. SY7000 3 pcs.	

Refer to page 220 for ordering single unit.

Connector Connecting Base Manifold Exploded View **Series SY3000/5000/7000**

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 (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 (Note 1)	SY3000/5000/7000	SY30M-49-2-A	SV2000-55-2A-A	SY70M-49-2-A <sup>Note 2)</sup>	2 pcs. supplied (SY3000), 3 pcs. supplied (SY5000/7000)
		For mixed mounting of SY3000/5000: except A, B port size $\phi 8, \phi 5/16$ "	—	SY50M-49-2-A	—	3 pcs. supplied.
		For mixed mounting of SY3000/5000: A, B port size $\phi 8, \phi 5/16$ "	—	SV2000-55-2A-A	—	3 pcs. supplied.
⑤	Tie-rod	SY3000/5000/7000	VVQC1000-TR-□	SV2000-55-1-□-A	SY70M-49-1-□-A	□: Manifold stations (2 stations to 24 stations) 2 pcs. supplied (SY3000), 3 pcs. supplied (SY5000/7000)
		Mixed mounting type manifold (for mounting only SY3000 on SY5000 manifolds)	—	SY50M-49-1-□-A	SY70M-49-1-□-A	3 pcs. supplied.
⑥	Valve mounting screw	Round head combination screw	SY3000-23-24A (M2 x 32)	SY5000-221-1A (M3 x 32.5)	SY7000-221-1A (M3 x 36.5)	Part numbers shown on the left are as follows. SY3000/5000: for 10 valves (20 pcs. included) SY7000: for 10 valves (30 pcs. included)
		Hexagon socket head cap screw	SY3000-222-1A (M2 x 32)	SY5000-222-1A (M3 x 32.5)	SY7000-222-1A (M3 x 36.5)	
⑦	DIN rail		VZ1000-11-1-□		VZ1000-11-4-□	Refer to page 225.
⑧	Clamp bracket assembly (for connector connecting base)		SY30M-15-1A	SY50M-15-1A		Supplied individually.

Note 1) For the SS5Y5/7-(M)10/11/12, the manifold cannot be assembled with only the tie-rod for additional stations. Be sure to use the tie-rod ⑤.

Note 2) For the SY7000, order this part number also when the SY5000 is mounted.

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.

### Ⓐ Manifold block assembly

**SY 3 0M-2-1 D A-C6**

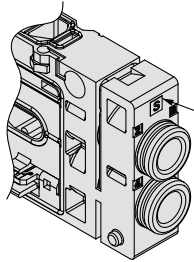
#### Series

3	SY3000
5	SY5000
7	SY7000

#### Piping direction

1	Side/Top ported
2	Bottom ported

Note) "2" for bottom ported can be selected for the SY5000/7000 series.



Single wiring  
Marked with **S**

#### Wiring type

<b>S</b>	Single wiring
<b>D</b>	Double wiring

#### A, B port size (One-touch fittings)

Symbol	A, B port	SY3000	SY5000	SY7000	Note
<b>C2</b>	ø2	●	—	—	Side/ Bottom ported Metric size
<b>C3</b>	ø3.2	●	—	—	
<b>C4</b>	ø4	●	●	●	
<b>C6</b>	ø6	●	●	●	
<b>C8</b>	ø8	— (Note)	●	●	
<b>C10</b>	ø10	—	—	●	
<b>C12</b>	ø12	—	—	●	Side/ Bottom ported Inch size
<b>N1</b>	ø1/8"	●	—	—	
<b>N3</b>	ø5/32"	●	●	—	
<b>N7</b>	ø1/4"	●	●	●	
<b>N9</b>	ø5/16"	— (Note)	●	●	
<b>N11</b>	ø3/8"	—	—	●	

Note) Refer to mixed mounting type for ø8, ø5/16".

Symbol	A, B port	SY3000	SY5000	SY7000	Note
<b>L4</b>	ø4	●	●	—	Upward elbow
<b>L6</b>	ø6	●	●	●	
<b>L8</b>	ø8	— (Note)	—	●	
<b>L10</b>	ø10	—	—	●	
<b>LN3</b>	ø5/32"	—	—	—	
<b>LN7</b>	ø1/4"	●	●	—	
<b>LN9</b>	ø5/16"	— (Note)	●	—	
<b>LN11</b>	ø3/8"	—	—	●	Downward elbow
<b>B4</b>	ø4	●	●	—	
<b>B6</b>	ø6	●	●	●	
<b>B8</b>	ø8	— (Note)	—	●	
<b>B10</b>	ø10	—	—	●	
<b>BN3</b>	ø5/32"	●	—	—	
<b>BN7</b>	ø1/4"	●	●	—	
<b>BN9</b>	ø5/16"	— (Note)	●	—	
<b>BN11</b>	ø3/8"	—	—	●	
<b>00</b>	Plug	●	●	●	Top ported

### Ⓐ Mixed mounting of the SY3000/5000 Manifold block assembly for mounting the SY3000

**SY50M-2-3 D A-C6**

#### Piping direction

3	Side/Top ported
4	Bottom ported

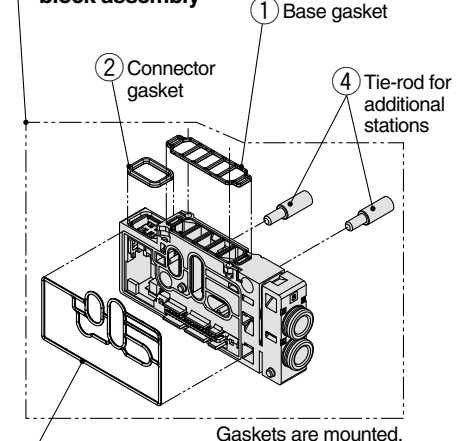
#### Wiring type

<b>S</b>	Single wiring
<b>D</b>	Double wiring

#### A, B port size (One-touch fittings)

Symbol	A, B port	Note	Symbol	A, B port	Note
<b>C2</b>	ø2	Side/Bottom ported Metric size	<b>L4</b>	ø4	Side ported
<b>C3</b>	ø3.2		<b>L6</b>	ø6	Metric size
<b>C4</b>	ø4		<b>LN3</b>	ø5/32"	Side ported Inch size
<b>C6</b>	ø6	Side/Bottom ported Inch size	<b>LN7</b>	ø1/4"	Side ported Inch size
<b>N1</b>	ø1/8"		<b>B4</b>	ø4	
<b>N3</b>	ø5/32"		<b>B6</b>	ø6	
<b>N7</b>	ø1/4"	<b>BN3</b>	ø5/32"	Side ported Inch size	
		<b>BN7</b>	ø1/4"		
		<b>00</b>	Plug	Top ported	

### Ⓐ Manifold (All parts inside ----- are included.) block assembly



Gaskets are mounted.

### Ⓐ Mixed mounting of the SY3000/5000 Manifold block assembly for mounting the SY3000 for ø8, ø5/16"

(A manifold block assembly for mounting the SY3000 valves on the SY5000 manifolds at A, B port size: ø8, ø5/16")

**SY50M-2-5 D A-C8**

#### Piping direction

5	Side ported
6	Bottom ported

#### Wiring type

<b>S</b>	Single wiring
<b>D</b>	Double wiring

#### A, B port size (One-touch fittings)

Symbol	A, B port	Note
<b>C8</b>	ø8	Side/Bottom ported Metric size
<b>N9</b>	ø5/16"	Side/Bottom ported Inch size
<b>L8</b>	Upward elbow	ø8 Side ported Metric size
<b>LN9</b>		ø5/16" Side ported Inch size
<b>B8</b>	Downward elbow	ø8 Side ported Metric size
<b>BN9</b>		ø5/16" Side ported Inch size

### Manifold block assembly accessories and the number of accessories

Accessories	SY3000	SY5000 SY7000 (Note)
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.

Note) Including mixed mounting type

### Ⓐ Mixed mounting of the SY5000/7000 Manifold block assembly for mounting the SY5000

**SY70M-2-3 D A-C10**

#### Piping direction

3	Side/Bottom ported
4	Bottom ported

#### Wiring type

<b>S</b>	Single wiring
<b>D</b>	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>	ø6	Side/Bottom ported Metric size	<b>L6</b>	Upward elbow	ø6	Side ported Metric size	<b>B6</b>	Downward elbow	ø6	Side ported Metric size
<b>C8</b>	ø8		<b>L8</b>		ø8		<b>B8</b>		ø8	
<b>C10</b>	ø10		<b>L10</b>		ø10		<b>B10</b>		ø10	
<b>C12</b>	ø12	Side/Bottom ported Inch size	<b>L12</b>	Upward elbow	ø12	Side ported Inch size	<b>B12</b>	Downward elbow	ø12	Side ported Inch size
<b>N7</b>	ø1/4"		<b>LN11</b>		ø3/8"		<b>BN11</b>		ø3/8"	
<b>N9</b>	ø5/16"						<b>00</b>		Plug	
<b>N11</b>	ø3/8"									

**Manifold Parts No.**

② SUP/EXH end block assembly

**SY 3 0M-3-1A**    - **C8** -   

● **Series**

3	SY3000
5	SY5000
7	SY7000

● **Mounting**

Nil	Direct mounting
D0	DIN rail mounting (Without DIN rail)

\* For bottom ported, the symbol is nil.

● **Pilot, Silencer/Piping type**

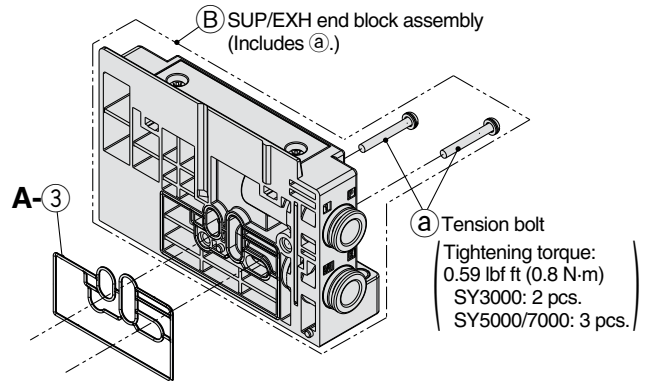
Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
Nil	●	—	—	Side
S	●	—	—	
R	—	●	—	
V	●	—	—	Top
RV	—	●	—	
VP	●	—	●*	
B	●	—	—	Bottom
BS	●	—	●	
BR	—	●	—	

\* For silencer (supply side). E port is plugged.  
 Note) "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
<b>C8</b>	ø8	●	—	—	Side/Bottom/Top ported Metric size
<b>C10</b>	ø10	—	●	—	
<b>C12</b>	ø12	—	—	●	
<b>N9</b>	ø5/16"	●	—	—	Side/Bottom/Top ported Inch size
<b>N11</b>	ø3/8"	—	●	—	
<b>N13</b>	ø1/2"	—	—	●	
<b>L8</b>	Upward elbow ø8	●	—	—	Side ported Metric size
<b>L10</b>		—	●	—	
<b>L12</b>		ø12	—	—	
<b>LN9</b>	Upward elbow ø5/16"	●	—	—	Side ported Inch size
<b>LN11</b>		ø3/8"	—	●	
<b>LN13</b>		ø1/2"	—	—	
<b>B8</b>	Downward elbow ø8	●	—	—	Side ported Metric size
<b>B10</b>		—	●	—	
<b>B12</b>		ø12	—	—	
<b>BN9</b>	Downward elbow ø5/16"	●	—	—	Side ported Inch size
<b>BN11</b>		ø3/8"	—	●	
<b>BN13</b>		ø1/2"	—	—	
<b>00</b> (Note)	Plug	●	●	●	P/E port entry on one side or Top ported

Note) 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
a Tension bolt	2 pcs.	3 pcs.
A-3 Manifold block gasket	1 pc.	

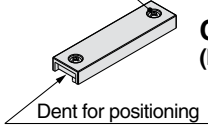
Gasket is mounted.

# Series SY3000/5000/7000

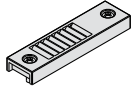
## Manifold Parts No.

### ■ Cover assembly/Silencer cover assembly/Port block assembly for SUP/EXH (end) block assembly

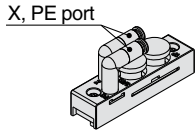
Mounting screw (M3)



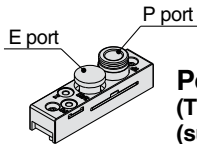
**Cover assembly**  
(Internal pilot)



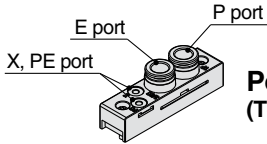
**Silencer cover assembly**  
(Internal pilot, Built-in silencer)



**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): 0.59 lbf ft (0.8 N·m)  
SY7000 (M4): 1.03 lbf ft (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
Nil	Metric size	ø4	●	●
		ø6	—	—
U	Inch size	ø5/32"	●	●
		ø1/4"	—	—

SY 3 0M-6- 3AV - C8

SY 3 0M-6- 1A V - C8

Series

3	SY3000
5	SY5000
7	SY7000

Pilot type

Nil	Internal pilot
R	External pilot

P, E port size (One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000
C8	ø8	●	—	—
C10	ø10	—	●	—
C12	ø12	—	—	●
N9	ø5/16"	●	—	—
N11	ø3/8"	—	●	—
N13	ø1/2"	—	—	●
00 <sup>Note)</sup>	Plug	●	●	●

Note) 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 248 for replacement method.

## One-touch fittings

		Port size		SY3000	SY5000	SY7000
A, B port <sup>(Note 1)</sup>	Metric size	Straight type	ø2	VVQ1000-50A-C2	—	—
			ø3.2	VVQ1000-50A-C3	—	—
			ø4	VVQ1000-50A-C4	VVQ1000-51A-C4	—
			ø6	VVQ1000-50A-C6	VVQ1000-51A-C6	VVQ2000-51A-C6
			ø8	—	VVQ1000-51A-C8	VVQ2000-51A-C8
			ø10	—	—	VVQ2000-51A-C10
		ø12	—	—	KQ2H12-17-X224	
		Elbow type	ø4	SZ3000-73-1A-L4	SZ3000-74-1A-L4	—
			ø6	SZ3000-73-1A-L6	SZ3000-74-1A-L6	SZ3000-83-1A-L6
			ø8	—	SZ3000-74-1A-L8	SZ3000-83-1A-L8
			ø10	—	—	SZ3000-83-1A-L10
			ø12	—	—	KQ2L12-17N-X224
	Long elbow type		ø4	SZ3000-73-2A-L4	SZ3000-74-2A-L4	—
		ø6	SZ3000-73-2A-L6	SZ3000-74-2A-L6	SZ3000-83-2A-L6	
		ø8	—	SZ3000-74-2A-L8	SZ3000-83-2A-L8	
		ø10	—	—	SZ3000-83-2A-L10	
		ø12	—	—	KQ2W12-17N-X224	
		Inch size	Straight type	ø1/8"	VVQ1000-50A-N1	—
	ø5/32"			VVQ1000-50A-N3	VVQ1000-51A-N3	—
	ø1/4"			VVQ1000-50A-N7	VVQ1000-51A-N7	VVQ2000-51A-N7
	ø5/16"			—	VVQ1000-51A-N9	VVQ2000-51A-N9
	ø3/8"			—	—	VVQ2000-51A-N11
	ø5/32"			KJL03-95-X224	—	—
	Elbow type		ø1/4"	KJL07-95-X224	KQ2L07-14-X224	—
ø5/16"			—	KQ2L09-14-X224	—	
ø3/8"			—	—	KQ2L11-14-X224	
ø5/32"			KJL03-95-X225	—	—	
ø1/4"			KJL07-95-X225	KQ2L07-14-X225	—	
ø5/16"			—	KQ2L09-14-X225	—	
Long elbow type	ø3/8"	—	—	KQ2L11-14-X225		
	Metric size	Straight type	ø8	VVQ1000-51A-C8	—	—
			ø10	—	VVQ2000-51A-C10	—
			ø12	—	—	VVQ4000-50B-C12
		Elbow type	ø8	SZ3000-74-1A-L8	—	—
			ø10	—	SZ3000-83-1A-L10	—
ø12			—	—	KQ2L12-19N-X224	
Long elbow type	ø8	SZ3000-74-2A-L8	—	—		
	ø10	—	SZ3000-83-2A-L10	—		
	ø12	—	—	KQ2W12-19N-X224		
Inch size	Straight type	ø5/16"	VVQ1000-51A-N9	—	—	
		ø3/8"	—	VVQ2000-51A-N11	—	
		ø1/2"	—	—	VVQ4000-50B-N13	
	Elbow type	ø5/16"	KQ2L09-14-X224	—	—	
		ø3/8"	—	KQ2L11-14-X224	—	
		ø1/2"	—	—	KQ2L13-19N-X224	
	Long elbow type	ø5/16"	KQ2L09-14-X225	—	—	
		ø3/8"	—	KQ2L11-14-X225	—	
ø1/2"	—	—	KQ2W13-19N-X224			

Note 1) A and B ports (ø8 and ø5/16") of the SY3000 and 5000 mixed mounting type are the same as those of the SY5000.

Note 2) The basic order unit of the One-touch fitting part number is 1 pc. 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

Note) The basic order unit of the plug assembly part number is 1 pc.

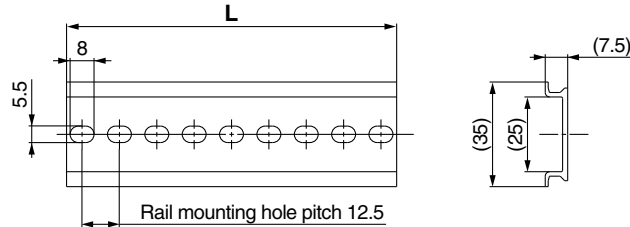


# Series SY3000/5000/7000 Manifold Options

## ■ 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 □.

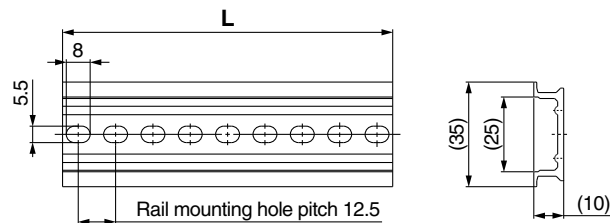


No.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
L dimension	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	235.5	248	260.5	273	285.5	298	310.5	323
Weight (g)	17.6	19.9	22.1	24.4	26.6	28.9	31.1	33.4	35.6	37.9	40.1	42.4	44.6	46.9	49.1	51.4	53.6	55.9	58.1
No.	19	20	21	22	23	24	25	26	27	28	29	30	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

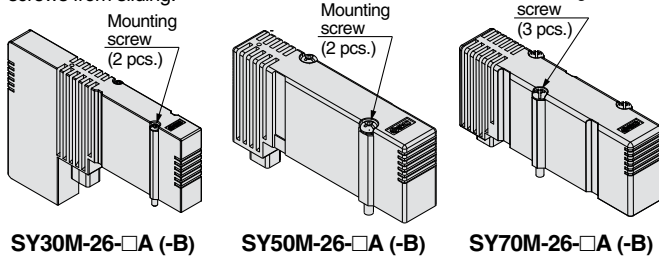
Tightening torque for mounting screw	
M2: 0.12 lbf ft (0.16 N·m)	(SY3000)
M3: 0.59 lbf ft (0.8 N·m)	(SY5000/7000)

## Manifold Options

\* Refer to pages 236, 238, 240 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.



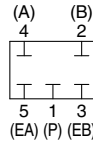
SY30M-26-□A (-B)    SY50M-26-□A (-B)    SY70M-26-□A (-B)

### How to Order Blanking Plate Assembly

SY 3 0M-26-1 A-□

#### ● Series

3	SY3000
5	SY5000
7	SY7000



Circuit diagram

#### ● Option for mounting

Nil	With mounting screw (Round head combination screw)
B	With mounting screw (Hexagon socket head cap screw)

#### ● Base type

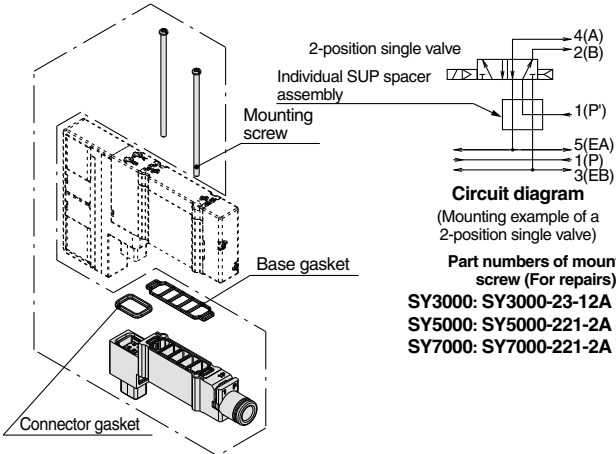
1	For plug-in connector connecting base
2	For plug-in metal base

### ■ 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.

Note) 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 0M-38-1 A-C6

One-touch fitting Elbow type

SY 3 0M-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

Note) 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	ø4	●	●	—
L6	ø6	●	●	●
L8	ø8	—	●	●
L10	ø10	—	—	●
L12	ø12	—	—	●

#### ● Port size (Inch/One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000
LN3	ø5/32"	●	—	—
LN7	ø1/4"	●	●	—
LN9	ø5/16"	—	●	—
LN11	ø3/8"	—	—	●

#### ● Port size (Metric/One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000
C2	ø2	●	—	—
C3	ø3	●	—	—
C4	ø4	●	●	—
C6	ø6	●	●	●
C8	ø8	—	—	●
C10	ø10	—	—	●
C12	ø12	—	—	●

#### ● Port size (Inch/One-touch fittings)

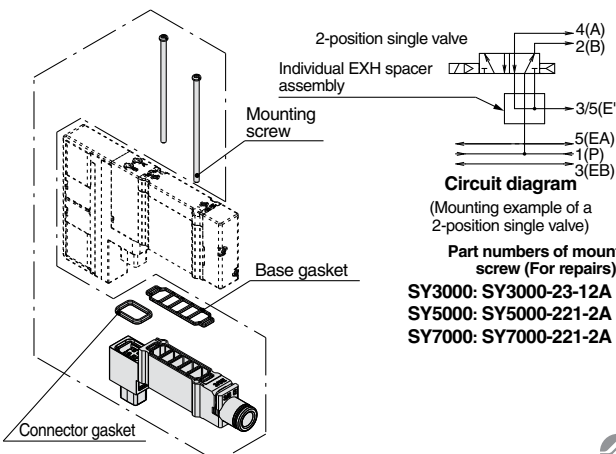
Symbol	P, E port	SY3000	SY5000	SY7000
N1	ø1/8"	●	—	—
N3	ø5/32"	●	●	—
N7	ø1/4"	●	●	●
N9	ø5/16"	—	●	●
N11	ø3/8"	—	—	●

### ■ 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.

Note) 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.)

## ⚠ Caution

Tightening torque for mounting screw
M2: 0.12 lbf ft (0.16 N-m) (SY3000)
M3: 0.59 lbf ft (0.8 N-m) (SY5000/7000)

## Manifold Options

\* Refer to pages 236 to 241 for dimensions.

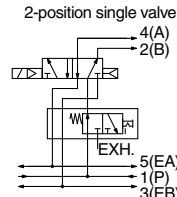
### ■ SUP stop valve spacer assembly with residual pressure release valve

[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.

Note) 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.

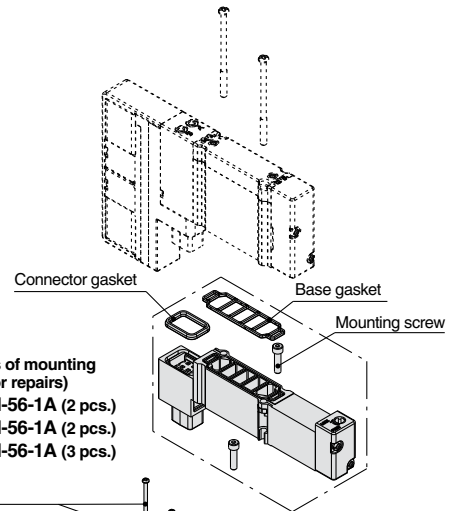
Series	Part no.
SY3000	SY30M-50-1A
SY5000	SY50M-50-1A
SY7000	SY70M-50-1A



SUP stop valve spacer assembly with residual pressure release valve

**Circuit diagram**  
(Mounting example of a 2-position single valve)

**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.)**



### [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.

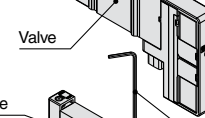
Tighten the SUP stop valve mounting screw to the specified tightening torque. Mount the valve and tighten the valve mounting screws to the specified tightening torque after mounting the SUP stop valve spacer assembly with residual pressure exhaust valve.

Note 1) 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.

Note 2) 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.

Valve mounting screw

Tightening torque:  
 Series SY3000: 0.12 lbf-ft (0.16 N-m)  
 Series SY5000/7000: 0.59 lbf-ft (0.8 N-m)  
 or 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: 0.12 lbf-ft (0.16 N-m)  
 Series SY5000/7000: 0.59 lbf-ft (0.8 N-m)

Hexagon wrench  
 Nominal wrench size:  
 Series SY3000: 1.3  
 Series SY5000/7000: 2

### ■ 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 center 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.

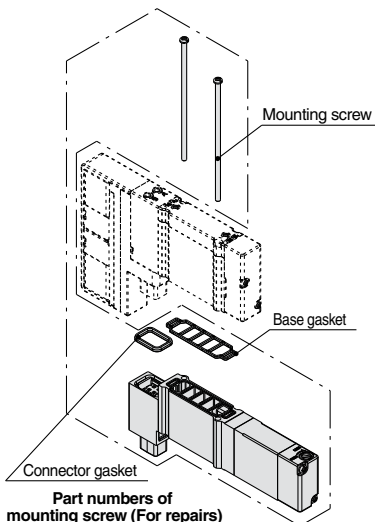
Note) When the elbows are facing upward in A and B ports in Type 10 manifolds, they will interfere with the piping for the spacer assembly. Therefore, combine the A and B ports with straight types or elbows facing downward.

Series	Part no.
SY3000	SY30M-60-1A
SY5000	SY50M-60-1A
SY7000	SY70M-60-1A

	Intermediate stop	Drop prevention
Applicable valve	SY $\frac{3}{7}$ 40 $\frac{0}{1}$	SY $\frac{3}{7}$ 20 $\frac{0}{1}$

## ⚠ 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 center or pressure center 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.

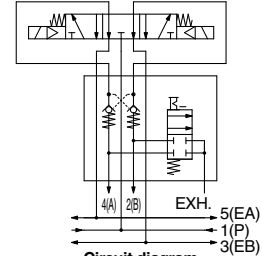


**Part numbers of mounting screw (For repairs)**  
**SY3000: SY3000-23-27A (2 pcs.)**  
**SY5000: SY5000-221-4A (2 pcs.)**  
**SY7000: SY7000-221-4A (3 pcs.)**

### <Example>

#### Double check spacer assembly with residual pressure release valve

3-position exhaust center valve

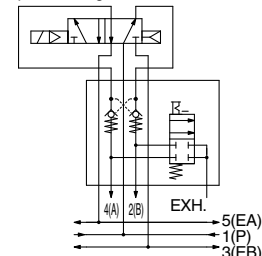


**Circuit diagram**

(Intermediate stop: When 3-position exhaust center valve is mounted)

#### Double check spacer assembly with residual pressure release valve

2-position single valve



**Circuit diagram**

(Drop prevention: When 2-position single valve is mounted)

## ⚠ Caution

Tightening torque for mounting screw	
M2:	0.12 lbf ft (0.16 N·m) (SY3000)
M3:	0.59 lbf ft (0.8 N·m) (SY5000/7000)

## Manifold Options

\* Refer to pages 237, 239, 241 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

SY **3** OM - **05** - **P** - □

#### Series

3	SY3000
---	--------

#### Pressure gauge option <sup>Note 1)</sup>

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) <sup>Note 2)</sup>
N6	Pressure gauge with psi display (For even number station) <sup>Note 2)</sup>

#### Applicable valve <sup>Note 3)</sup>

Nil	For single, double, and 4-position
3	For 3-position

Note 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), you can use only the model without a pressure gauge (M1).

Note 2) As per the new Measurement Law, gauges with a psi display will only be sold to overseas customers.

Note 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.

SY **5** OM - **00** - **P**

#### Series

5	SY5000
7	SY7000

#### Pressure gauge option

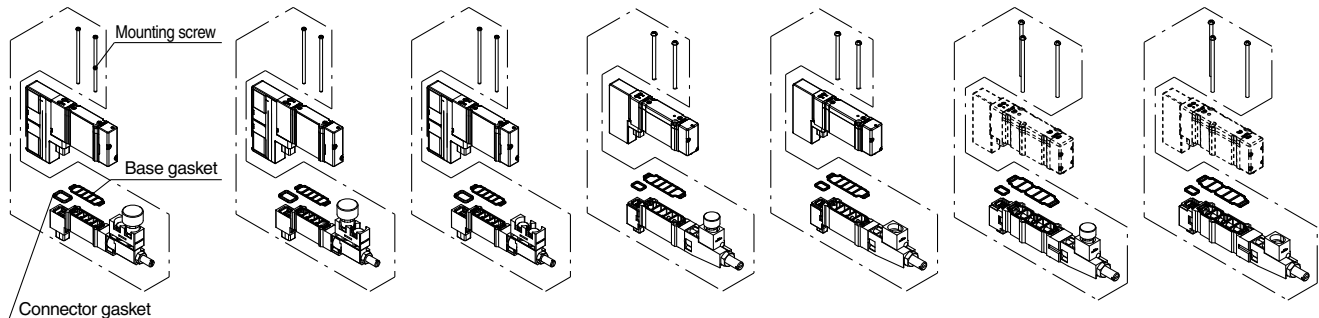
M1	No pressure gauge
00	Pressure gauge with MPa display
NO	Pressure gauge with psi display <sup>Note 2)</sup>

#### Regulating port

P	1(P) port
A1	4(A) port (P controlled type, A port regulation)
B1	2(B) port (P controlled type, B port regulation)

#### 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 <sup>Note 2)</sup>	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] <sup>Note 3)</sup>	With pressure gauge	33(35) <sup>Note 4)</sup>	75	93
	Without pressure gauge	27(29) <sup>Note 4)</sup>	69	87

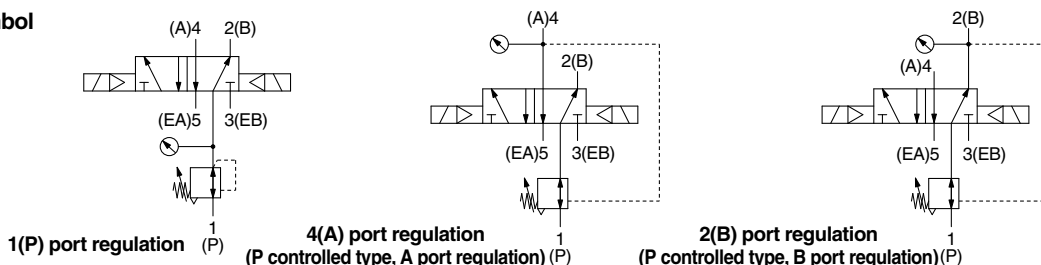
Note 1) Always apply pressure from 1(P) port in the base for interface regulator.

Note 2) 3-position closed center and pressure center, and 4-position dual 3-port valves are only available for 1(P) port pressure regulation.

Note 3) Gasket and mounting screws are included in the weight.

Note 4) ( ): Denotes the values of SY30M-□-□-3.

#### Symbol

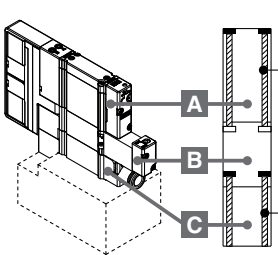
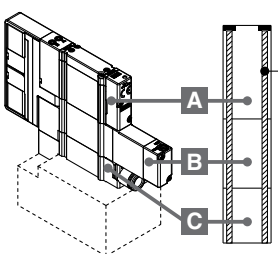
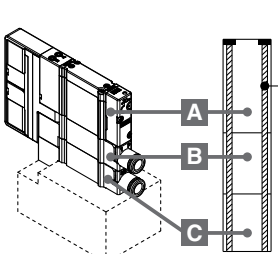
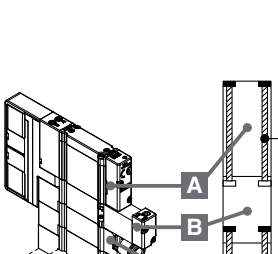


# Series SY3000/5000/7000



Tightening torque for mounting screw
M2: 0.12 lbf-ft (0.16 N-m) (SY3000)
M3: 0.59 lbf-ft (0.8 N-m) (SY5000/7000)

## Mounting Screw Part No. ① (when adding optional lamination layers)

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; ①: SY3000-23-24A ②: SY5000-221-1A ③: SY7000-221-1A</p> <p>&lt;Hexagon socket head cap screw&gt; ①: SY3000-222-1A ②: SY5000-222-1A ③: SY7000-221-1A</p> <p>①: SY30M-56-2A ②: SY50M-56-2A ③: SY70M-56-2A</p>	A Valve	SY3000-23-24A [for 10 valves (20 pcs.)]	SY3000-222-1A [for 10 valves (20 pcs.)]	SY5000-221-1A [for 10 valves (20 pcs.)]	SY5000-222-1A [for 10 valves (20 pcs.)]	SY7000-221-1A [for 10 valves (30 pcs.)]	SY7000-222-1A [for 10 valves (30 pcs.)]
	B SUP stop valve spacer assembly with residual pressure release valve	SY30M-56-2A (2 pcs.)		SY50M-56-2A (2 pcs.)		SY70M-56-2A (3 pcs.)	
	C Individual SUP (EXH) spacer assembly						
 <p>&lt;Round head combination screw&gt; ①: SY3000-23-33A ②: SY5000-221-5A ③: SY7000-221-5A</p>	A Valve	SY3000-23-33A (2 pcs.)	—	SY5000-221-5A (2 pcs.)	—	SY7000-221-5A (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; ①: SY3000-23-32A ②: SY5000-221-3A ③: SY7000-221-3A</p>	A Valve	SY3000-23-32A (2 pcs.)	—	SY5000-221-3A (2 pcs.)	—	SY7000-221-3A (3 pcs.)	—
	B Individual SUP (EXH) spacer assembly						
	C Individual EXH (SUP) spacer assembly						
 <p>&lt;Round head combination screw&gt; ①: SY3000-23-24A ②: SY5000-221-1A ③: SY7000-221-1A</p> <p>&lt;Hexagon socket head cap screw&gt; ①: SY3000-222-1A ②: SY5000-222-1A ③: SY7000-222-1A</p> <p>①: SY30M-56-4A ②: SY50M-56-4A ③: SY70M-56-4A</p>	A Valve	SY3000-23-24A [for 10 valves (20 pcs.)]	SY3000-222-1A [for 10 valves (20 pcs.)]	SY5000-221-1A [for 10 valves (20 pcs.)]	SY5000-222-1A [for 10 valves (20 pcs.)]	SY7000-221-1A [for 10 valves (30 pcs.)]	SY7000-222-1A [for 10 valves (30 pcs.)]
	B SUP stop valve spacer assembly with residual pressure release valve	SY30M-56-4A (2 pcs.)		SY50M-56-4A (2 pcs.)		SY70M-56-4A (3 pcs.)	
	C Individual SUP (EXH) spacer assembly						
	D Individual EXH (SUP) spacer assembly						

\* Mounting onto a manifold follows the order explained above.

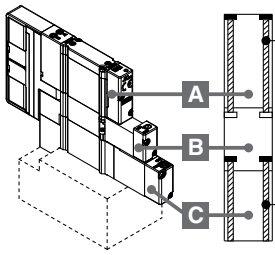
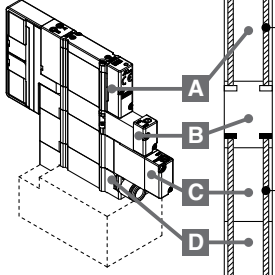
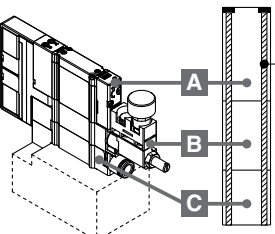
Note) The fitting for individual SUP/EXH spacers comes in a straight type only, since an elbow type would interfere with each spacer assembly when laminated.



## ⚠ Caution

Tightening torque for mounting screw	
M2: 0.12 lbf-ft (0.16 N·m)	(SY3000)
M3: 0.59 lbf-ft (0.8 N·m)	(SY5000/7000)

### Mounting Screw Part No. ② (when adding optional lamination layers)

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; ①: SY3000-23-24A ②: SY5000-221-1A ③: SY7000-221-1A</p> <p>&lt;Hexagon socket head cap screw&gt; ①: SY3000-222-1A ②: SY5000-222-1A ③: SY7000-222-1A</p> <p>①: SY30M-56-3A ②: SY50M-56-3A ③: SY70M-56-3A</p>	A Valve	SY3000-23-24A [for 10 valves (20 pcs.)]	SY3000-222-1A [for 10 valves (20 pcs.)]	SY5000-221-1A [for 10 valves (20 pcs.)]	SY5000-222-1A [for 10 valves (20 pcs.)]	SY7000-221-1A [for 10 valves (30 pcs.)]	SY7000-222-1A [for 10 valves (30 pcs.)]
	B SUP stop valve spacer assembly with residual pressure release valve	SY30M-56-3A (2 pcs.)		SY50M-56-3A (2 pcs.)		SY70M-56-3A (3 pcs.)	
	C Double check spacer assembly with residual pressure release valve	SY30M-56-3A (2 pcs.)		SY50M-56-3A (2 pcs.)		SY70M-56-3A (3 pcs.)	
 <p>&lt;Round head combination screw&gt; ①: SY3000-23-24A ②: SY5000-221-1A ③: SY7000-221-1A</p> <p>&lt;Hexagon socket head cap screw&gt; ①: SY3000-222-1A ②: SY5000-222-1A ③: SY7000-222-1A</p> <p>①: SY30M-56-5A ②: SY50M-56-5A ③: SY70M-56-5A</p>	A Valve	SY3000-23-24A [for 10 valves (20 pcs.)]	SY3000-222-1A [for 10 valves (20 pcs.)]	SY5000-221-1A [for 10 valves (20 pcs.)]	SY5000-222-1A [for 10 valves (20 pcs.)]	SY7000-221-1A [for 10 valves (30 pcs.)]	SY7000-222-1A [for 10 valves (30 pcs.)]
	B SUP stop valve spacer assembly with residual pressure release valve	SY30M-56-5A (2 pcs.)		SY50M-56-5A (2 pcs.)		SY70M-56-5A (3 pcs.)	
	C Double check spacer assembly with residual pressure release valve	SY30M-56-5A (2 pcs.)		SY50M-56-5A (2 pcs.)		SY70M-56-5A (3 pcs.)	
	D Individual EXH (SUP) spacer assembly	SY30M-56-5A (2 pcs.)		SY50M-56-5A (2 pcs.)		SY70M-56-5A (3 pcs.)	
 <p>&lt;Round head combination screw&gt; ①: SY3000-23-32A ②: SY5000-221-7A ③: SY7000-221-7A</p>	A Valve	SY3000-23-32A (2 pcs.)	—	SY5000-221-7A (2 pcs.)	—	SY7000-221-7A (3 pcs.)	—
	B Interface regulator						
	C Individual SUP (EXH) spacer assembly						

\* Mounting onto a manifold follows the order explained above.

Note 1) 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.

Note 2) When laminating an interface regulator with other options, only the combinations in the table above are possible.



## ⚠ Caution

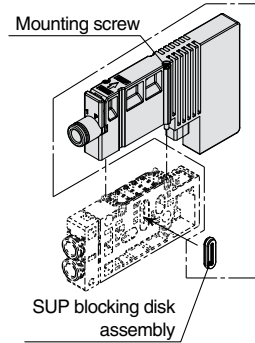
Tightening torque for mounting screw	
M2:	0.12 lbf-ft (0.16 N·m) (SY3000)
M3:	0.59 lbf-ft (0.8 N·m) (SY5000/7000)

## Manifold Options

\* Refer to pages 237, 239, 241 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).



### 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)

Note) Long elbow type is for the SY5000/7000 only.

#### Port size (Metric/One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000
L4	ø4	●	●	—
L6	ø6	●	●	●
L8	ø8	—	●	●
L10	ø10	—	—	●
L12	ø12	—	—	●

#### Port size (Inch/One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000
LN3	ø5/32"	●	—	—
LN7	ø1/4"	●	●	—
LN9	ø5/16"	—	●	—
LN11	ø3/8"	—	—	●

#### Port size (Metric/One-touch fittings)

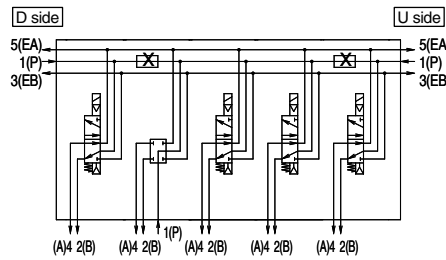
Symbol	P, E port	SY3000	SY5000	SY7000
C2	ø2	●	—	—
C3	ø3	●	—	—
C4	ø4	●	●	—
C6	ø6	●	●	●
C8	ø8	—	●	●
C10	ø10	—	—	●
C12	ø12	—	—	●

#### Port size (Inch/One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000
N1	ø1/8"	●	—	—
N3	ø5/32"	●	●	—
N7	ø1/4"	●	●	●
N9	ø5/16"	—	●	●
N11	ø3/8"	—	—	●

- \* 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.

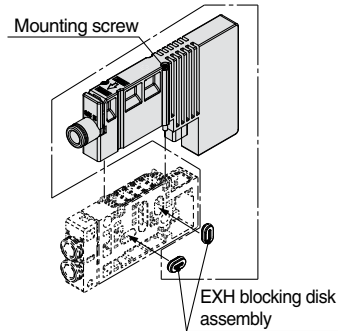
#### <Example>



- \* 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.

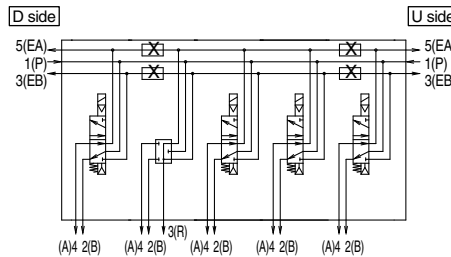
### ■ Individual EXH block assembly

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

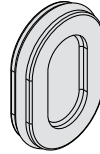
### ■ SUP/EXH blocking disk assembly (for connector type manifold, Type 10, 11, 12)

#### [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.)

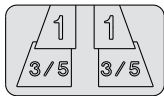


Series	SUP blocking disk assembly	EXH blocking disk assembly
<b>SY3000</b>	SY30M-40-1A	SY30M-40-2A
<b>SY5000</b>	SY50M-40-1A	SY50M-40-1A
<b>SY7000</b>	SY70M-40-1A	SY70M-40-1A

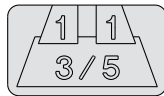
### ■ Label for blocking disk

Label to indicate and confirm on the manifold where the SUP/EXH blocking disk assemblies were inserted. (3 sheets each)

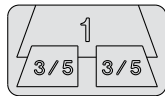
SUP/EXH blocking disk label



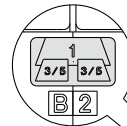
SUP blocking disk label



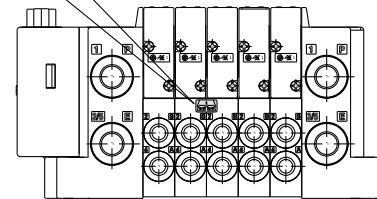
EXH blocking disk label



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.)

Note) 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.

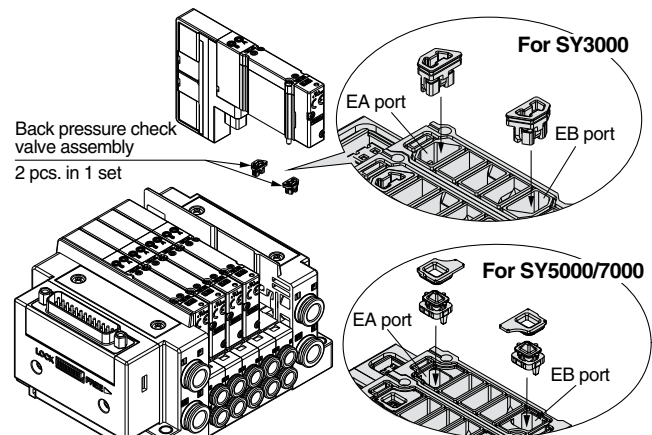
#### Ordering Example

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

# 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.

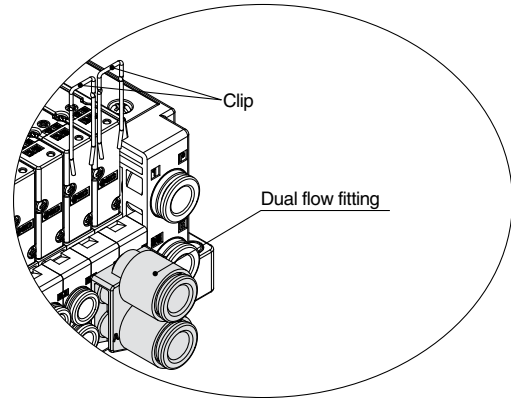
### How to Order Dual Flow Fitting

**SY 3 OM - 120 - 1A - C8**

Series	
3	SY3000
5	SY5000

#### ● A, B port size (One-touch fittings)

Symbol	A, B port	SY3000	SY5000
C8	Metric size	ø8	●
C10		ø10	—
N9	Inch size	ø5/16"	●
N11		ø3/8"	—



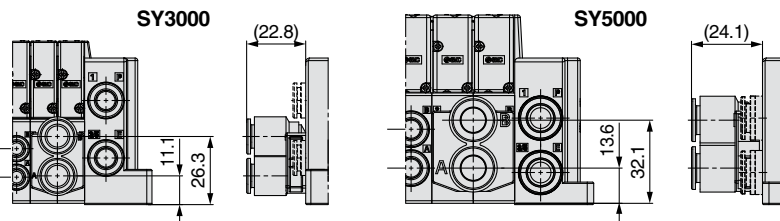
#### Ordering Example

SS5Y3-10F1-08B-CM

\*SY3100-5U1

\*SY30M-120-1A-C8

\*The asterisk denotes the symbol for assembly.



Note 1) 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.

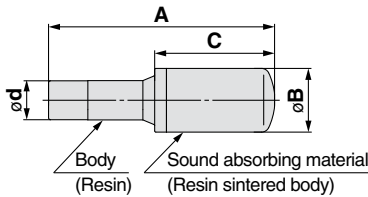
Note 2) When adding or changing clips, push them into the very end of the manifold for each station. Also, make sure to use the clip that was packed together, as the clip and the fitting for one station differ among products that can be used with the SY5000.

Note 3) Not available for the SY7000 series.

### ■ Silencer

#### (One-touch fitting connection type)

This silencer can be mounted to the 3/5 (E: EXH) port of the manifold in one step.

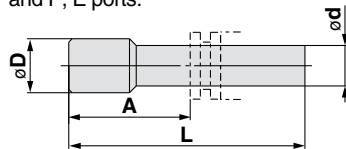


Note) Shipped together with the product.

Series	Model	Effective area	A	B	C
For SY3000 (ø8)	<b>AN15-C08</b>	20 mm <sup>2</sup>	45	13	20
For SY5000 (ø10)	<b>AN20-C10</b>	30 mm <sup>2</sup>	57.5	16.5	30.5
For SY7000 (ø12)	<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.



Note) Shipped together with the product.

#### Dimensions

Applicable fitting size ød (Metric size)	Model	A	L	øD
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 ød (Inch size)	Model	A	L	øD
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.

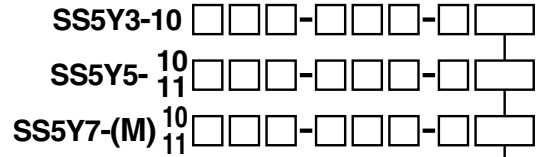
### ■ Name plate (For connector connecting base)

[ 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.



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	—

Note 1) 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.

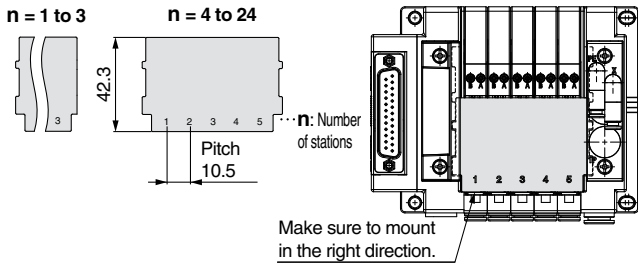
Note 2) No name plate settings are available for the SY3000/SY5000 mixed mounting types. However, they are available for the SY5000/SY7000 mixed mounting types.

#### Ordering Example

SS5Y3-10F1-05UR-C6AA ..... 1 set  
 \*SY3200R-5U1 ..... 5 sets

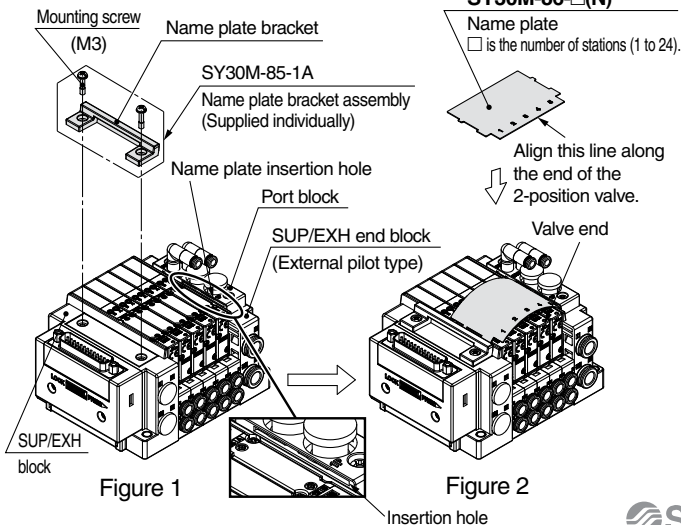
\* The asterisk denotes the symbol for assembly.

#### <SY3000>

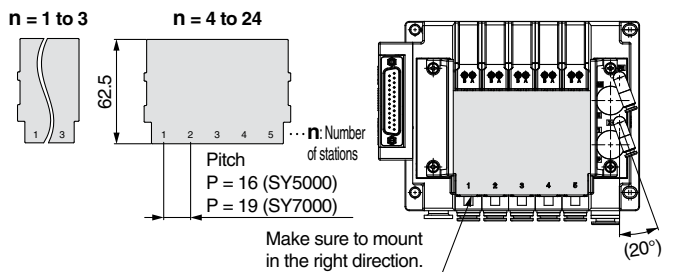


Make sure to mount in the right direction.

Tightening torque for mounting screw (M3):  
 0.59 lbf-ft (0.8 N-m)



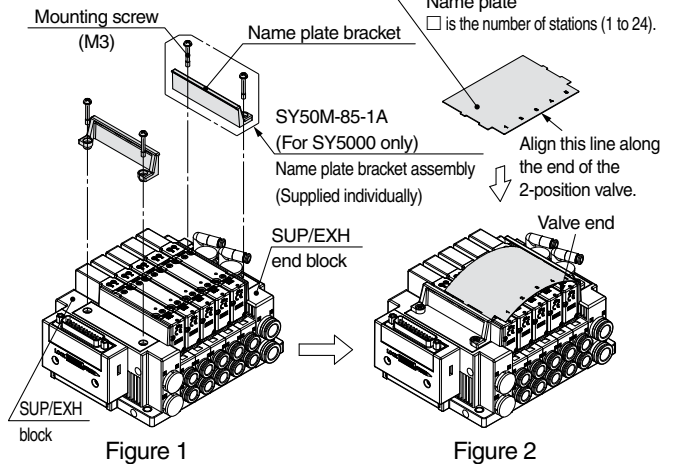
#### <SY5000/7000>



Make sure to mount in the right direction.

Tightening torque for mounting screw (M3):  
 0.59 lbf-ft (0.8 N-m)

SY5000: SY50M-86-□(N)  
 SY7000: SY70M-86-□(N)  
 Name plate  
 □ is the number of stations (1 to 24).



# 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 no.

Series		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 (1 to 24)
	No printing	SY30M-86-□	SY50M-86-□	SY70M-86-□	

### Name plate bracket assembly part no. and number of items ordered

Series		SS5Y3-10	SS5Y5-10/11
Name plate assembly part no.		SY30M-85-1A	SY50M-85-1A
Manifold SUP/EXH block assembly 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. <sup>Note)</sup>	
	External pilot double sided piping	Not required <sup>Note)</sup>	

Note 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.

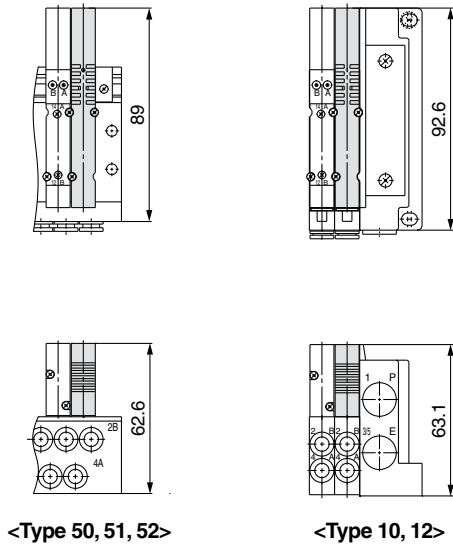
Note 2) Name plate bracket assembly is not required for the SY7000.

### ⚠ Caution

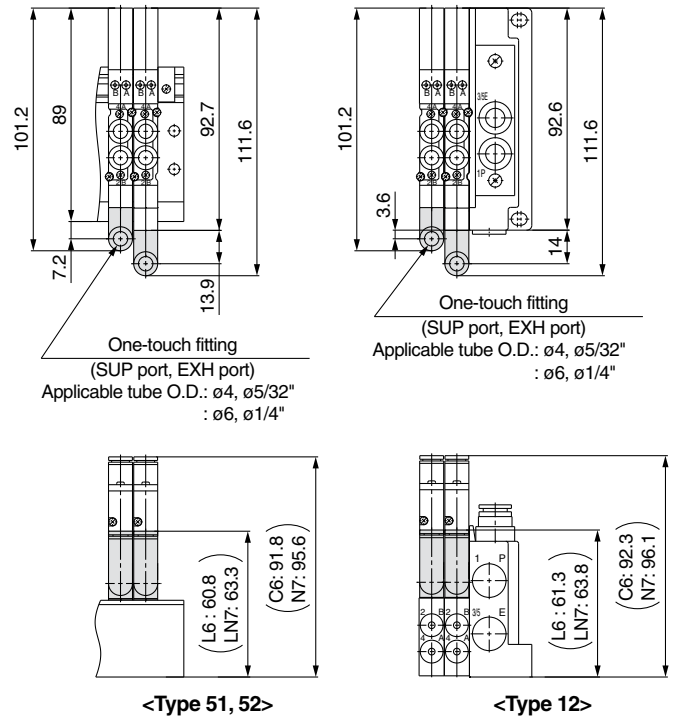
1. Be sure to shut off the power and air supplies before mounting the name plate bracket assembly. Furthermore, since air may remain inside the actuator, piping and manifold, confirm that the air is completely exhausted before performing any work.
2. When disassembly and assembly are performed, air leakage may result if the tightening of the bracket mounting screws is inadequate.

**Dimensions: Manifold Options/Series SY3000**

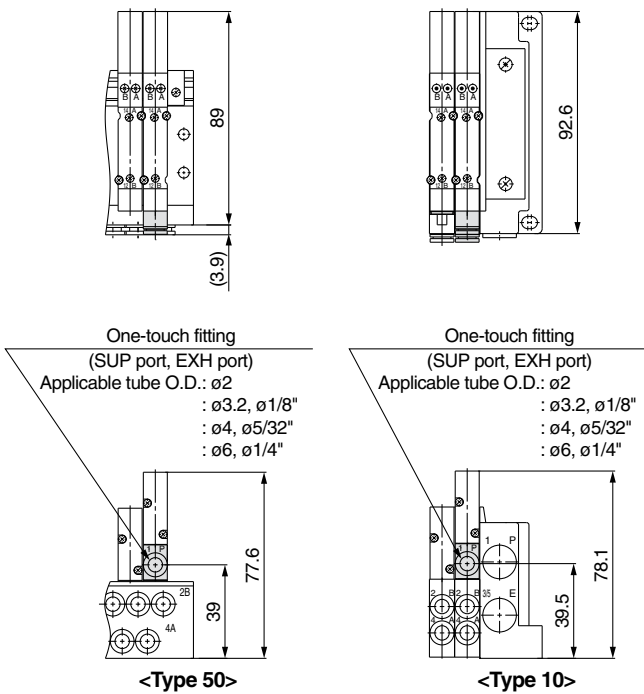
■ **Blanking plate assembly**



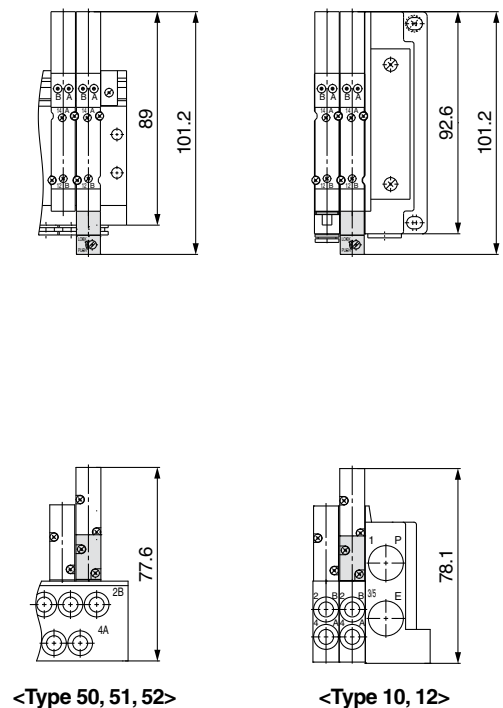
■ **Individual SUP/EXH spacer assembly (Top/Bottom ported)**



■ **Individual SUP/EXH spacer assembly (Side ported)**



■ **SUP stop valve spacer assembly with residual pressure release valve**



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.

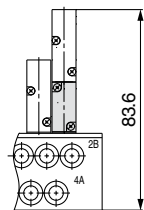
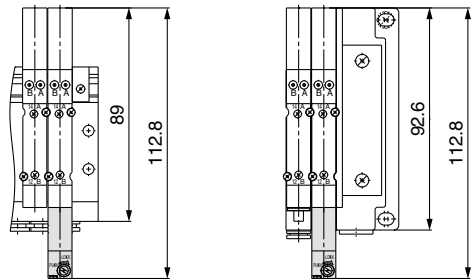
Manifold Options



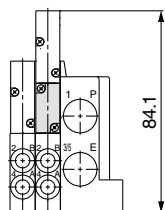
# Series SY3000/5000/7000

## Dimensions: Manifold Options/Series SY3000

### Double check spacer assembly with residual pressure release valve

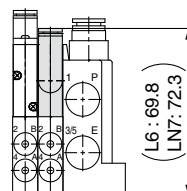
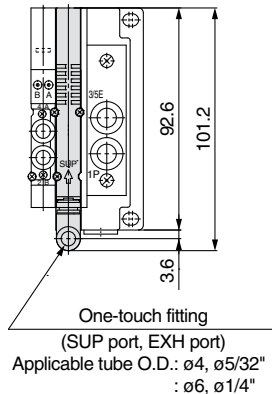


<Type 50, 51>



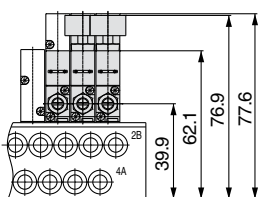
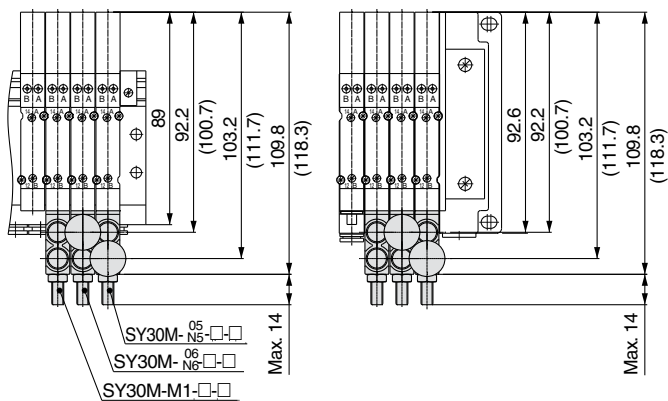
<Type 10>

### Individual SUP/EXH block assembly (Top ported)

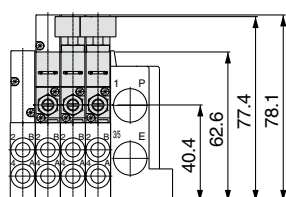


<Type 12>

### Interface regulator

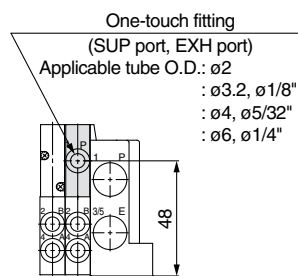
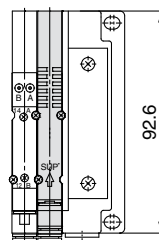


<Type 50, 51, 52>



<Type 10, 12>

### Individual SUP/EXH block assembly (Side ported)

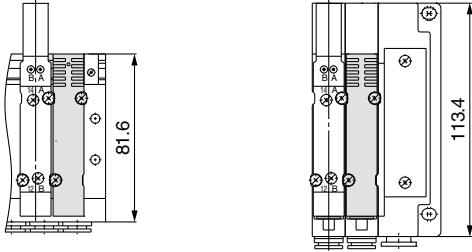


<Type 10>

\*The dimensions within ( ) applies to the SY30M-□-□-3.

**Dimensions: Manifold Options/Series SY5000**

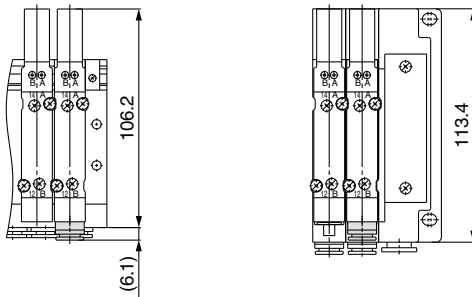
**■ Blanking plate assembly**



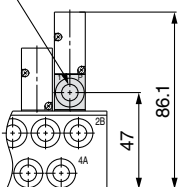
<Type 50, 51, 52>

<Type 10, 11, 12>

**■ Individual SUP/EXH spacer assembly (Side ported)**

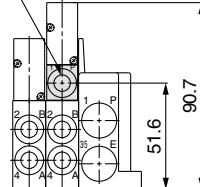


One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\phi 4, \phi 5/32''$   
:  $\phi 6, \phi 1/4''$   
:  $\phi 8, \phi 5/16''$



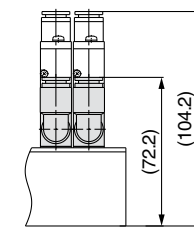
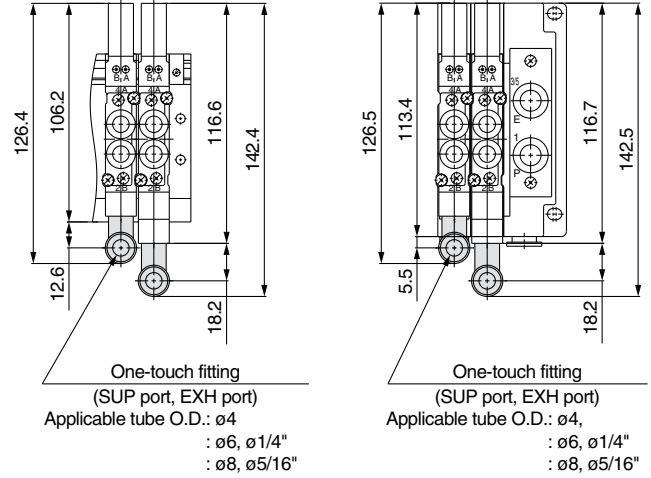
<Type 50>

One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\phi 4, \phi 5/32''$   
:  $\phi 6, \phi 1/4''$   
:  $\phi 8, \phi 5/16''$

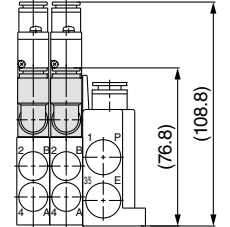


<Type 10>

**■ Individual SUP/EXH spacer assembly (Top/Bottom ported)**

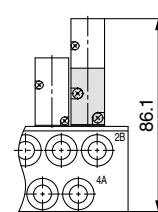
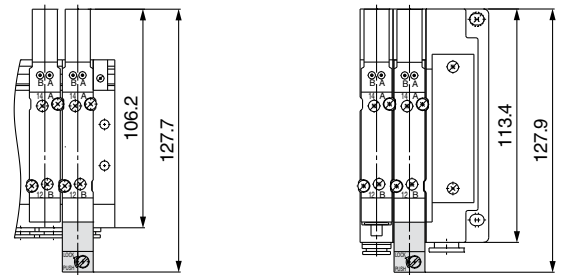


<Type 51, 52>

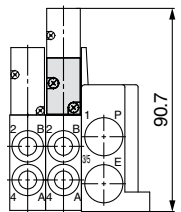


<Type 11, 12>

**■ SUP stop valve spacer assembly with residual pressure release valve**



<Type 50, 51, 52>



<Type 10, 11, 12>

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

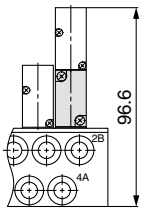
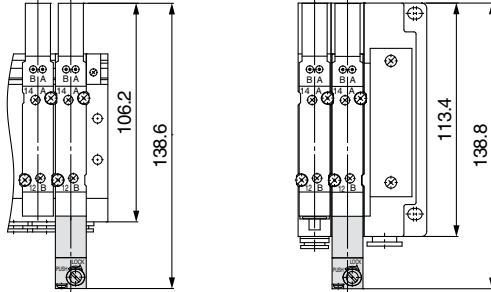
One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

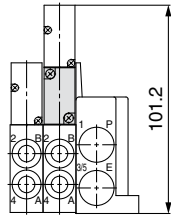
# Series SY3000/5000/7000

## Dimensions: Manifold Options/Series SY5000

### Double check spacer assembly with residual pressure release valve

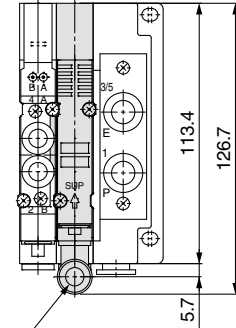


<Type 50, 51>

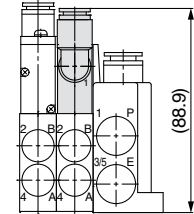


<Type 10, 11>

### Individual SUP/EXH block assembly (Top ported)

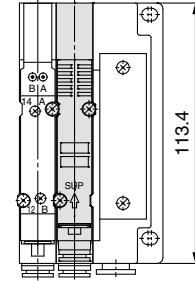


One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\phi 4$   
:  $\phi 6$ ,  $\phi 1/4$ "  
:  $\phi 8$ ,  $\phi 5/16$ "

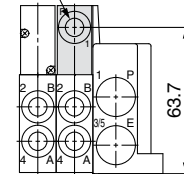


<Type 12>

### Individual SUP/EXH block assembly (Side ported)

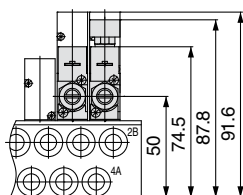
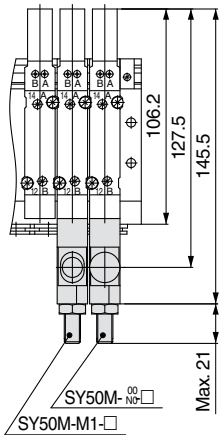


One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\phi 4$ ,  $\phi 5/32$ "  
:  $\phi 6$ ,  $\phi 1/4$ "  
:  $\phi 8$ ,  $\phi 5/16$ "

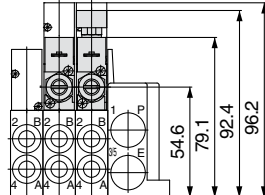
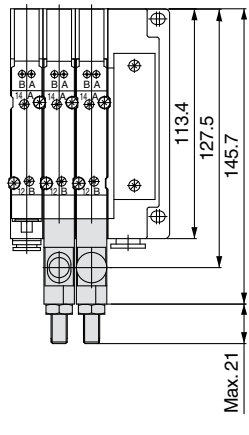


<Type 10>

### Interface regulator

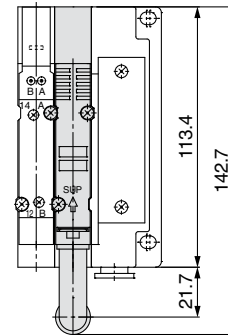


<Type 50, 51, 52>

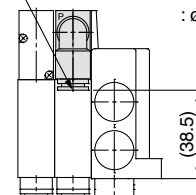


<Type 10, 11, 12>

### Individual SUP/EXH block assembly (Bottom ported)



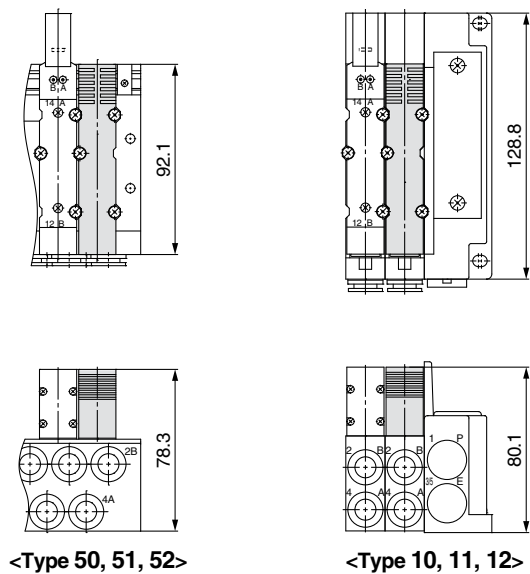
One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\phi 4$ ,  
:  $\phi 6$ ,  $\phi 1/4$ "  
:  $\phi 8$ ,  $\phi 5/16$ "



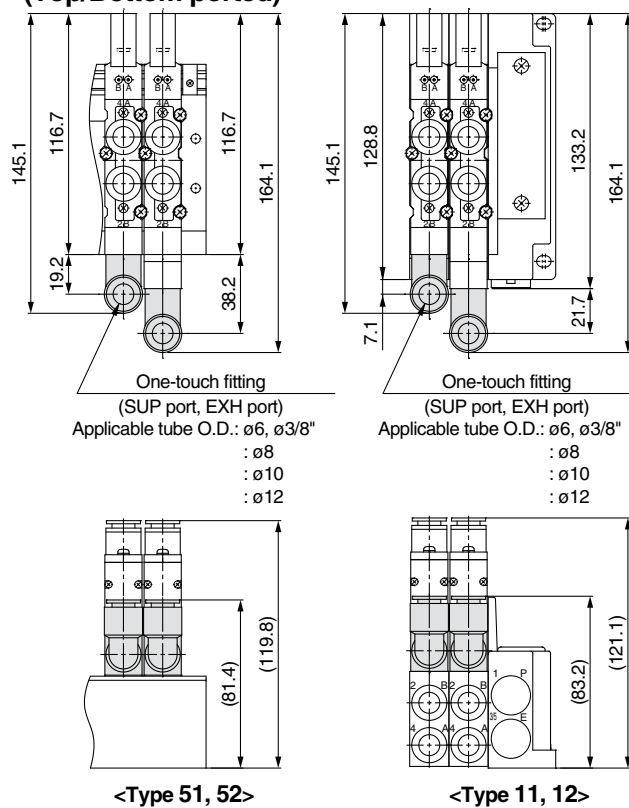
<Type 11>

**Dimensions: Manifold Options/Series SY7000**

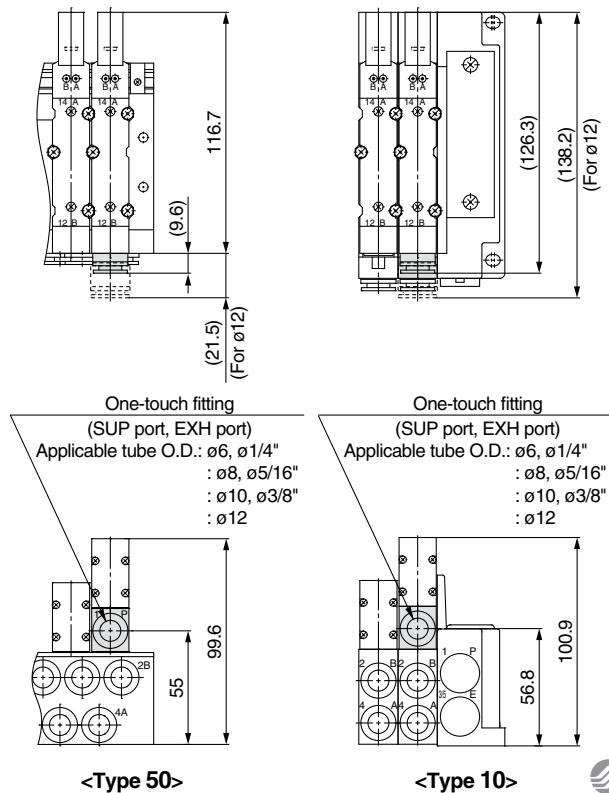
**Blanking plate assembly**



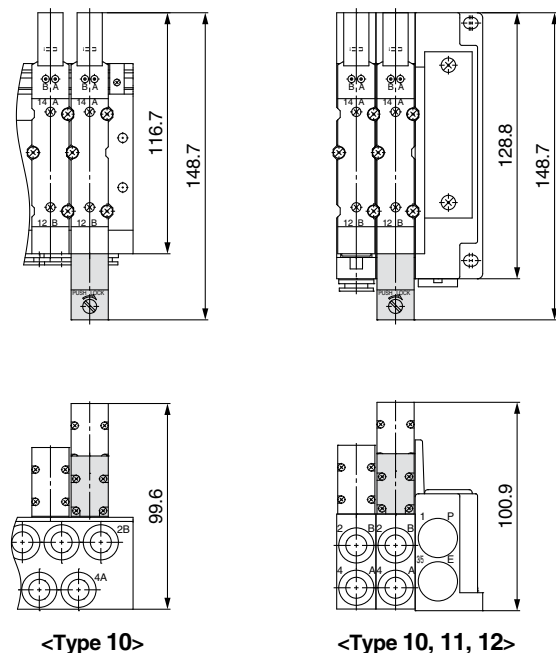
**Individual SUP/EXH spacer assembly (Top/Bottom ported)**



**Individual SUP/EXH spacer assembly (Side ported)**



**SUP stop valve spacer assembly with residual pressure release valve**



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

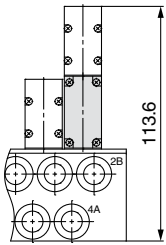
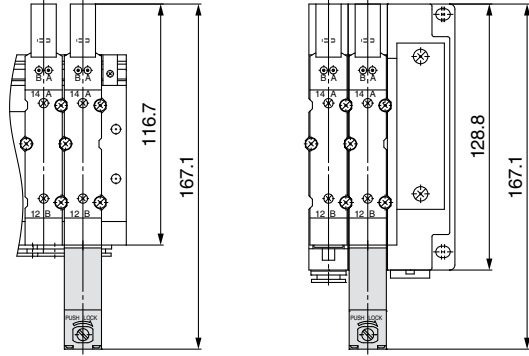
One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

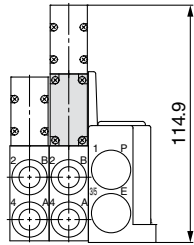
# Series SY3000/5000/7000

## Dimensions: Manifold Options/Series SY7000

### Double check spacer assembly with residual pressure release valve

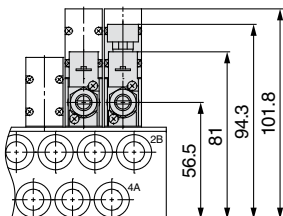
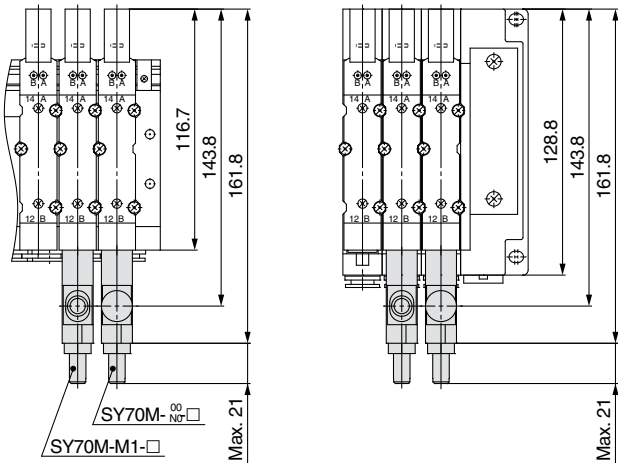


<Type 50, 51>

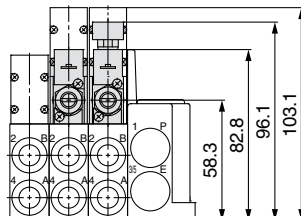


<Type 10, 11>

### Interface regulator

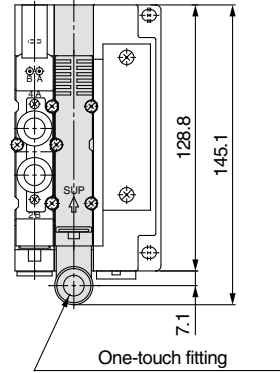


241 <Type 50, 51, 52>

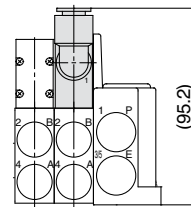


<Type 10, 11, 12>

### Individual SUP/EXH block assembly (Top ported)

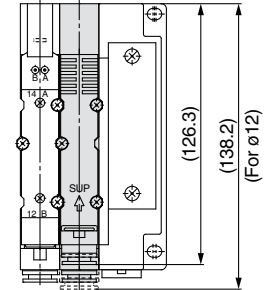


(SUP port, EXH port)  
Applicable tube O.D.:  $\phi 6$ ,  $\phi 3/8$ "  
:  $\phi 8$   
:  $\phi 10$   
:  $\phi 12$

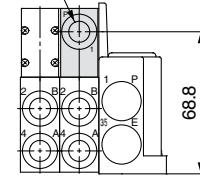


<Type 12>

### Individual SUP/EXH block assembly (Side ported)

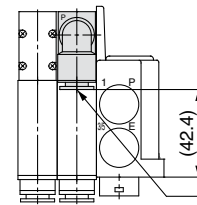
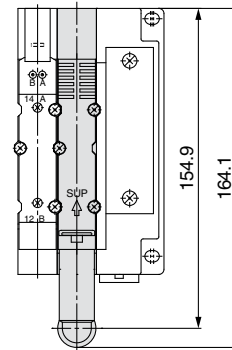


One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\phi 6$ ,  $\phi 3/8$ "  
:  $\phi 8$   
:  $\phi 10$   
:  $\phi 12$



<Type 10>

### Individual SUP/EXH block assembly (Bottom ported)



<Type 11>

One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\phi 8$ ,  $\phi 3/8$ "  
:  $\phi 10$   
:  $\phi 12$



# Series SY3000/5000/7000

## Specific Product Precautions 1

Be sure to read before handling. Refer to 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 SMC website, <http://www.smcworld.com>

### 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.

Model	Thread size	Tightening torque
SY3000	M2	0.12 lbf ft (0.16 N·m)
SY5000/7000	M3	0.59 lbf ft (0.8 N·m)

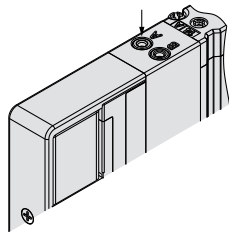
### Manual Override

#### 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.

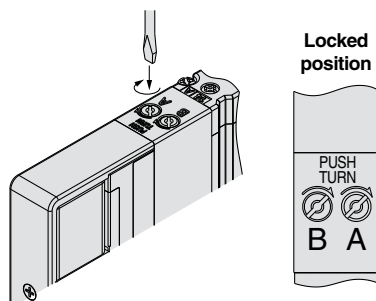
##### Non-locking push type

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.

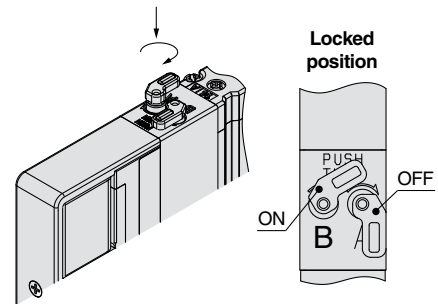


### Manual Override

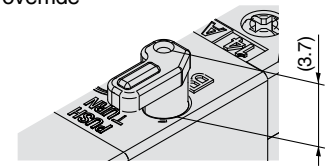
#### Warning

##### 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

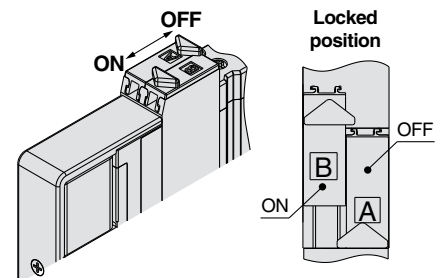


#### Caution

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 before handling. Refer to 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 SMC website, <http://www.smcworld.com>

### 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 pressurized from exhaust port [3/5(E)]. As compared with the types which do not integrate the back pressure check valve, C value of the flow-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<sup>3/5</sup>□0□) and top ported type (SY<sup>3/5</sup>□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 before handling. Refer to 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 SMC website, <http://www.smcworld.com>

## Light/Surge Voltage Suppressor

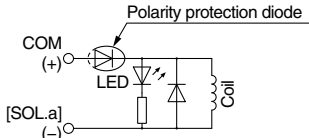
### Caution

#### ■ Polar type

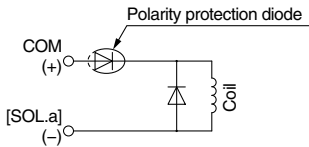
##### Positive common

##### Single solenoid

Light/surge voltage suppressor (□Z)



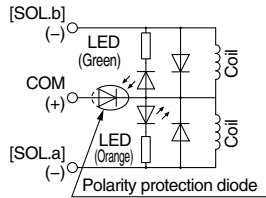
Surge voltage suppressor (□S)



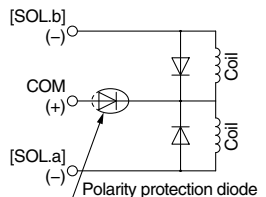
##### Positive common

##### Double solenoid, 3-position, 4-position

Light/surge voltage suppressor (□Z)



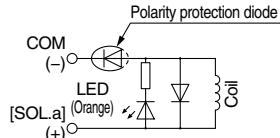
Surge voltage suppressor (□S)



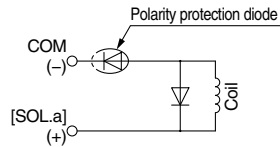
##### Negative common

##### Single solenoid

Light/surge voltage suppressor (□NZ)



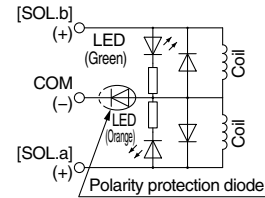
Surge voltage suppressor (□NS)



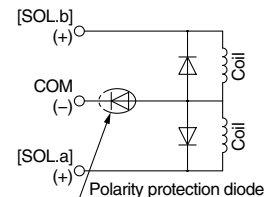
##### Negative common

##### Double solenoid, 3-position, 4-position

Light/surge voltage suppressor (□NZ)



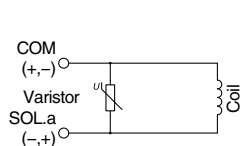
Surge voltage suppressor (□NS)



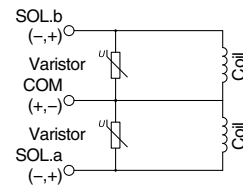
#### ■ Non-polar type

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

##### Single solenoid

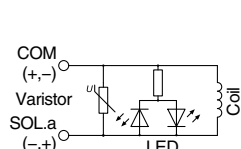


##### Double solenoid

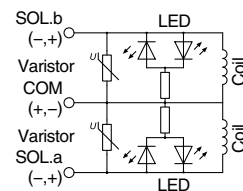


##### With light/surge voltage suppressor (□U)

##### Single solenoid



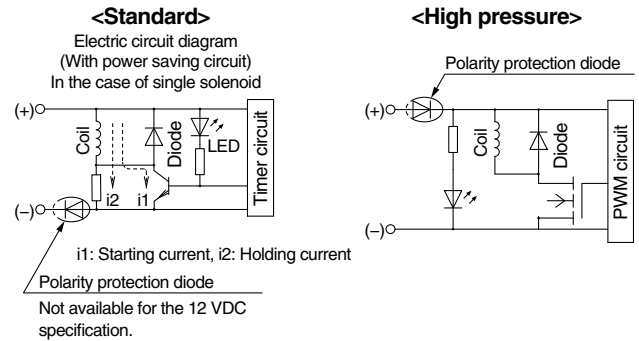
##### Double solenoid



#### ■ With power saving circuit

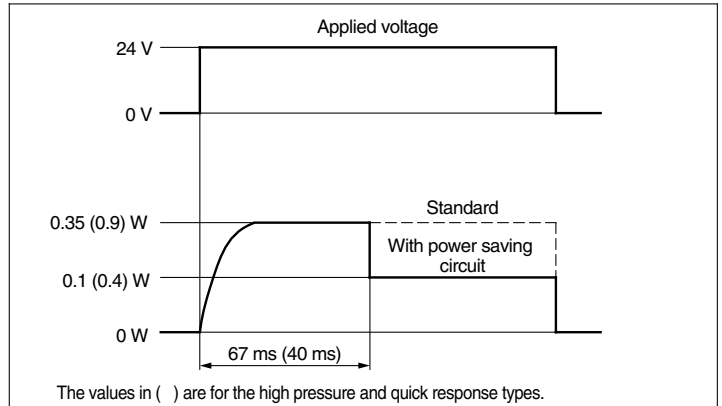
Power consumption is decreased by approx. 1/3 by reducing the wattage required to hold the valve in an energized state. (Effective energizing time is over 67 ms at 24 VDC.)

Note) Be careful of the energizing time, as quick response and high pressure types will become operational when the energizing 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 VDC 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

Note) 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 4.

#### 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 before handling. Refer to 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 SMC website, <http://www.smcworld.com>

### Continuous Duty

#### ⚠ Caution

If a valve is energized continuously for a long period of time, the rise in temperature due to heat-up of the coil assembly may cause a decline in solenoid valve performance, reduce service life, or have adverse effects on peripheral equipment. If the valve is energized 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 energized simultaneously for extended periods of time or if the valves on A side and B side are energized 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-energized 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).

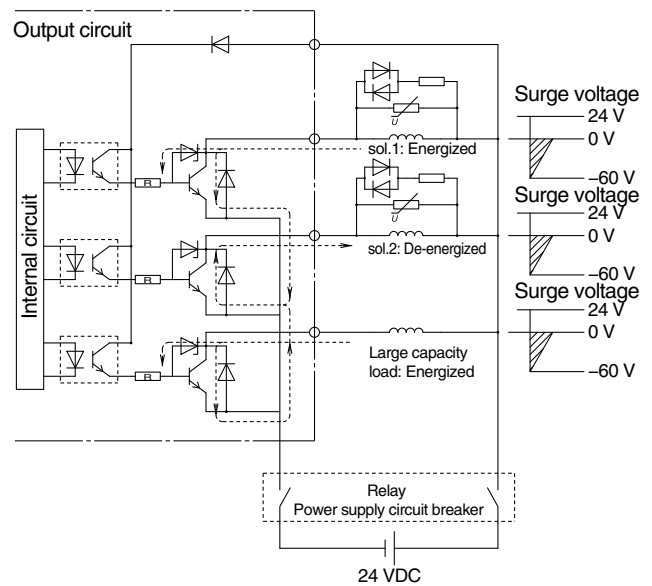


Figure 1. Surge intrusion circuit example (NPN outlet example) (24 VDC)

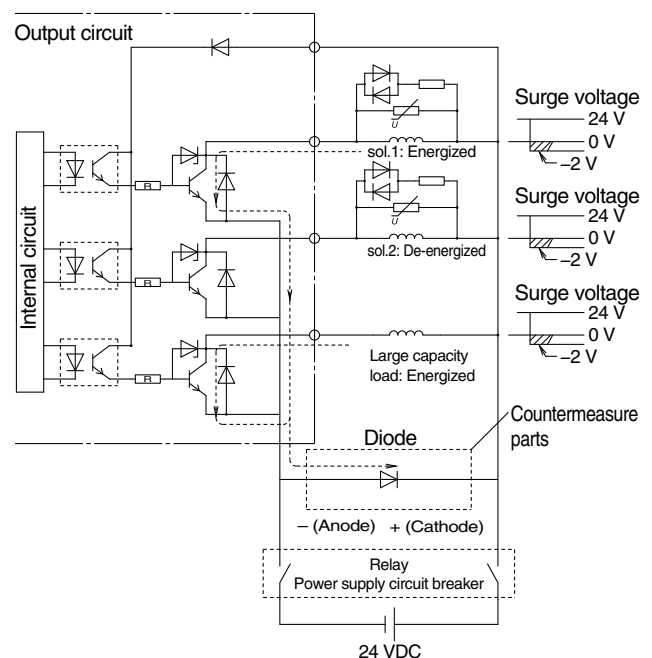


Figure 2. Surge intrusion circuit example (NPN outlet example) (24 VDC)



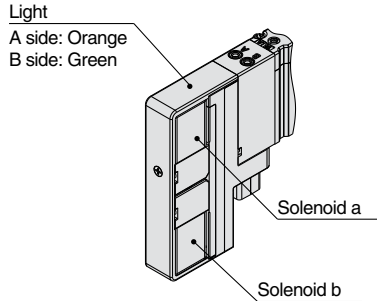
# Series SY3000/5000/7000

## Specific Product Precautions 5

Be sure to read before handling. Refer to 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 SMC website, <http://www.smcworld.com>

### Light Indication

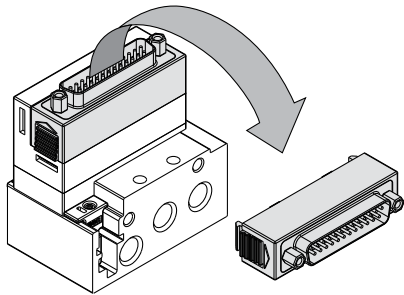
When equipped with indicator light and surge voltage suppressor, the light window turns orange when solenoid a is energized, and it turns green when solenoid b is energized.



### 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.

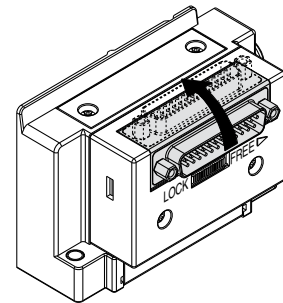


### Type 1 (Connector Connecting Base) Changing Connector Entry Direction

#### 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.

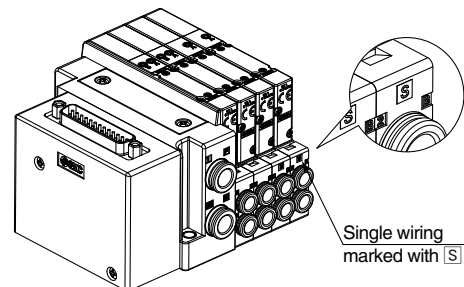


### How to Order Manifold

#### Caution

The letter "S" 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 [S].)





# Series SY3000/5000/7000

## Specific Product Precautions 6

Be sure to read before handling. Refer to 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 SMC website, <http://www.smcworld.com>

### 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 223 for part numbers of port block assembly and body cover assembly.

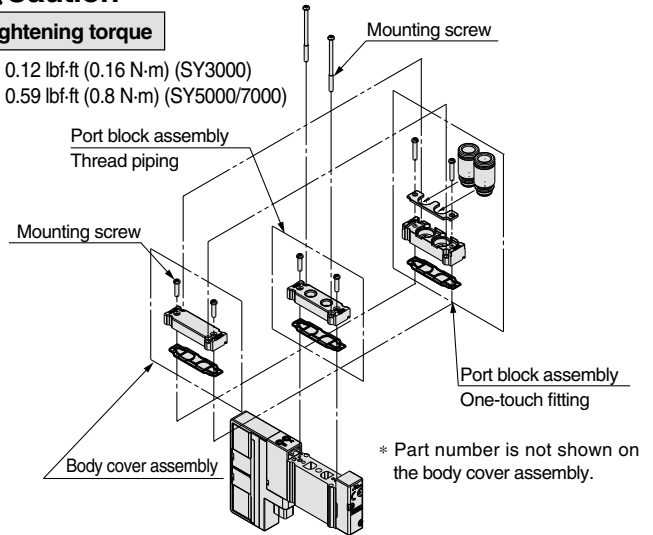
When switching them while valves are mounted on a manifold, remove the clip with a flat head screwdriver before switching the port plugs and the One-touch fittings. It may cause air leakage if the mounting screws are not tightened or the clip is not inserted securely enough when they are switched. Take care to tighten to the correct tightening torque.

#### ⚠ Caution

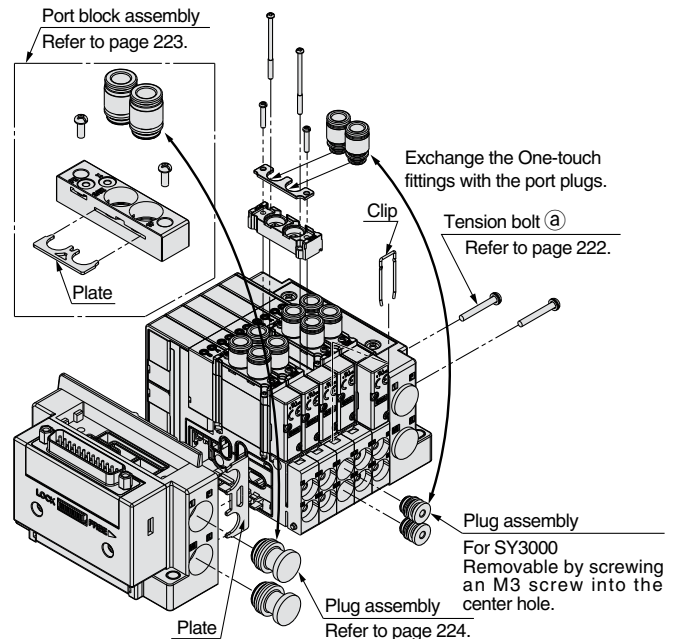
##### Tightening torque

M2: 0.12 lbf-ft (0.16 N-m) (SY3000)

M3: 0.59 lbf-ft (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 before handling. Refer to 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 SMC website, <http://www.smcworld.com>

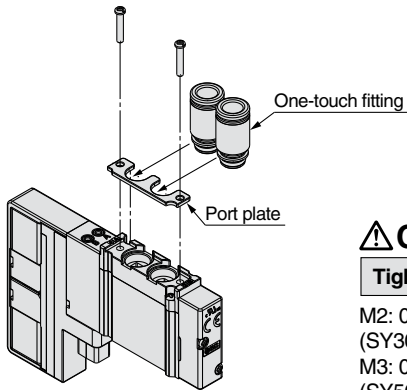
## Changing One-touch Fittings

### ⚠ 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 224 for part numbers of One-touch fittings for valve or manifold.

#### ■ Valve



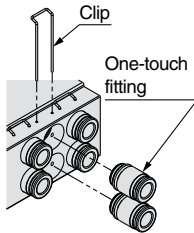
### ⚠ Caution

#### Tightening torque

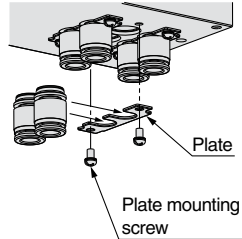
M2: 0.12 lbf ft (0.16 N·m)  
(SY3000)  
M3: 0.59 lbf ft (0.8 N·m)  
(SY5000/7000)

#### ■ 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

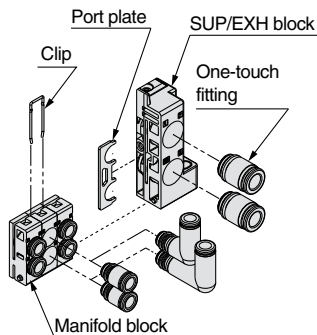
#### Plate assembly part no. (10 pcs. included)

Series	Part no.
SY3000	SY30M-10-3A
SY5000	SY50M-10-6A
SY7000	SY70M-10-7A

Note) 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 Note 1)	SY50M-19-6A
SY3000/5000 Mixed mounting type	SY50M-19-1A
SY7000	SV3000-70-1A

Note 1) A and B ports (ø8 and ø5/16") of the SY3000/5000 mixed mounting type are those for the SY5000.

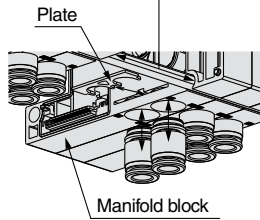
Note 2) If the port plate for the SUP/EXH block is required, please contact SMC.

## 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 Note)	SY50M-10-4A
SY3000/5000 Mixed mounting type	SY50M-10-5A
SY7000	SY70M-10-4A

Note) A and B ports (ø8 and ø5/16") 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 ±0.1 mm             |
| 2) Soft nylon tube   | within ±0.1 mm             |
| 3) Polyurethane tube | within +0.15 mm<br>-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

- 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.
- Grasp the tube and push it in slowly, inserting it securely all the way into the fitting.
- 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

- Push in the release button sufficiently, pushing its collar equally around the circumference.
- 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.
- 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 before handling. Refer to 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 SMC website, <http://www.smcworld.com>

### 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.							
					ø2	ø3.2	ø4	ø6	ø8	ø10	ø12	
SY3000	SY3□30-□□-M5	4A, 2B	M5	KQ2H	████████████████████							
				KQ2S		████████████████████						
	SS5Y3-50/51/52 (R) 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.							
					ø2	ø3.2	ø4	ø6	ø8	ø10	ø12	
SY5000	SY5□30-□□-01	4A, 2B	1/8	KQ2H		████████████████████						
				KQ2S		████████████████████						
	SS5Y5-50/51/52 (R) 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.							
					ø2	ø3.2	ø4	ø6	ø8	ø10	ø12	
SY7000	SY7□30-□□-02	4A, 2B	1/4	KQ2H		████████████████████						
				KQ2S		████████████████████						
	SS5Y7-50/51/52 (R) 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.

- \*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.

### Warning

**1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.**

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

**2. Only personnel with appropriate training should operate machinery and equipment.**

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

**3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.**

- 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.
- 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.
- 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.**

- Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
- Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalog.
- An application which could have negative effects on people, property, or animals requiring special safety analysis.
- 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.

## 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

- 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.
- 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.
- Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog 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

- The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
- 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.

### Revision history

<p><b>Edition B</b></p> <ul style="list-style-type: none"> <li>Added the EX260 Integrated-type (For Output) Serial Transmission System.</li> <li>Added EtherNet/IP™ and EtherCAT to the EX600 Integrated-type (For Input/Output) Serial Transmission System (Fieldbus System).</li> <li>Additional Options:               <ul style="list-style-type: none"> <li>Interface regulator assembly</li> <li>Dual flow fitting</li> <li>Individual SUP block assembly</li> <li>Name plate for manifolds</li> <li>Individual EXH block assembly</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Changed the part numbers for A, B port mixed sizes for plug-in connector connecting bases for Type 10 (Side ported), Type 11 (Bottom ported), Type 12 (Top ported).</li> <li>Deleted the mixed specification for A, B port piping specification for plug-in connector connecting base for Type 12 (Top ported).</li> <li>Number of pages from 148 to 164</li> </ul>	<p><b>Edition C</b></p> <ul style="list-style-type: none"> <li>Added the SY7000.</li> <li>Added plug-in sub-plate (SY3000/5000).</li> <li>Added with residual pressure release valve (SY5000).</li> <li>Added with safety slide locking manual override.</li> <li>Added D-sub connector [IP67] manifold.</li> <li>Added PC wiring (with power supply terminal) manifold.</li> <li>Number of pages from 164 to 260</li> </ul>
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 **Safety Instructions** Be sure to read “Handling Precautions for SMC Products” (M-E03-3) before using.

# Global Manufacturing, Distribution and Service Network

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Nashville  
New Jersey  
Rochester  
Tampa  
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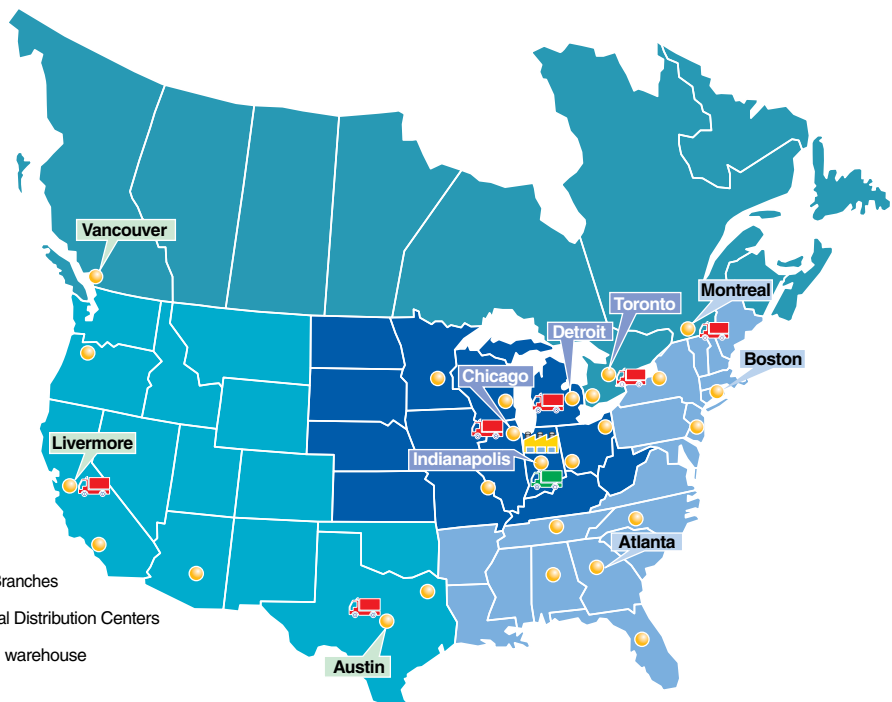
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