

# 5 Port Solenoid Valve



**Plug-in Type**

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

Saves **energy** and **space**.

**SY3000**



10 mm

Ø 2, Ø 3.2, Ø 4, Ø 6, Ø 8\*1 fittings are connectable.  
\*1: Type M10/M11 manifold

**SY5000**



15 mm

Ø 4, Ø 6, Ø 8 fittings are connectable.

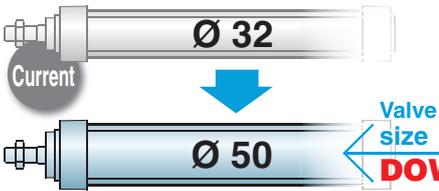
**SY7000**



18 mm

Ø 6, Ø 8, Ø 10, Ø 12 fittings are connectable.

At 300 mm/s

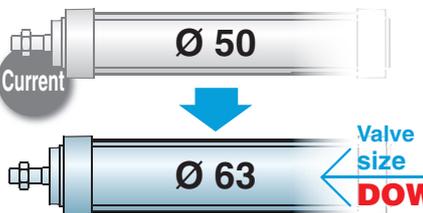


Current

Valve size **DOWN**

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

At 300 mm/s

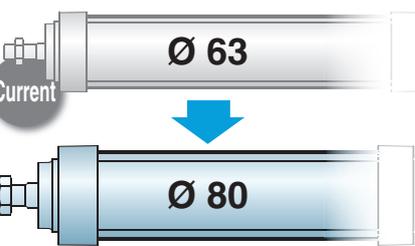


Current

Valve size **DOWN**

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

At 300 mm/s



Current

Valve size **DOWN**

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

Page 32

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




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

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

**Power consumption**  
\*: Refer to page 2.

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

**Rubber seal** (Service life: 70 million cycles)  
**Metal seal** (Service life: 200 million cycles)

\*: According to SMC life test conditions

## Series SY3000/5000/7000

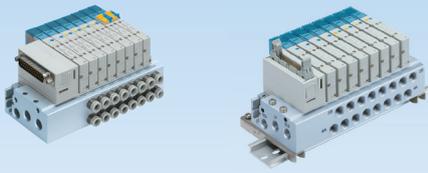


CAT.EUS11-103Dd-UK

# 5 Port Solenoid Valve

## Plug-in Metal Base [IP40]

Side ported [From page 45](#)



Bottom ported [From page 45](#)



Top ported [From page 65](#)



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

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

### Manifold

Side ported [From page 97](#)



Bottom ported [From page 97](#)



Top ported [From page 109](#)

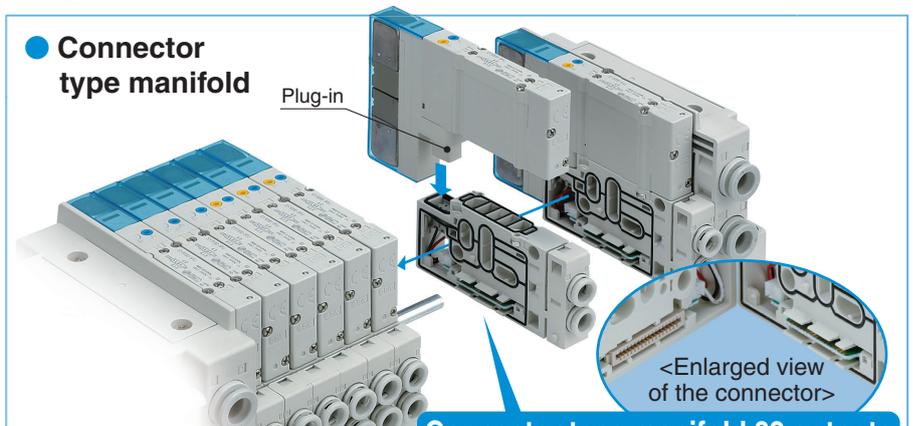


### Plug-in Compatible sub-plate type



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

### Connector type manifold



## Wiring

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

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

### Serial Transmission Variations

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

# Power Saving

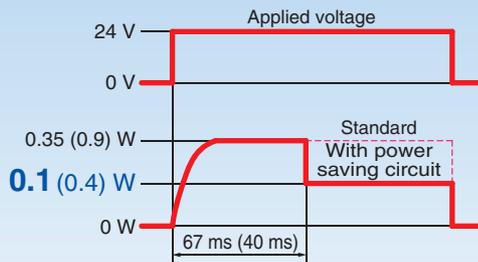
## Power Consumption

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

With power saving circuit

Standard

[Electrical power waveform with power saving circuit]



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

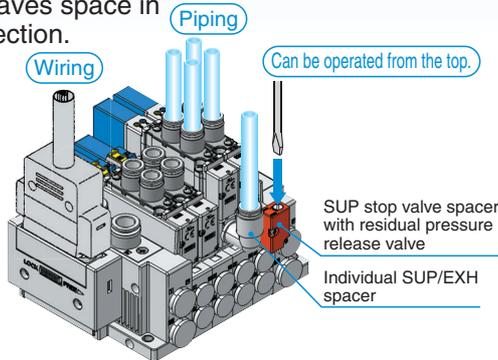
Power consumption is decreased by approx. 1/3 by reducing the wattage required to hold the valve in an energised state. (Effective energizing time is over 67 ms at 24 V DC.) Refer to the electrical power waveform as shown on the left.

# Space Saving / Improved Operability

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

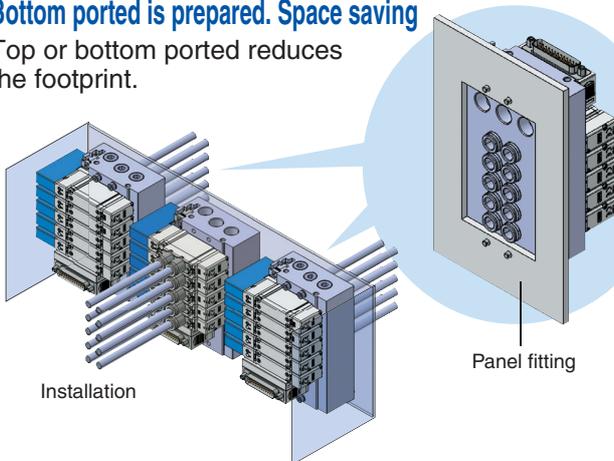
Wiring, piping and operation are integrated on one side.

Multiple layer type is available as an option. This saves space in the lateral direction. **From page 250**



Bottom ported is prepared. Space saving

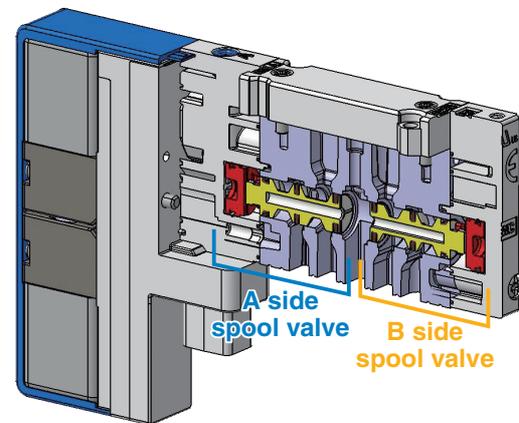
Top or bottom ported reduces the footprint.



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

(Only rubber seal type)

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



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

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

**Different sizes (SY3000/5000 or SY5000/7000) can be mixed!** **From page 213**

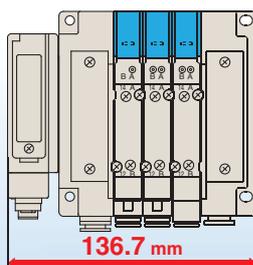
Possible to reduce installation space, the number of serial units and wirings.

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

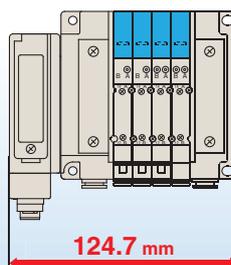
For serial transmission EX260

Installation space

**SY5000 manifold**  
SY5000 3 stations

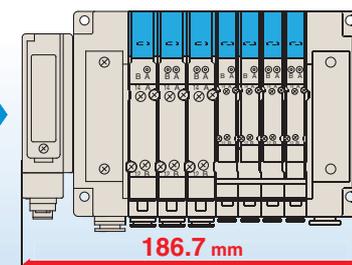


**SY3000 manifold**  
SY3000 4 stations



**Mixed manifold**

SY5000 3 stations SY3000 4 stations



Number of serial units

2 sets



1 set



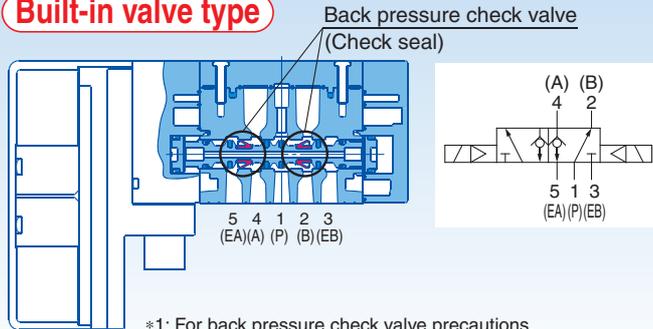
# 5 Port Solenoid Valve

## Improved Safety

### Back Pressure Check Valve

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

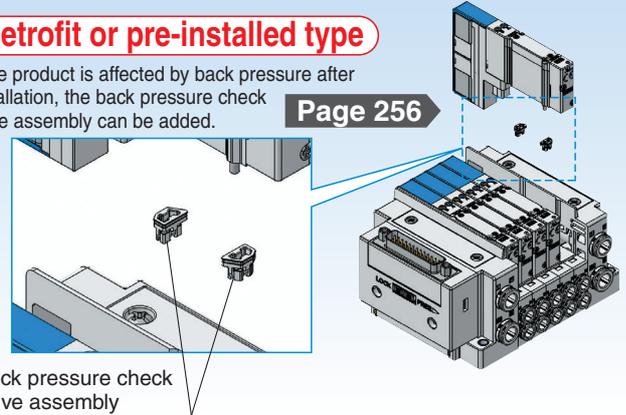
#### Built-in valve type



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

#### Retrofit or pre-installed type

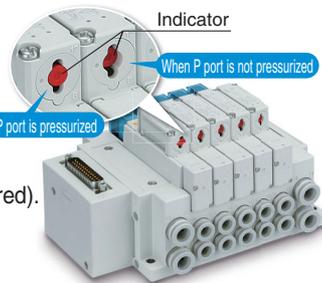
If the product is affected by back pressure after installation, the back pressure check valve assembly can be added.



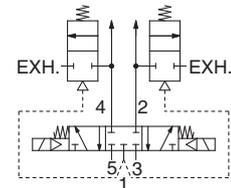
### With residual pressure release valve (SY5000/7000) Page 23

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

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

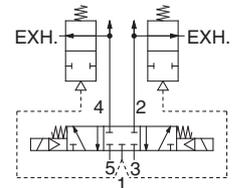


[When 1(P) port is pressurised]



### IP67 compliant

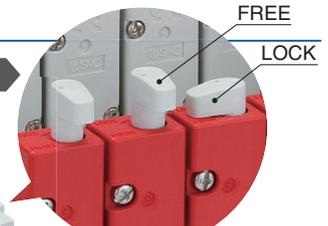
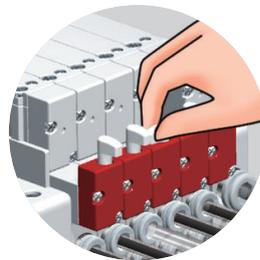
[When 1(P) port is not pressurised]



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

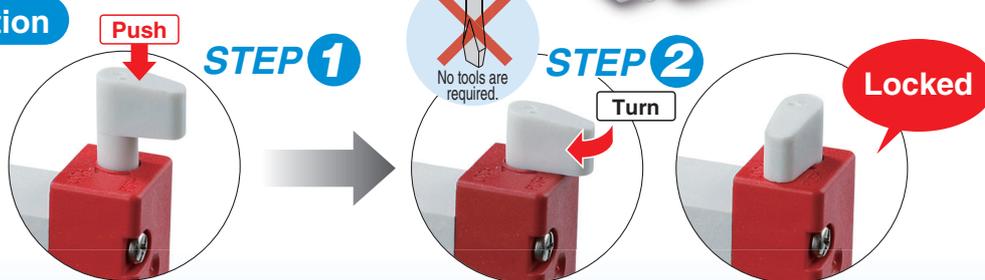
Lever type is added to manual override button!

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



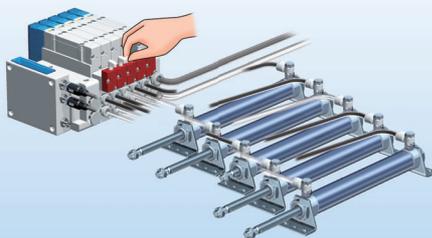
Easy to visually check

2 action



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

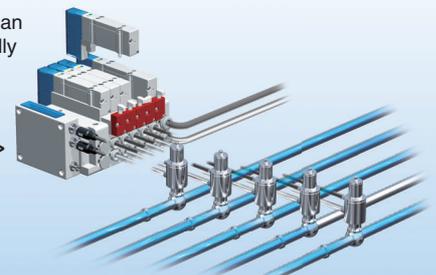
The operation of an actuator can be checked by shutting off the air for the solenoid valves on the base individually, while the main air is being supplied during a trial operation.



#### Solenoid valves can be replaced individually!

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

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



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

# Improved Safety

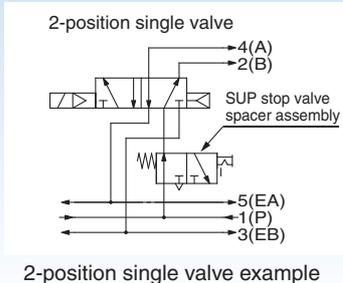
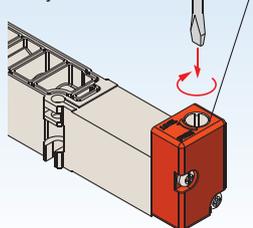
## Slotted Type

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

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

Button for manual release of residual pressure

To exhaust residual pressure on cylinder side.



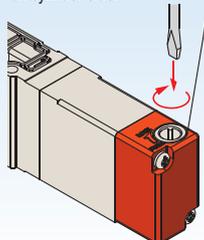
## Slotted Type

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

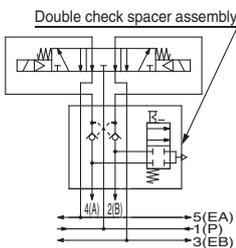
Long time of intermediate stop and position holding are possible.

Button for manual release of residual pressure

To exhaust residual pressure on cylinder side.

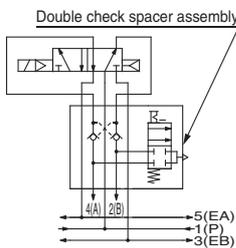


[Intermediate stop]



Exhaust centre

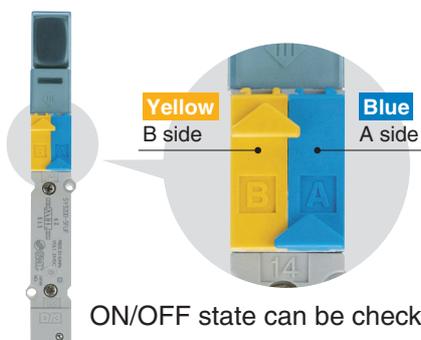
[Drop prevention]



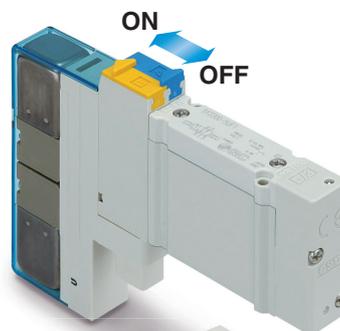
2-position single/double

## With slide locking manual override

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



ON/OFF state can be checked at a glance.



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

Page 31

Double action manual override prevents incorrect operation!

SY7000-X13

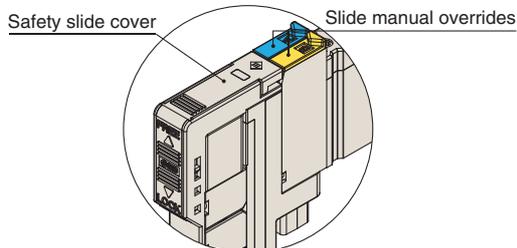


SY5000-X13

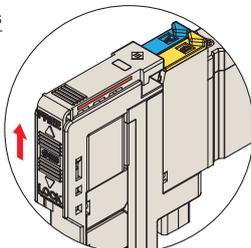
SY3000-X13

### ● Double action operation

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

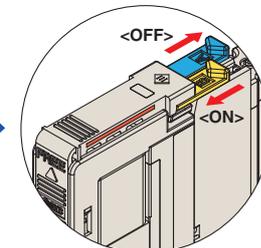


**Operation 1** Operates the safety slide cover upward. (Unlocked)



<Vertical sliding>

**Operation 2** The slide manual overrides can be operated.

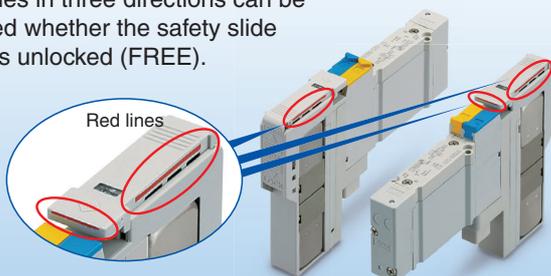


<Horizontal sliding>

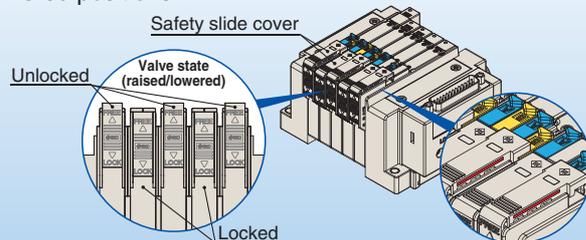
\*: The safety slide cover cannot be locked when the slide manual override is turned ON.

### ● Visual check

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



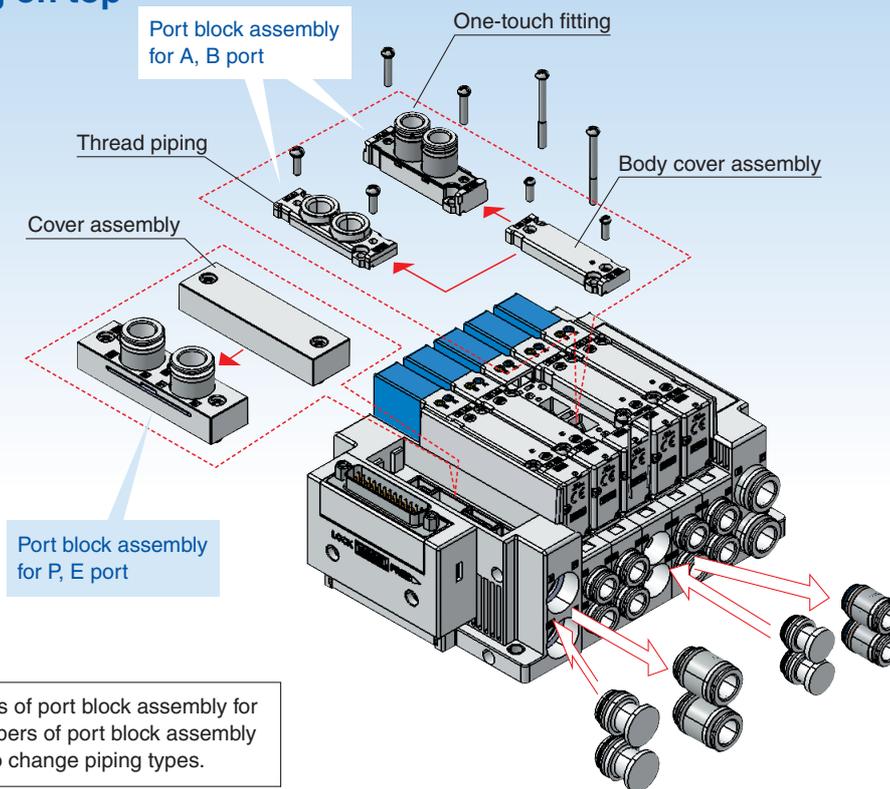
Safety slide covers can be checked from their raised and lowered positions.



# 5 Port Solenoid Valve

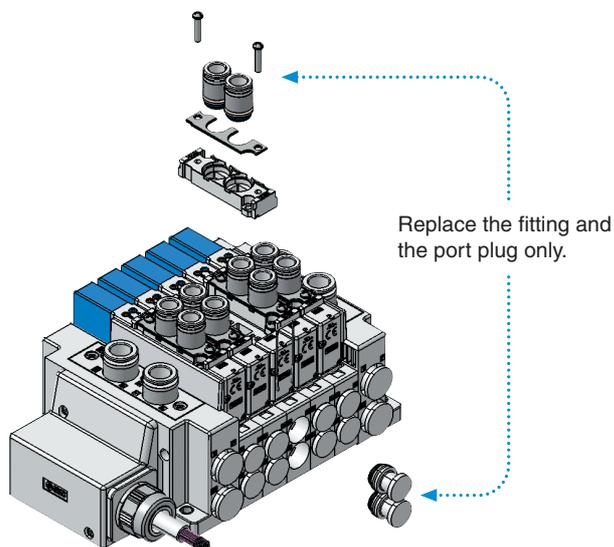
## Piping Options

### To mount the piping on top

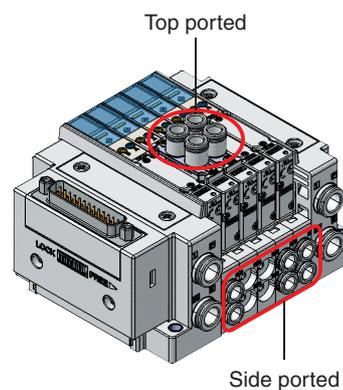


Refer to page 21 for part numbers of port block assembly for A, B post, page 247 for part numbers of port block assembly for P, E port and page 271 how to change piping types.

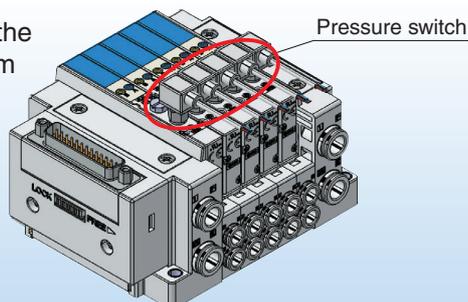
### To mount the piping on the side



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



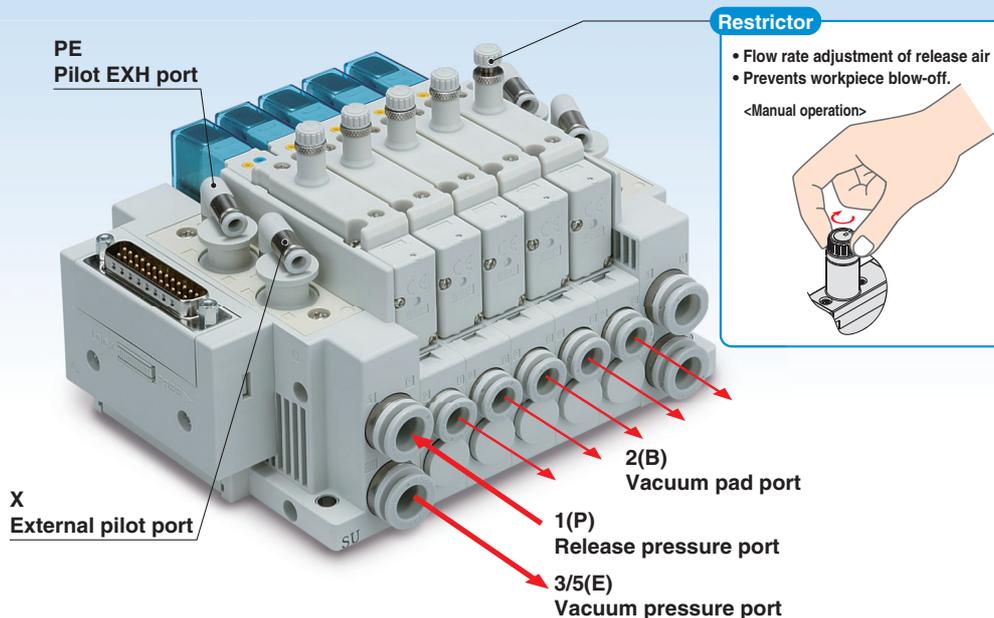
It is possible to detect the output of 4(A) and 2(B) port with a pressure switch by mounting the top ported valve onto the side ported or bottom ported manifold. (Pressure switch etc., needs to be ordered separately.)



# Variation

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

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



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

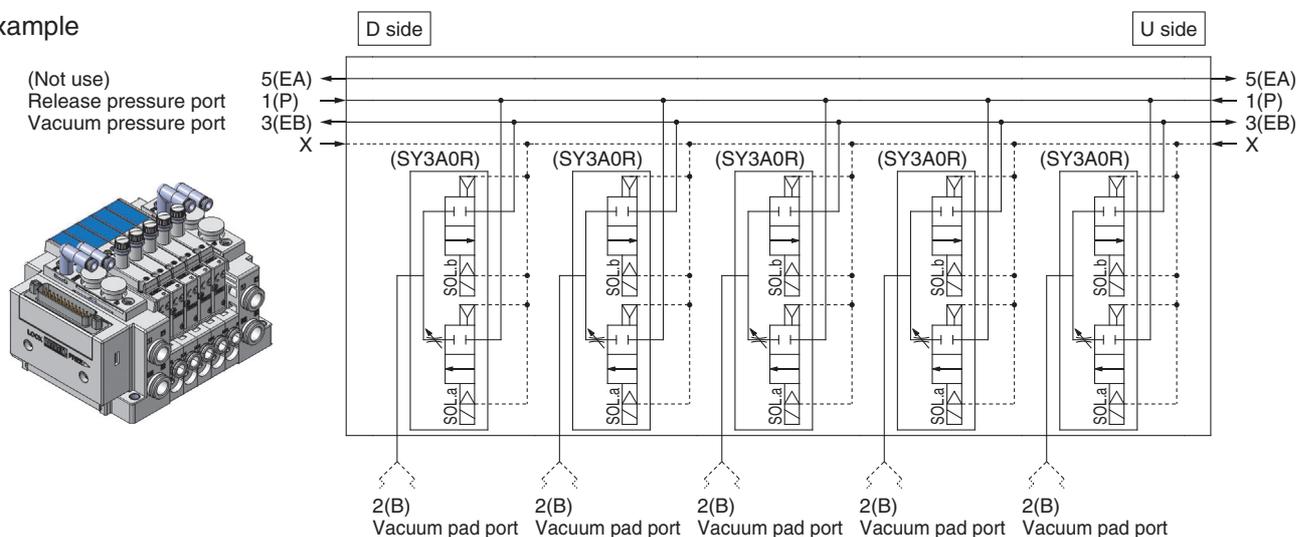
\*: When the individual EXH spacer is used.

■ Mountable manifolds

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

Metal base SS5Y<sup>3</sup><sub>5</sub>-50/52 type manifold

■ Example



# 5 Port Solenoid Valve

## Variations

Variations			Valve Series	Wiring													A, B							
				Connection											Common specification		Straight piping	C2						
				D-sub connector	Flat ribbon cable	PC wiring	Terminal block box	Lead wire	Circular connector	M12 connector	Serial transmission								Positive common	Negative common	M5	1/8	1/4	3/8
											EX510	EX500 (128 points)	EX500 (64 points)	EX600	EX250	EX260								
5 ports																								
Plug-in Sub-plate		From page 34	SY3□ <sub>3</sub> □																					
			SY5□ <sub>3</sub> □						●								●	●						
			SY7□ <sub>3</sub> □																				●	
Metal Base	Side ported	Type 50□ From page 45	SY3□0□																					
			SY5□0□		●	●	●										●	●						●
			SY7□0□		●	●	●							●										
	Bottom ported	Type 51□ From page 45	SY3□0□																					
			SY5□0□		●	●	●										●	●						●
			SY7□0□		●	●	●							●										
	Top ported	Type 52□ From page 65	SY3□3□																					
			SY5□3□		●	●	●										●	●						●
			SY7□3□		●	●	●																●	
Connector Connecting Base	Side ported	Type 10□ From page 97	SY3□0□																					
			SY5□0□		●	●	●	●	●	●														
			SY7□0□		●	●	●	●	●	●														
	Bottom ported	Type 11□ From page 97	SY5□0□		●	●	●	●	●	●														
			SY7□0□		●	●	●	●	●	●														
	Top ported	Type 12□ From page 109	SY3□3□																					
			SY5□3□		●	●	●	●	●	●														●
			SY7□3□		●	●	●	●	●	●														

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

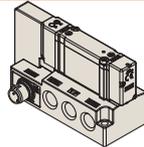


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Valve Specifications .....	<b>Page 13</b>	Vacuum Release Valve with Restrictor .....	<b>Page 25</b>
(Specifications, Response Time, Weight)		Made-to-Order for Valve .....	<b>Page 31</b>
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## Sub-plate

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



M12 connector

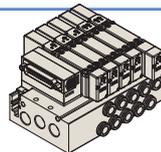


**Plug-in Sub-plate Specifications (M12 Connector)..... Page 33**

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

## Manifold

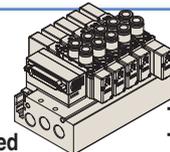
**Plug-in Metal Base Page 42**



Type 50/  
Side ported



Type 51/  
Bottom ported



Type 52/  
Top ported

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

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

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

Type 50/Side Ported .....

**Page 45**

Type 51/Bottom Ported .....

**Page 45**

Type 52/Top Ported .....

**Page 65**

Wiring Specifications .....

**Page 70**

EX510 Gateway-type Serial Transmission System [IP20]

Type 50/Side Ported .....

**Page 73**

Type 51/Bottom Ported .....

**Page 73**

Type 52/Top Ported .....

**Page 83**

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

**Page 89**



D-sub connector



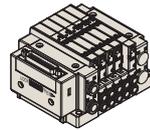
Flat ribbon cable



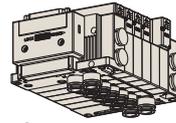
PC wiring



EX510



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 93
	Flat ribbon cable		Terminal block box	D-sub Connector, Flat Ribbon Cable, PC Wiring System [IP40/67]..... Page 97
	Lead wire		Circular connector	Terminal Block Box [IP67]..... Page 115
				Lead Wire [IP67]..... Page 125
				Circular Connector [IP67]..... Page 135
	EX500		EX500	EX500 Gateway Decentralised System 2 (128 Points) [IP67] ..... Page 145
				EX500 Gateway Decentralised System (64 Points) [IP67] ..... Page 151
	EX600			EX600 Integrated-type (For Input/Output) Serial Transmission System (Fieldbus System) [IP67] .... Page 161
	EX250			EX250 Integrated-type (For Input/Output) Serial Transmission System [IP67].... Page 173
	EX260			EX260 Integrated type (For Output) Serial Transmission System [IP67]..... Page 181
	EX126			EX126 Integrated-type (For Output) Serial Transmission System [IP67]..... Page 189
	EX120			EX120 Integrated-type (For Output) Serial Transmission System [IP20]..... Page 197
				Type 10/Side ported Common Dimensions (External Pilot, Silencer, Elbow Fittings, Slide Locking Manual Override) ..... Page 205
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				One-touch Fittings, Plug Assembly/Part No. .... Page 248
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				Specific Product Precautions..... Page 266

# Optimum Actuation Size Chart of Air Cylinder

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

[Common conditions]

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

Connector type manifold (for side and bottom ported type)

※: Use as a guide for selection.

Please check the actual conditions with SMC Model Selection Software.



# Series SY3000/5000/7000 Valve Specifications

## Valve Specifications

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

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

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

Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energised and de-energised states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)  
Refer to page 271 for the fixation of DIN rail mounting type manifold.

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

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

S/Z type  $\begin{cases} 24 \text{ V DC: } -7 \% \text{ to } +10 \% \\ 12 \text{ V DC: } -4 \% \text{ to } +10 \% \end{cases}$  T type  $\begin{cases} 24 \text{ V DC: } -8 \% \text{ to } +10 \% \\ 12 \text{ V DC: } -6 \% \text{ to } +10 \% \end{cases}$

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

## Response Time

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

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

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

Valve

Plug-in Sub-plate

Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

# Series SY3000/5000/7000

## Valve Weight

### Series SY3000

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

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

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

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

### Series SY5000

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

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

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

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

## Valve Weight

### Series SY7000

Valve model	Seal type	Type of actuation		Weight [g]
SY7□00	Rubber seal	2-position	Single	110
			Double	118
		3-position	Closed centre	133
			Exhaust centre	
			Pressure centre	
		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 centre	150
			Exhaust centre	
			Pressure centre	

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

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

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

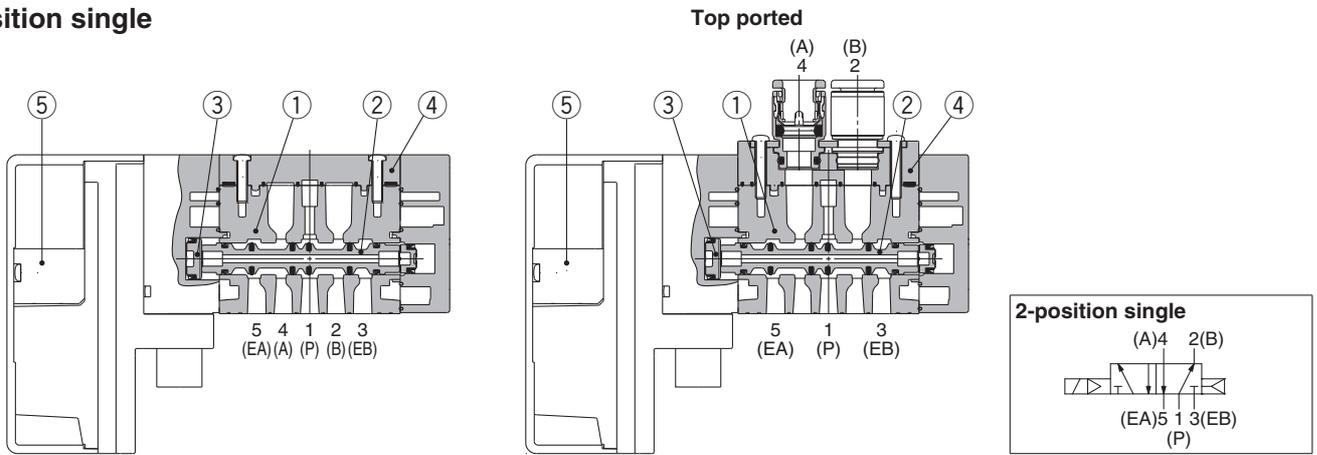
One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

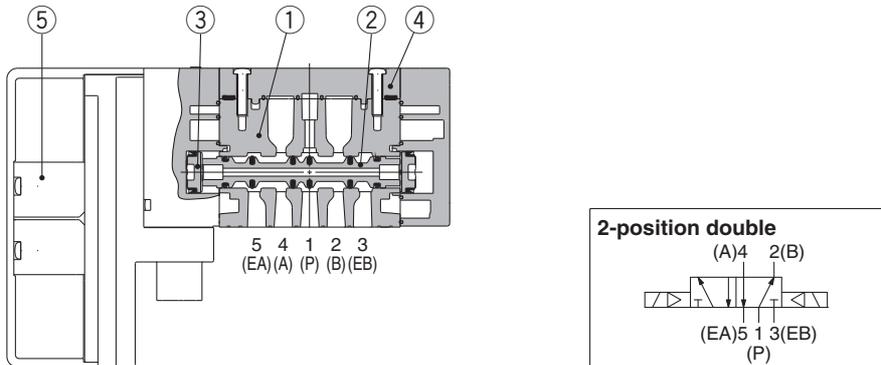
# Series SY3000/5000/7000 Valve Construction

## Rubber Seal

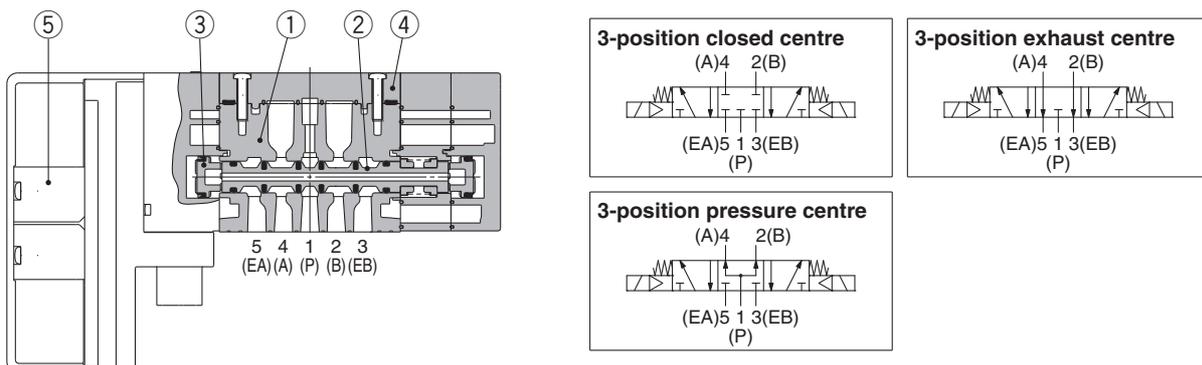
### 2-position single



### 2-position double



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

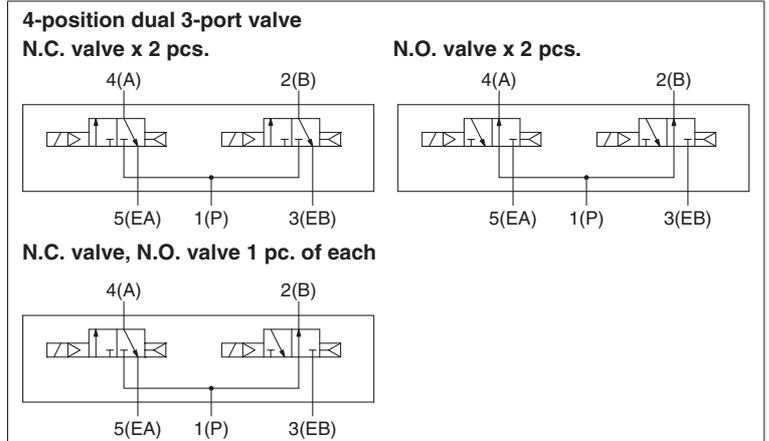
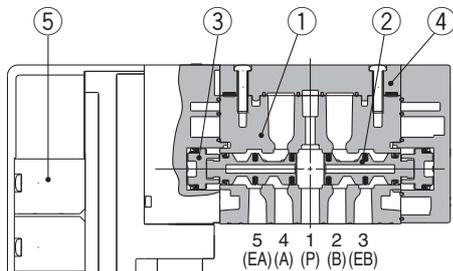


## Component Parts

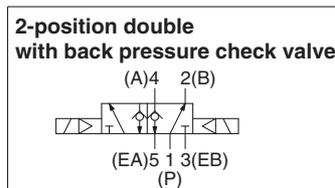
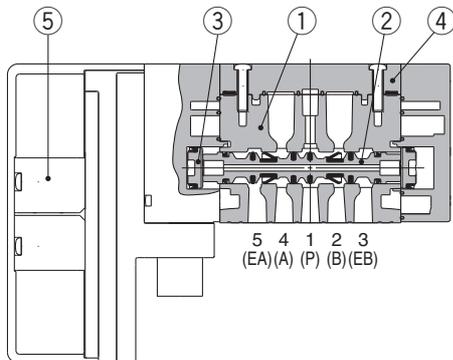
No.	Description	Material	Note
1	<b>Body</b>	SY3000: Zinc die-casted SY5000/SY7000: Aluminium die-casted	
2	<b>Spool valve</b>	Special resin/HNBR (3-position valve: Aluminium/HNBR)	
3	<b>Piston</b>	Resin	
4	<b>Body cover assembly</b>	Resin	For side/bottom ported
	<b>Port block assembly</b>	SY3000: Resin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

## Rubber Seal

### 4-position dual 3-port valve

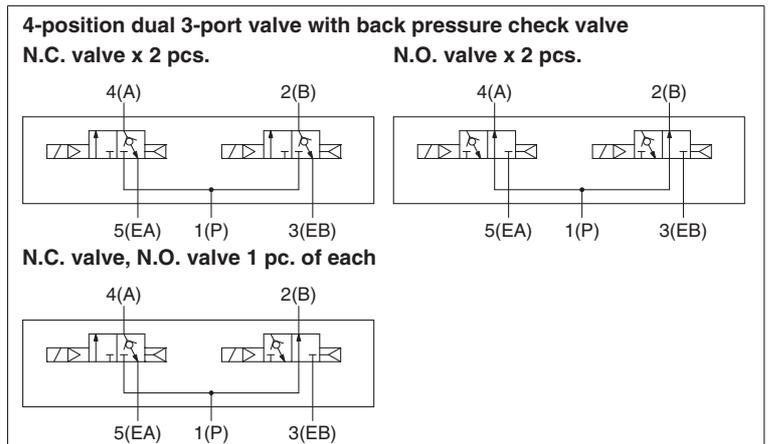
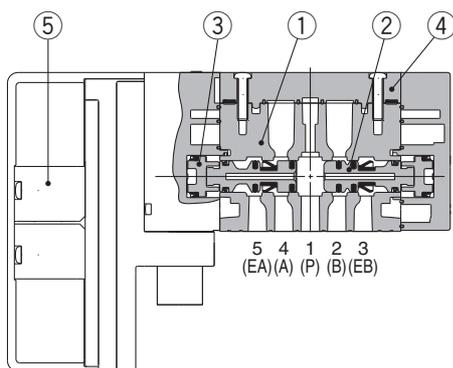


### 2-position double with back pressure check valve (Built-in valve type)



\*: 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)



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

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

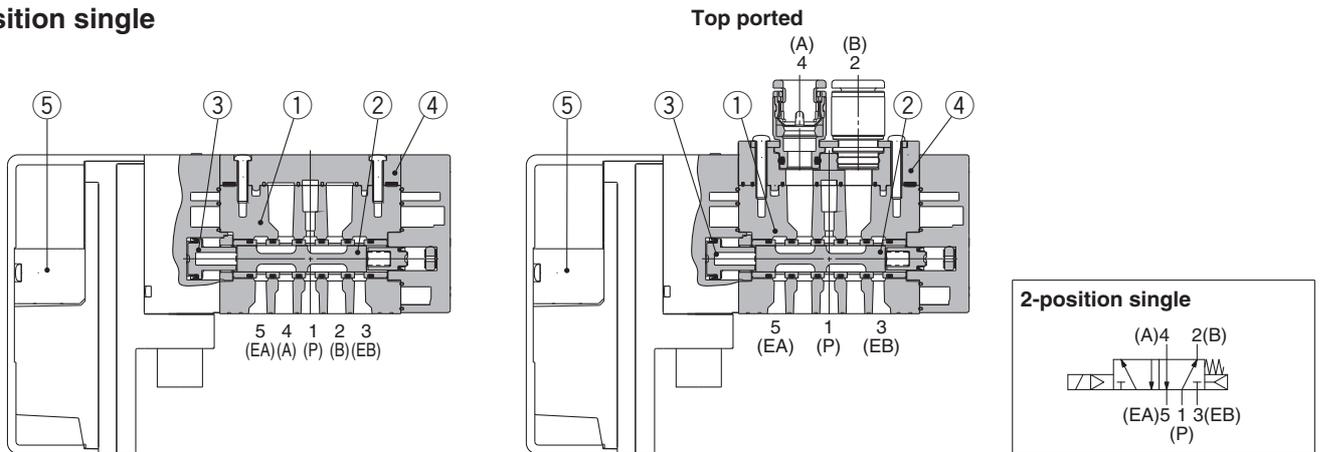
One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

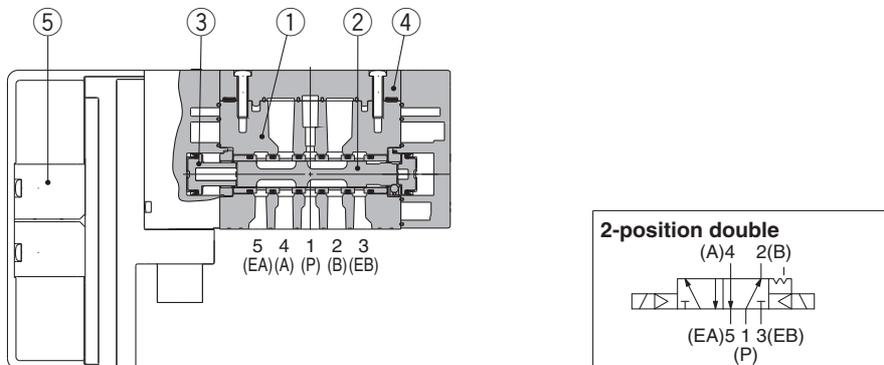
# Series SY3000/5000/7000

## Metal Seal

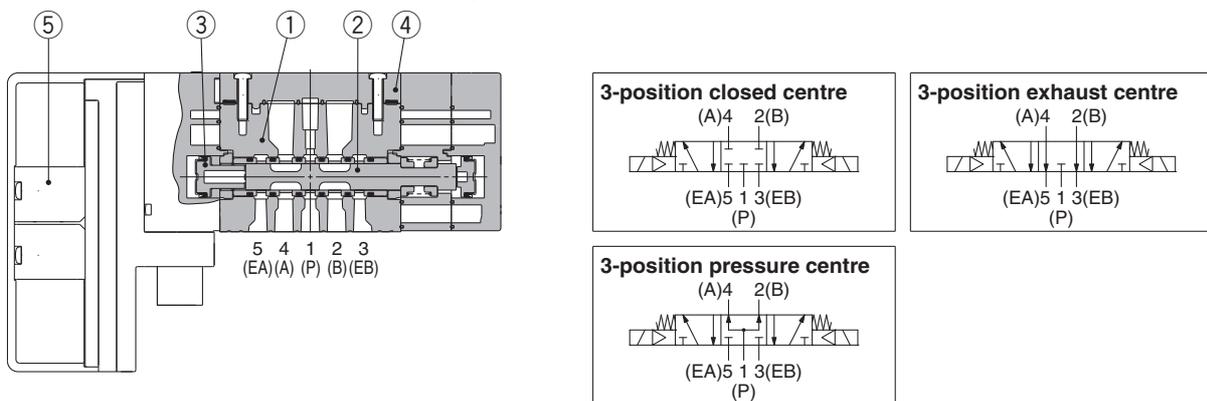
### 2-position single



### 2-position double



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



## Component Parts

No.	Description	Material	Note
1	<b>Body</b>	SY3000: Zinc die-casted SY5000/SY7000: Aluminium 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: Aluminium die-casted	For top ported
5	<b>Pilot valve assembly</b>	—	Refer to page 22.

Manifold Options

One-touch Fittings/  
Plug Assembly Part No.

Type 10, 11, 12  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Metal Base

Plug-in Sub-plate

Valve

# Series SY3000/5000/7000

## Valve Replacement Parts

### How to Order Port Block Assembly

SY    0V-6A    -    -      

● **Series**

3	3000
5	5000
7	7000

● **Pilot type**

—	Internal pilot
R	External pilot

● **Option for mounting**

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

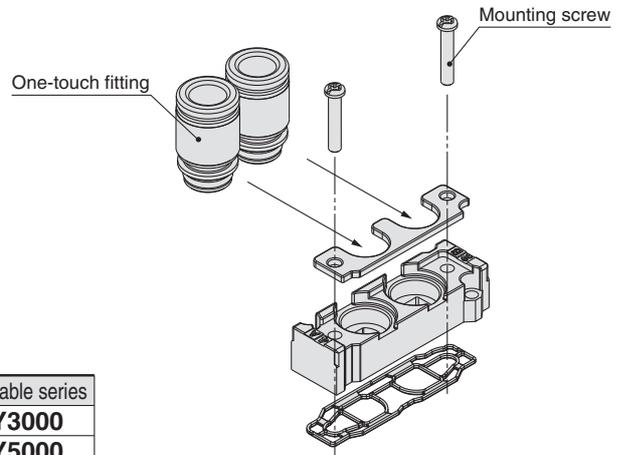
● **Thread type**

—	Rc
F	G
N	NPT
T	NPTF

\*: Except M5

● **A, B port size Thread piping**

Symbol	Port size	Applicable series
M5	M5 x 0.8	<b>SY3000</b>
O1	1/8	<b>SY5000</b>
O2	1/4	<b>SY7000</b>



● **Metric size (One-touch fitting)**

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

● **Inch size (One-touch fitting)**

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

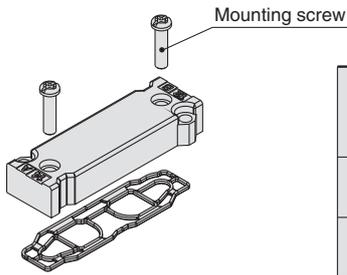
● **Possible to replace only the One-touch fitting.**

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

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

## Body Cover Assembly

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



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

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

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

V112   -  A

### Pilot valve option

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

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

### Coil type

—	Standard
T	With power saving circuit

### Rated voltage

5	24 V DC
6	12 V DC

### Caution

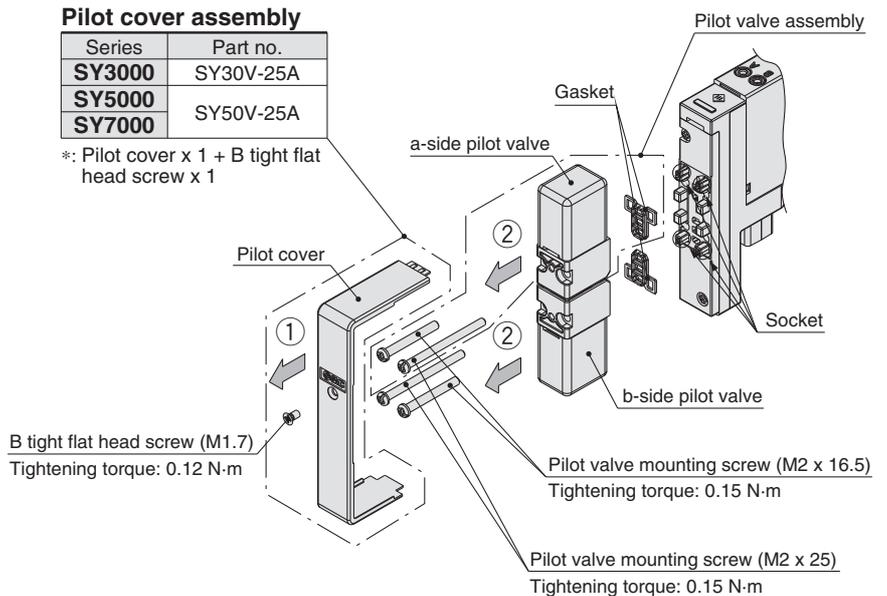
1. The coil specification and voltage (including light/surge voltage suppressor) cannot be changed by changing the pilot valve assembly.
2. When selecting the coil type with power saving circuit, it is not possible to change to high pressure/power saving circuit type.

## How to replace pilot valves

### Pilot cover assembly

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

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



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

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

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

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

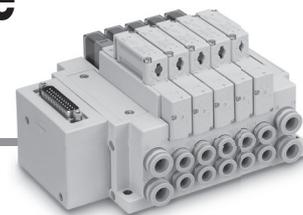
# Series SY5000/7000

## With Residual Pressure Release Valve



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

### How to Order (With mounting screw)



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

Series	5	SY5000
	7	SY7000

Type of actuation	3	3-position closed $\chi$ EV type*1
-------------------	---	------------------------------------

\*1: Only closed centre type is available.

Base mounted  
 (Top ported is not available.)

With residual pressure release valve

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

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



### 1 Seal type

0	Rubber seal
1	Metal seal

### 2 Pilot valve option

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

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

### 3 Coil type

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

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

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

### 4 Rated voltage

5	24 V DC
6	12 V DC

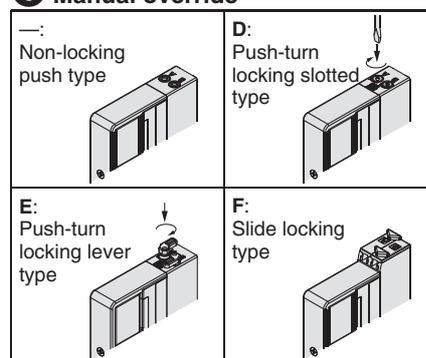
\*: The applicable rated voltage varies depending on the manifold wiring type. Refer to the "How to Order Manifold" pages.

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

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

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

### 6 Manual override



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

\*: **When ordering a valve individually, the base gasket is not included.** Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service. Refer to page 89 or 244 for part numbers of the base gasket and mounting screw.

## Valve Specifications

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

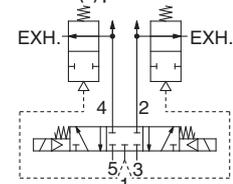
\*1: Rubber seal is used for the residual pressure release valve.

\*2: Internal pilot type only

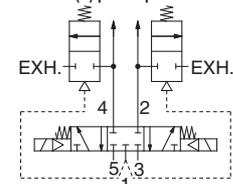
\*: Other specifications are common to the valve specifications on page 13.

### Symbol

<When 1(P) port is exhausted>



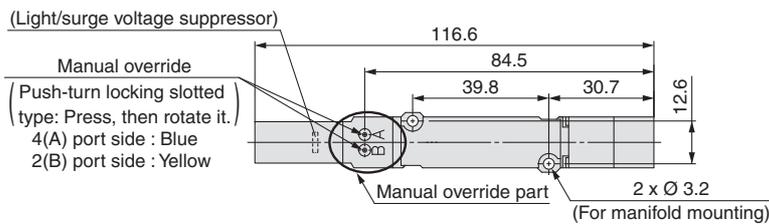
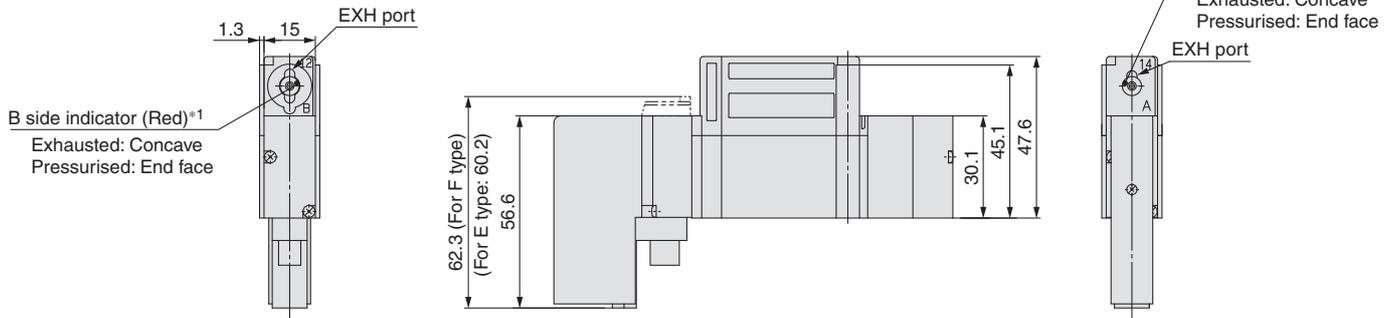
<When 1(P) port is pressurised>



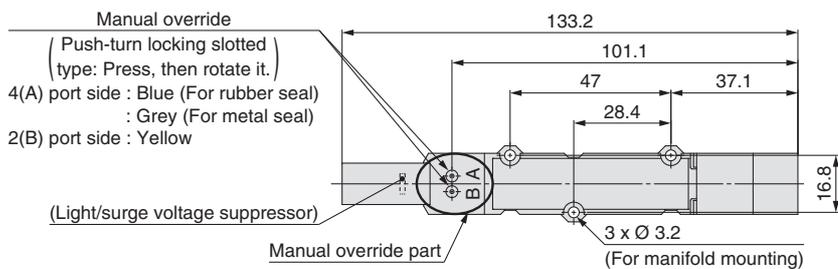
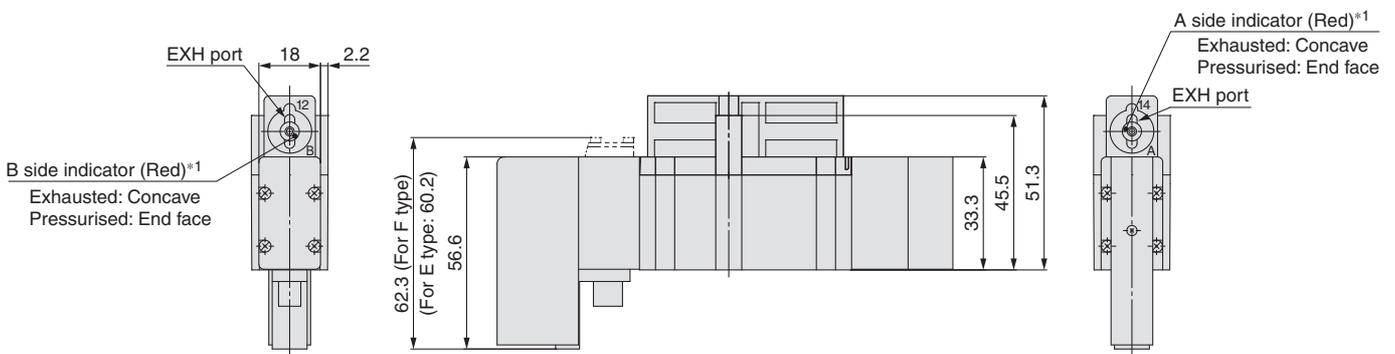
A mechanism is used that exhausts the pressure of the cylinder port when the P port supply pressure of the 3 position closed centre valve is exhausted.

**Dimensions**

**SY5000**



**SY7000**



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

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.

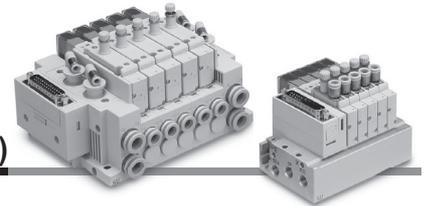
Manifold Options

Only for External Pilot

# Vacuum Release Valve with Restrictor C € Series SY3000/5000

Mountable manifolds [External pilot]	Metal base	
	Type 50	Type 52
	SY3000/5000	From P.45 From P.65
	Connector connecting base	
Type 10/11	Type 12	
SY3000/5000	From P.97 From P.109	

How to Order (With mounting screw)



Side ported/Bottom ported

SY 3 A 0 R □ - 5 □ □ 1 - □

Top ported

SY 3 A 3 R □ - 5 □ □ 1 - C6 - □

1 2 3 4 5 6 7 8

### 1 Series

3	SY3000
5	SY5000

### 2 Pilot type

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

### 4 Rated voltage

5	24 V DC
6	12 V DC

### 3 Coil type

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

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

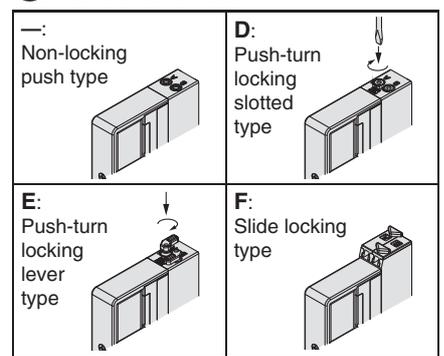
\*: Note the specified energising time when power saving circuit is selected.

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

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

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

### 6 Manual override



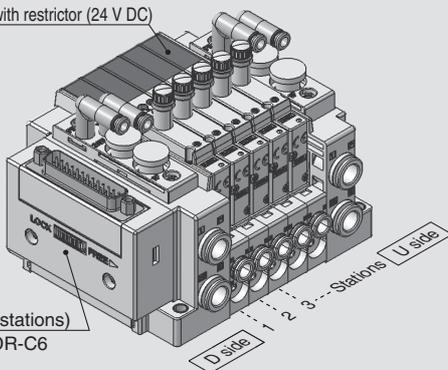
\*: Refer to page 31 for with the safety slide locking manual override.

Protective class class III (Mark: ⚡)

## How to Order Manifold Assembly

### Example (SS5Y3-10F1-□□R)

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



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

SS5Y3-10F1-05DR-C6...1 set (Type 10 5-station manifold base part no.)  
\*SY3A0R-5U1 (3-position 3-port with restrictor part no.)...5 sets  
→ \*The asterisk denotes the symbol for assembly.  
\*Prefix it to the part numbers of the valve etc.

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

### 7 B port size

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

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

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

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

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

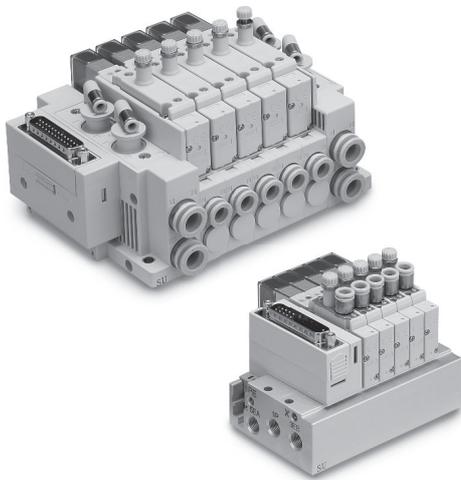
\*: When mounting on the manifold base or sub-plate, the A port is plugged. When a manifold base or sub-plate is ordered separately, mount a plug on the A port.

### 8 Type of mounting screw

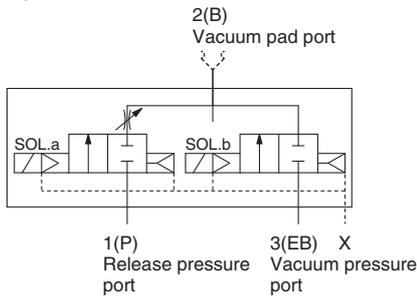
—	Round head combination screw
B	Hexagon socket head cap screw

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

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



### Symbol



## Valve Specifications

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

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

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

\*: Quick response type is not available.

## Weight

Valve model	Weight [g]	
<b>SY3A0R</b>	90	
Valve model	Port size	
	2(B) port	
	C4	91
<b>SY3A3R</b>	93	
Valve model	Weight [g]	
	94	
	Valve model	Port size
2(B) port		
C4		118
<b>SY5A3R</b>	115	
	C6	121
	C8	

## Response Time

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

\*: P = 0.1 MPa X = 0.5 MPa

## Manifold Flow Rate Characteristics\*1

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

#### ① Plug-in Metal Base

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

#### ② Plug-in Connector Connecting Base

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

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

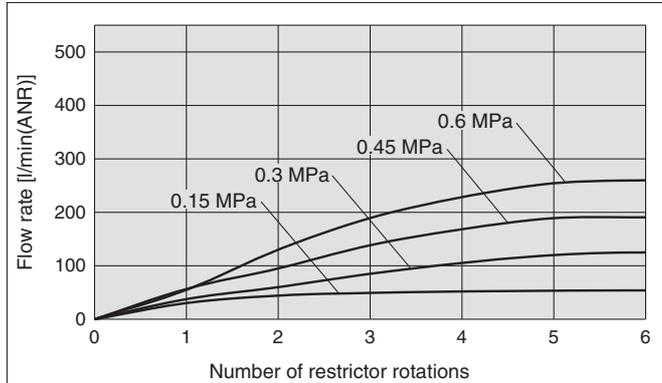
\*: Calculation of effective area S and sonic conductance C: S = 5.0 x C

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

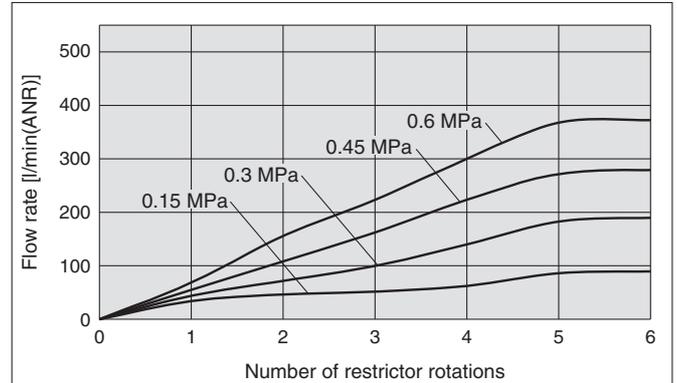
# Series SY3000/5000

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

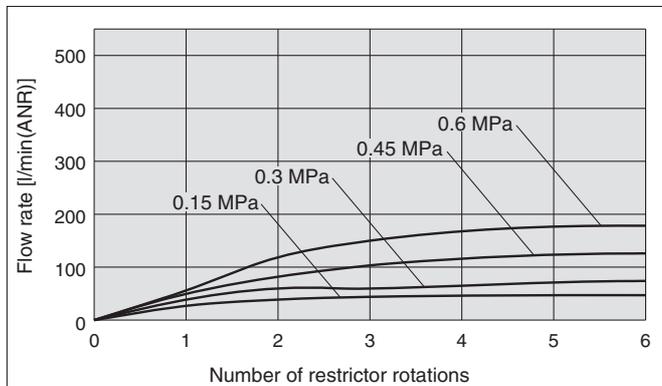
### SY3A0R



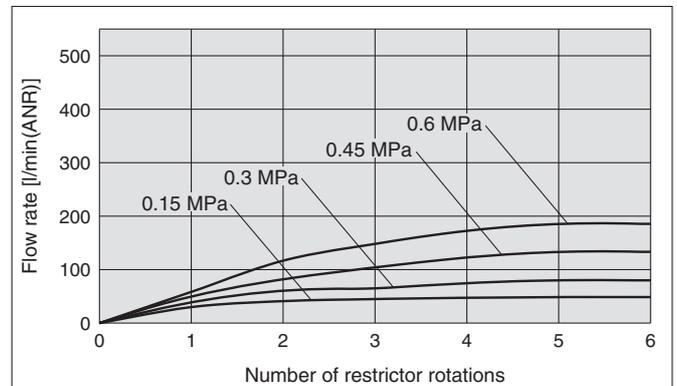
### SY5A0R



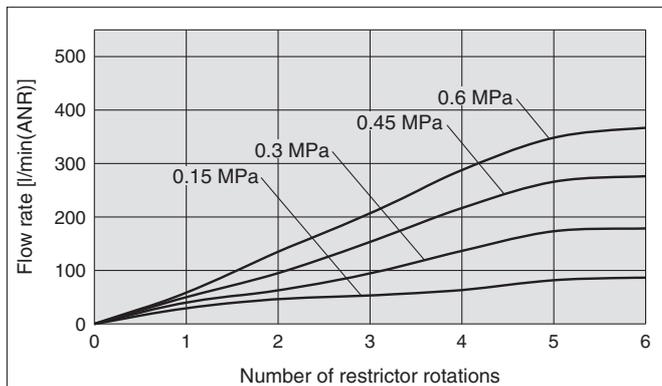
### SY3A3R-C4



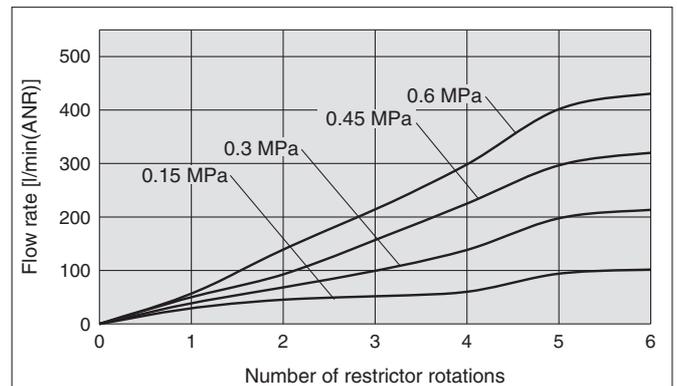
### SY5A3R-C4



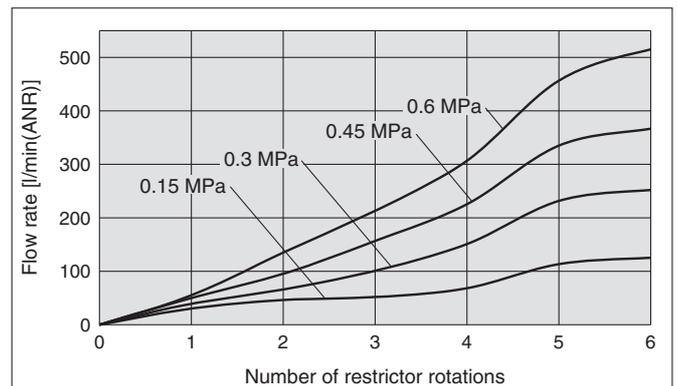
### SY3A3R-C6



### SY5A3R-C6

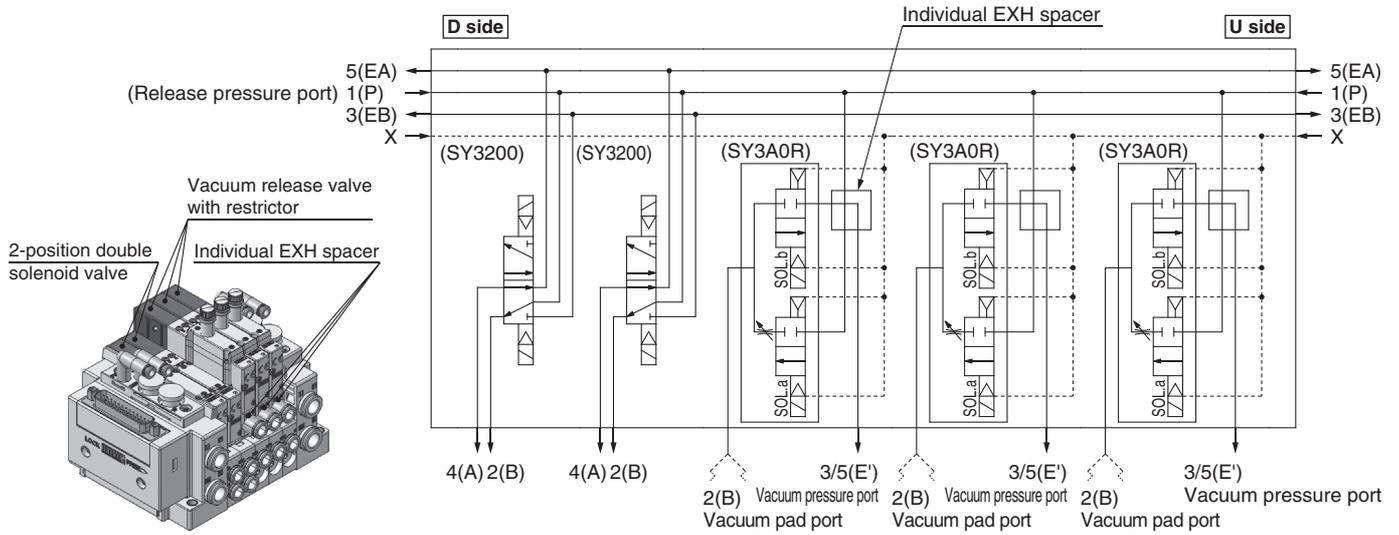


### SY5A3R-C8

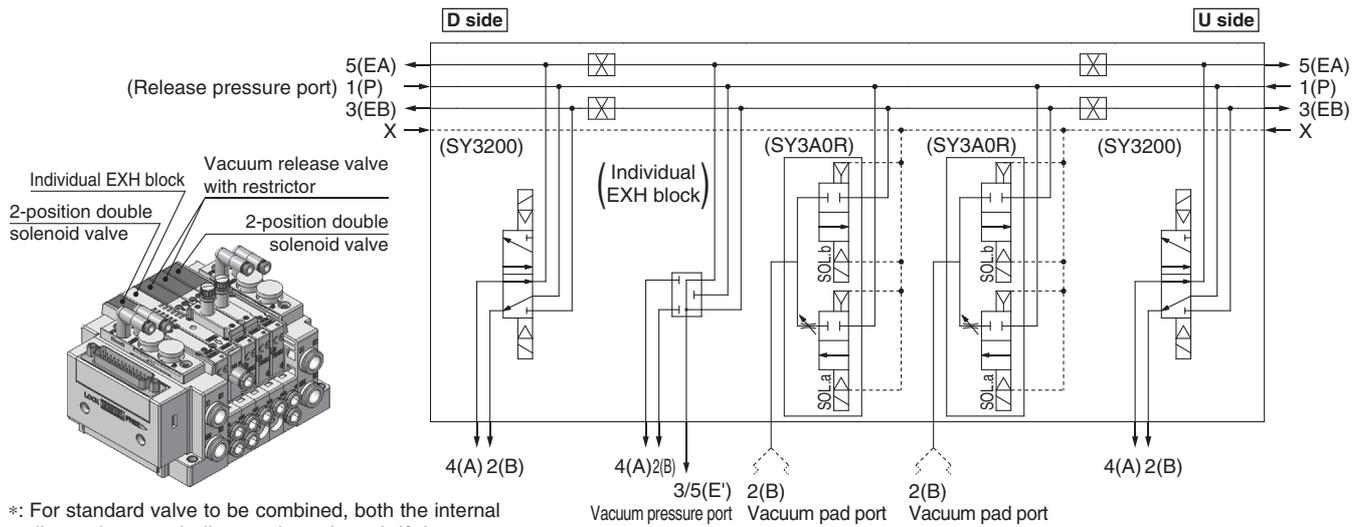


### Circuit Example

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



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

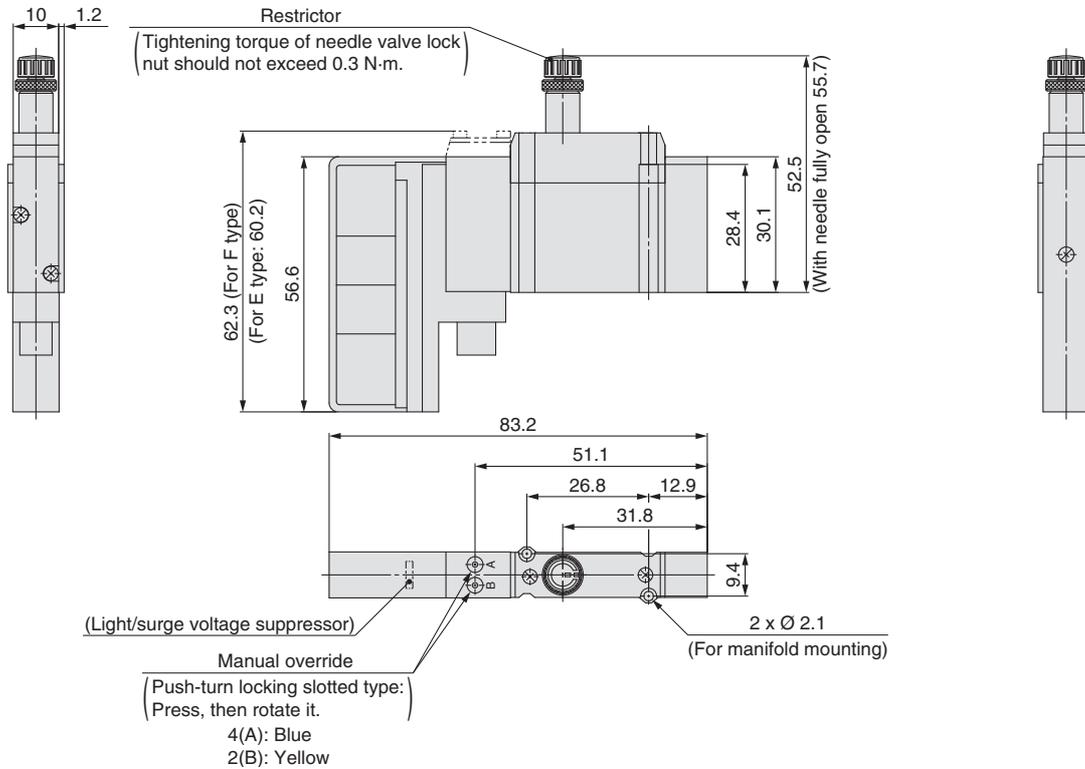


\*: For standard valve to be combined, both the internal pilot and external pilot can be selected. If the pressure drop may occur when the 1(P) port releases the vacuum, use the external pilot type.

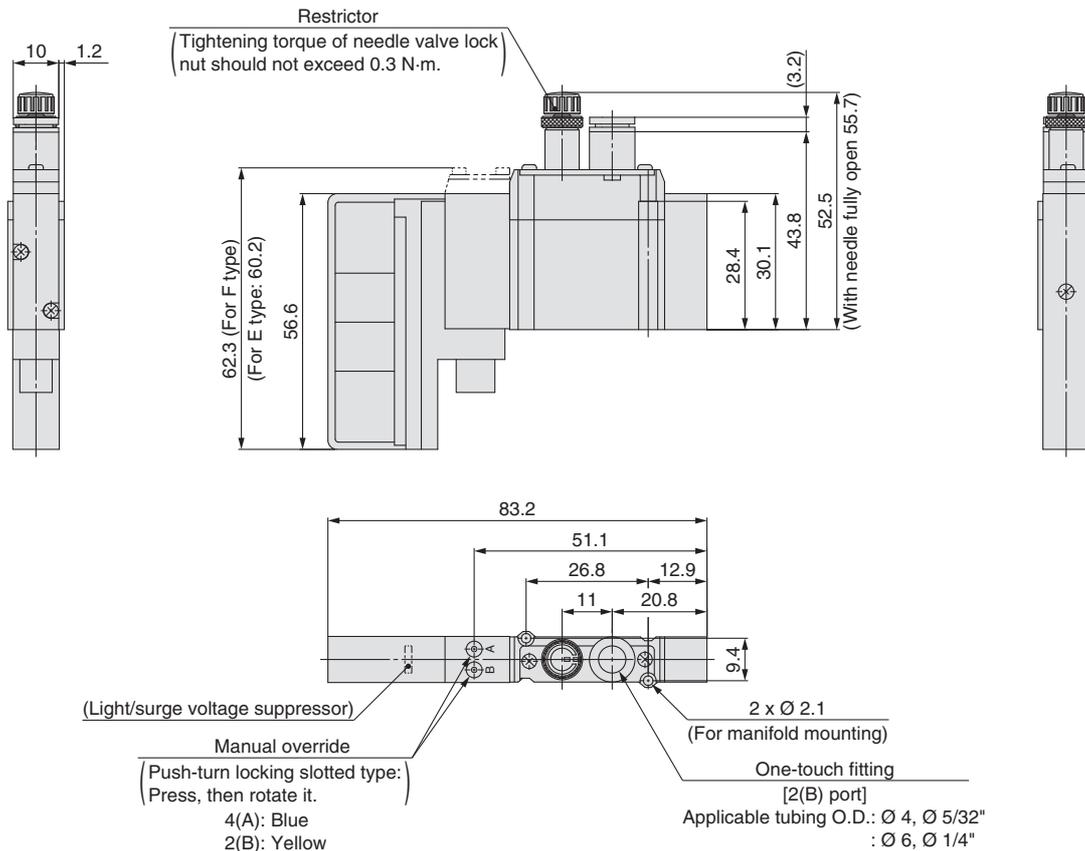
# Series SY3000/5000

## Dimensions: SY3000

### Side ported SY3A0R

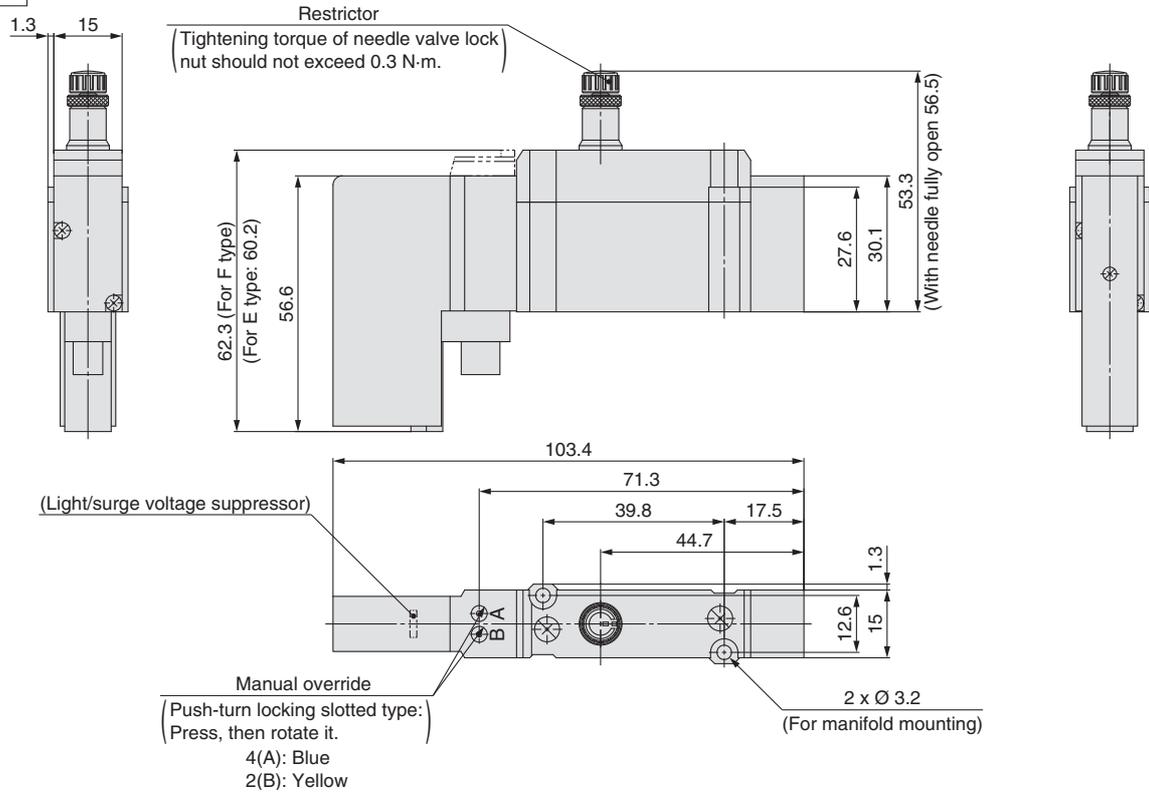


### Top ported SY3A3R

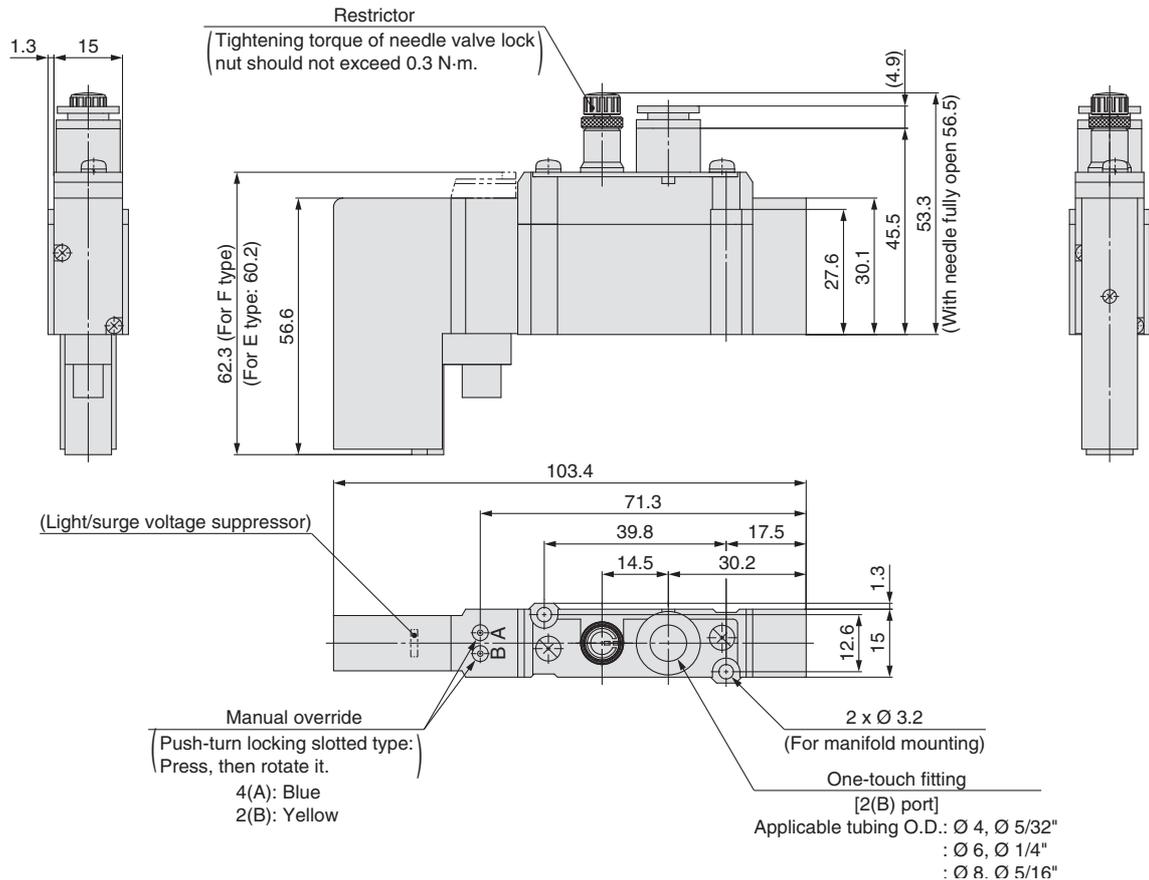


**Dimensions: SY5000**

**Side ported**  
**Bottom ported** **SY5A0R**



**Top ported** **SY5A3R**



Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

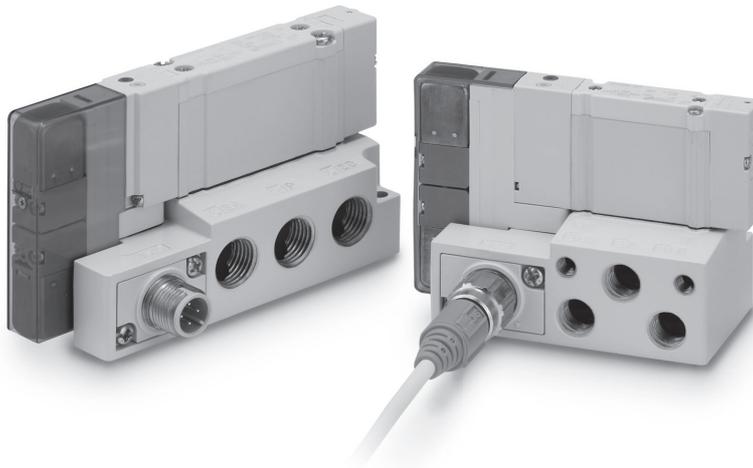
Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options



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



Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

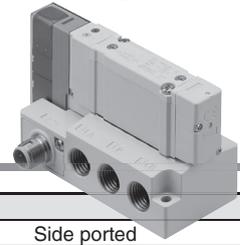
One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

# Series SY3000/5000/7000

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

(Side ported, Bottom ported, Top ported)



### 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 4(A)/2(B) port	Side ported Top ported	
SUP/EXH port type	SUP/EXH individual port [5(EA), 3(EB) individual]			
Applicable connector	M12 waterproof connector			
Internal wiring	Positive common, Negative common			
Port size	Side ported	1(P), 5(EA)/3(EB) port, 4(A)/2(B) port	SY3000	1/8
			SY5000	1/4
			SY7000	3/8
	Bottom ported	1(P), 5(EA)/3(EB) port, 4(A)/2(B) port	SY3000	1/8
			SY5000	1/4
			SY7000	3/8
	Top ported	1(P), 5(EA)/3(EB) port 4(A)/2(B) port	SY3000	1/8
			SY5000	1/4
			SY7000	3/8
Enclosure (Based on IEC60529)	IP67			
Weight: W [g]*2	SY3000	Side ported	99	
		Bottom ported	109	
		Top ported	104	
	SY5000	Side ported	145	
		Bottom ported	172	
		Top ported	159	
	SY7000	Side ported	205	
		Bottom ported	232	
		Top ported	227	

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

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

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

#### Rubber Seal

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

#### Metal Seal

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

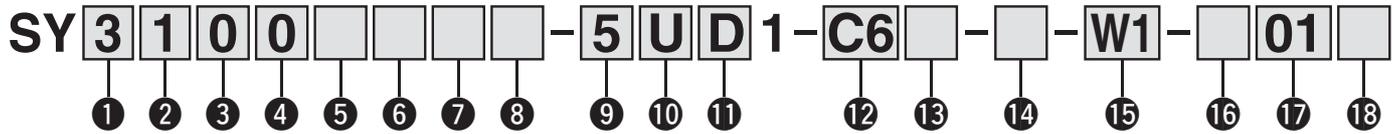
\* Calculation of effective area S and sonic conductance C:  $S = 5.0 \times C$

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

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

## How to Order

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



### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type of actuation

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

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

### 3 Valve piping type

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

### 4 Seal type

0	Rubber seal
1	Metal seal

### 5 Pilot type

—	Internal pilot
R	External pilot

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

—	None
H	Built-in

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

### 7 Pilot valve option

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

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

### 8 Coil type

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

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

### 9 Rated voltage

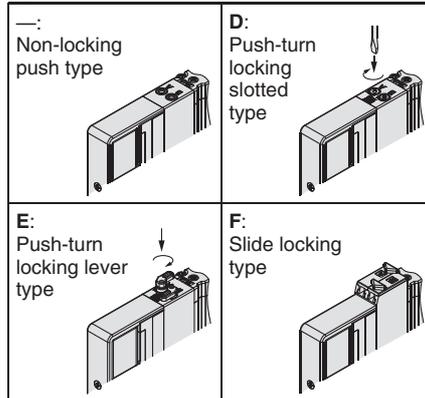
5	24 V DC
6	12 V DC

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

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

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

### 11 Manual override



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

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

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

### Metric size (One-touch fitting)

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

### Inch size (One-touch fitting)

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

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

—	Rc
F	G
N	NPT
T	NPTF

\*: Only — is available for M5.

### 14 Type of mounting screw

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

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

### 15 Wiring specifications

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

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

### 16 Port location (Sub-plate)

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

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

### 17 Port size (Sub-plate)

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

### 18 Sub-plate thread type

—	Rc
F	G
N	NPT
T	NPTF

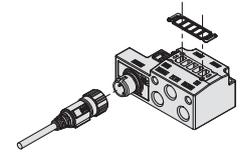
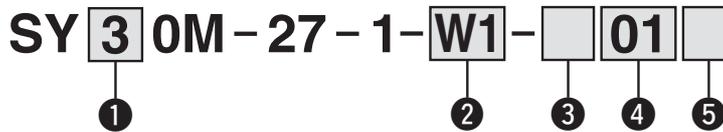
\*: When mounting a special order (including Made-to-Order specification) valve or manifold option (spacer etc.) on the sub-plate, add the valve part number or spacer part number under the sub-plate part number to place an order. For details, refer to the ordering example on page 35.

# Series SY3000/5000/7000

## How to Order

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

※: Without valve



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

### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 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)

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

### 3 Port location (Sub-plate)

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

### 4 Port size

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

### 5 Sub-plate thread type

—	Rc
F	G
N	NPT
T	NPTF

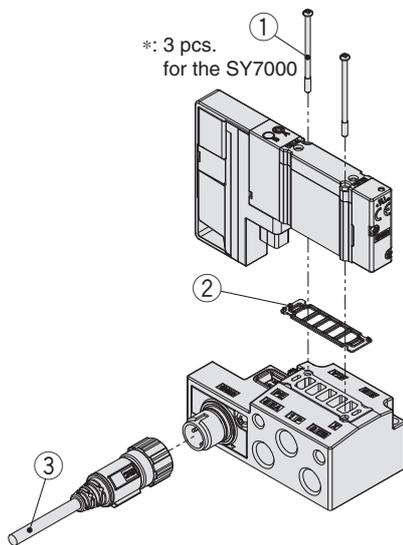
**How to Order when mounting a special order (including Made-to-Order specification) valve on the sub-plate (Ordering example: X90)**

SY30M-27-1-W1-01 ..... 1 set (Sub-plate single unit part no.)  
\*SY3200-5U1-X90 ..... 1 set (2-position double part no./Main valve fluororubber specification)

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

SY30M-27-1-W1-01 ..... 1 set (Sub-plate single unit part no.)  
\*SY3400-5U1 ..... 1 set (3-position exhaust centre part no.)  
\*SY30M-60-1A ..... 1 set (Part no. for double check spacer with residual pressure release valve)

## Sub-plate Parts No.



※: 3 pcs. for the SY7000

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 sub-plate)	SY30M-11-1A	SY50M-11-1A	SY70M-11-1A	Part numbers shown on the left are for 10 valves (10 pcs.).	
③	M12 waterproof connector cable		ZS-37-L		Cable length: 300 mm Cable weight: Approx. 18 g	
			ZS-37-M		Cable length: 500 mm Cable weight: Approx. 23 g	
			ZS-37-N		Cable length: 1000 mm Cable weight: Approx. 36 g	
			ZS-37-P		Cable length: 2000 mm Cable weight: Approx. 62 g	
			ZS-37-C		Cable length: 5000 mm Cable weight: Approx. 140 g	

## ⚠ Caution

**Tightening torque**

M2: 0.16 N·m (SY3000)  
M3: 0.8 N·m (SY5000/7000)

## Dimensions: Series SY3000

**Plug-in**  
**Single Unit/Sub-plate**  
**Side Ported**  
**Top Ported**

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

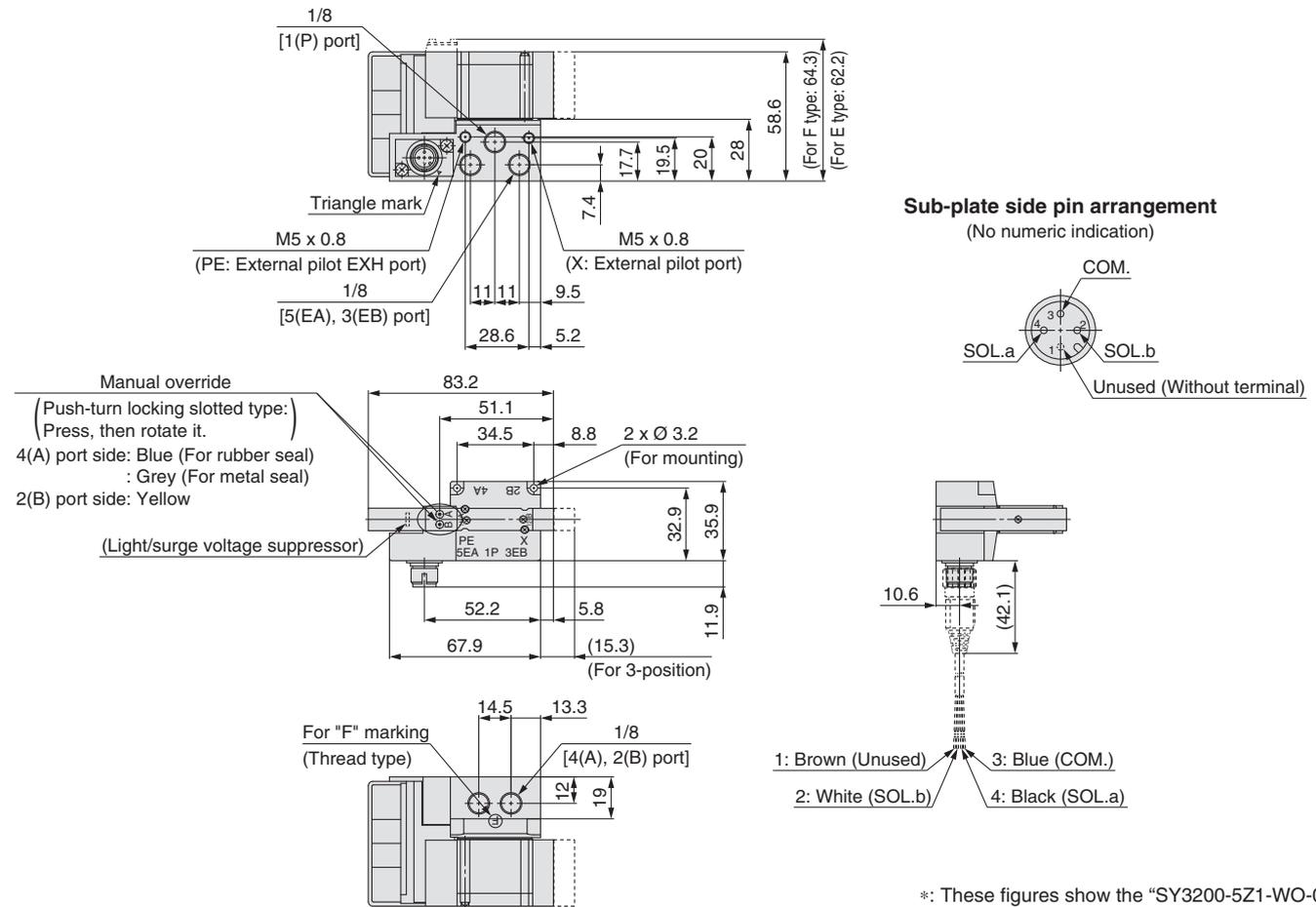
Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

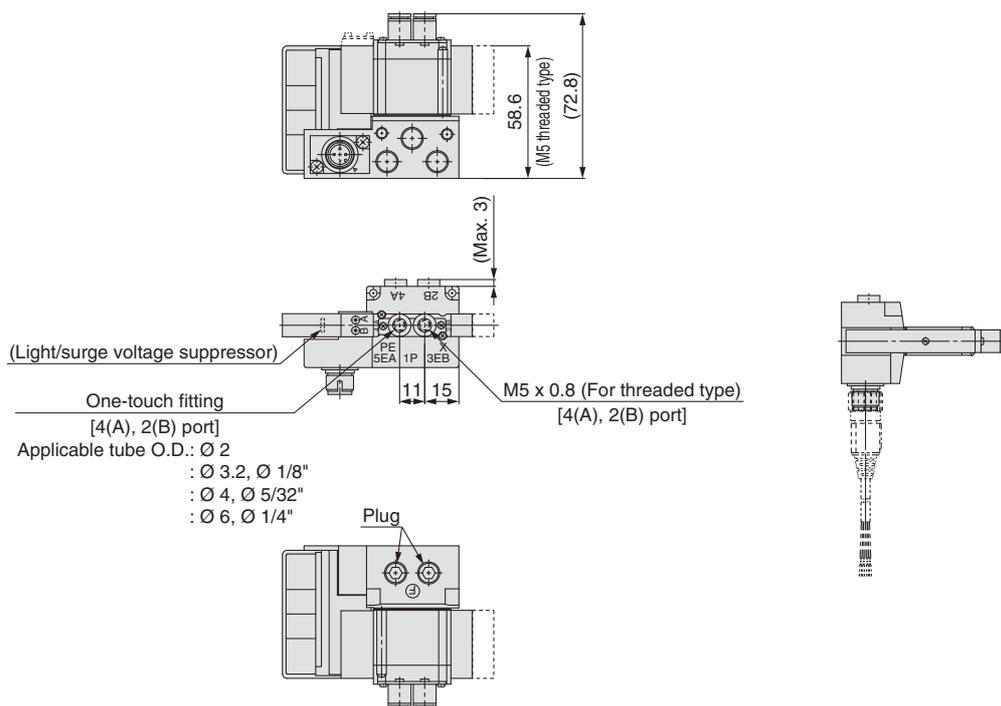
One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

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



### SY3□3□□□□-□□□1-□□-V01□ (Top ported)



# Series SY3000/5000/7000

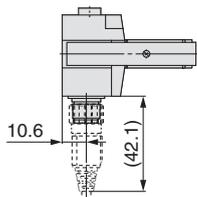
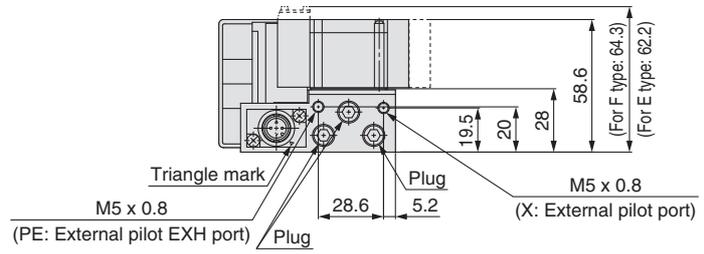
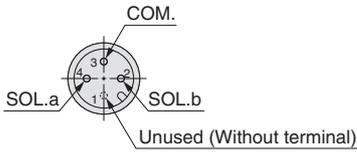
## Dimensions: Series SY3000

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

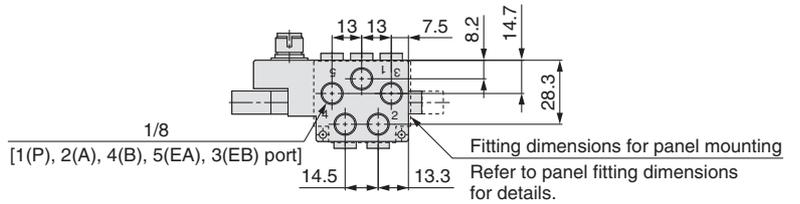
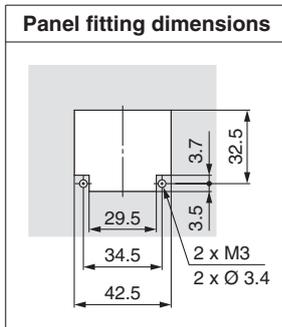
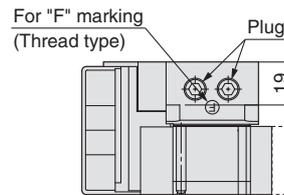
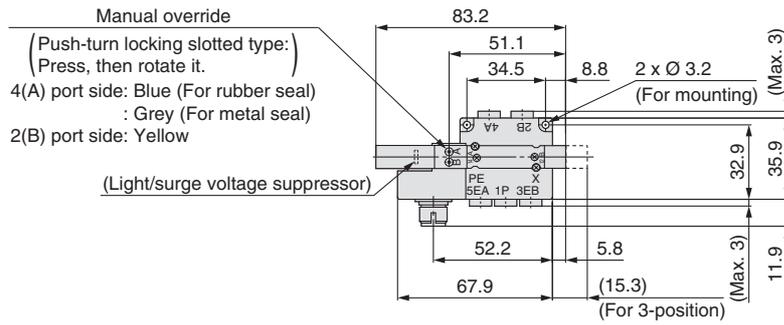
SY3000□□□□-□□□1-W□-B01□ (Bottom ported)

#### Sub-plate side pin arrangement

(No numeric indication)



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



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

## Dimensions: Series SY5000

**Plug-in**  
**Single Unit/Sub-plate**  
**Side Ported**  
**Top Ported**

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

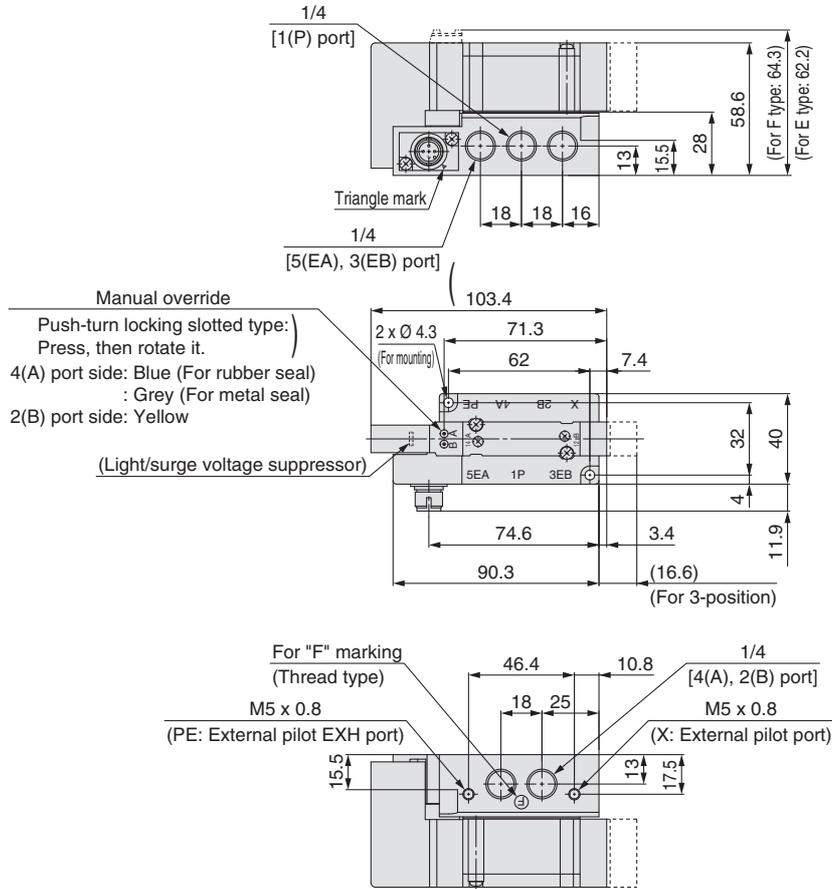
Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

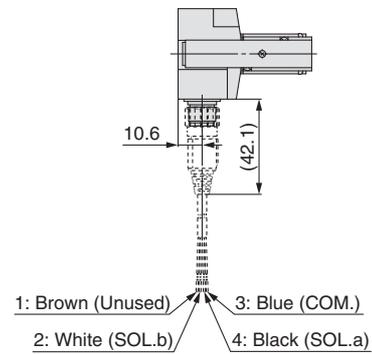
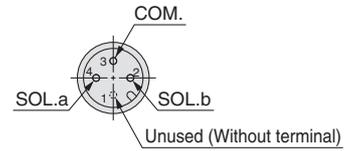
Manifold Options

SY5□0□□□□-□□□1-W□-02□ (Side ported)



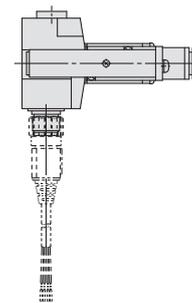
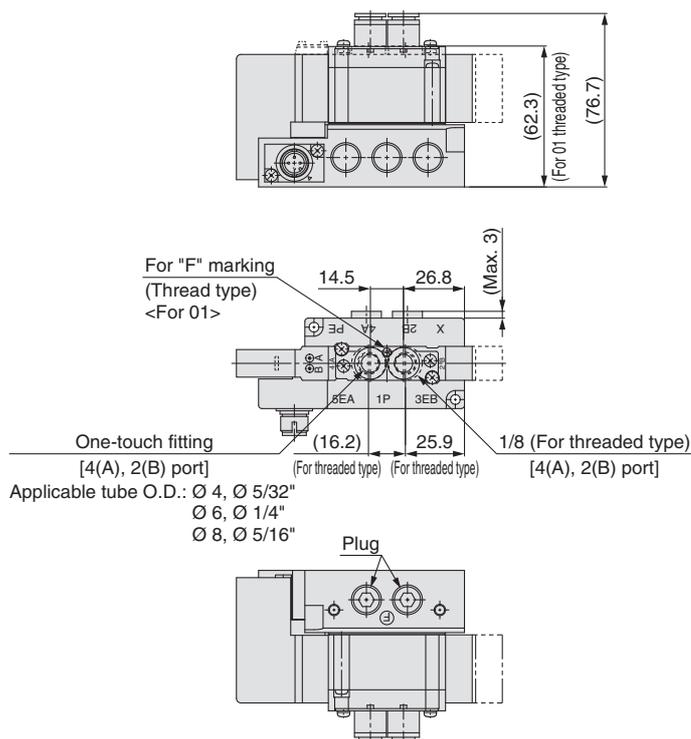
### Sub-plate side pin arrangement

(No numeric indication)



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

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



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

# Series SY3000/5000/7000

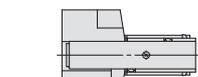
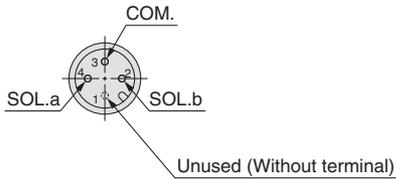
## Dimensions: Series SY5000

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

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

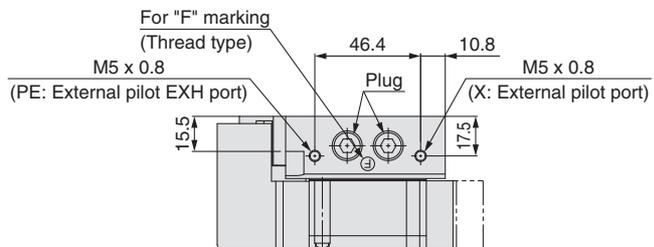
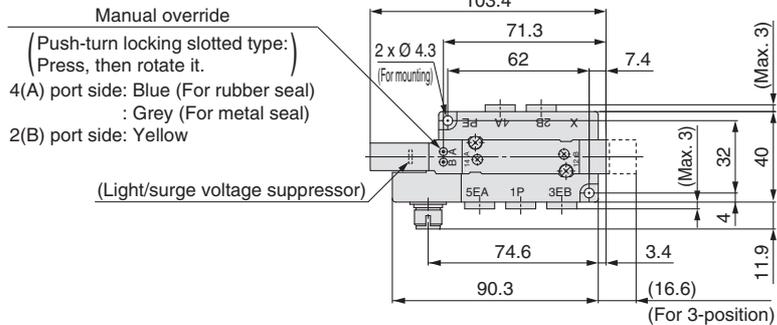
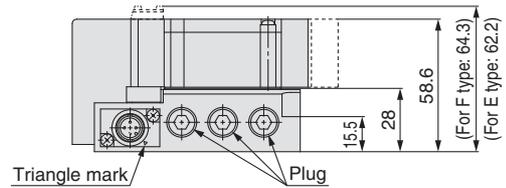
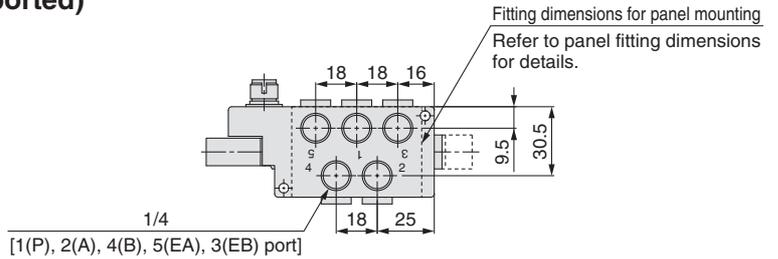
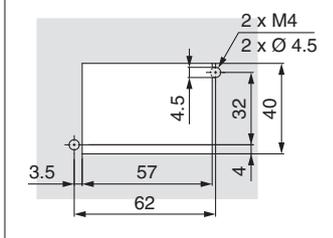
#### Sub-plate side pin arrangement

(No numeric indication)



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

#### Panel fitting dimensions



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

## Dimensions: Series SY7000

**Plug-in**  
**Single Unit/Sub-plate**  
**Side Ported**  
**Top Ported**

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

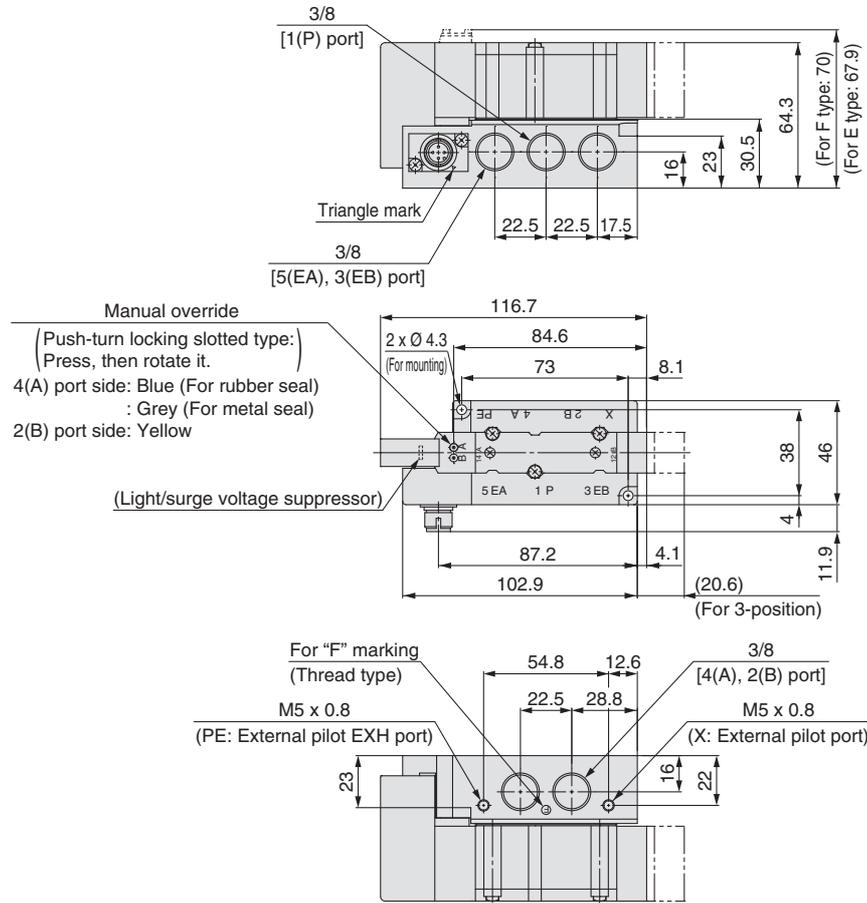
Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

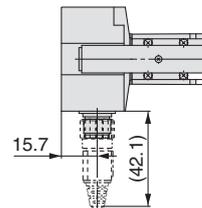
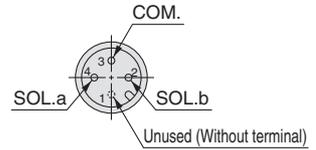
Manifold Options

SY7□0□□□□-□□□1-W□-03□ (Side ported)



### Sub-plate side pin arrangement

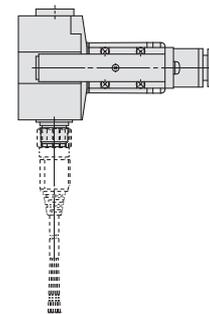
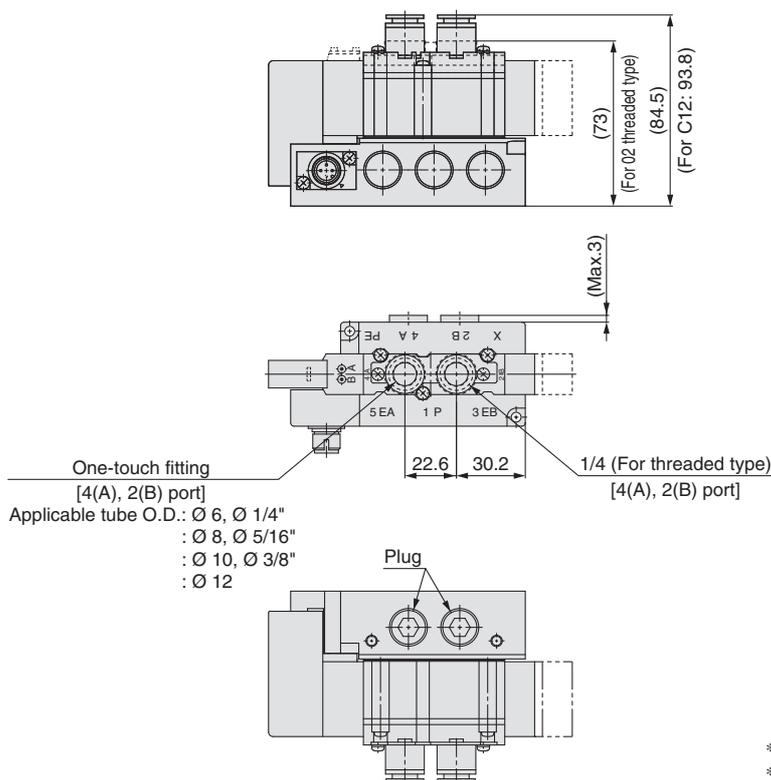
(No numeric indication)



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

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

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



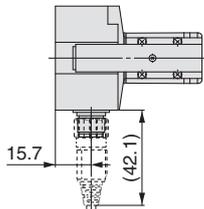
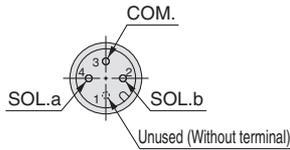
\*: These figures show the "SY7230-5Z1-C10-WO-V03F".  
\*: 1(P), 5(EA), 3(EB), X and PE ports are side ported.

# Series SY3000/5000/7000

## Dimensions: Series SY7000

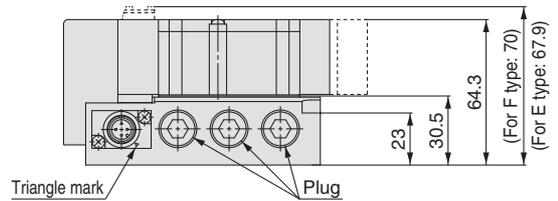
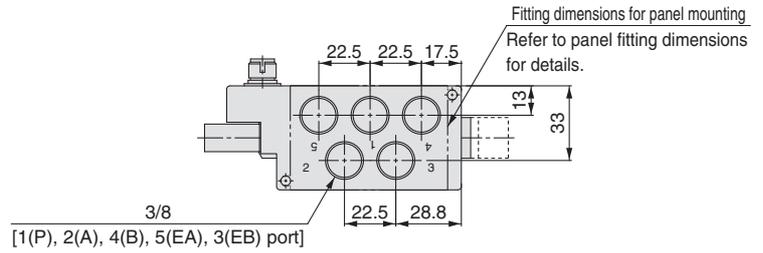
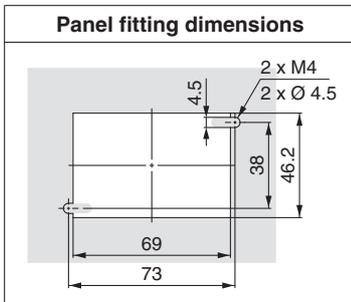
### Plug-in Single Unit/Sub-plate Bottom Ported

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



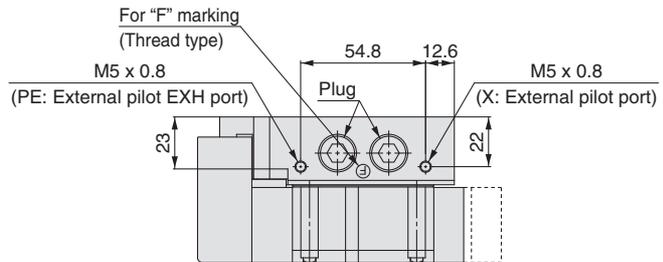
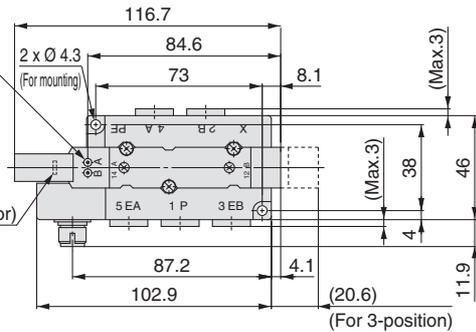
- 1: Brown (Unused)
- 2: White (SOL.b)
- 3: Blue (COM.)
- 4: Black (SOL.a)

#### Panel fitting dimensions



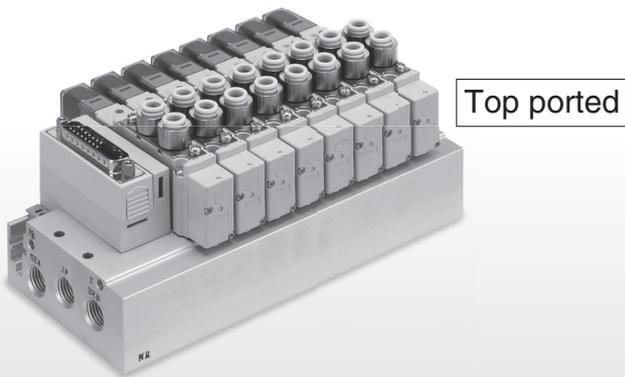
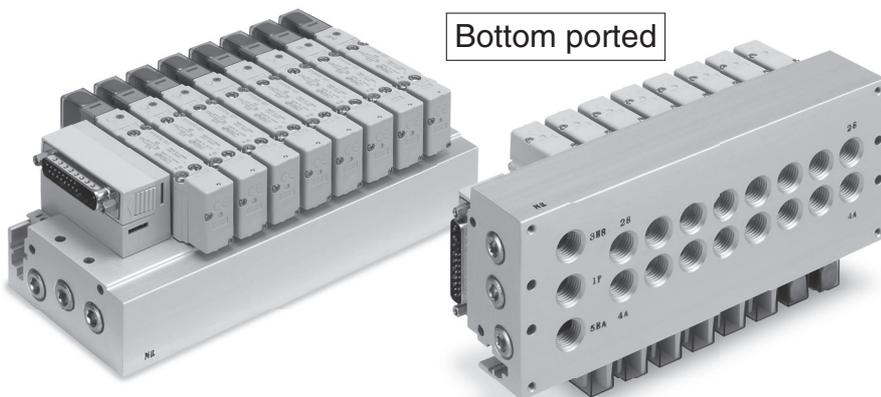
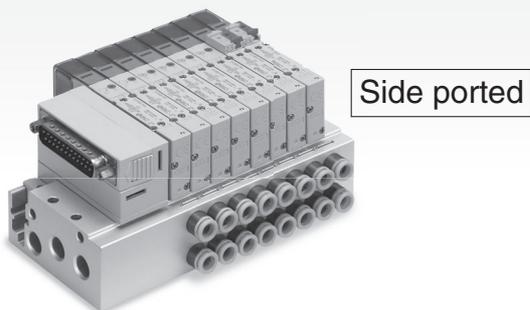
Manual override  
(Push-turn locking slotted type:  
Press, then rotate it.)  
4(A) port side: Blue (For rubber seal)  
                                  : Grey (For metal seal)  
2(B) port side: Yellow

(Light/surge voltage suppressor)



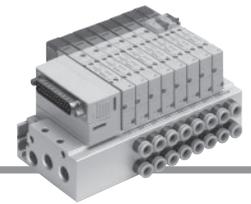
\*: These figures show the "SY7200-5Z1-WO-B03F".

# Plug-in Metal Base



# 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 Ø 2 One-touch fitting, Ø 3.2 One-touch fitting, Ø 4 One-touch fitting, Ø 6 One-touch fitting Ø 1/8" One-touch fitting, Ø 5/32" One-touch fitting, Ø 1/4" One-touch fitting			
		<b>SY5000</b>	1/8, 1/4 Ø 4 One-touch fitting, Ø 6 One-touch fitting, Ø 8 One-touch fitting Ø 5/32" One-touch fitting, Ø 1/4" One-touch fitting, Ø 5/16" One-touch fitting			
		<b>SY7000</b>	1/4 Ø 6 One-touch fitting, Ø 8 One-touch fitting, Ø 10 One-touch fitting, Ø 12 One-touch fitting Ø 1/4" One-touch fitting, Ø 5/16" One-touch fitting, Ø 3/8" One-touch fitting			
<b>Enclosure (Based on IEC60529)</b>		IP40			IP20	

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

### Valve Seal Type: Rubber Seal

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

### Valve Seal Type: Metal Seal

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

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

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

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

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

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

Type 50  
Side Ported

Type 51  
Bottom Ported

# Plug-in Metal Base

D-sub Connector

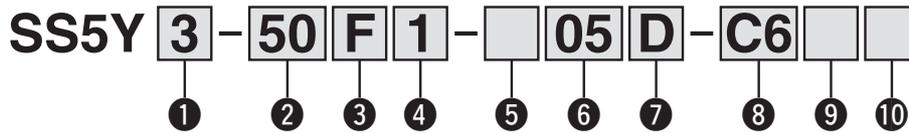
Flat Ribbon Cable

PC Wiring

# Series SY3000/5000/7000



## How to Order Manifold



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

### 5 Wiring type

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

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

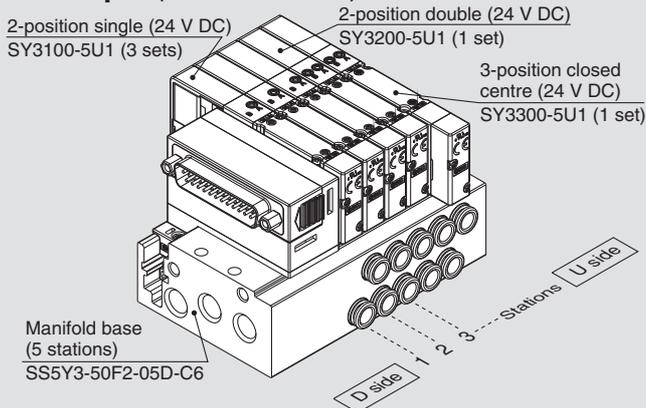
\*2: All single wiring: Available only for the manifold which has 2-position single for all stations.

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

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

## How to Order Manifold Assembly

### Example (SS5Y3-50F2-□)



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

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

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

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

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

### 6 Valve stations

<b>F:</b> D-sub connector (25 pins) <table border="1"> <thead> <tr> <th>Symbol</th> <th>Stations</th> <th>Note</th> </tr> </thead> <tbody> <tr> <td>02</td> <td>2 stations</td> <td>All double wiring</td> </tr> <tr> <td>12</td> <td>12 stations</td> <td>All double wiring</td> </tr> <tr> <td>02</td> <td>2 stations</td> <td>All single wiring</td> </tr> <tr> <td>12</td> <td>12 stations</td> <td>All single wiring</td> </tr> </tbody> </table>	Symbol	Stations	Note	02	2 stations	All double wiring	12	12 stations	All double wiring	02	2 stations	All single wiring	12	12 stations	All single wiring	<b>P:</b> Flat ribbon cable (26 pins) <table border="1"> <thead> <tr> <th>Symbol</th> <th>Stations</th> <th>Note</th> </tr> </thead> <tbody> <tr> <td>02</td> <td>2 stations</td> <td>All double wiring</td> </tr> <tr> <td>12</td> <td>12 stations</td> <td>All double wiring</td> </tr> <tr> <td>02</td> <td>2 stations</td> <td>All single wiring</td> </tr> <tr> <td>12</td> <td>12 stations</td> <td>All single wiring</td> </tr> </tbody> </table>	Symbol	Stations	Note	02	2 stations	All double wiring	12	12 stations	All double wiring	02	2 stations	All single wiring	12	12 stations	All single wiring	<b>PG:</b> Flat ribbon cable (20 pins) <table border="1"> <thead> <tr> <th>Symbol</th> <th>Stations</th> <th>Note</th> </tr> </thead> <tbody> <tr> <td>02</td> <td>2 stations</td> <td>All double wiring</td> </tr> <tr> <td>09</td> <td>9 stations</td> <td>All double wiring</td> </tr> <tr> <td>02</td> <td>2 stations</td> <td>All single wiring</td> </tr> <tr> <td>12</td> <td>12 stations</td> <td>All single wiring</td> </tr> </tbody> </table>	Symbol	Stations	Note	02	2 stations	All double wiring	09	9 stations	All double wiring	02	2 stations	All single wiring	12	12 stations	All single wiring
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\*: This also includes the number of blanking plate assembly.

**7 P, E port entry**

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

- \*1: Plugs are mounted on the opposite side of the selected ports.
- \*2: Only D side is available for Type 51 (Bottom ported).

**9 Thread type**

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

**10 Mounting**

—	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.
<b>:</b>	:	
<b>D12</b>	For 12 stations	

- \*: Only direct mounting is available for Type 51 (Bottom ported).
- \*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

**8 A, B port size**

**Thread piping**

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

**One-touch fitting (Metric)**

Symbol	A, B port	SY3000	SY5000	SY7000
<b>Fixed</b>	<b>C2</b>	∅ 2	●	—
	<b>C3</b>	∅ 3.2	●	—
	<b>C4</b>	∅ 4	●	●
	<b>C6</b>	∅ 6	●	●
	<b>C8</b>	∅ 8	—	●
	<b>C10</b>	∅ 10	—	—
<b>Replaceable</b>	<b>KC2</b>	∅ 2	●	—
	<b>KC3</b>	∅ 3.2	●	—
	<b>KC4</b>	∅ 4	●	●
	<b>KC6</b>	∅ 6	●	●
	<b>KC8</b>	∅ 8	—	●
	<b>KC10</b>	∅ 10	—	—
	<b>KC12</b>	∅ 12	—	—
<b>M*1</b>	Mixed sizes	●	●	
P, E port size (Thread piping)		1/8	1/4	3/8

**One-touch fitting (Inch)**

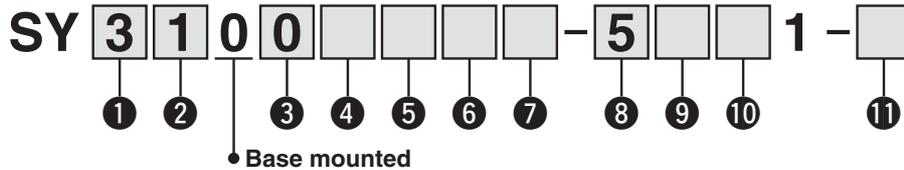
Symbol	A, B port	SY3000	SY5000	SY7000
<b>Fixed</b>	<b>N1</b>	∅ 1/8"	●	—
	<b>N3</b>	∅ 5/32"	●	●
	<b>N7</b>	∅ 1/4"	●	●
	<b>N9</b>	∅ 5/16"	—	●
	<b>N11</b>	∅ 3/8"	—	—
<b>Replaceable</b>	<b>KN1</b>	∅ 1/8"	●	—
	<b>KN3</b>	∅ 5/32"	●	●
	<b>KN7</b>	∅ 1/4"	●	●
	<b>KN9</b>	∅ 5/16"	—	●
	<b>KN11</b>	∅ 3/8"	—	—
	<b>M*1</b>	Mixed sizes	●	●
P, E port size (Thread piping)		1/8	1/4	3/8

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

# Series SY3000/5000/7000

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type of actuation

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

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

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

—	Internal pilot
R	External pilot

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

—	None
H	Built-in

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

### 6 Pilot valve option

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

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

### 7 Coil type

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

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

### 8 Rated voltage

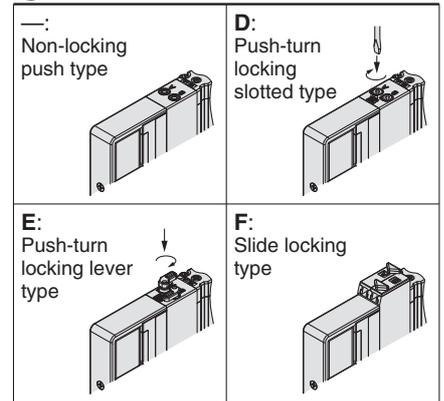
5	24 V DC
6	12 V DC

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

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

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

### 10 Manual override



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

### 11 Type of mounting screw

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

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

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

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

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

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

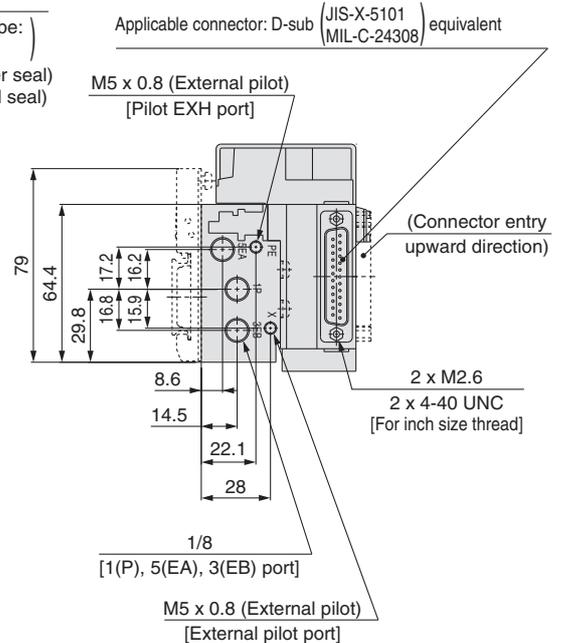
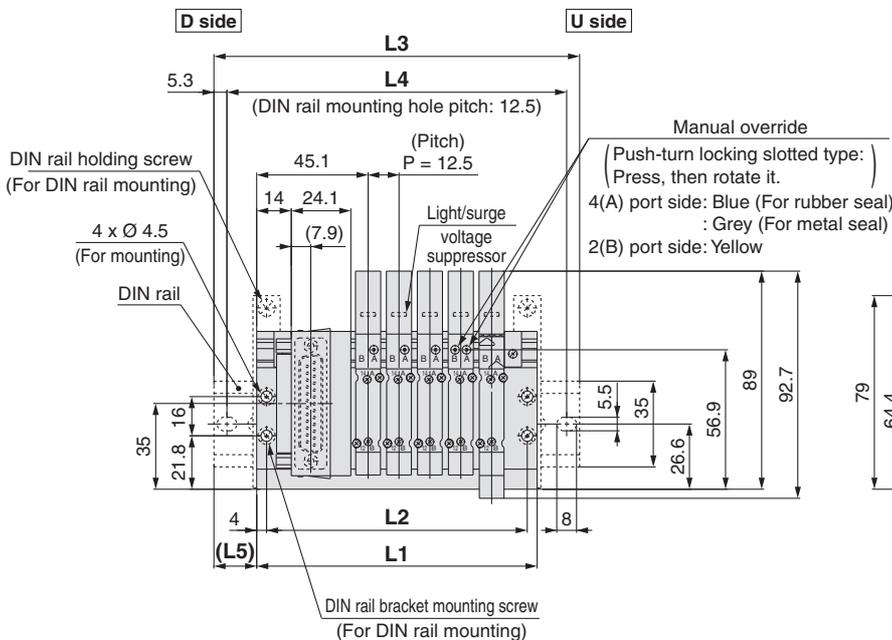
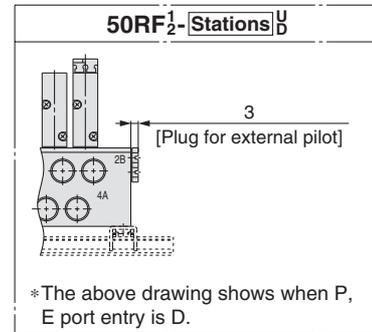
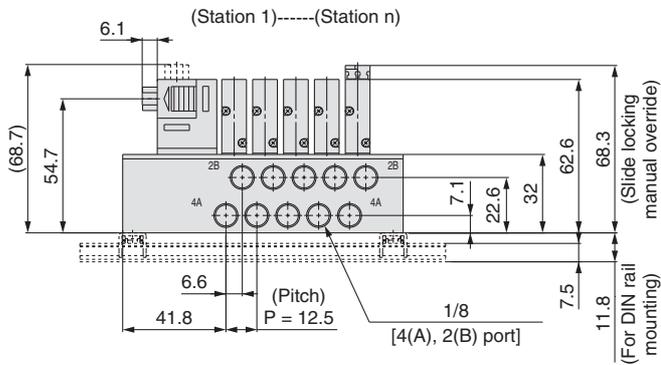


# Series SY3000/5000/7000

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

## Dimensions: Series SY3000

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



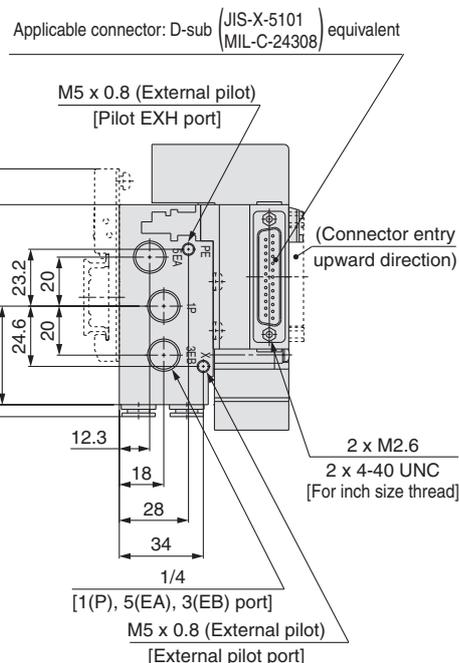
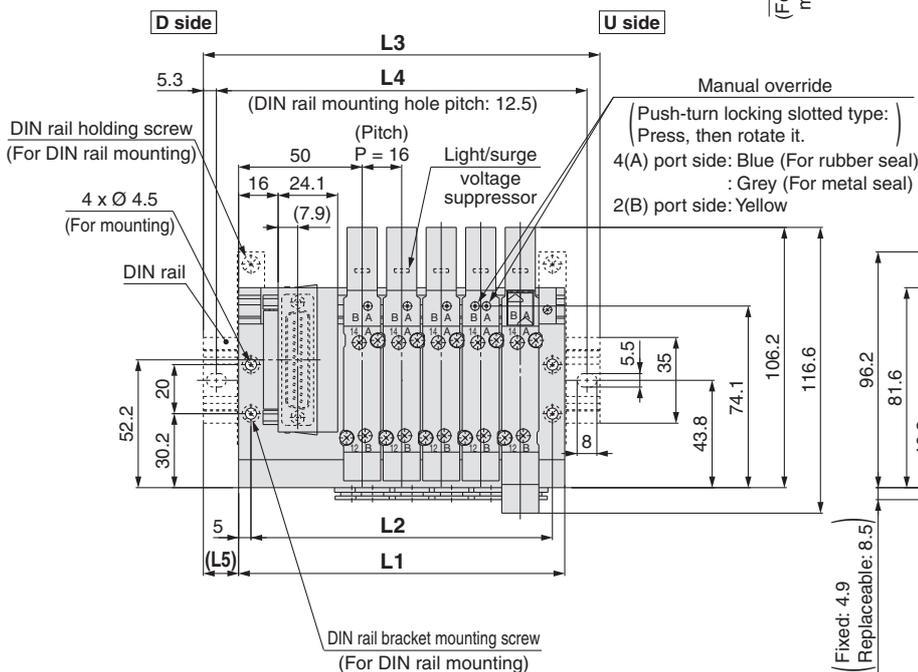
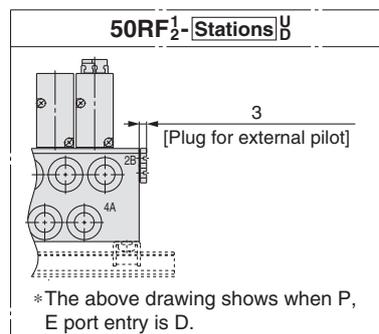
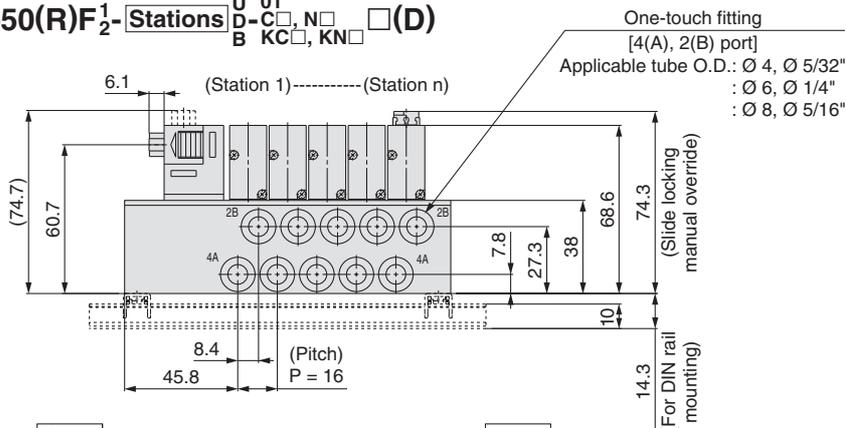
\*: These figures show the "SS5Y3-50F2-05B-01".

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

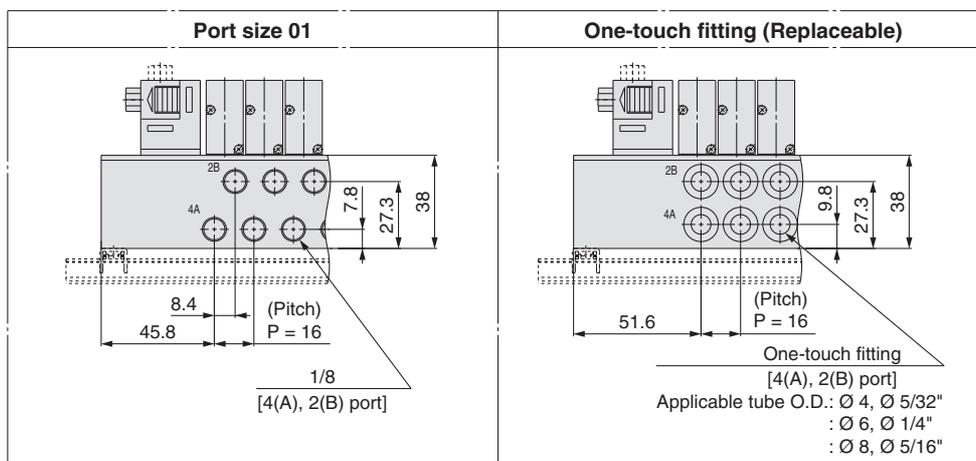
**Plug-in Metal Base** Type 50/Side Ported  
D-sub Connector

Dimensions: Series **SY5000**

SS5Y5-50(R)F<sub>2</sub>-Stations  $\frac{U}{D}$   $\frac{01}{C}$   $\square$   $\square$   $\square$   $\square$  (D)  
B KC  $\square$ , KN  $\square$



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

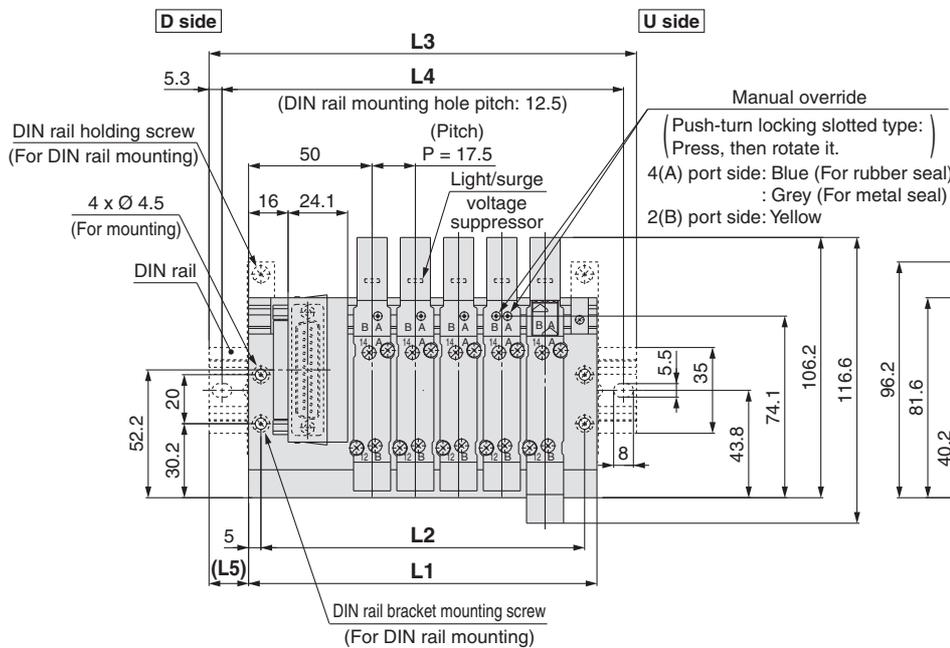
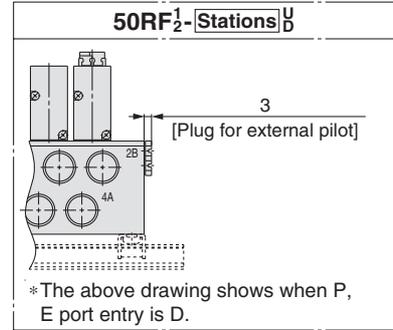
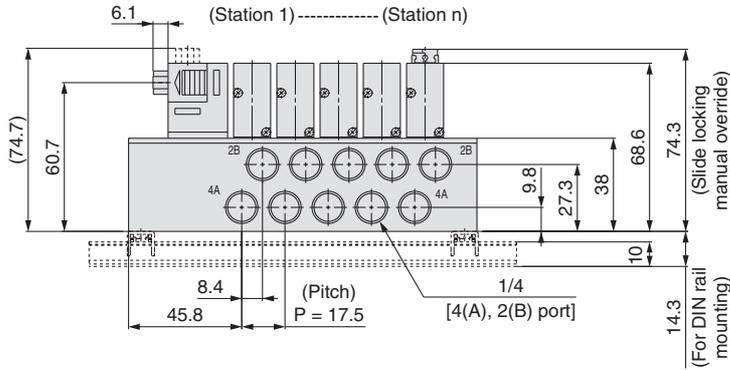
Valve  
Plug-in Sub-plate  
Plug-in Metal Base  
Type 50, 51, 52 Manifold Exploded View  
Plug-in Connector Connecting Base  
Type 10, 11, 12 Manifold Exploded View  
One-touch Fittings/ Plug Assembly Part No.  
Manifold Options

# Series SY3000/5000/7000

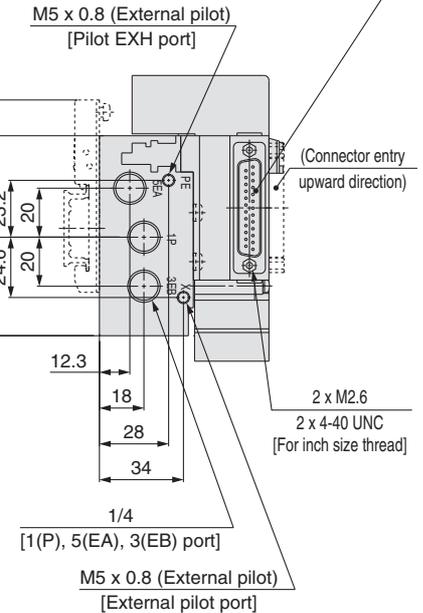
**Plug-in Metal Base** Type 50/Side Ported  
D-sub Connector

## Dimensions: Series SY5000

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



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



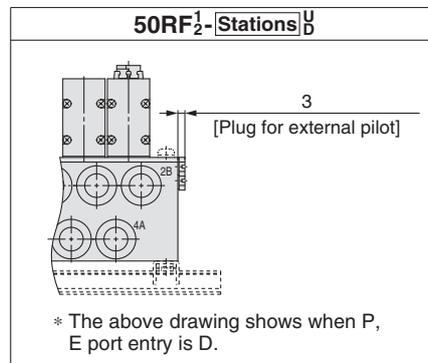
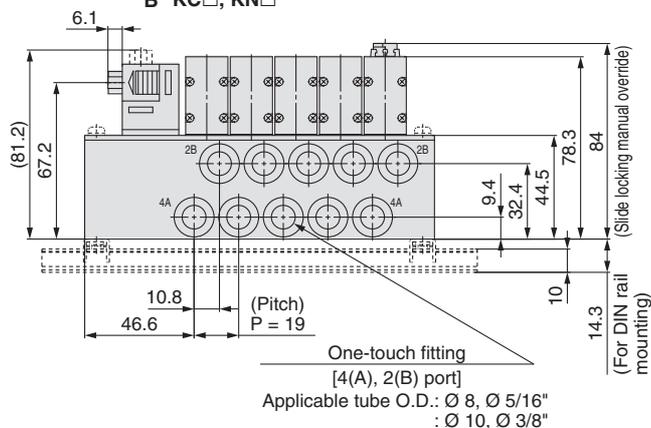
\*: These figures show the "SS5Y5-50F2-05B-02".

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

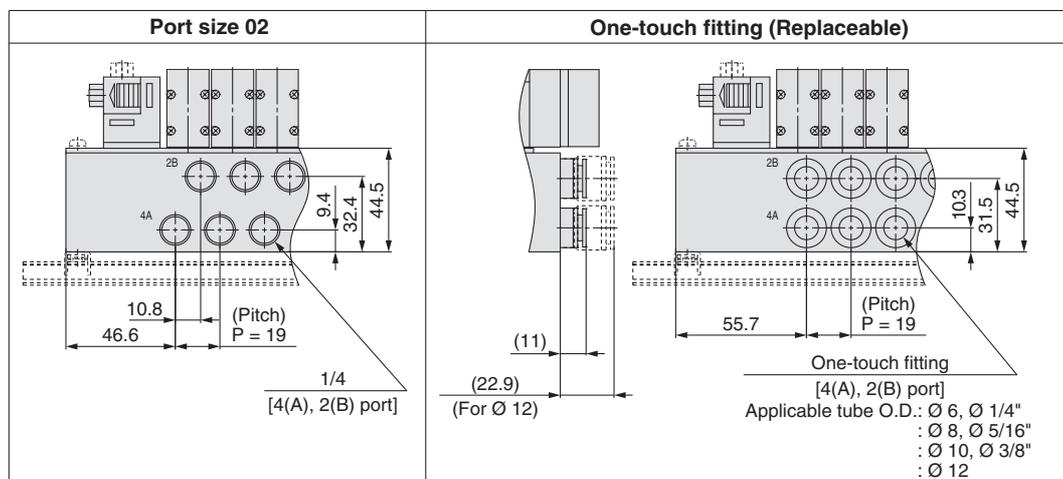
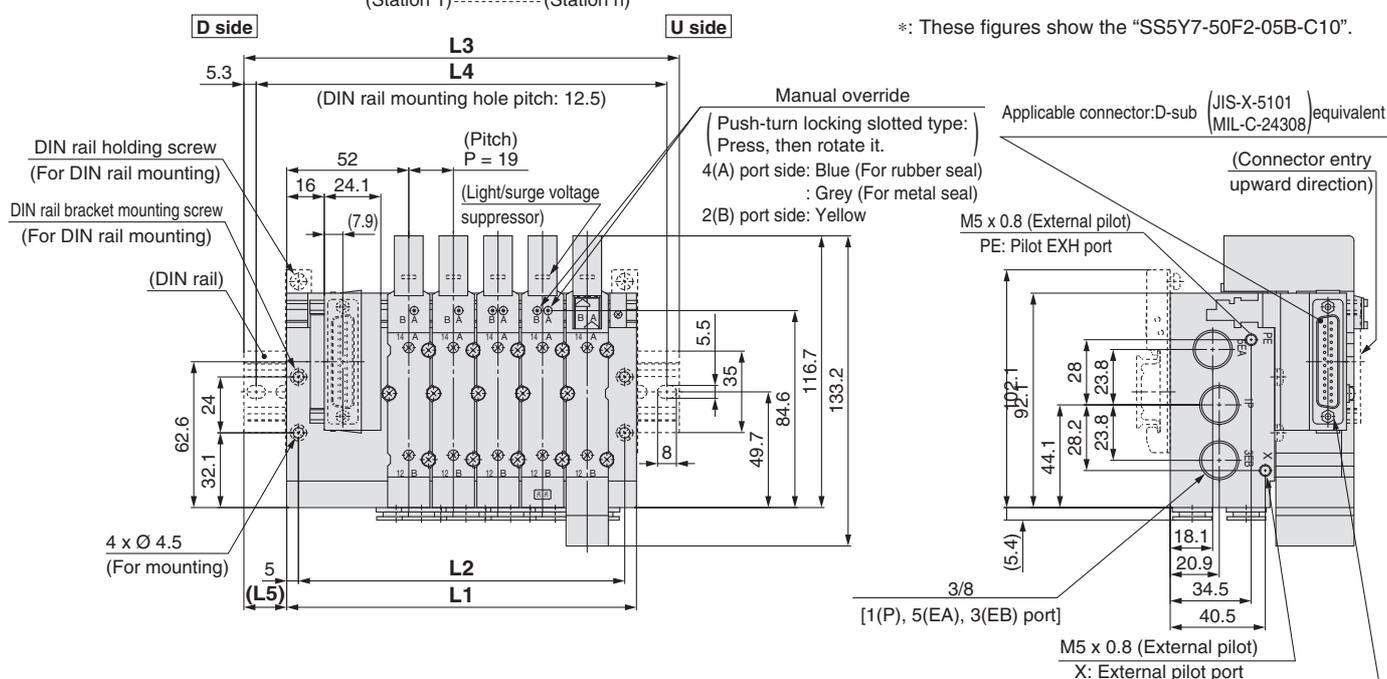
<b>Plug-in Metal Base</b>	Type 50/Side Ported
	D-sub Connector

Dimensions: Series **SY7000**

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



\*: These figures show the "SS5Y7-50F2-05B-C10".



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

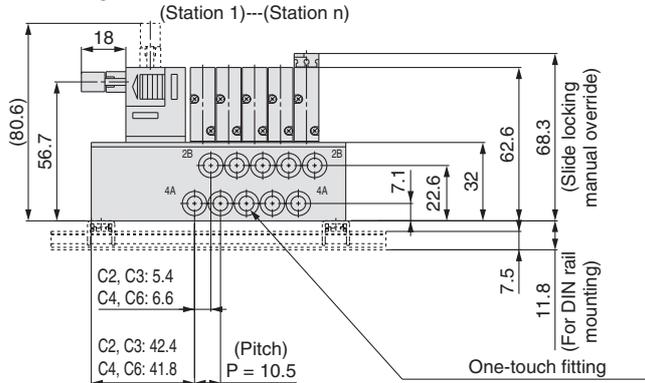
# Series SY3000/5000/7000

**Plug-in  
Metal Base**

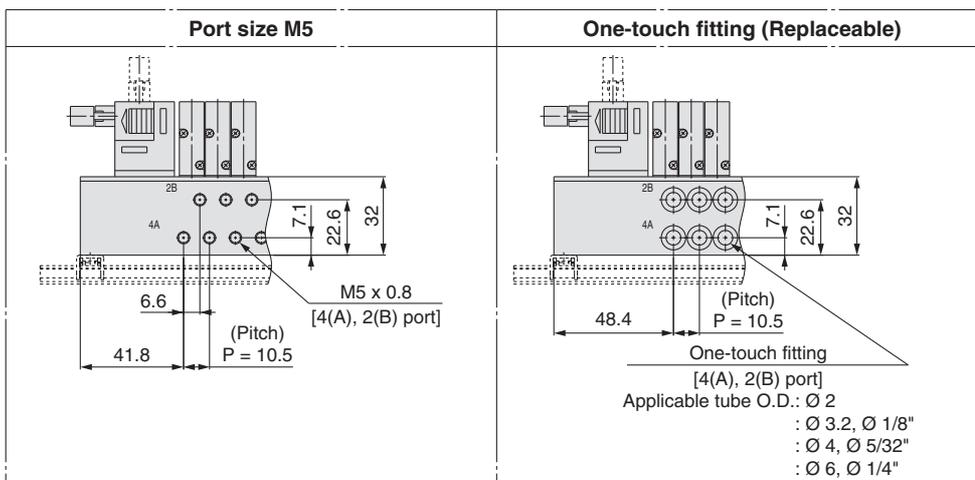
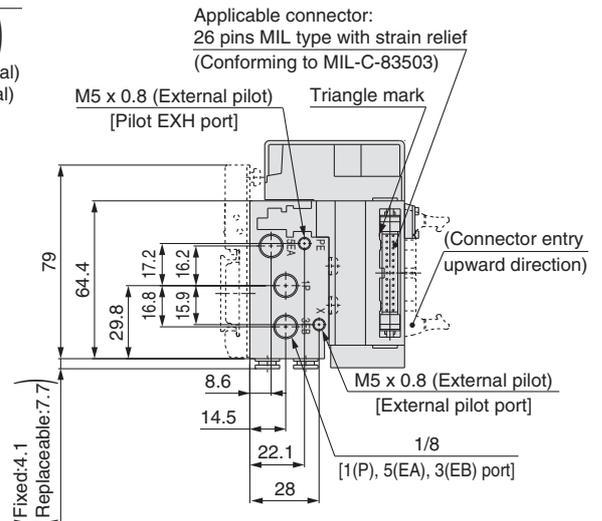
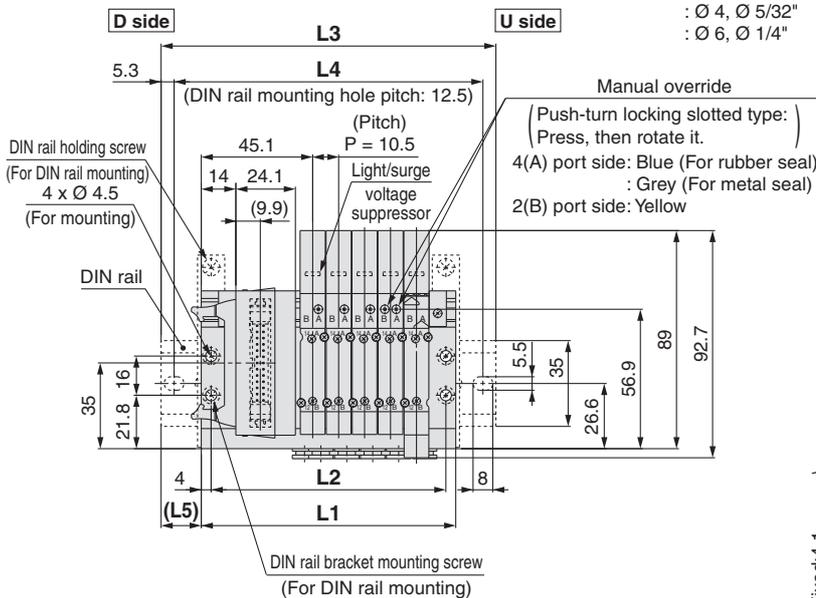
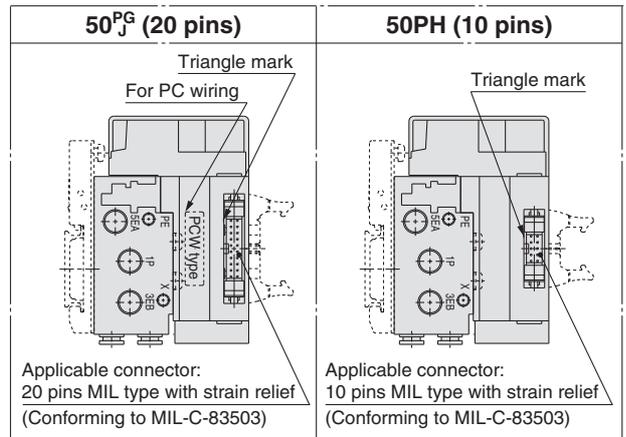
**Type 50/Side Ported  
Flat Ribbon Cable**

## Dimensions: Series SY3000

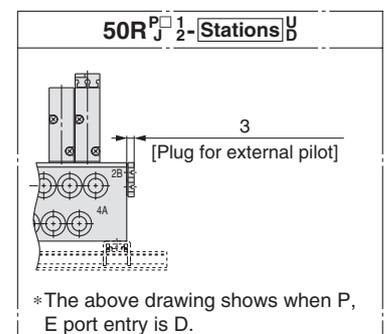
SS5Y3-50(R)  $\begin{matrix} P \\ PG \\ PH \end{matrix} \begin{matrix} 1 \\ 2 \end{matrix}$  - Stations  $\begin{matrix} U \\ D-C \\ B \end{matrix} \begin{matrix} M5 \\ \square, N \\ \square, KN \\ \square(D) \end{matrix}$



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



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

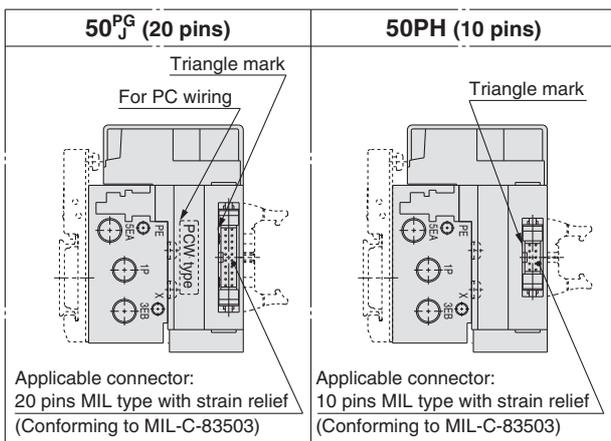
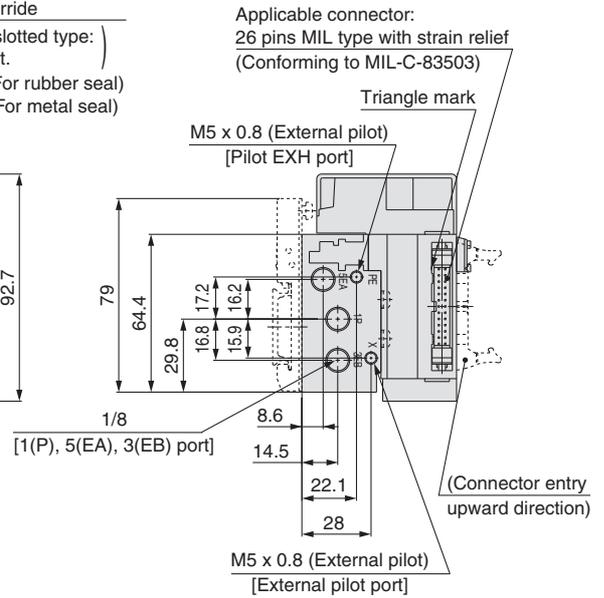
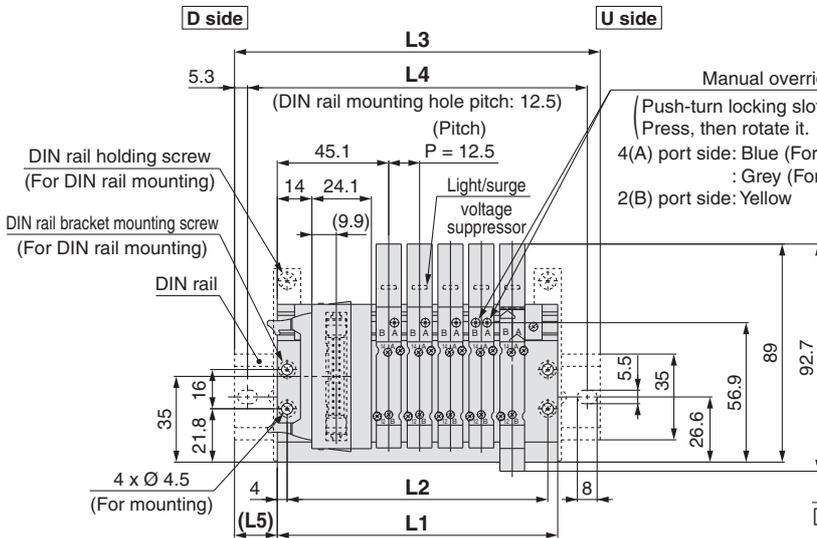
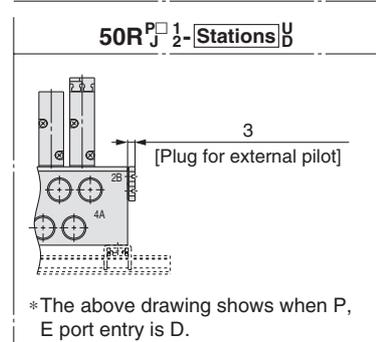
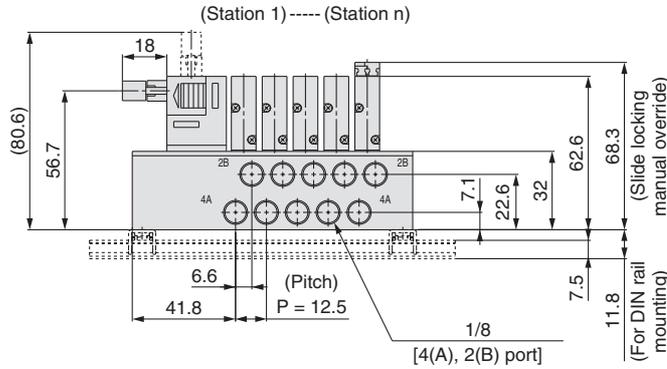


n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	71.5	82	92.5	103	113.5	124	134.5	145	155.5	166	176.5
L2	63.5	74	84.5	95	105.5	116	126.5	137	147.5	158	168.5
L3	98	110.5	123	135.5	148	160.5	160.5	173	185.5	198	210.5
L4	87.5	100	112.5	125	137.5	150	150	162.5	175	187.5	200
L5	13.5	14.5	15.5	16.5	17.5	18.5	13	14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

Dimensions: Series **SY3000**

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

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



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

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

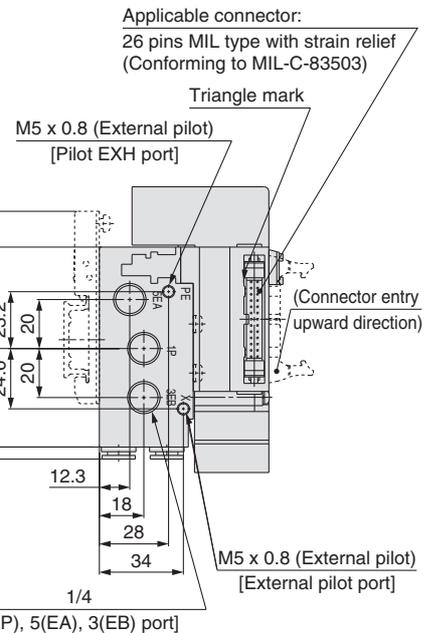
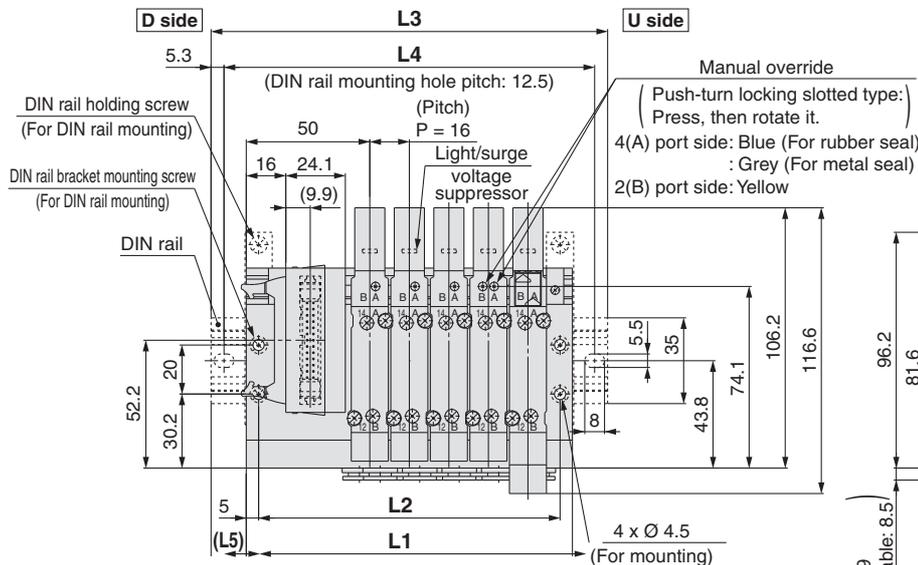
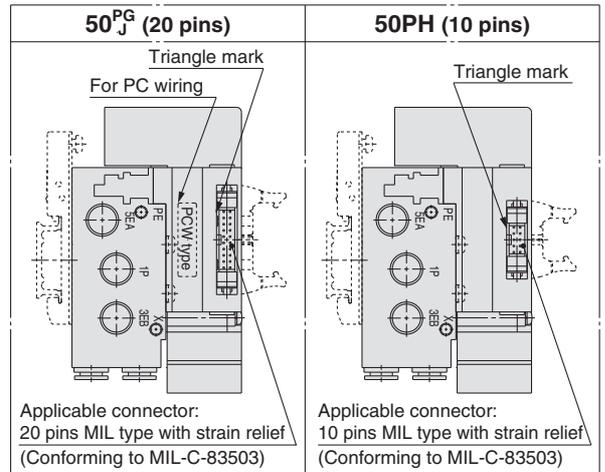
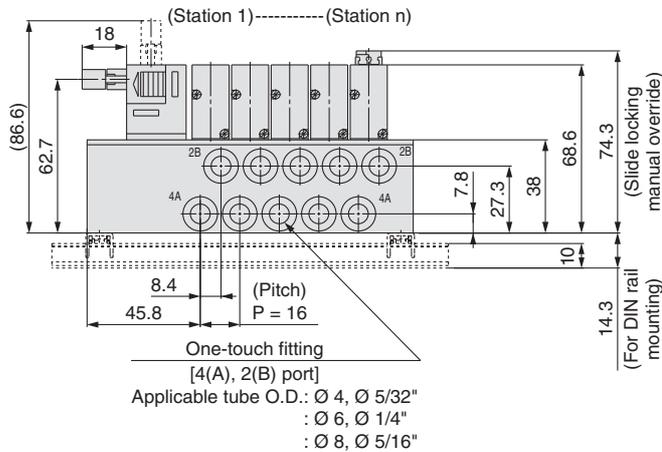
# Series SY3000/5000/7000

**Plug-in  
Metal Base**

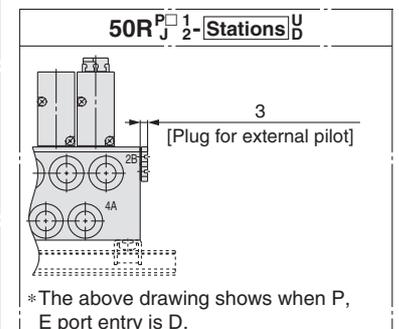
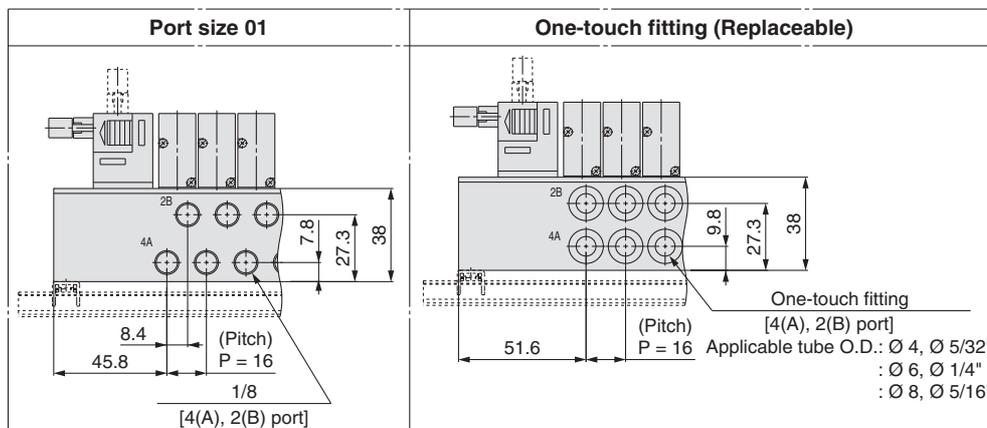
**Type 50/Side Ported  
Flat Ribbon Cable**

## Dimensions: Series SY5000

SS5Y5-50(R)  $\frac{P}{PH} \frac{1}{2}$  - Stations  $\frac{U}{D} \frac{01}{C}$ , N,  $\square$   $\square$  (D)  
B KC, KN,  $\square$



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

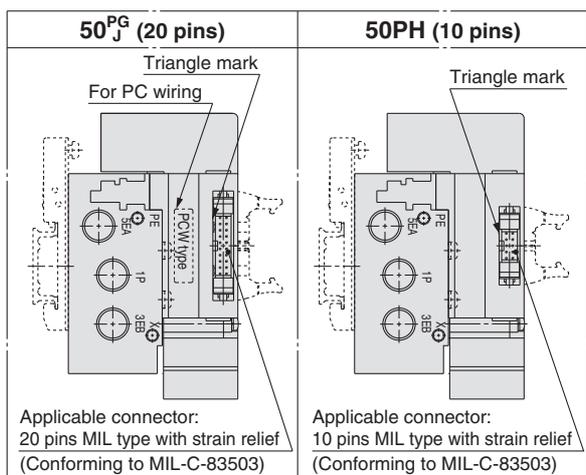
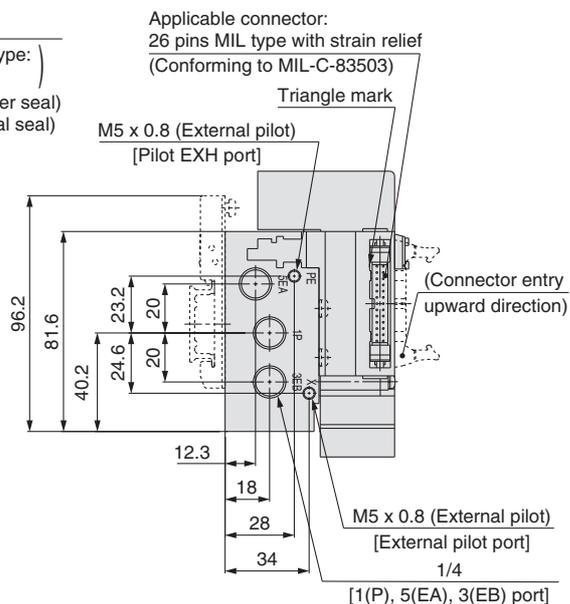
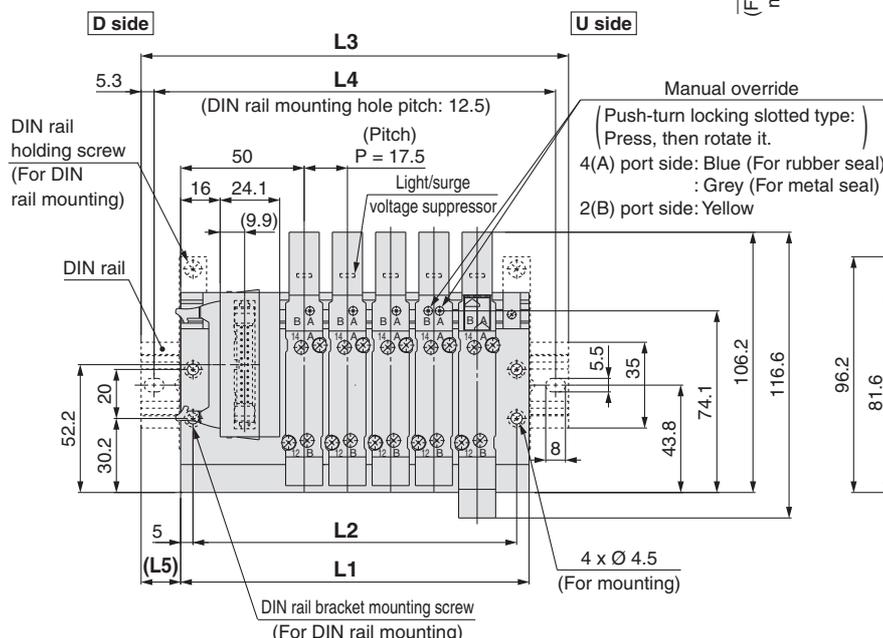
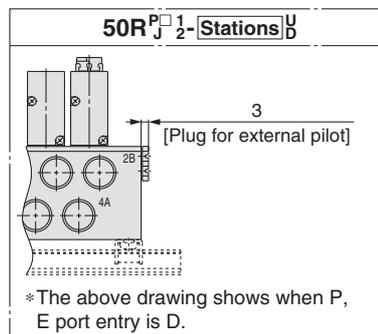
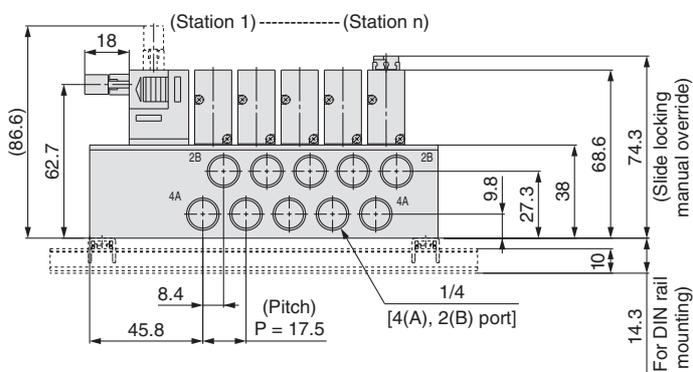


n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	84	100	116	132	148	164	180	196	212	228	244
L2	74	90	106	122	138	154	170	186	202	218	234
L3	110.5	135.5	148	160.5	173	198	210.5	223	248	260.5	273
L4	100	125	137.5	150	162.5	187.5	200	212.5	237.5	250	262.5
L5	13.5	18	16	14.5	12.5	17	15.5	13.5	18	16.5	14.5

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

Dimensions: Series **SY5000**

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



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

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

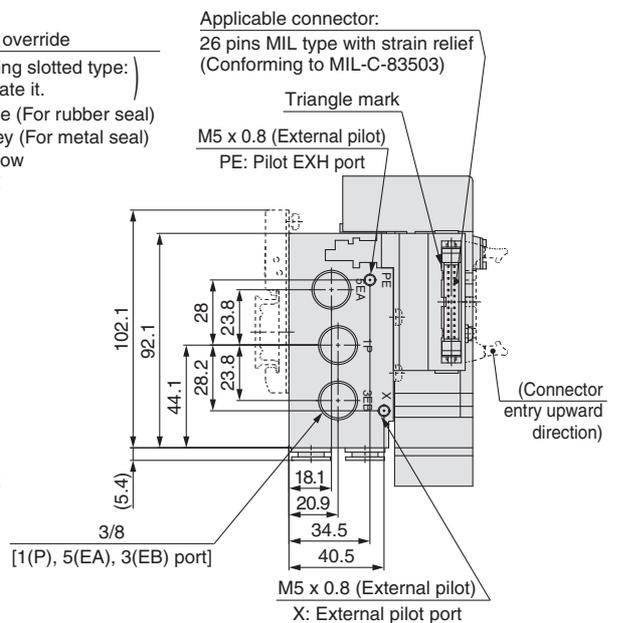
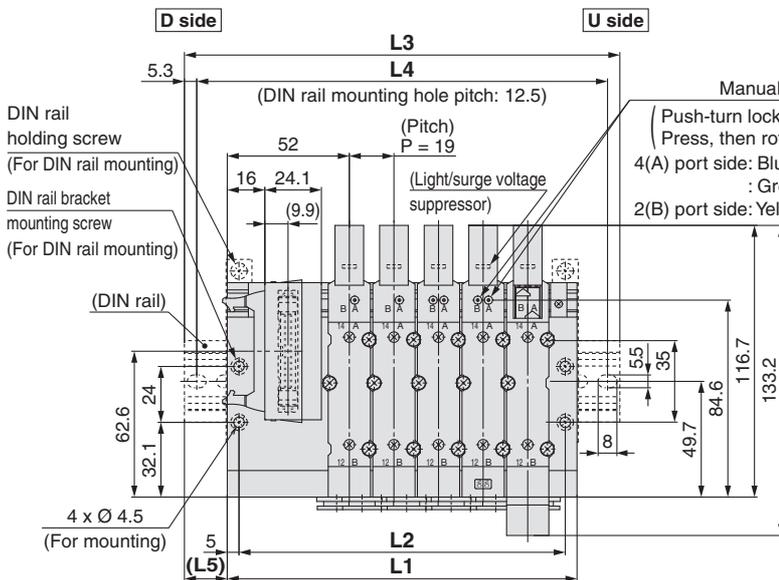
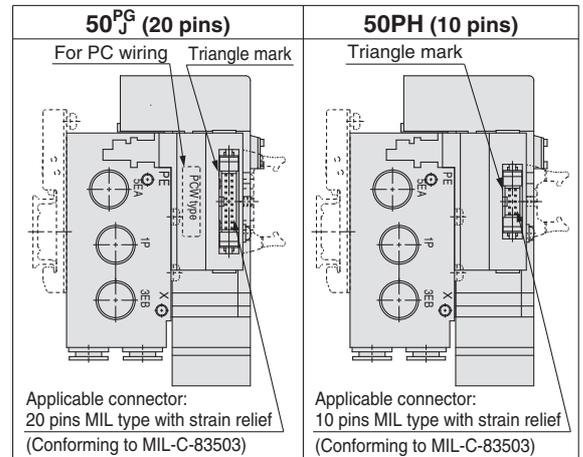
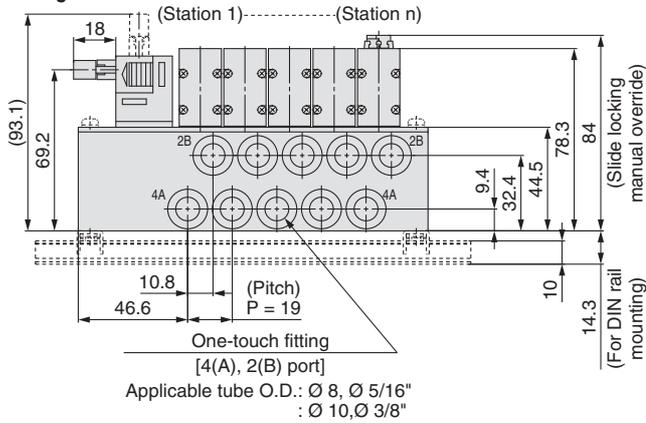
Valve  
Plug-in Sub-plate  
Plug-in Metal Base  
Type 50, 51, 52 Manifold Exploded View  
Plug-in Connector Connecting Base  
Type 10, 11, 12 Manifold Exploded View  
One-touch Fittings/ Plug Assembly Part No.  
Manifold Options

# Series SY3000/5000/7000

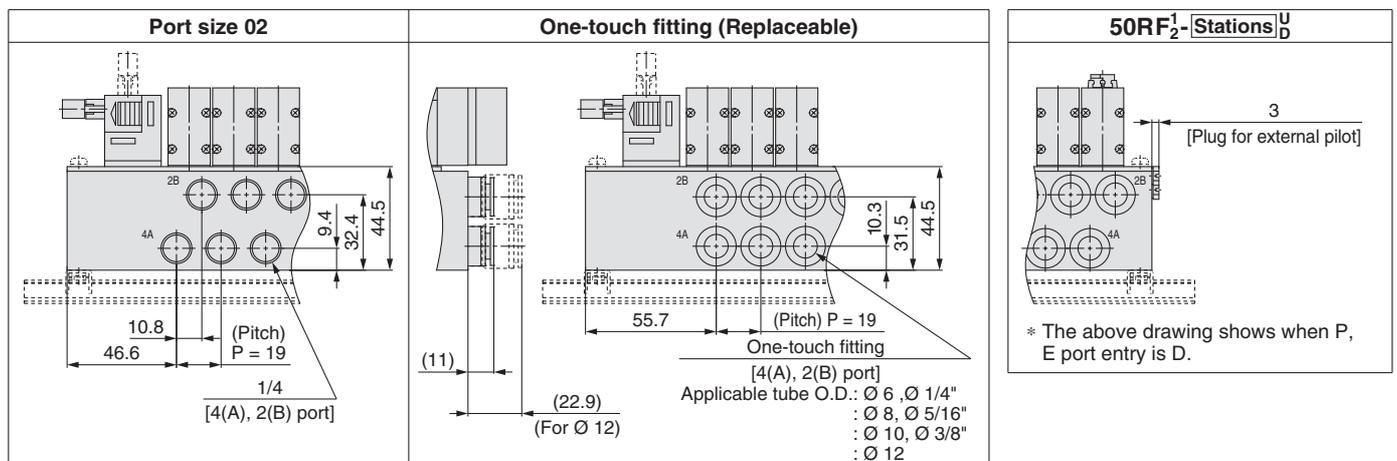
**Plug-in Metal Base** Type 50/Side Ported  
Flat Ribbon Cable

## Dimensions: Series SY7000

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



\*: 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

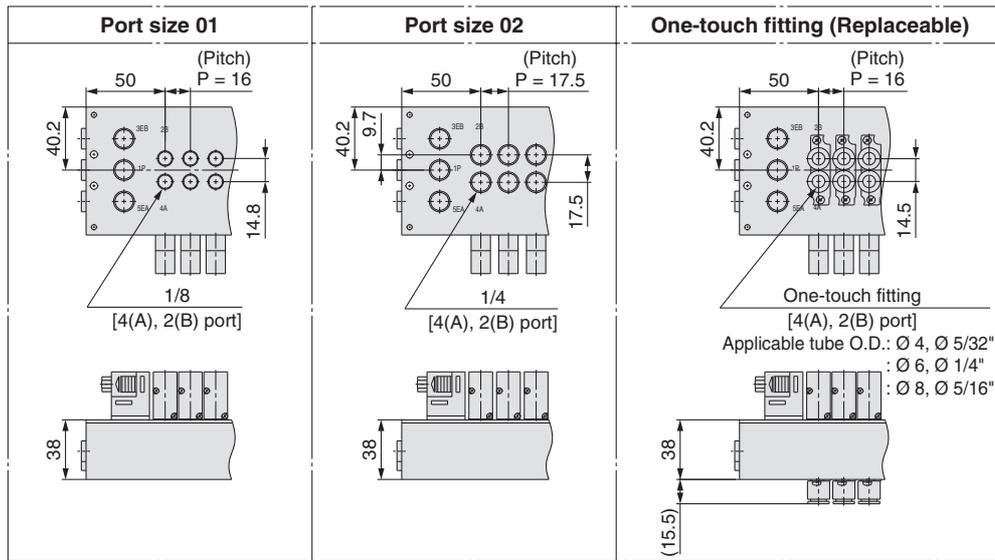
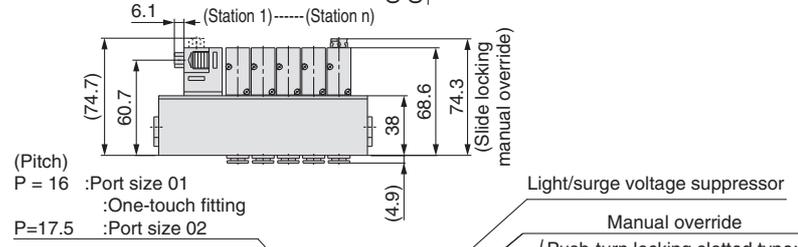
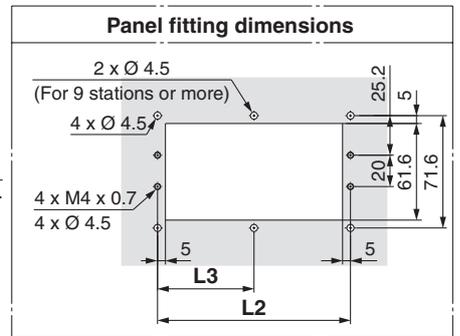
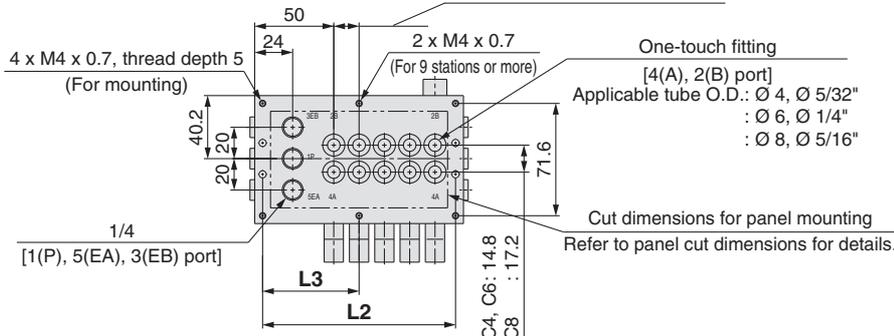


# Series SY3000/5000/7000

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



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

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

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

### Port Size 02

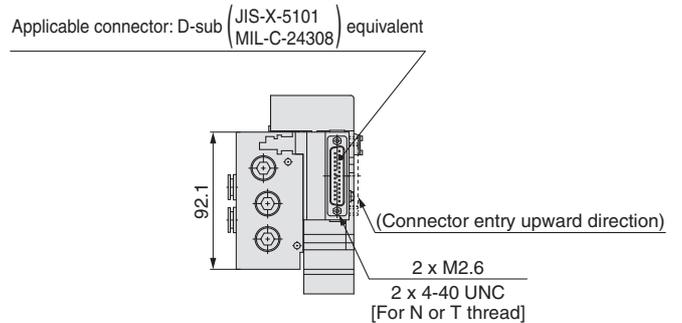
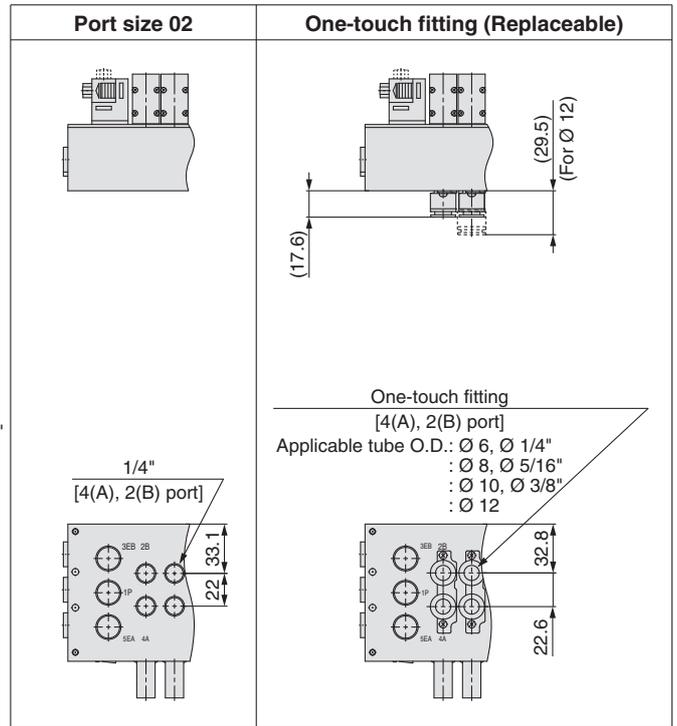
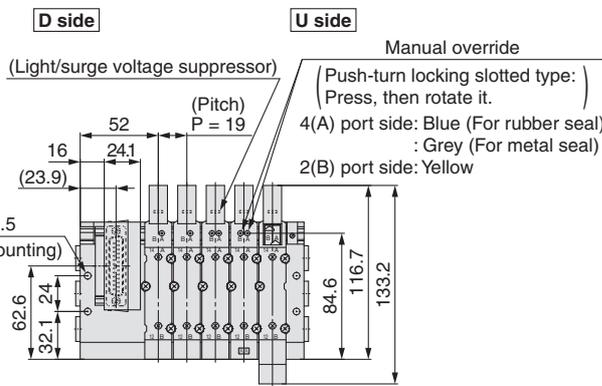
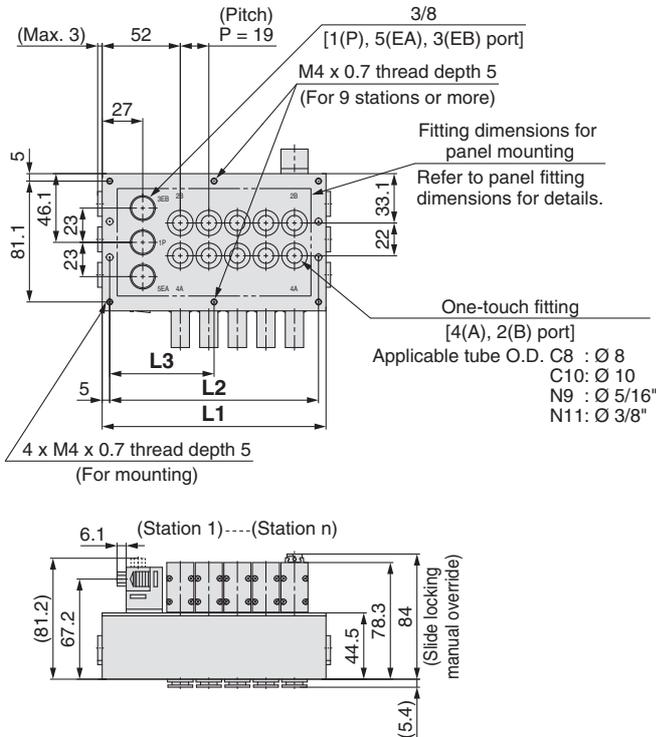
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	88.5	106	123.5	141	158.5	176	193.5	211	228.5	246	263.5
L2	78.5	96	113.5	131	148.5	166	183.5	201	218.5	236	253.5
L3	—	—	—	—	—	—	—	100.5	109.3	118	126.8

Dimensions: Series **SY7000**

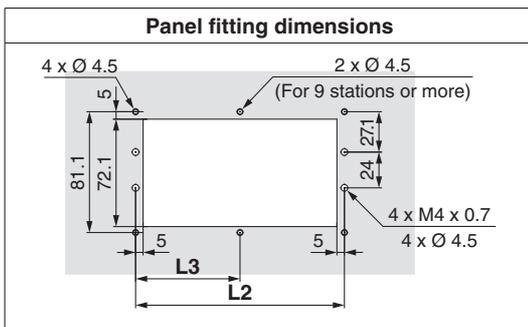
**Plug-in Metal Base**

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

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



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



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

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.

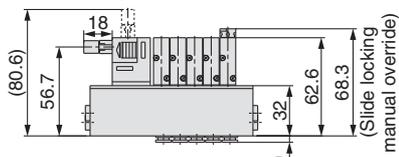
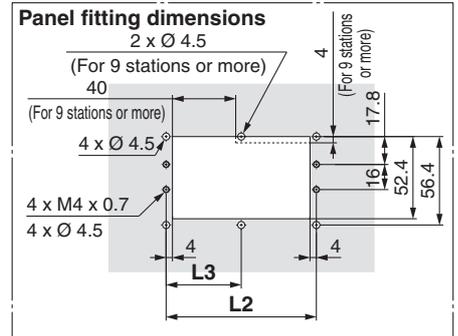
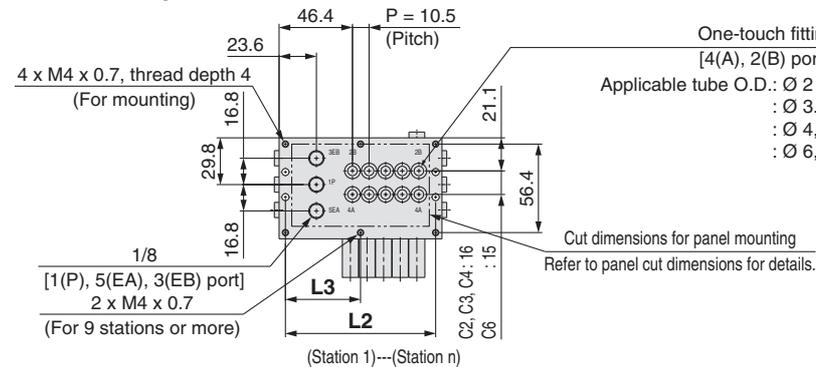
Manifold Options

# Series SY3000/5000/7000

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

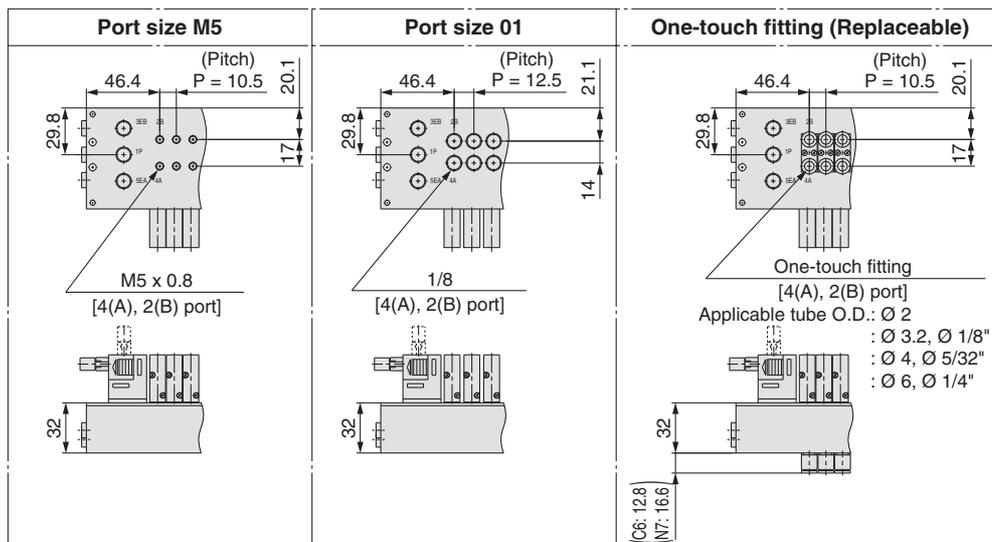
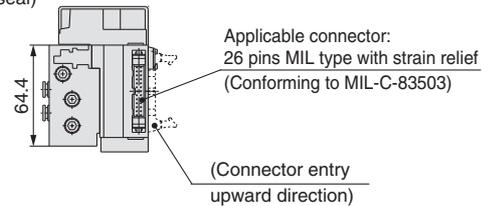
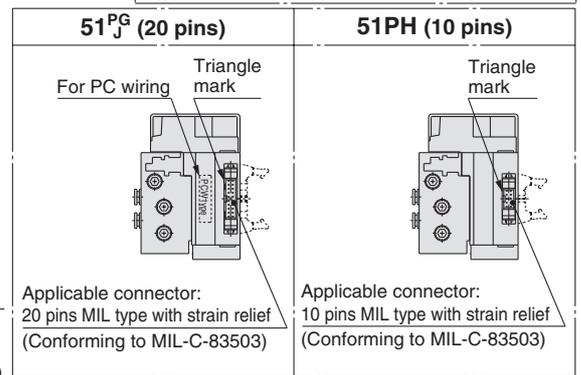
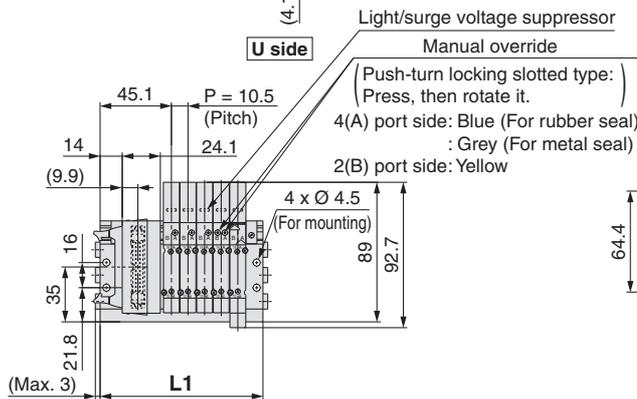
## Dimensions: Series SY3000

SS5Y3-51 <sup>P</sup>PG 1 - Stations D- <sup>M5, 01</sup>C□, N□, KC□, KN□ <sub>J</sub>PH 2



**D side**

**U side**



\*: 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

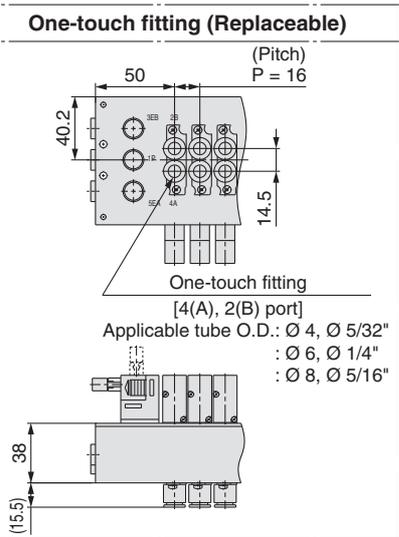
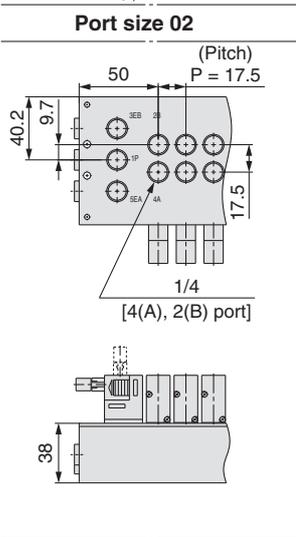
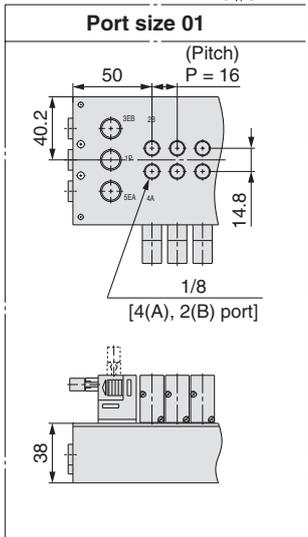
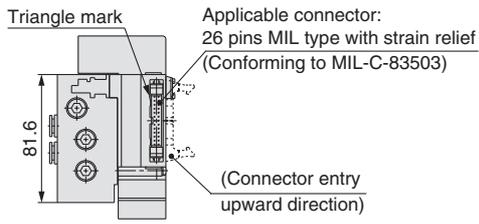
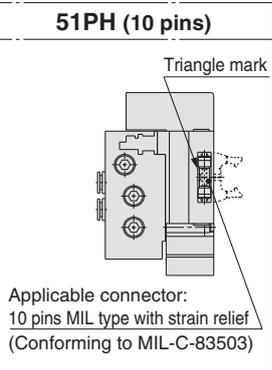
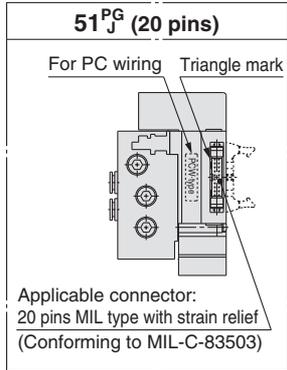
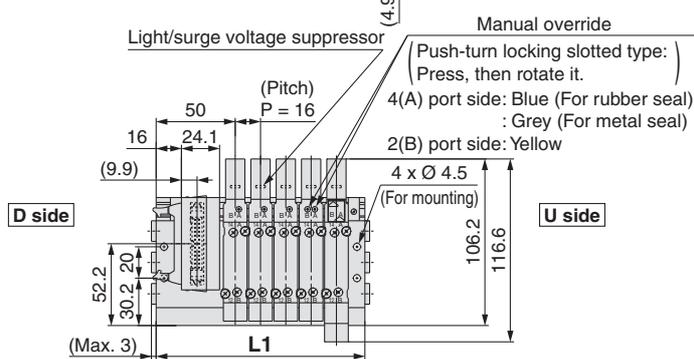
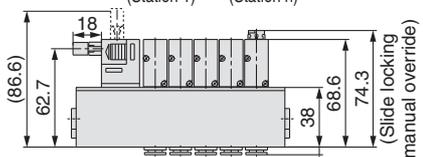
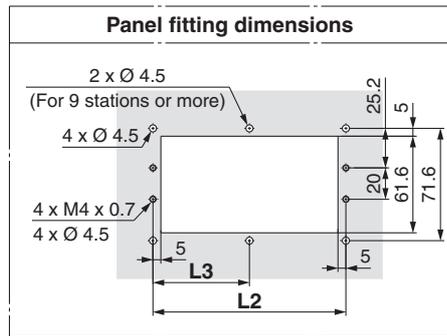
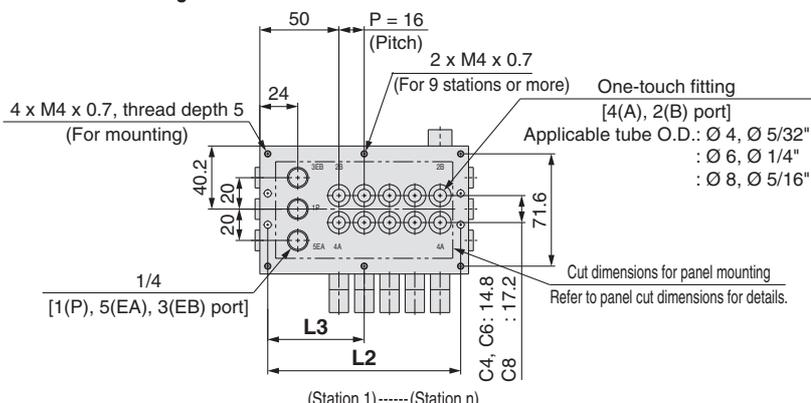
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	76	88.5	101	113.5	126	138.5	151	163.5	176	188.5	201
L2	68	80.5	93	105.5	118	130.5	143	155.5	168	180.5	193
L3	—	—	—	—	—	—	—	77.8	84	90.3	96.5

Dimensions: Series **SY5000**

**Plug-in Metal Base**

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

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



\*: 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

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.

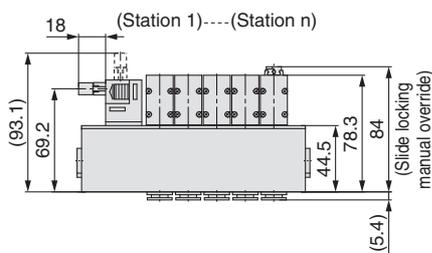
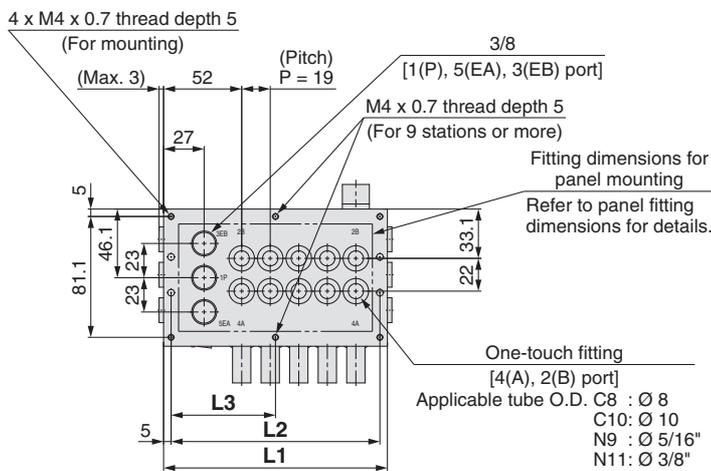
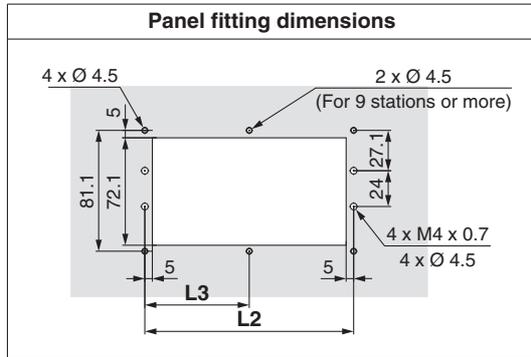
Manifold Options

# Series SY3000/5000/7000

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

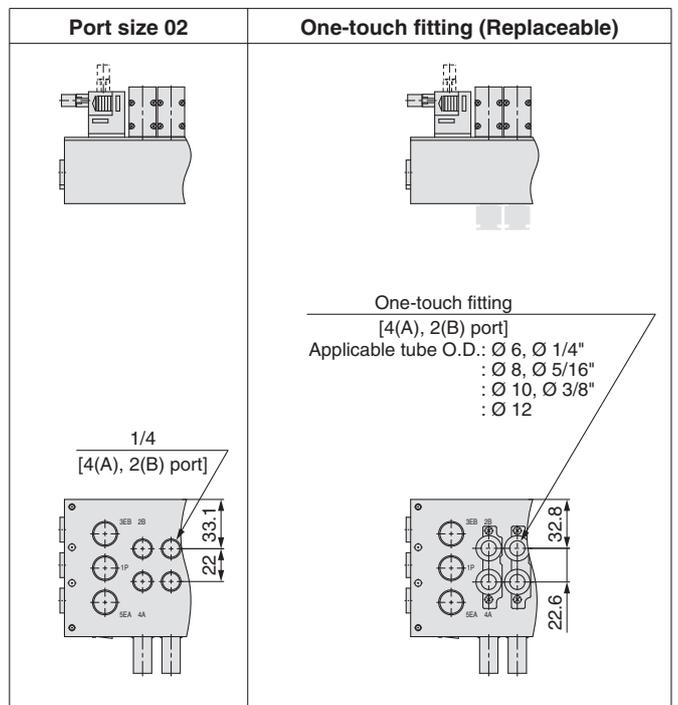
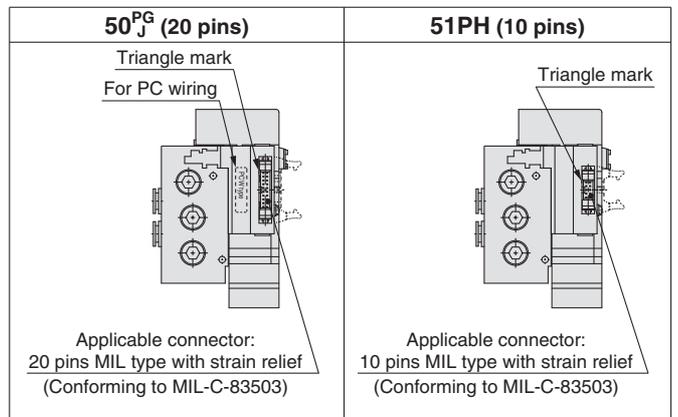
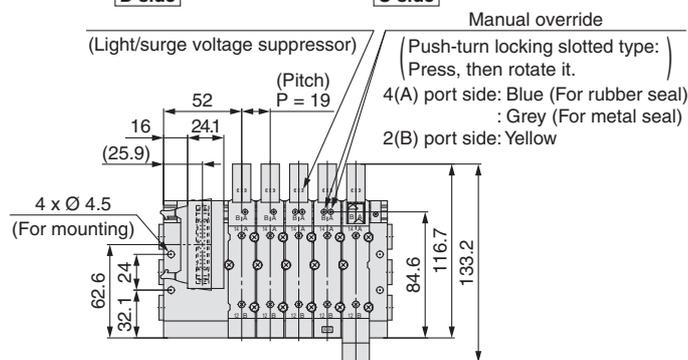
## Dimensions: Series SY7000

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

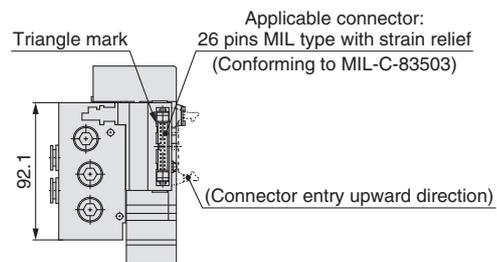


**D side**

**U side**



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



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

Manifold Options

One-touch Fittings/  
Plug Assembly Part No.

Type 10, 11, 12  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Metal Base

Plug-in Sub-plate

Valve

# Plug-in Metal Base

D-sub Connector

Flat Ribbon Cable

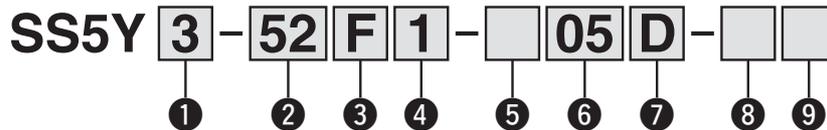
PC Wiring

Type 52  
Top Ported

# Series SY3000/5000/7000



## How to Order Manifold



### 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) 	

### 4 Connector entry direction

1: Upward 	2: Lateral 
---------------	----------------

### 5 Wiring type

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

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

## How to Order Manifold Assembly

### Example (SS5Y3-52F2-□)

2-position single (24 V DC)  
SY3130-5U1-C6 (3 sets)

2-position double (24 V DC)  
SY3230-5U1-C6 (1 set)

3-position closed centre (24 V DC)  
SY3330-5U1-C6 (1 set)

Manifold base (5 stations)  
SS5Y3-52F2-05D

1 2 3 Stations U side  
D side

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

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

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

### 6 Valve stations

<b>F:</b> D-sub connector (25 pins) <table border="1"> <thead> <tr> <th>Symbol</th> <th>Stations</th> <th>Note</th> </tr> </thead> <tbody> <tr> <td>02</td> <td>2 stations</td> <td>All double wiring</td> </tr> <tr> <td>12</td> <td>12 stations</td> <td>wiring</td> </tr> <tr> <td>02</td> <td>2 stations</td> <td>All single wiring</td> </tr> <tr> <td>12</td> <td>12 stations</td> <td>wiring</td> </tr> </tbody> </table>	Symbol	Stations	Note	02	2 stations	All double wiring	12	12 stations	wiring	02	2 stations	All single wiring	12	12 stations	wiring	<b>P:</b> Flat ribbon cable (26 pins) <table border="1"> <thead> <tr> <th>Symbol</th> <th>Stations</th> <th>Note</th> </tr> </thead> <tbody> <tr> <td>02</td> <td>2 stations</td> <td>All double wiring</td> </tr> <tr> <td>12</td> <td>12 stations</td> <td>wiring</td> </tr> <tr> <td>02</td> <td>2 stations</td> <td>All single wiring</td> </tr> <tr> <td>12</td> <td>12 stations</td> <td>wiring</td> </tr> </tbody> </table>	Symbol	Stations	Note	02	2 stations	All double wiring	12	12 stations	wiring	02	2 stations	All single wiring	12	12 stations	wiring	<b>PG:</b> Flat ribbon cable (20 pins) <table border="1"> <thead> <tr> <th>Symbol</th> <th>Stations</th> <th>Note</th> </tr> </thead> <tbody> <tr> <td>02</td> <td>2 stations</td> <td>All double wiring</td> </tr> <tr> <td>09</td> <td>9 stations</td> <td>wiring</td> </tr> <tr> <td>02</td> <td>2 stations</td> <td>All single wiring</td> </tr> <tr> <td>12</td> <td>12 stations</td> <td>wiring</td> </tr> </tbody> </table>	Symbol	Stations	Note	02	2 stations	All double wiring	09	9 stations	wiring	02	2 stations	All single wiring	12	12 stations	wiring
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\*: This also includes the number of blanking plate assembly.

### 7 P, E port entry

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

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

### 8 Thread type

—	Rc
00F	G
00N	NPT
00T	NPTF

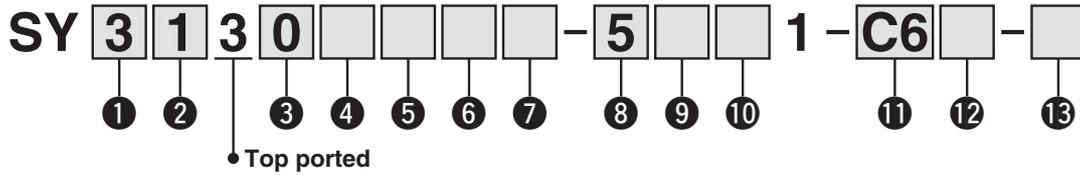
### 9 Mounting

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

Specify a longer rail than the standard length.

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

## How to Order Valves (With mounting screw) Refer to page 13 for valve specifications.



### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type of actuation

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

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

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

—	Internal pilot
R	External pilot

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

—	None
H	Built-in

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

### 6 Pilot valve option

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

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

### 7 Coil type

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

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

### 8 Rated voltage

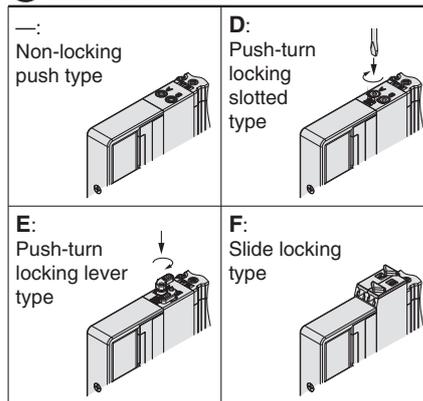
5	24 V DC
6	12 V DC

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

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

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

### 10 Manual override



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

### 11 A, B port size

#### Thread piping

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

#### One-touch fitting (Metric)

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

#### One-touch fitting (Inch)

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

### 12 Thread type

—	Rc
F	G
N	NPT
T	NPTF

\*: Only — is available for M5.

### 13 Type of mounting screw

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

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

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

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

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

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





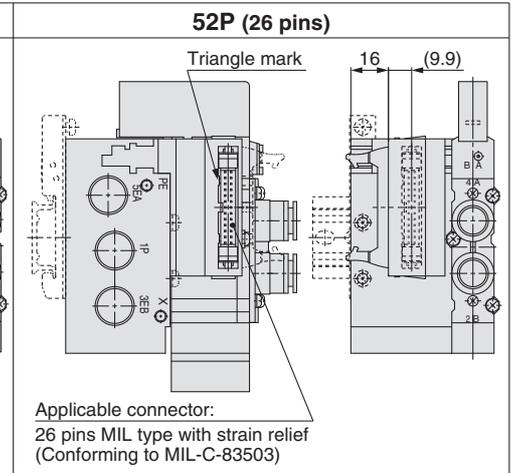
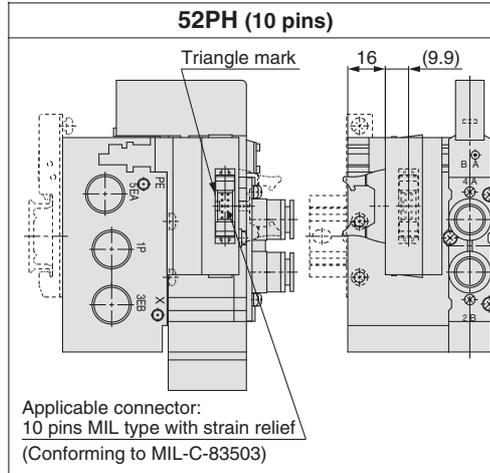
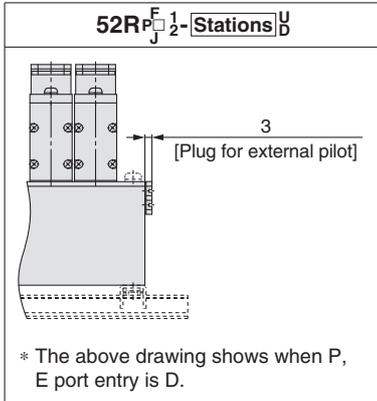
# Series SY3000/5000/7000

**Plug-in  
Metal Base**

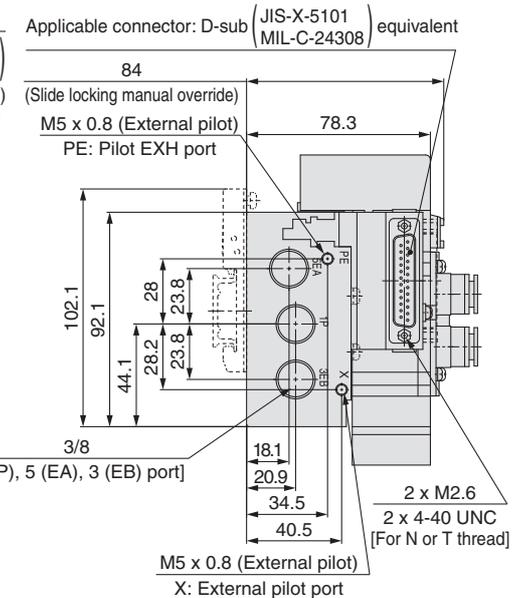
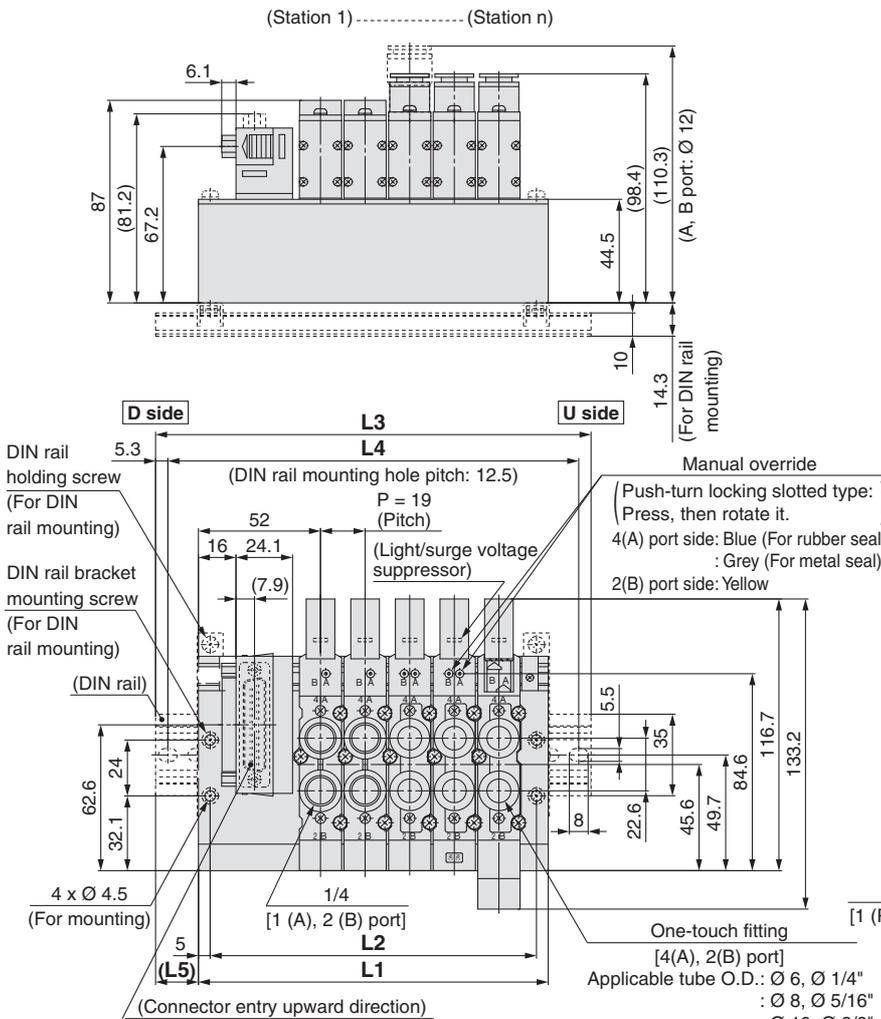
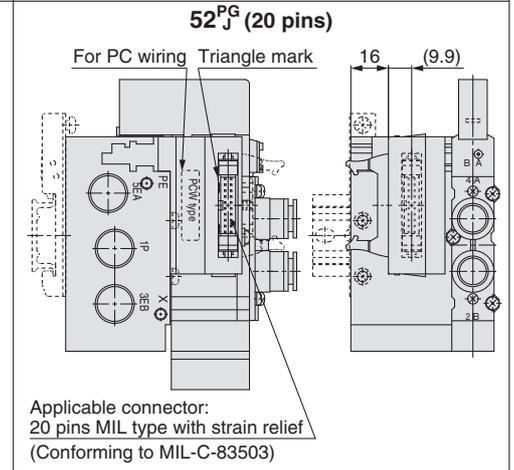
**Type 52/Top Ported  
D-sub Connector, Flat Ribbon Cable**

## Dimensions: Series SY7000

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



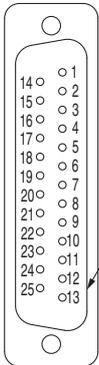
\*:These figures show the "SS5Y7-52F2-05B".



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

**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	Lead wire 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	(+)	(-)	

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

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

**Connector Cable**

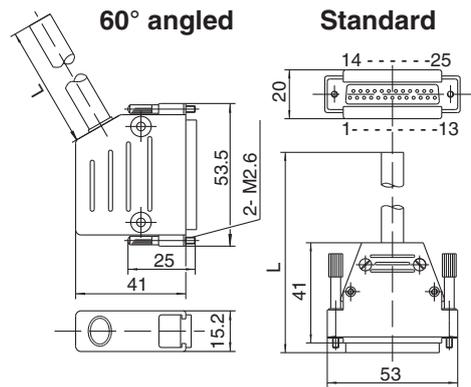
**GVVZS3000-21A-□ [IP40]**

**D-sub connector/cable**

Cable length (L)	Assembly part no.	Note
1 m	GVVZS3000-21A-160	60° angled
3 m	GVVZS3000-21A-260	60° angled
5 m	GVVZS3000-21A-360	60° angled
8 m	GVVZS3000-21A-460	60° angled
3 m	GVVZS3000-21A-2	Standard
5 m	GVVZS3000-21A-3	Standard
8 m	GVVZS3000-21A-4	Standard

**Shielded cable**

Cable length (L)	Assembly part no.	Note
1 m	GVVZS3000-21A-1S	Shielded
3 m	GVVZS3000-21A-2S	Shielded
5 m	GVVZS3000-21A-3S	Shielded
8 m	GVVZS3000-21A-4S	Shielded
20 m	GVVZS3000-21A-5S	Made to order



**Electrical characteristics**

Item	Property
Conductor resistance Ω/km, 20 °C	Max. 57
Voltage limit V, 5 minute, AC	1500
Insulation resistance MΩ/km, 20 °C	20

**Standard**

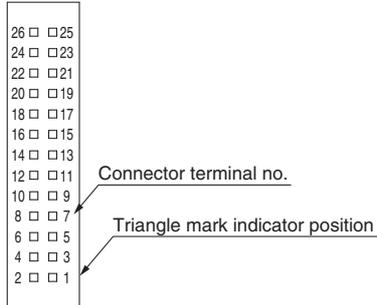
**D-Sub connector cable assembly (option)**

**AXT100-DS25-** <sup>015</sup> <sub>030</sub> <sup>050</sup> (According to MIL-C24308)

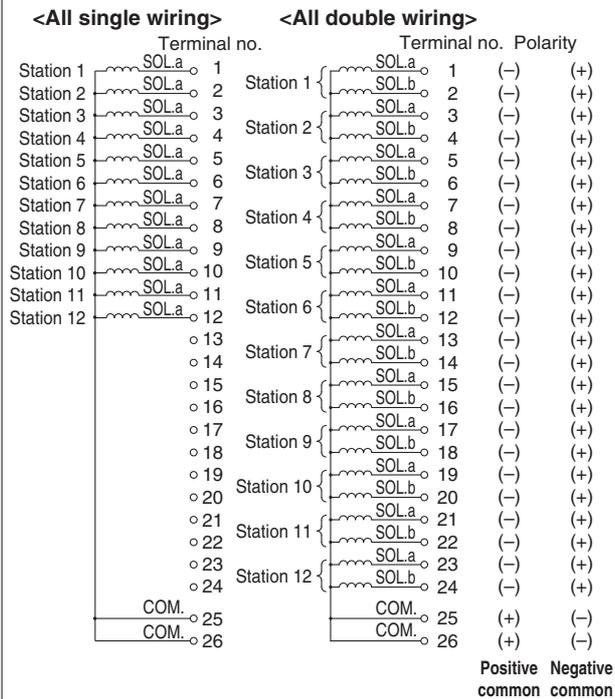
\* Please contact SMC for details.

## Electrical Wiring Specifications

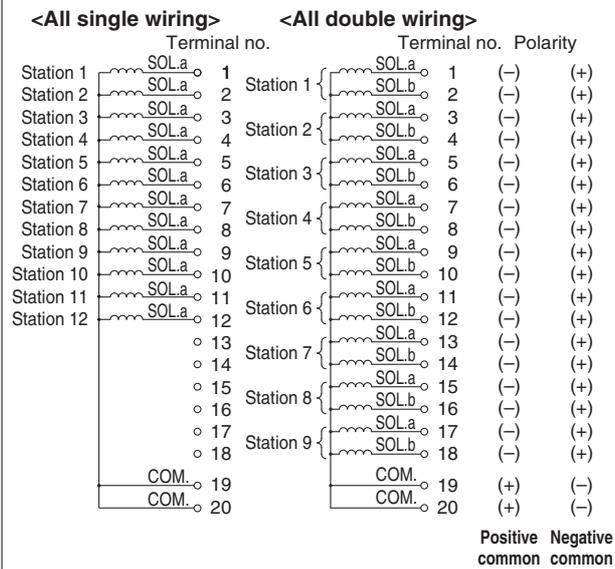
### Flat ribbon cable connector



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

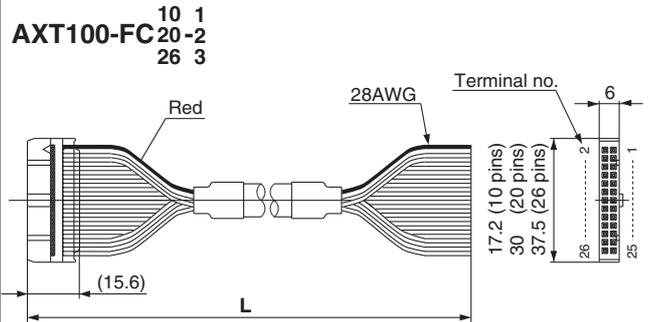


### PG: Flat ribbon cable (20 pins)



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

## Cable Assembly



### Flat ribbon cable connector assembly

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

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

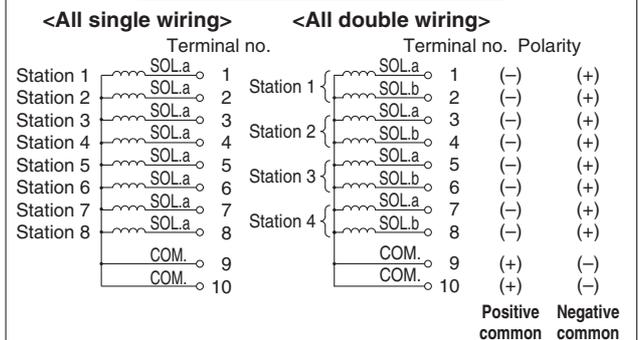
\*: Cannot be used for movable wiring.

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

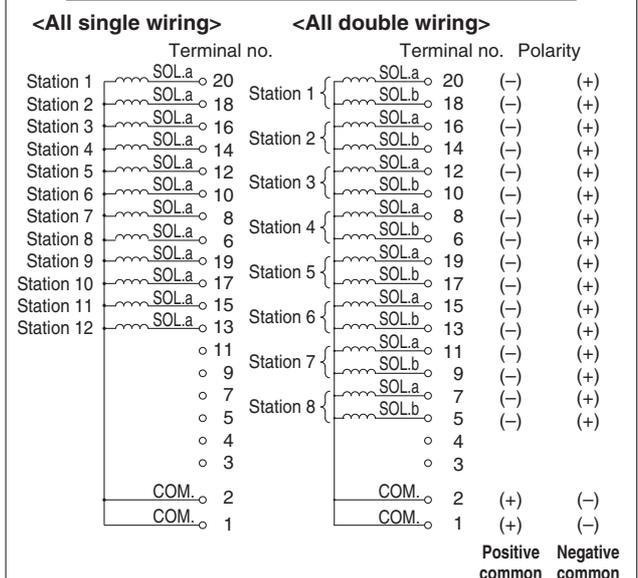
### Connector Manufacturers' Example

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

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



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



Manifold Options

One-touch Fittings/  
Plug Assembly Part No.

Type 10, 11, 12  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Metal Base

Plug-in Sub-plate

Valve

Type 50  
Side Ported

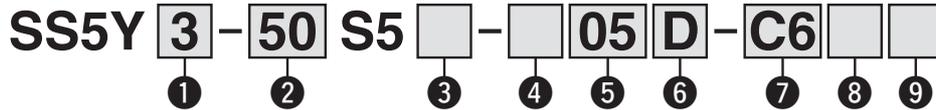
Type 51  
Bottom Ported

Plug-in Metal Base EX510

# Series SY3000/5000/7000



## How to Order Manifold



### 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

—	Positive common
N	Negative common

### 4 Wiring type

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

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

### 5 Valve stations

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

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

### 6 P, E port entry

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

- \*1: Plugs are mounted on the opposite side of the selected ports.
- \*2: Only D side is available for Type 51 (Bottom ported).

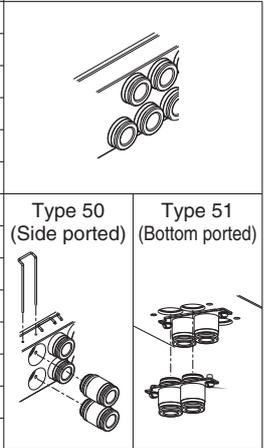
### 7 A, B port size

#### Thread piping

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

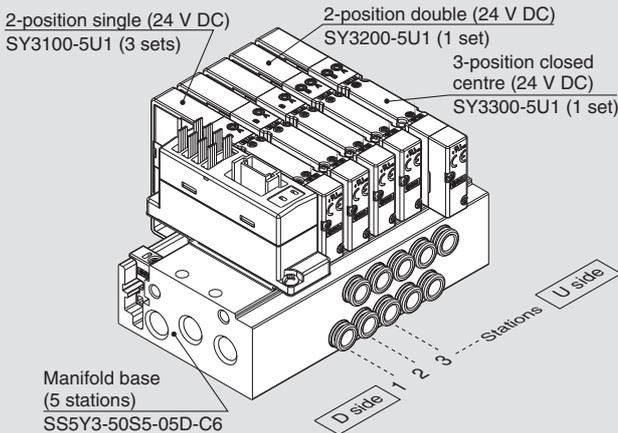
#### One-touch fitting (Metric)

Symbol	A, B port	SY3000	SY5000	SY7000	
Fixed	C2	∅ 2	●	—	—
	C3	∅ 3.2	●	—	—
	C4	∅ 4	●	●	—
	C6	∅ 6	●	●	—
	C8	∅ 8	—	●	●
	C10	∅ 10	—	—	●
Replaceable	KC2	∅ 2	●	—	—
	KC3	∅ 3.2	●	—	—
	KC4	∅ 4	●	●	—
	KC6	∅ 6	●	●	●
	KC8	∅ 8	—	●	●
	KC10	∅ 10	—	—	●
	KC12	∅ 12	—	—	●
M*1	Mixed sizes	●	●	●	
P, E port size (Thread piping)		1/8	1/4	3/8	



## How to Order Manifold Assembly

### Example (SS5Y3-50S5-□)



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

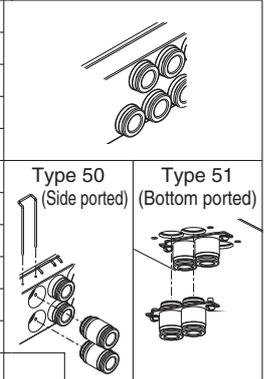
→ The asterisk denotes the symbol for assembly. Prefix it to the part numbers of the valve etc.

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

\*: When mixing top ported configurations, select from page 84.  
 In this case, use caution as there is also output on the A and B port on base side.  
 Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

#### One-touch fitting (Inch)

Symbol	A, B port	SY3000	SY5000	SY7000	
Fixed	N1	∅ 1/8"	●	—	—
	N3	∅ 5/32"	●	●	—
	N7	∅ 1/4"	●	●	—
	N9	∅ 5/16"	—	●	●
	N11	∅ 3/8"	—	—	●
	Replaceable	KN1	∅ 1/8"	●	—
KN3		∅ 5/32"	●	●	—
KN7		∅ 1/4"	●	●	●
KN9		∅ 5/16"	—	●	●
KN11		∅ 3/8"	—	—	●
M*1		Mixed sizes	●	●	●
P, E port size (Thread piping)		1/8	1/4	3/8	



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

**8 Thread type**

—	Rc
F	G
N	NPT
T	NPTF

**9 Mounting**

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

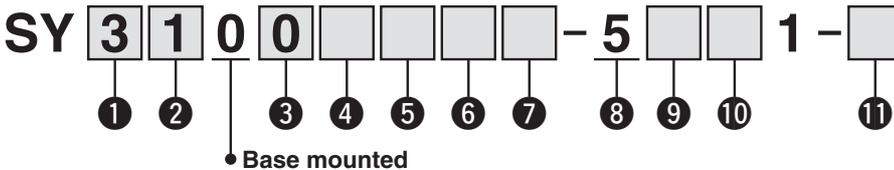
Specify a longer rail than the standard length.

\*: Only direct mounting is available for Type 51 (Bottom ported).  
\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

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

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

Refer to page 13 for valve specifications.



**1 Series**

3	SY3000
5	SY5000
7	SY7000

**2 Type of actuation**

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

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

**3 Seal type**

0	Rubber seal
1	Metal seal

**4 Pilot type**

—	Internal pilot
R	External pilot

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

—	None
H	Built-in

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

**6 Pilot valve option**

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

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

**7 Coil type**

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

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

**8 Rated voltage**

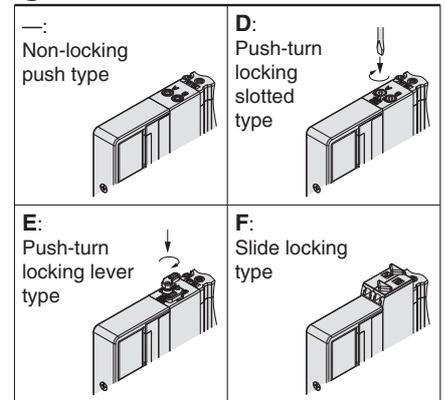
5	24 V DC
---	---------

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

Symbol	With light	Surge voltage suppressor	Common specification
R	—	●	Non-polar
U	●		
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 output polarity is — (positive common).  
Select a valve from R, U, NS or NZ when the SI Unit output polarity is N (negative common).

**10 Manual override**

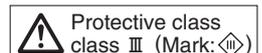


\*: Refer to page 31 for with the safety slide locking manual override.

**11 Type of mounting screw**

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

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





Dimensions: Series **SY3000**

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

Plug-in Metal Base Type 50/Side Ported EX510

Valve

Plug-in Sub-plate

Plug-in Metal Base

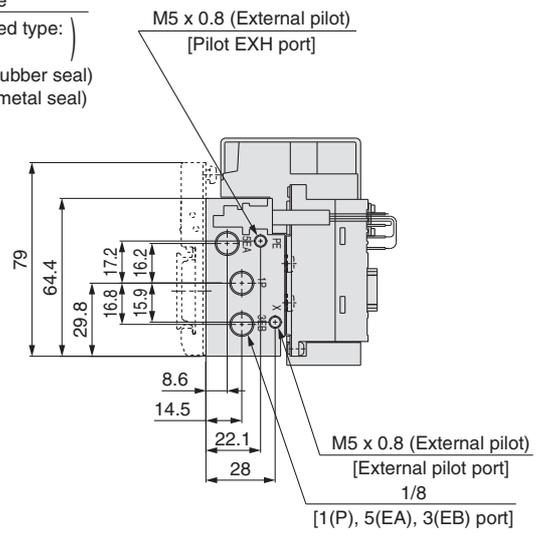
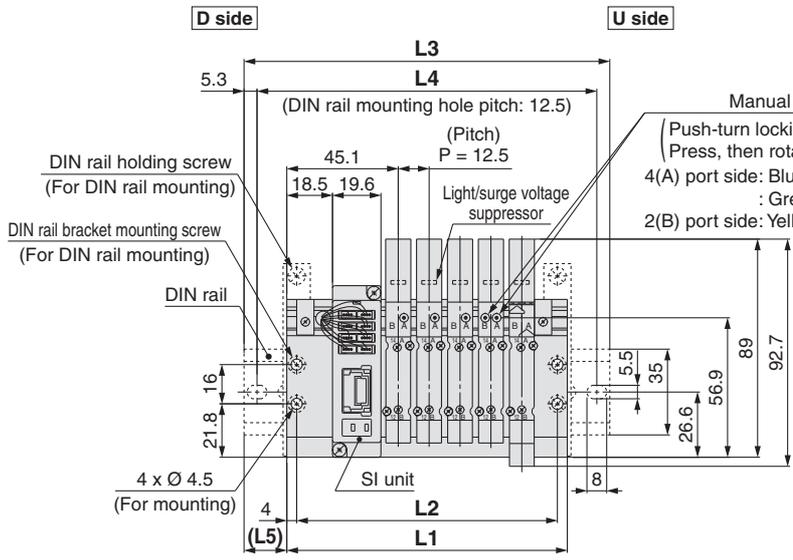
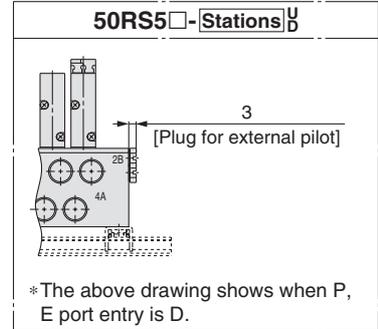
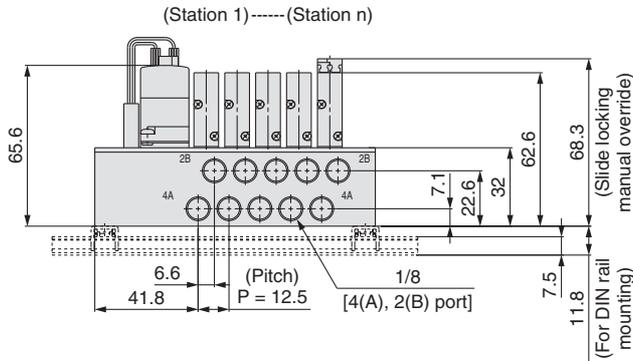
Type 50, 51, 52 Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12 Manifold Exploded View

One-touch Fittings/ Plug Assembly Part No.

Manifold Options



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

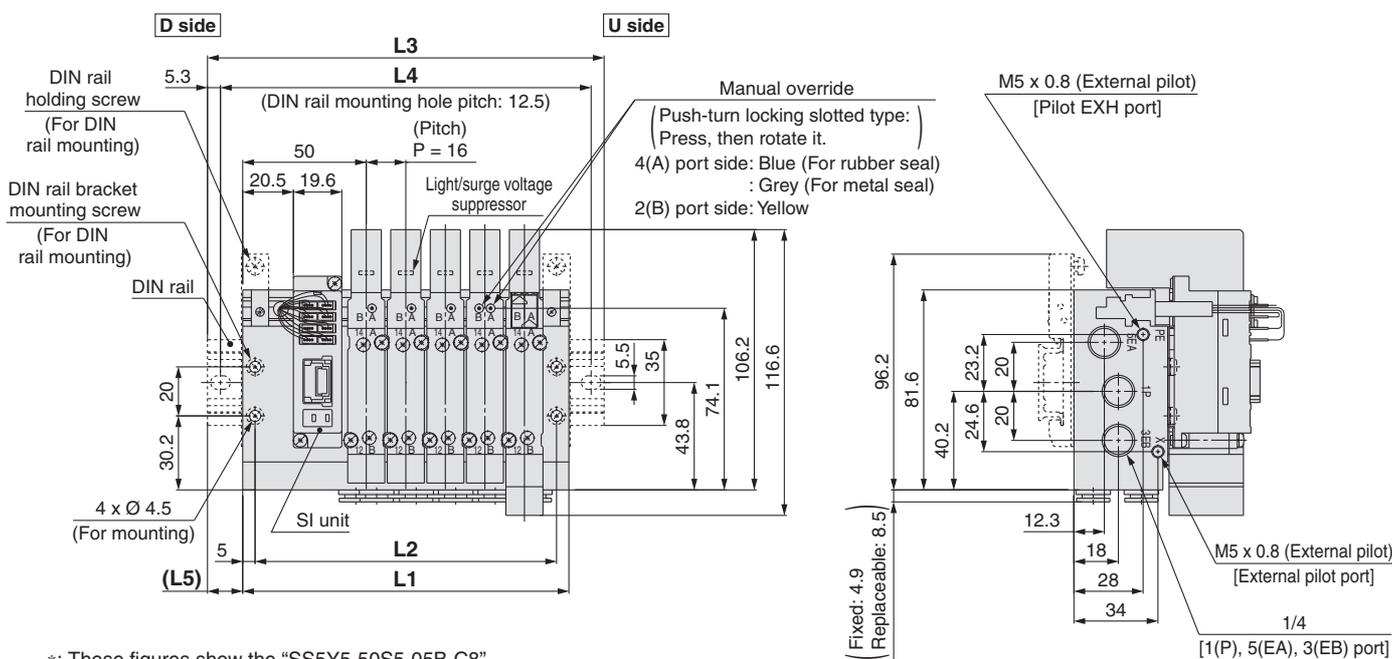
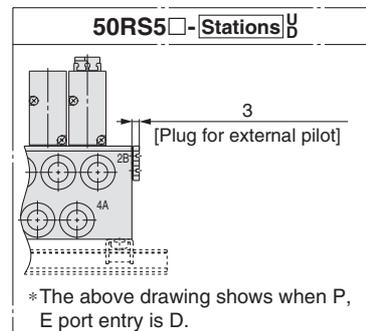
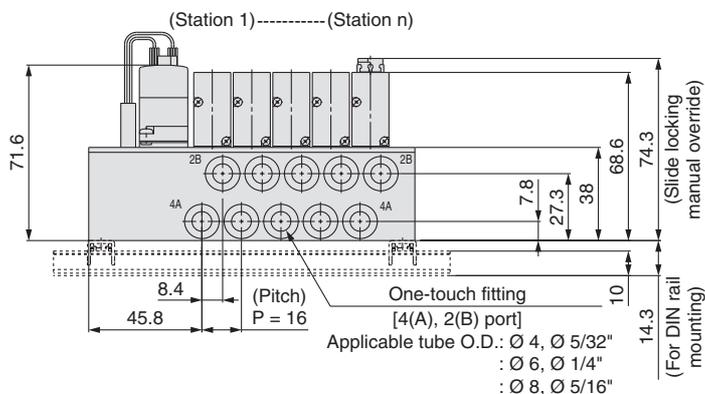
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	76	88.5	101	113.5	126	138.5	151	163.5	176	188.5	201
L2	68	80.5	93	105.5	118	130.5	143	155.5	168	180.5	193
L3	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	235.5
L4	100	112.5	125	137.5	150	162.5	175	187.5	200	212.5	225
L5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5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

# Series SY3000/5000/7000

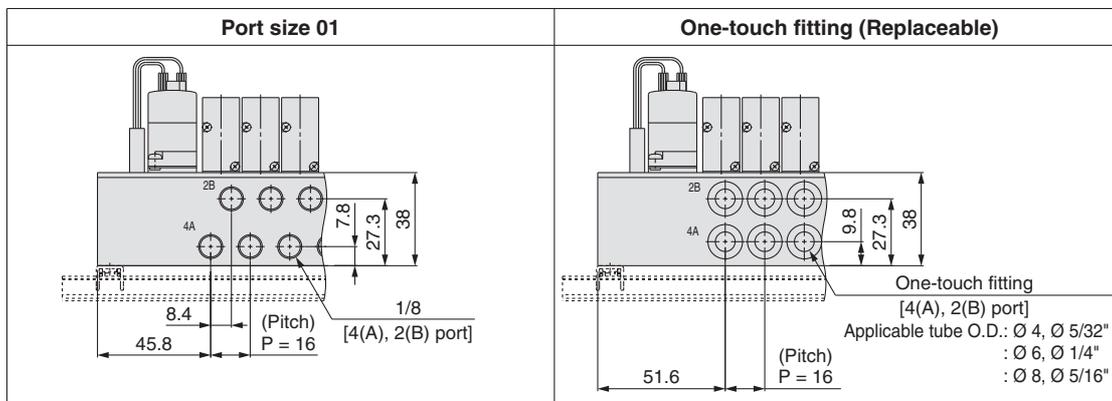
## Dimensions: Series SY5000

<b>Plug-in Metal Base</b>	<b>Type 50/Side Ported</b>
	<b>EX510</b>

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



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



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

Dimensions: Series **SY5000**

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

Plug-in Metal Base Type 50/Side Ported EX510

Valve

Plug-in Sub-plate

Plug-in Metal Base

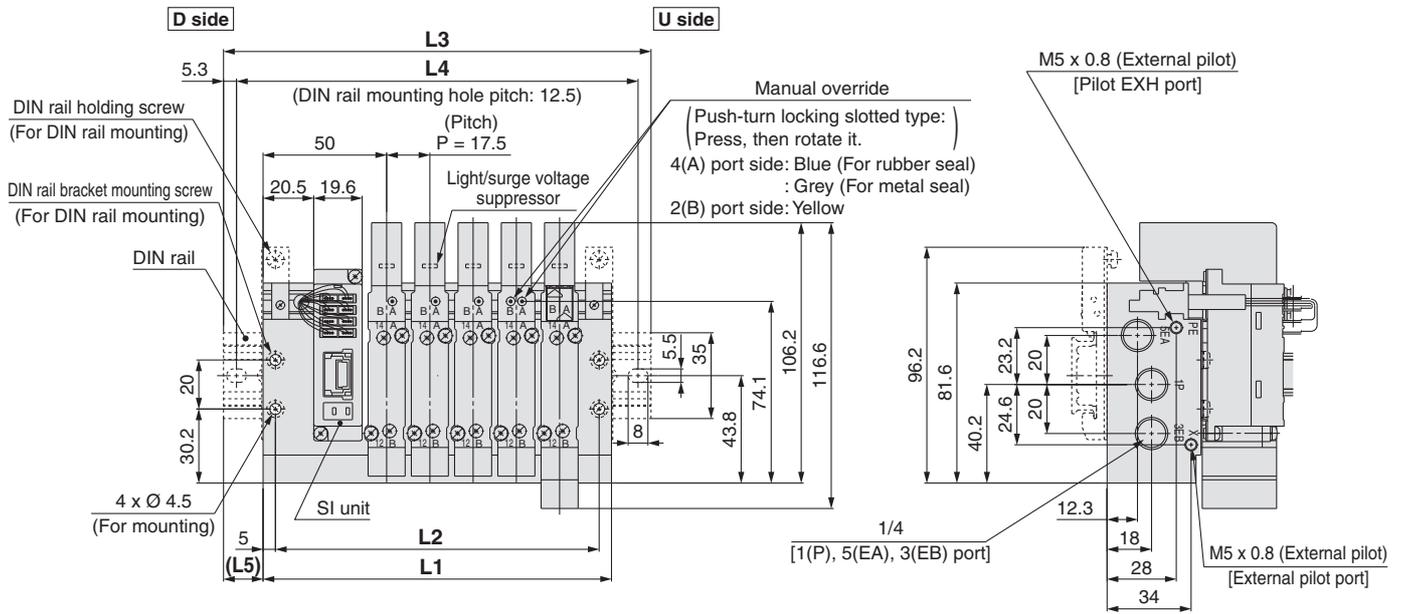
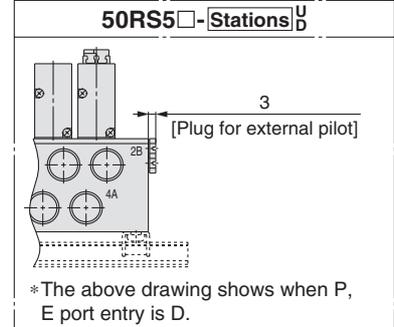
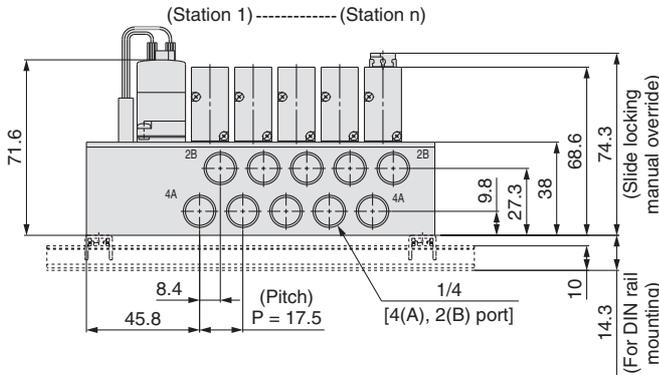
Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options



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

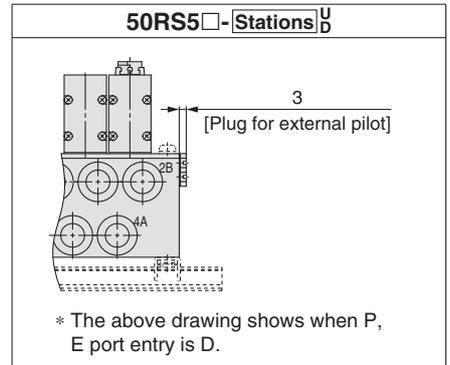
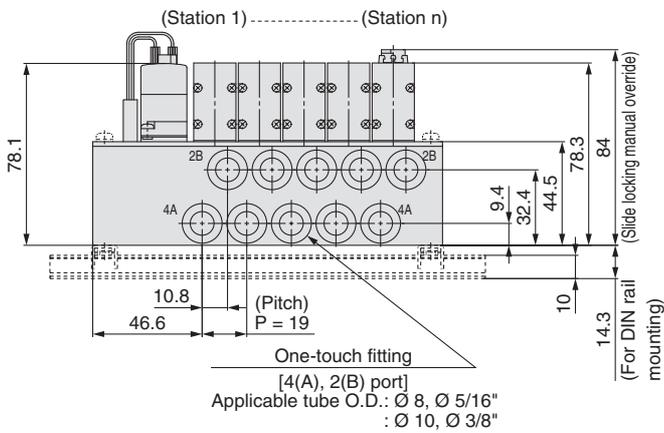
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	88.5	106	123.5	141	158.5	176	193.5	211	228.5	246	263.5
L2	78.5	96	113.5	131	148.5	166	183.5	201	218.5	236	253.5
L3	123	135.5	148	173	185.5	210.5	223	235.5	260.5	273	298
L4	112.5	125	137.5	162.5	175	200	212.5	225	250	262.5	287.5
L5	17.5	15	12.5	16	13.5	17.5	15	12.5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

# Series SY3000/5000/7000

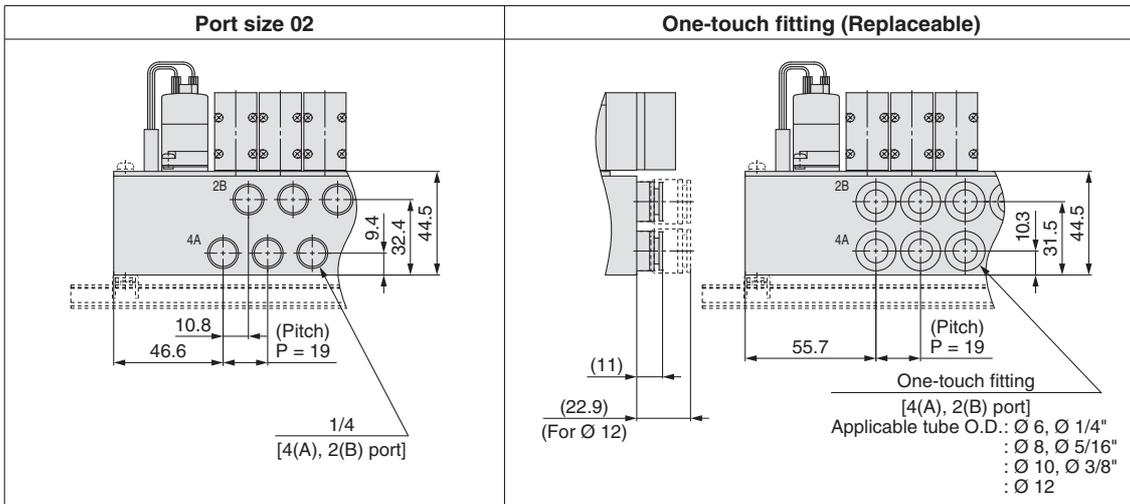
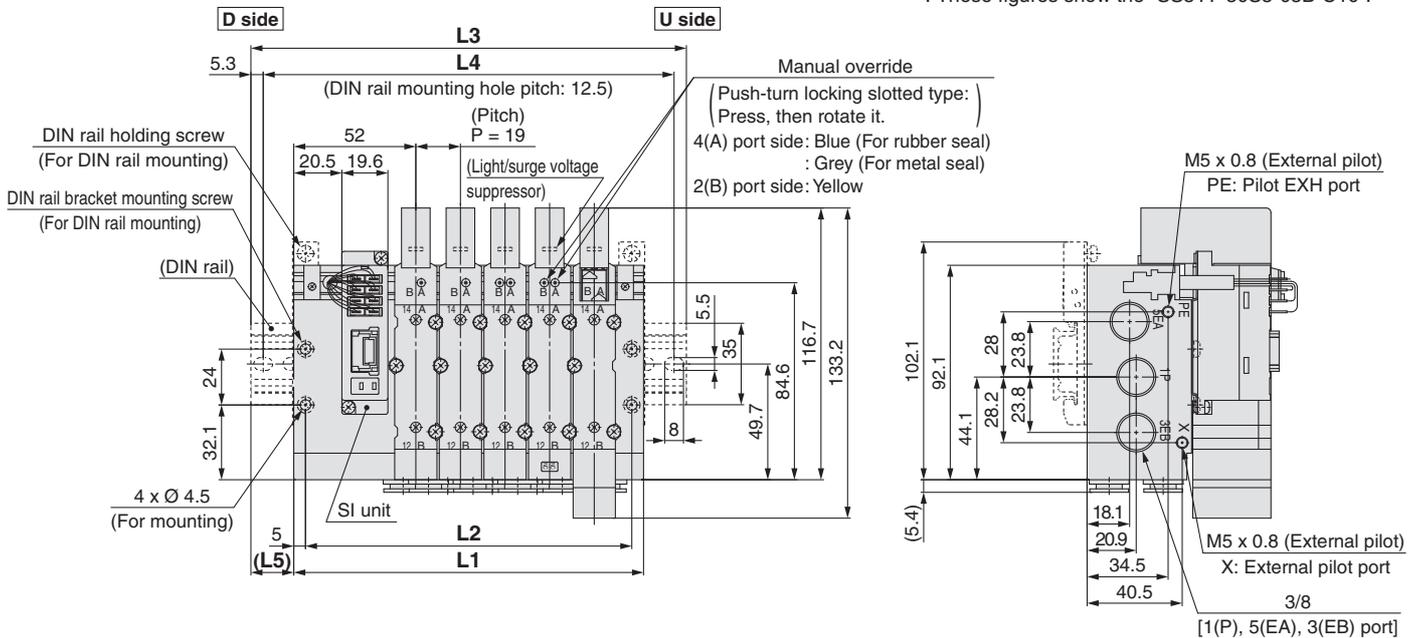
## Dimensions: Series SY7000

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

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



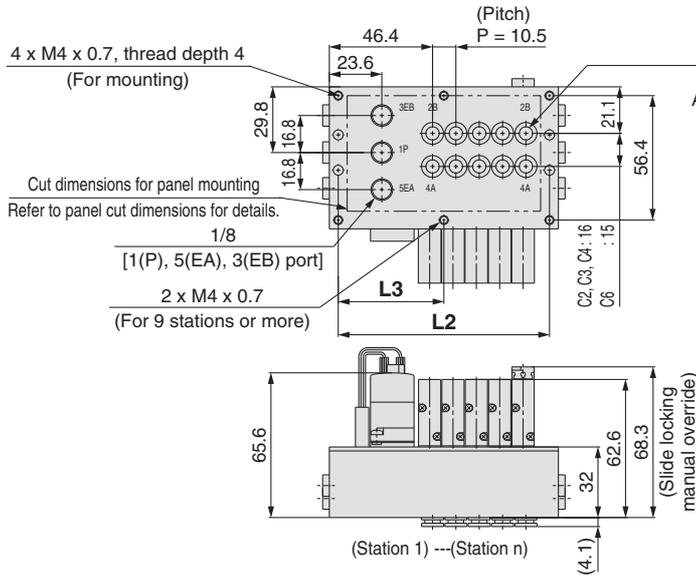
\*: These figures show the "SS5Y7-50S5-05B-C10".



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

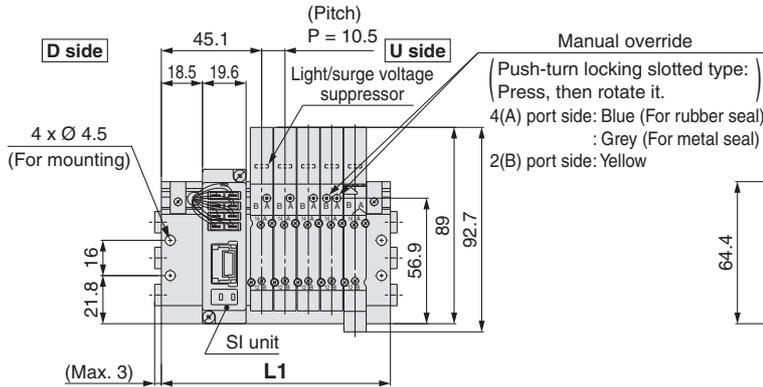
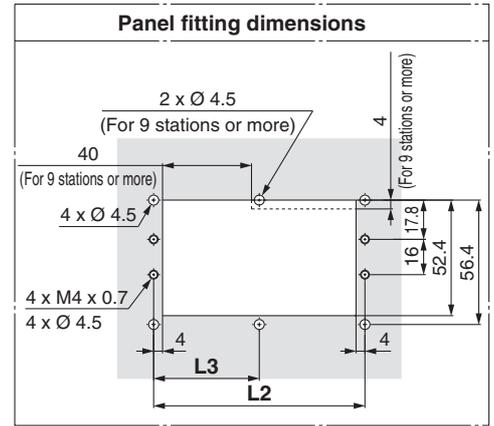
SS5Y3-51S5□-Stations D-M5, 01  
C□, N□  
KC□, KN□



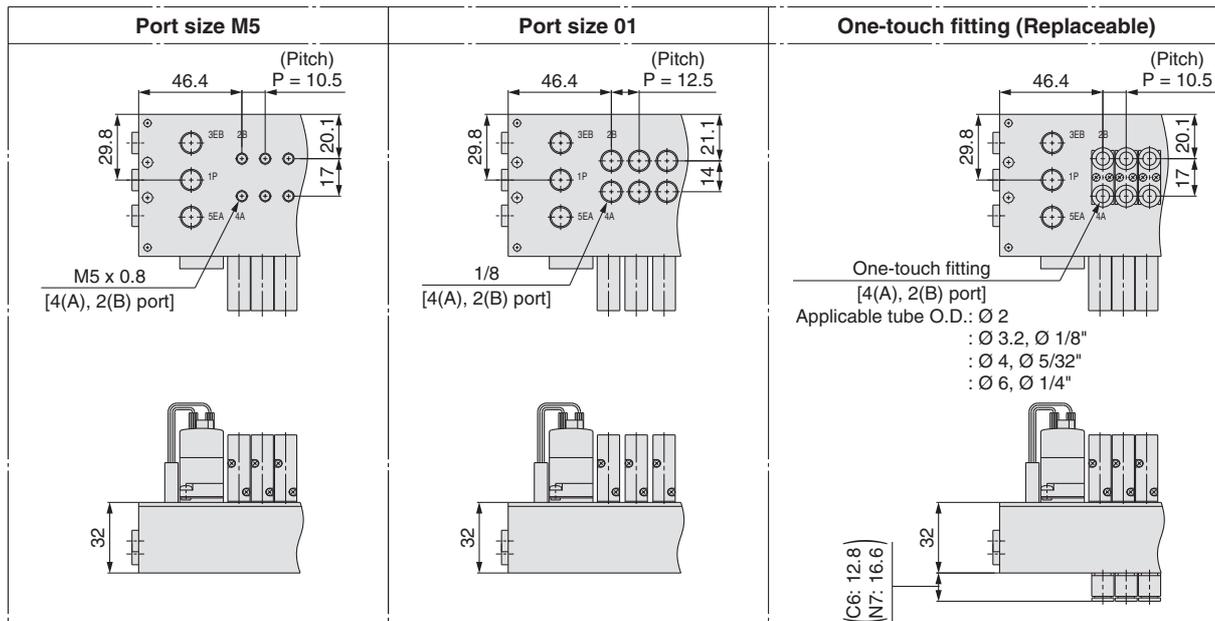
One-touch fitting [4(A), 2(B) port]

Applicable tube O.D.: Ø 2

- Ø 3.2, Ø 1/8"
- Ø 4, Ø 5/32"
- Ø 6, Ø 1/4"



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



Port Size M5, 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

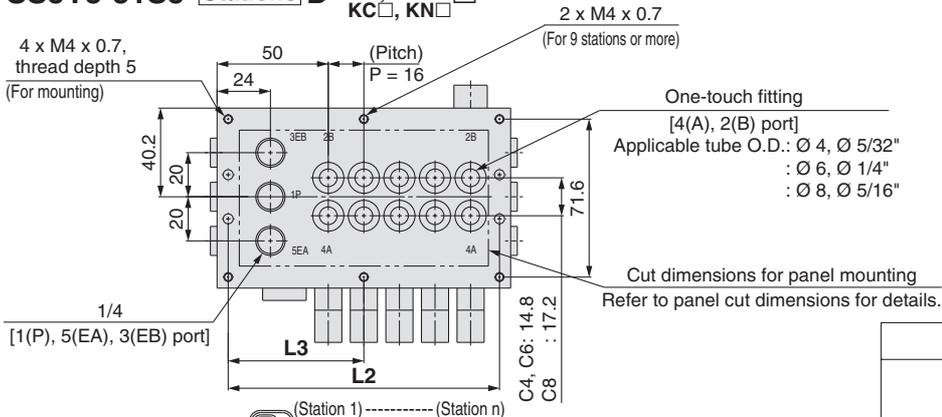
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	76	88.5	101	113.5	126	138.5	151	163.5	176	188.5	201
L2	68	80.5	93	105.5	118	130.5	143	155.5	168	180.5	193
L3	—	—	—	—	—	—	—	77.8	84	90.3	96.5

# Series SY3000/5000/7000

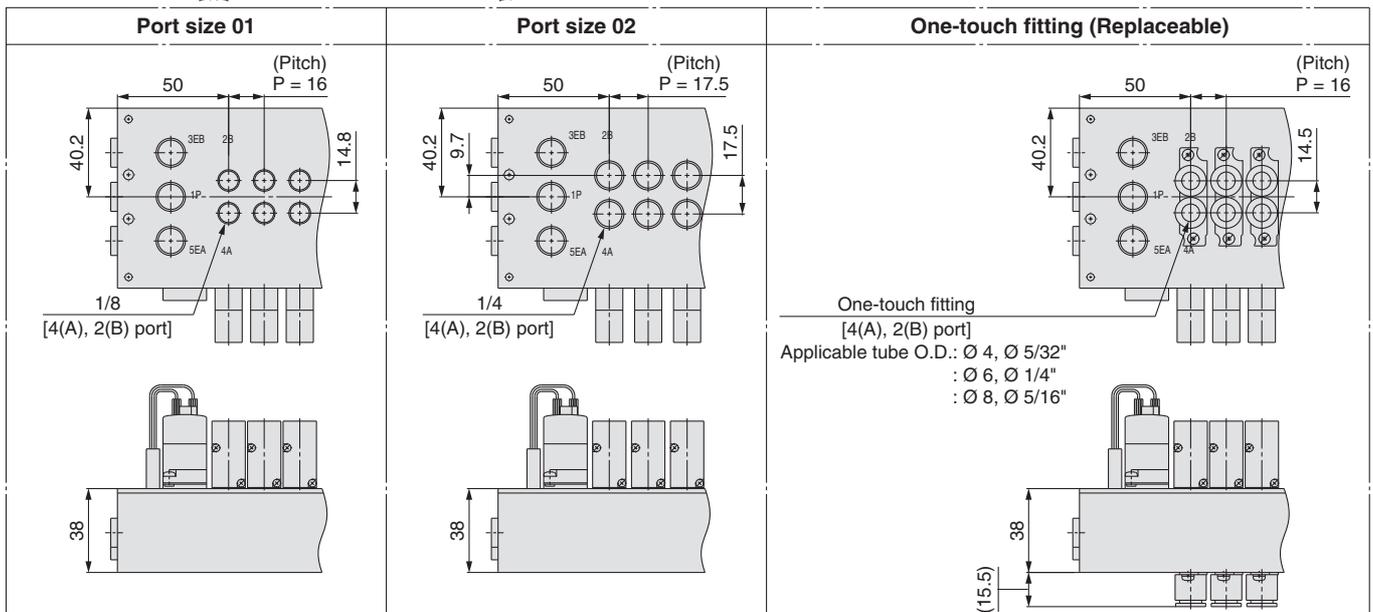
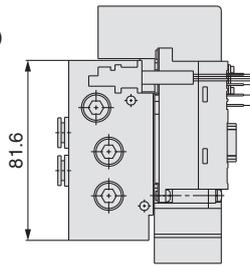
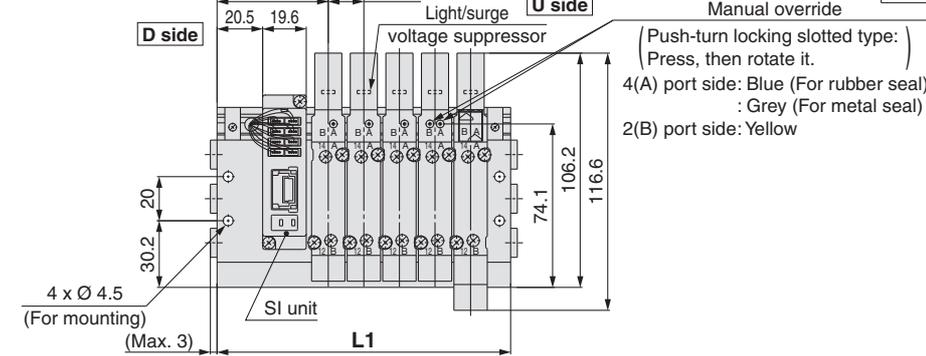
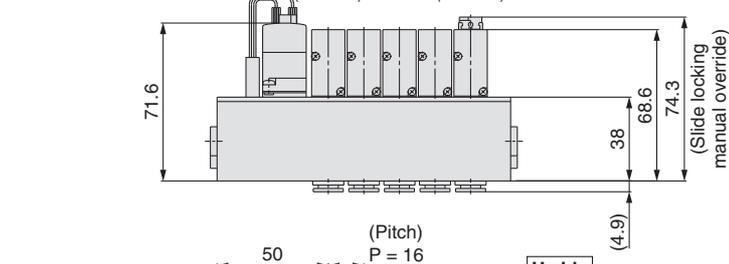
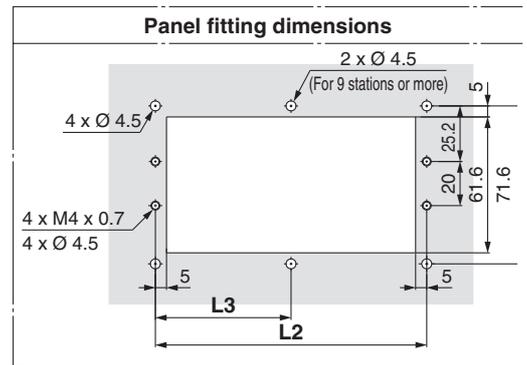
**Plug-in Metal Base** Type 51/Bottom Ported  
EX510

## Dimensions: Series SY5000

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



∗: 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

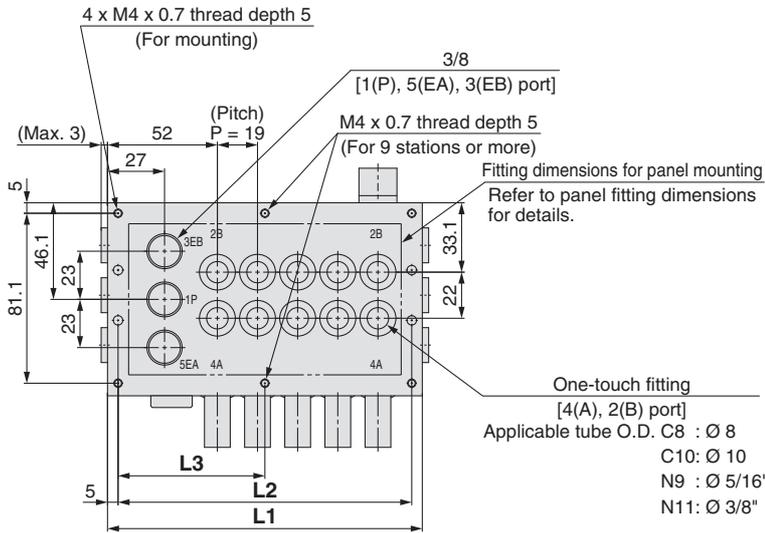
### Port Size 02

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

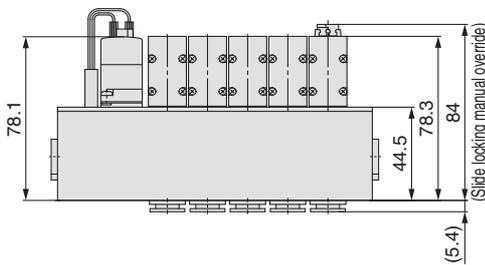
Dimensions: Series SY7000

Plug-in Metal Base Type 51/Bottom Ported EX510

SS5Y7-51S5□-Stations D-02 C□, N□, KN□ (D)

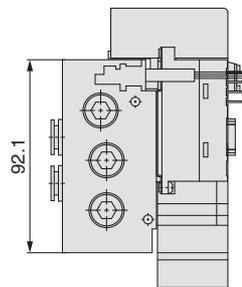
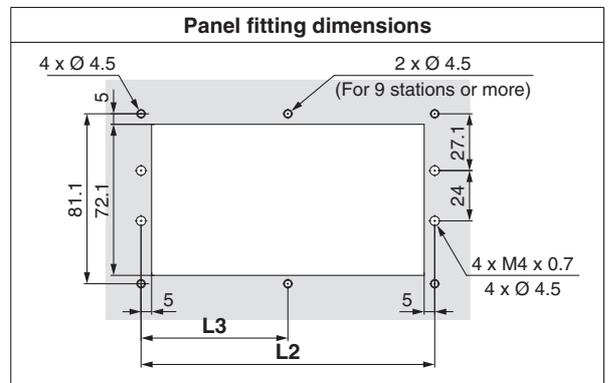
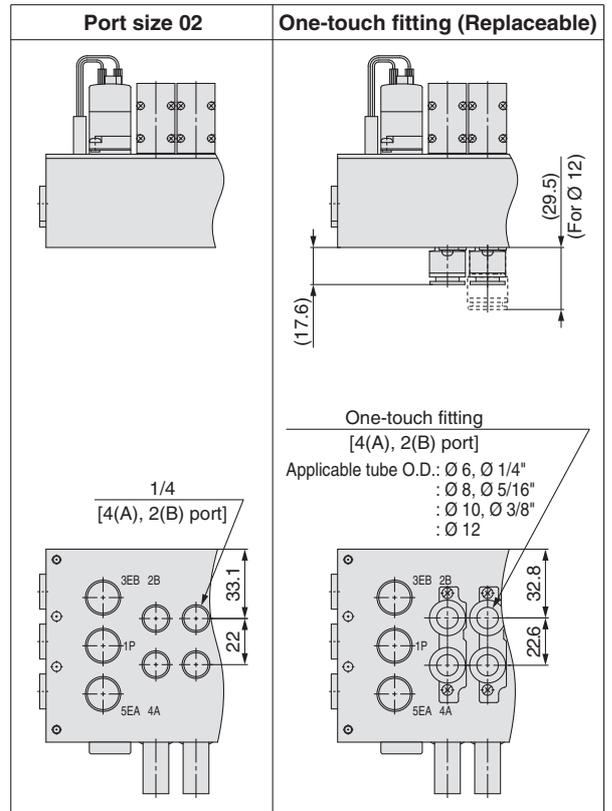
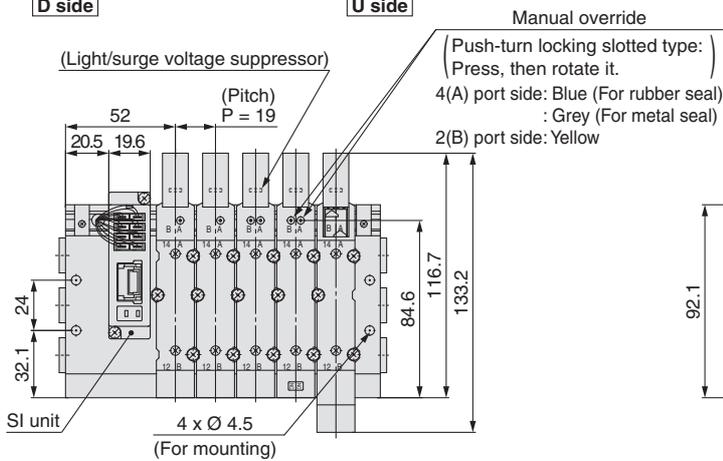


(Station 1) ..... (Station n)



D side

U side



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

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

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52 Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12 Manifold Exploded View

One-touch Fittings/ Plug Assembly Part No.

Manifold Options

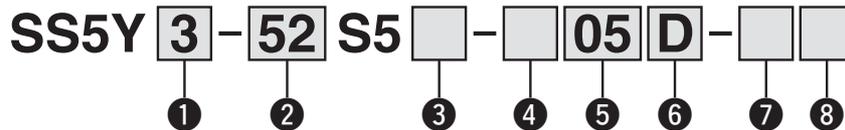
Type 52  
Top Ported

Plug-in Metal Base EX510

# 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

—	Positive common
N	Negative common

### 4 Wiring type

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

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

### 5 Valve stations

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

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

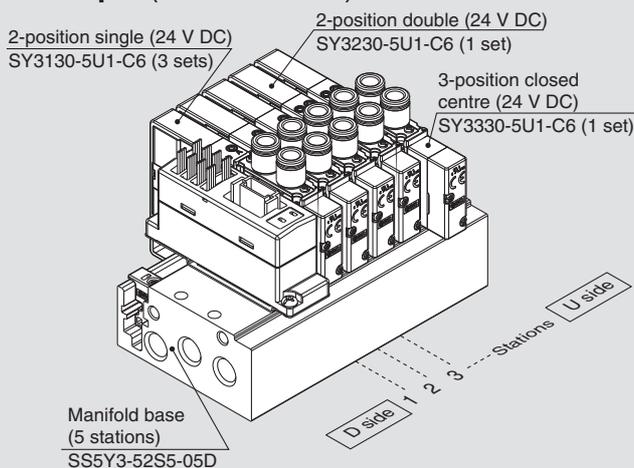
### 6 P, E port entry

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

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

## How to Order Manifold Assembly

### Example (SS5Y3-52S5-□)



SS5Y3-52S5-05D ..... 1 set (Type 52 5-station manifold base part no.)  
 \*SY3130-5U1-C6 ..... 3 sets (2-position single part no.)  
 \*SY3230-5U1-C6 ..... 1 set (2-position double part no.)  
 \*SY3330-5U1-C6 ..... 1 set (3-position closed centre part no.)  
 ↳ The asterisk denotes the symbol for assembly. Prefix it to the part numbers of the valve etc.

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

### 7 Thread type

—	Rc
00F	G
00N	NPT
00T	NPTF

### 8 Mounting

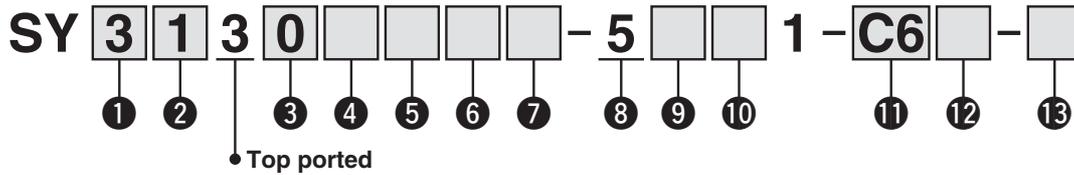
—	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	For 3 stations
:	:
D12	For 12 stations

Specify a longer rail than the standard length.

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

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

## How to Order Valves (With mounting screw) Refer to page 13 for valve specifications.



### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type of actuation

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

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

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

—	Internal pilot
R	External pilot

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

—	None
H	Built-in

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

### 6 Pilot valve option

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

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

### 7 Coil type

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

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

### 8 Rated voltage

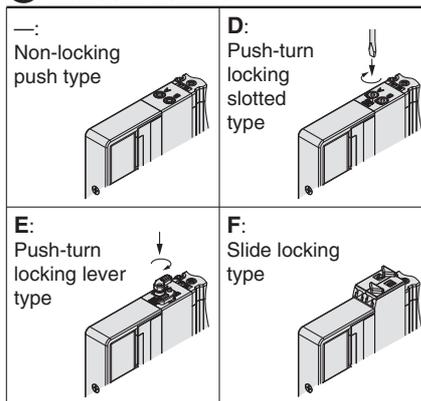
5	24 V DC
---	---------

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

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

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

### 10 Manual override



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

### 11 A, B port size

#### Thread piping

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

#### One-touch fitting (Metric)

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

#### One-touch fitting (Inch)

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

### 12 Thread type

—	Rc
F	G
N	NPT
T	NPTF

\*: Only — is available for M5.

### 13 Type of mounting screw

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

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

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

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

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

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

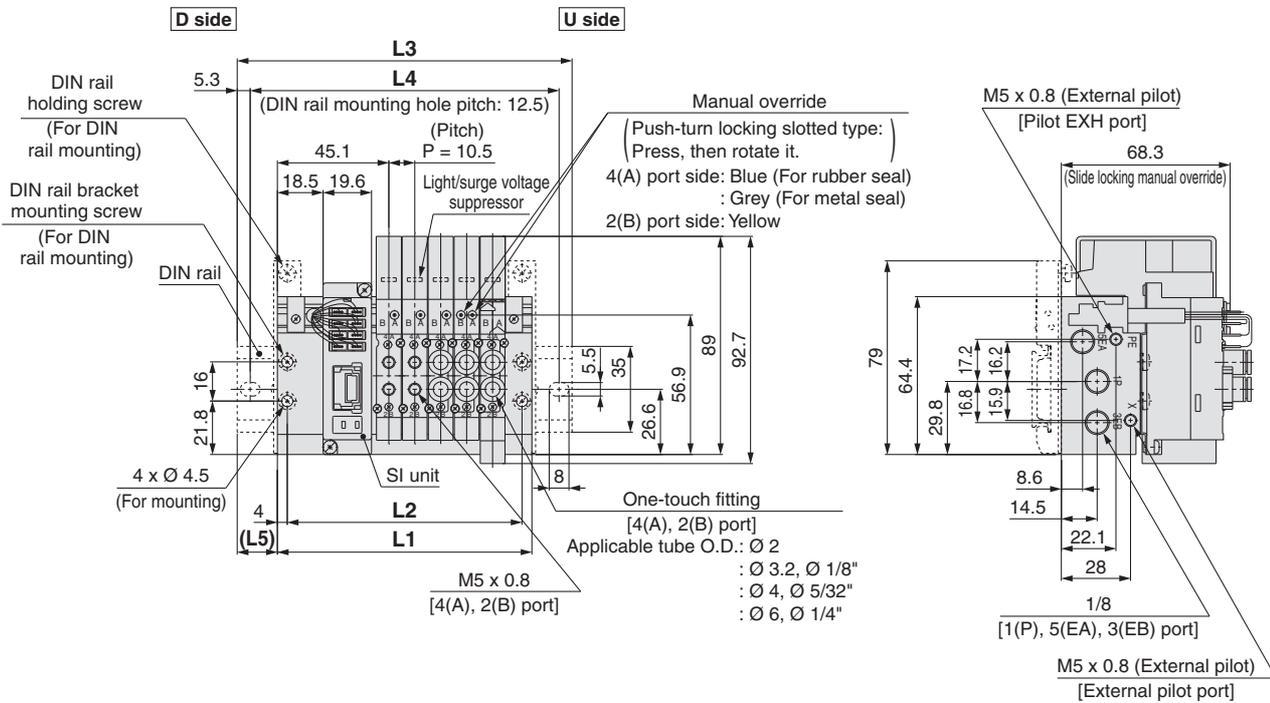
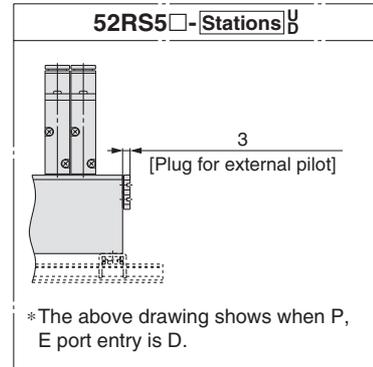
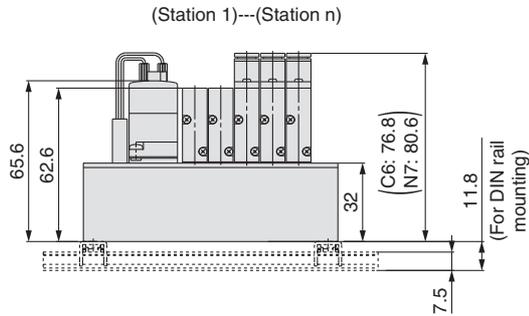
# Series SY3000/5000/7000

## Dimensions: Series SY3000

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

Plug-in  
Metal Base

Type 52/Top Ported  
EX510



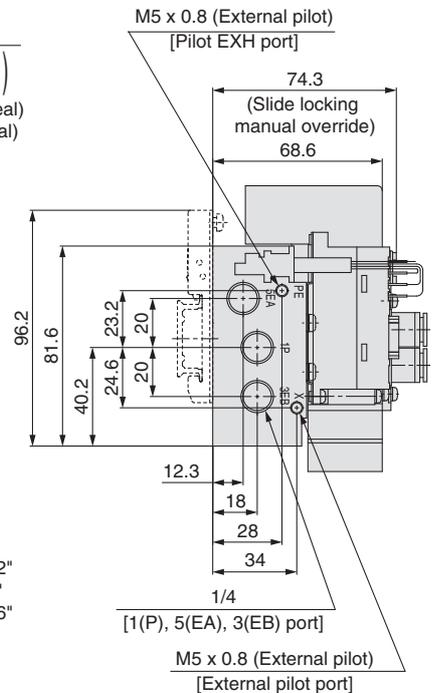
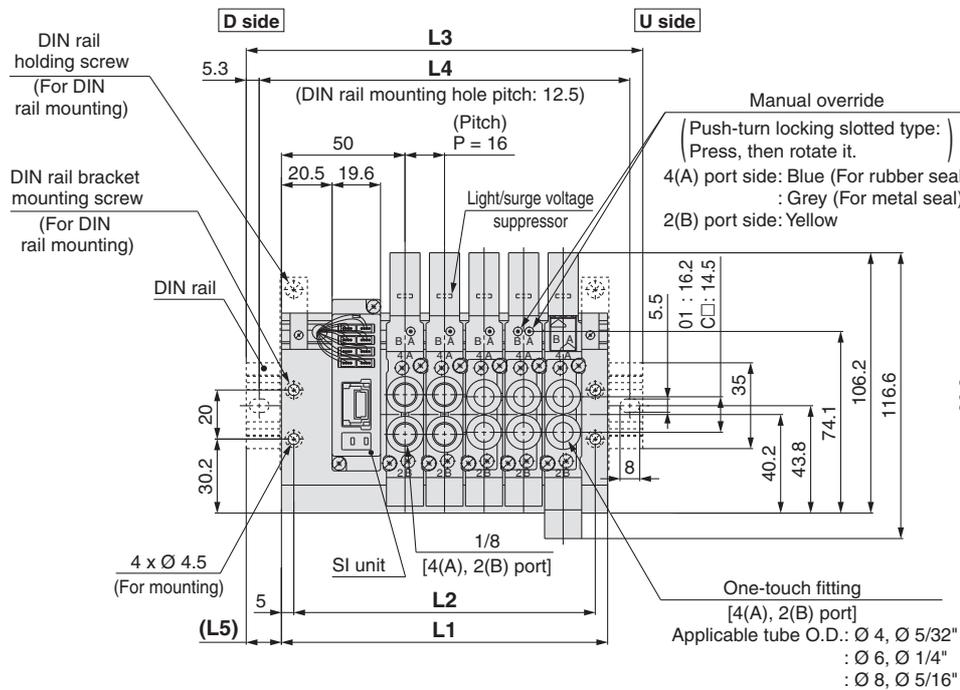
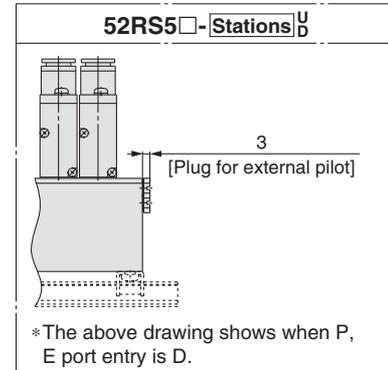
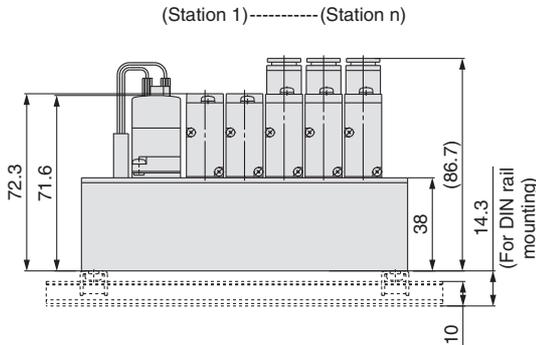
\*: These figures show the "SS5Y3-52S5-05B".

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

Dimensions: Series **SY5000**

Plug-in Metal Base Type 52/Top Ported  
EX510

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



\*: These figures show the "SS5Y5-52S5-05B".

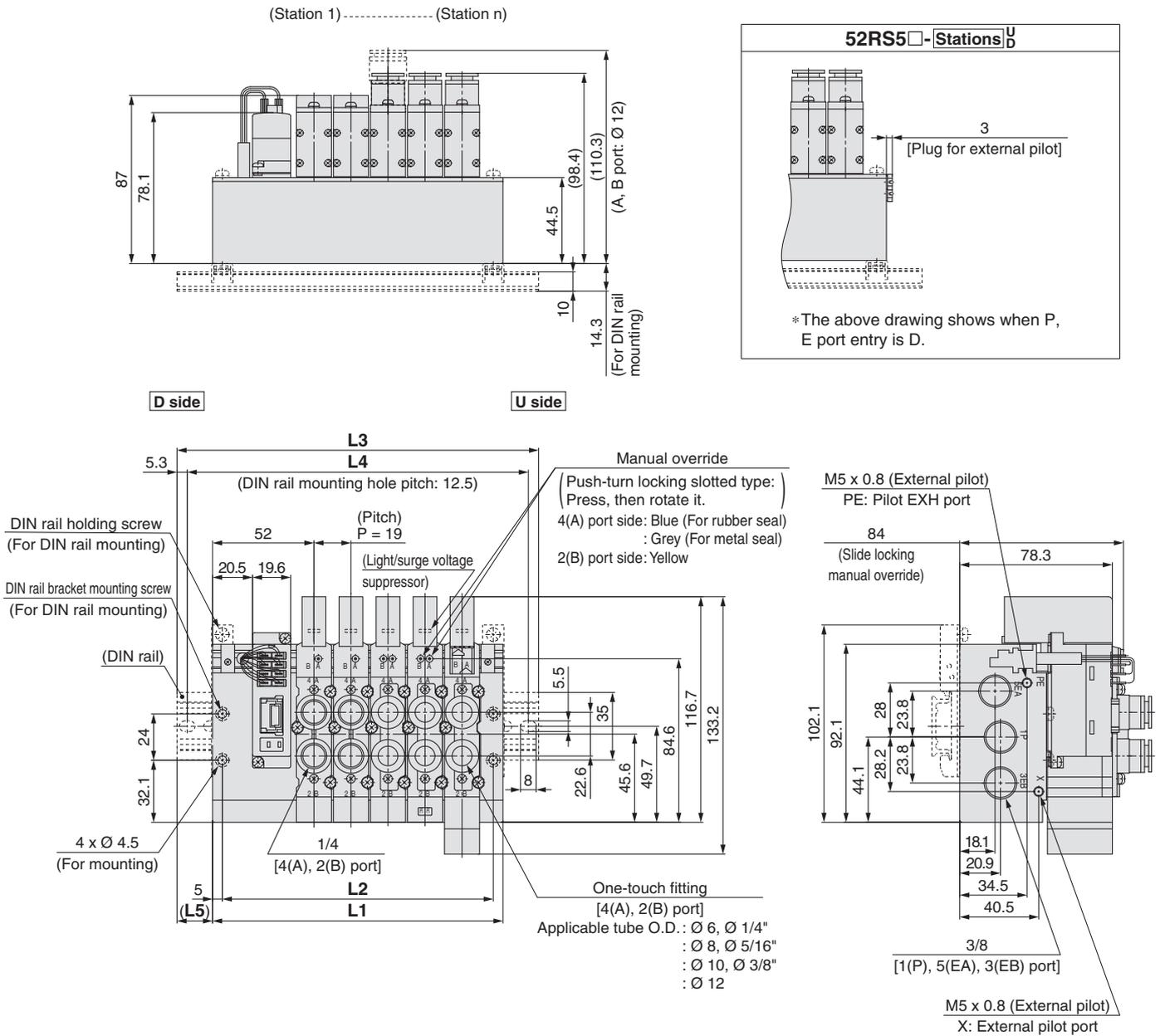
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	84	100	116	132	148	164	180	196	212	228	244
L2	74	90	106	122	138	154	170	186	202	218	234
L3	110.5	135.5	148	160.5	173	198	210.5	223	248	260.5	273
L4	100	125	137.5	150	162.5	187.5	200	212.5	237.5	250	262.5
L5	13.5	18	16	14.5	12.5	17	15.5	13.5	18	16.5	14.5

# 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)



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

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

Manifold Options

One-touch Fittings/  
Plug Assembly Part No.

Type 10, 11, 12  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 50, 51, 52  
Manifold Exploded View

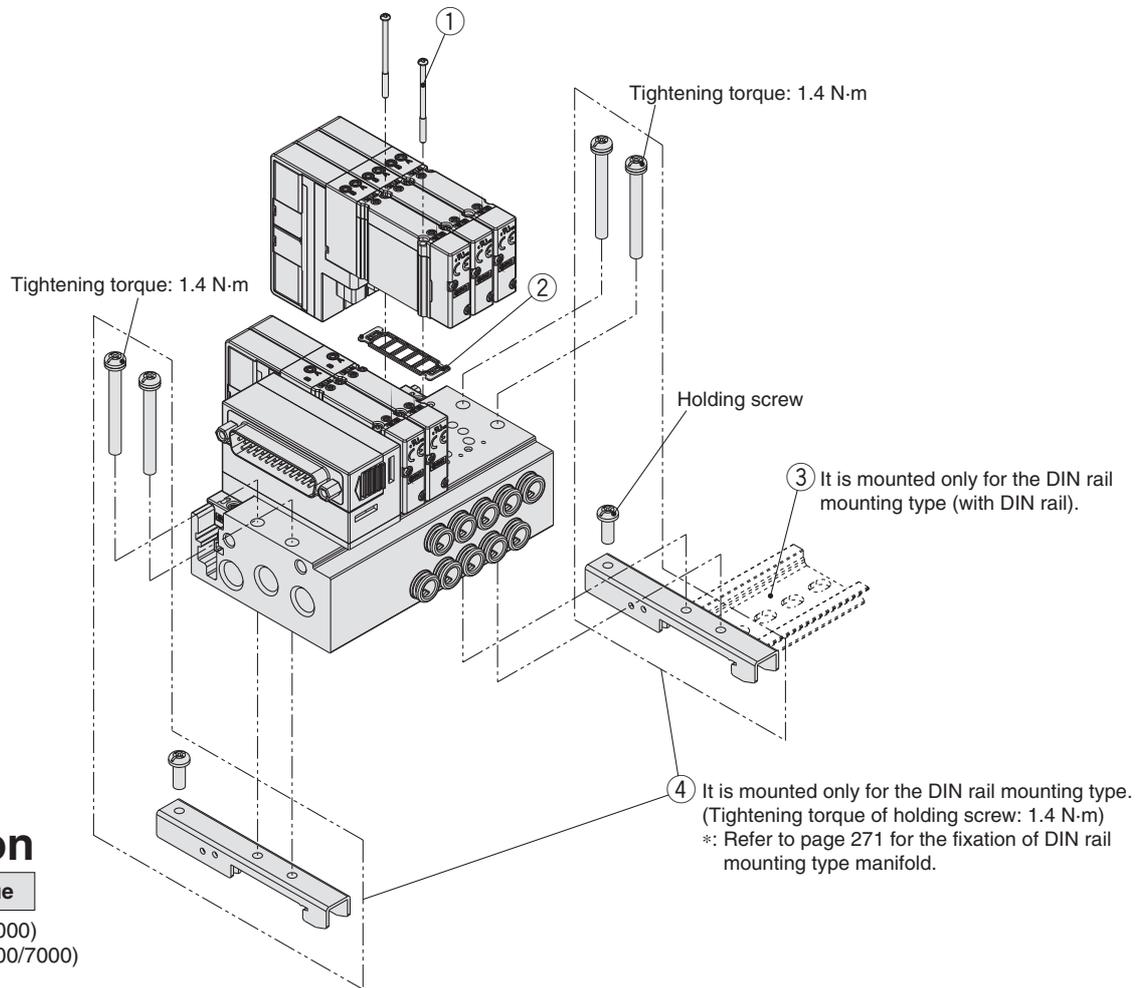
Plug-in Metal Base

Plug-in Sub-plate

Valve

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

## Plug-in Metal Base Manifold Exploded View



### ⚠ Caution

#### Tightening torque

M2: 0.16 N·m (SY3000)  
M3: 0.8 N·m (SY5000/7000)

### Manifold Parts No.

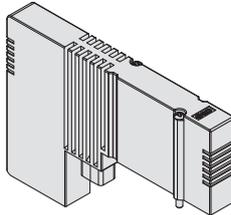
No.	Description		Part no.			Note
			SY3000	SY5000	SY7000	
①	Valve mounting screw	Round head combination screw	SY3000-23-24A (M2 x 32)	SY5000-221-1A (M3 x 32.5)	SY7000-221-1A (M3 x 36.5)	Part numbers shown on the left are for 10 valves (20 pcs.). (30 pcs. for the SY7000)
		Hexagon socket head cap screw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

## Manifold Parts No.

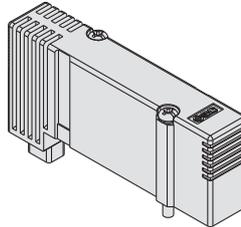
### Blanking plate assembly (With mounting screw)

Used when expecting valve additions, or for maintenance.

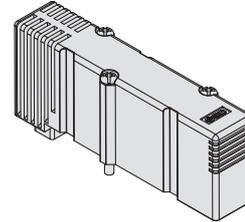
A structure to prevent screws falling out is in place on the blanking plate, making it much harder for the mounting screws to fall out.



SY30M-26-2A (-B)



SY50M-26-2A (-B)



SY70M-26-2A (-B)

Refer to pages 260, 262, 264 for dimensions.

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

### How to Order Blanking Plate Assembly

SY    0M-26-2A-  

• Series

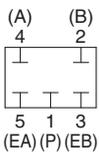
3	SY3000
5	SY5000
7	SY7000

• Option for mounting

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

• Base type

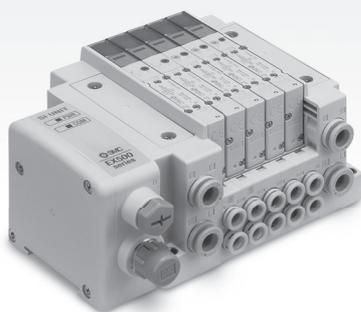
2	For plug-in metal base
---	------------------------



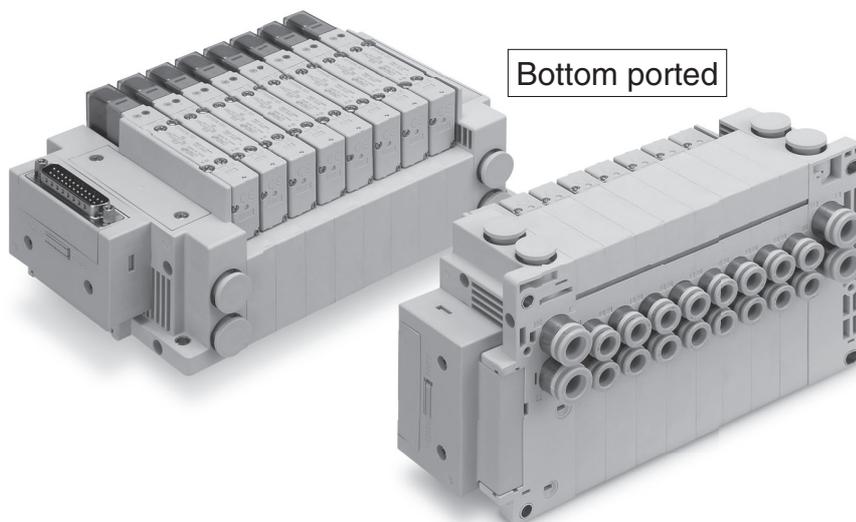
Circuit diagram



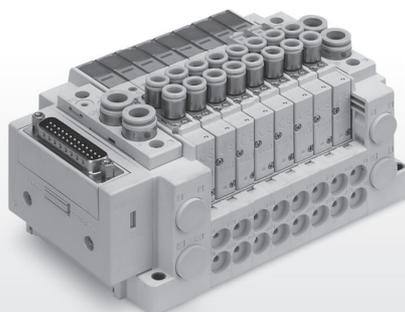
# Plug-in Connector Connecting Base



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)	S3□ type (EX120)
<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>	1(P), 3/5(E) port	<b>SY3000</b>	Ø 8 One-touch fitting Ø 5/16" One-touch fitting									
		<b>SY5000</b>	Ø 10 One-touch fitting Ø 3/8" One-touch fitting									
		<b>SY7000</b>	Ø 12 One-touch fitting Ø 1/2" One-touch fitting									
	4(A), 2(B) port	<b>SY3000</b>	Ø 2 One-touch fitting, Ø 3.2 One-touch fitting, Ø 4 One-touch fitting, Ø 6 One-touch fitting Ø 1/8" One-touch fitting, Ø 5/32" One-touch fitting, Ø 1/4" One-touch fitting									
		<b>SY5000</b>	Ø 4 One-touch fitting, Ø 6 One-touch fitting, Ø 8 One-touch fitting Ø 5/32" One-touch fitting, Ø 1/4" One-touch fitting, Ø 5/16" One-touch fitting									
		<b>SY7000</b>	Ø 6 One-touch fitting, Ø 8 One-touch fitting, Ø 10 One-touch fitting, Ø 12 One-touch fitting Ø 1/4" One-touch fitting, Ø 5/16" One-touch fitting, Ø 3/8" 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>\*1</sup>/Manifold Weight****Valve Seal Type: Rubber Seal**

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

**Valve Seal Type: Metal Seal**

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

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

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

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

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

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

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.

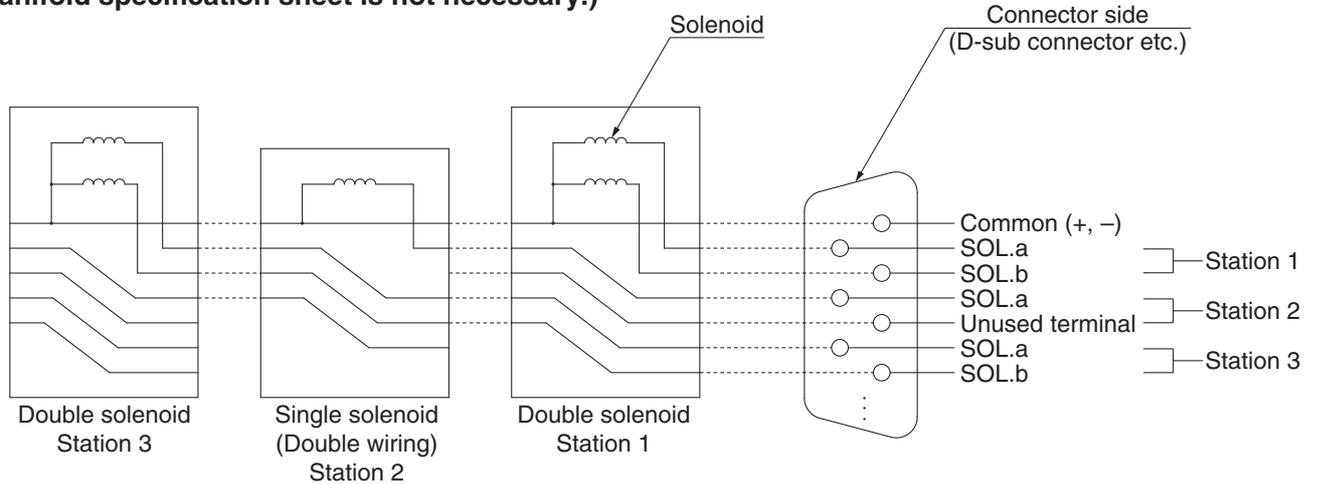
Manifold Options

# Series SY3000/5000/7000

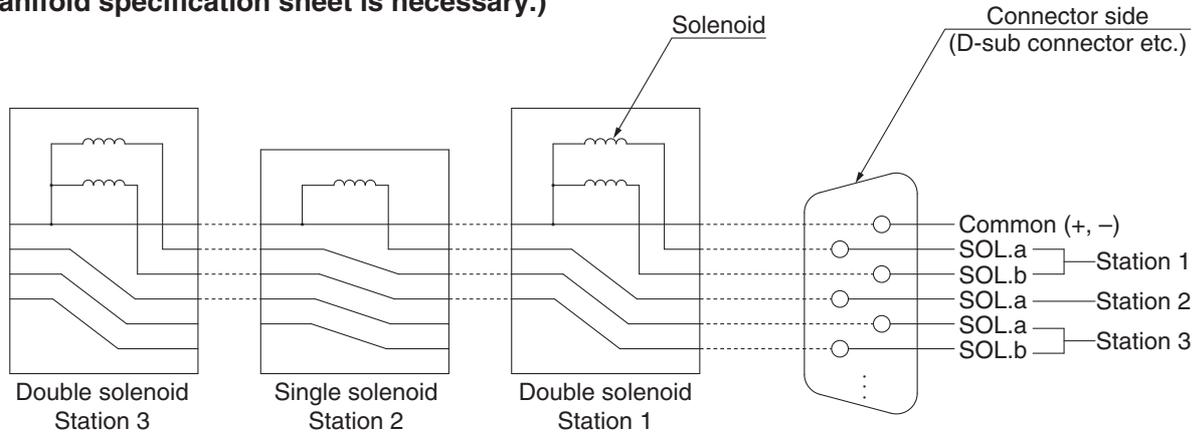
## Connector Wiring Layout

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

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



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



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

Manifold Options

One-touch Fittings/  
Plug Assembly Part No.

Type 10, 11, 12  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Metal Base

Plug-in Sub-plate

Valve

Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

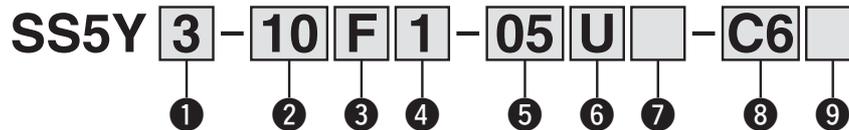
D-sub Connector Flat Ribbon Cable PC Wiring

# Series SY3000/5000/7000



## How to Order Manifold

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



### 1 Series

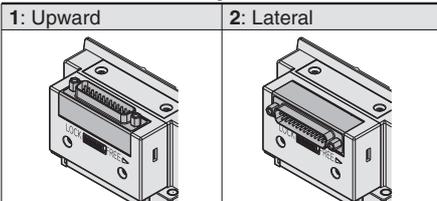
3	SY3000
5	SY5000
7	SY7000

### 2 Type

10	Side ported
11	Bottom ported*1

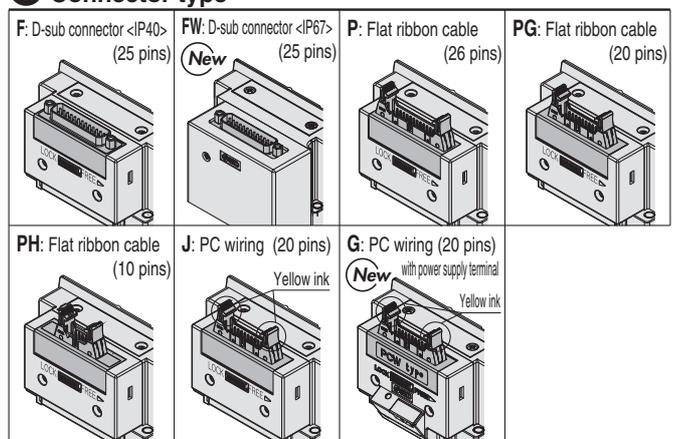
\*1: The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to "Plug-in Mixed Mounting Type Manifold" (from page 213).

### 4 Connector entry direction



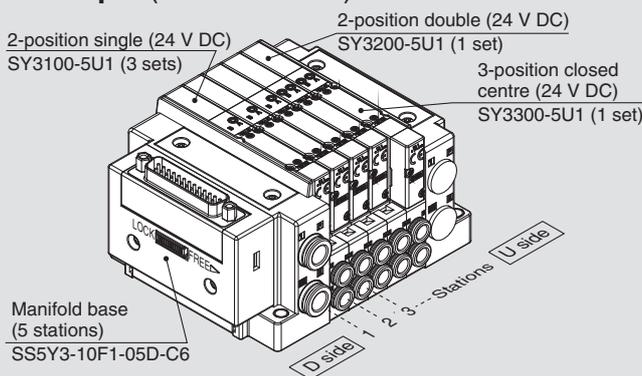
\*: The connector entry direction for connector type "FW" D-sub connector <IP67> can not be rotated. If it is necessary to change, order connector block assembly (page 231) separately.

### 3 Connector type



## How to Order Manifold Assembly

### Example (SS5Y3-10F1-□)



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

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

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

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

### 5 Valve stations

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

Symbol	Stations	Note
02	2 stations	Double wiring*1
∴	∴	
12	12 stations	Specified layout*2 (Available up to 24 solenoids)
∴	∴	
24	24 stations	Specified layout*2 (Available up to 24 solenoids)
∴	∴	

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

Symbol	Stations	Note
02	2 stations	Double wiring*1
∴	∴	
12	12 stations	Specified layout*2 (Available up to 24 solenoids)
∴	∴	
24	24 stations	Specified layout*2 (Available up to 24 solenoids)
∴	∴	

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

Symbol	Stations	Note
02	2 stations	Double wiring*1
∴	∴	
09	9 stations	Specified layout*2 (Available up to 18 solenoids)
∴	∴	
18	18 stations	Specified layout*2 (Available up to 18 solenoids)
∴	∴	

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

Symbol	Stations	Note
02	2 stations	Double wiring*1
∴	∴	
04	4 stations	Specified layout*2 (Available up to 8 solenoids)
∴	∴	
08	8 stations	Specified layout*2 (Available up to 8 solenoids)
∴	∴	

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

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

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

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

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

**6 P, E port entry**

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

**7 SUP/EXH block assembly**

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

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

**9 Mounting and Option**

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

**DIN Rail Option**

Direct mounting	
<b>0</b>	Without DIN rail (with bracket)
<b>3</b>	For 3 stations
⋮	⋮
<b>24</b>	For 24 stations

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

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

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

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

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

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

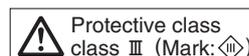
**A, B port size (Inch/One-touch fitting)**

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

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

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

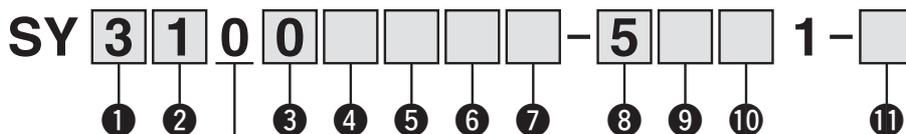
\*2: To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 250 to 252).



Valve  
Plug-in Sub-plate  
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

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type of actuation

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

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

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

—	Internal pilot
R	External pilot

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

—	None
H	Built-in

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

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

### 6 Pilot valve option

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

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

### 7 Coil type

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

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

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

### 8 Rated voltage

5	24 V DC
6	12 V DC

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

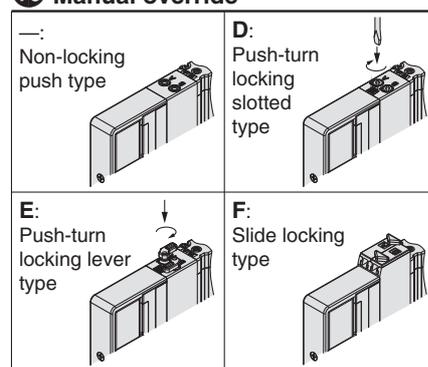
### 9 Light/surge voltage suppressor and common specification

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

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

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

### 10 Manual override



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

### 11 Type of mounting screw

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

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

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

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

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

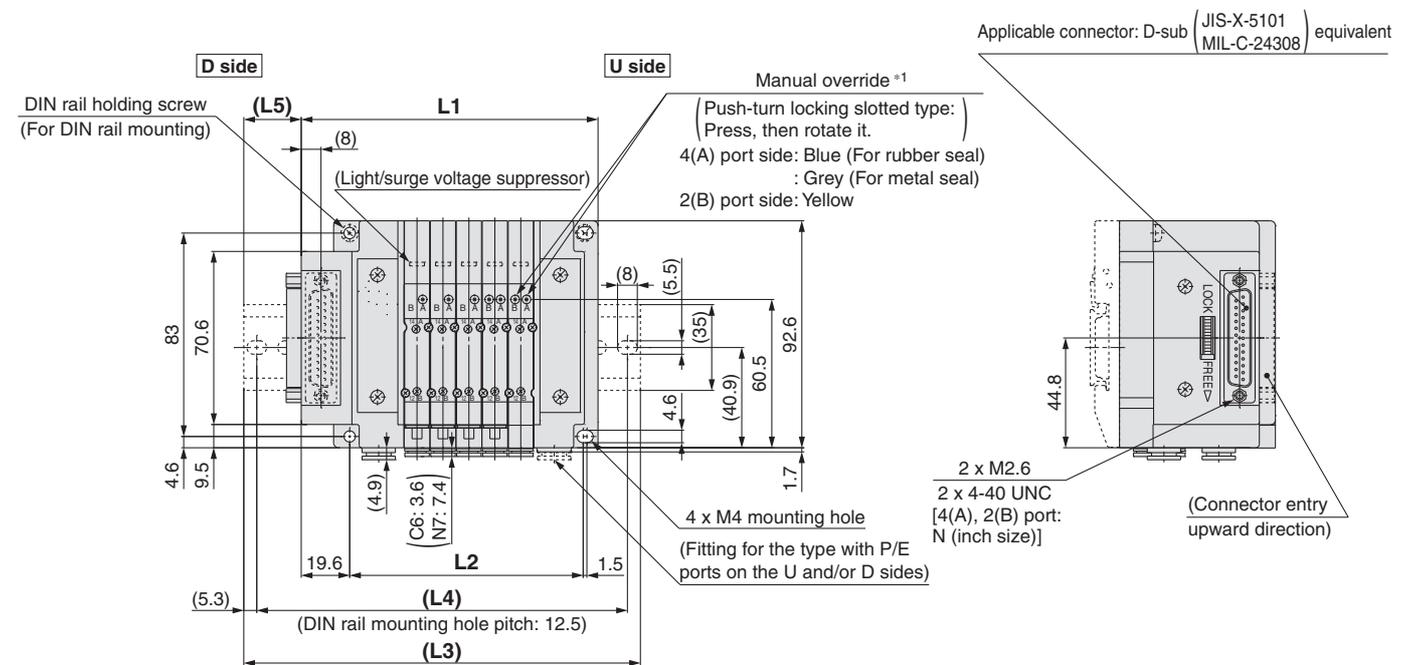
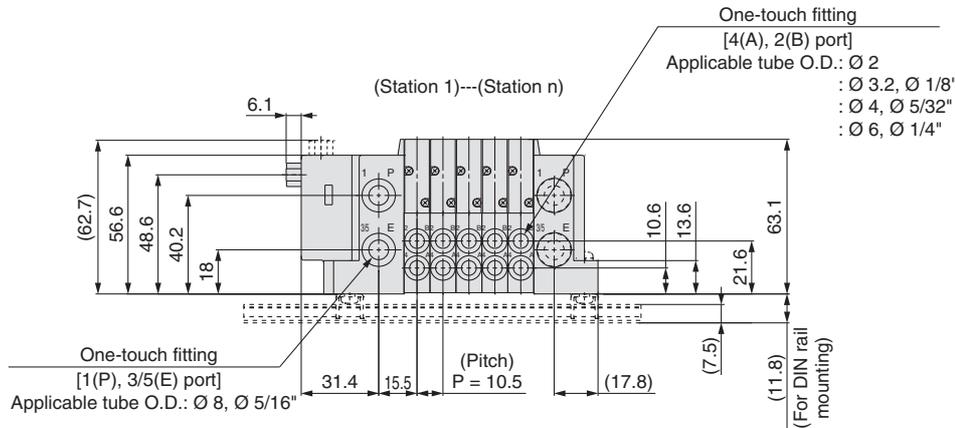
\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

Dimensions: Series **SY3000**

Plug-in  
Connector Connecting Base

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

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



\*1: Refer to page 205 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
 \*: These figures show the "SS5Y3-10F2-05D-C6".  
 \*: Refer to page 210 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
<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  
 Plug-in Sub-plate  
 Metal Base  
 Plug-in  
 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

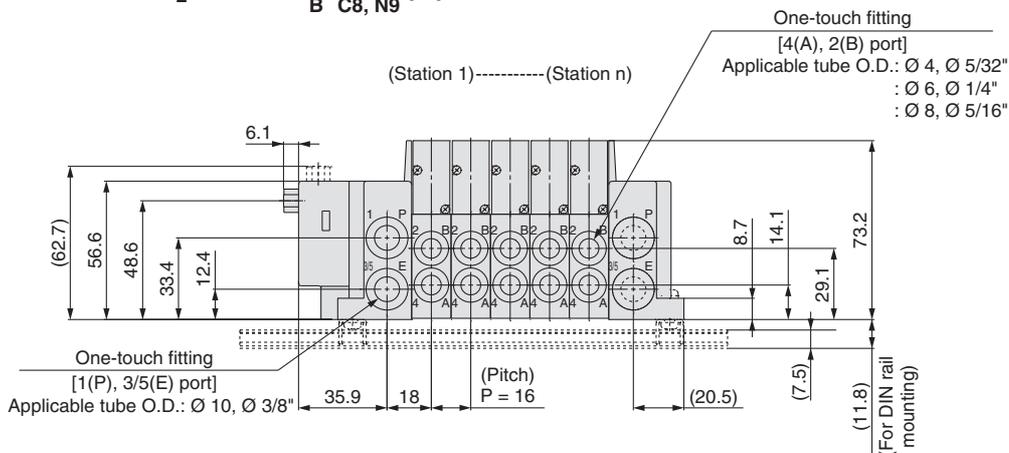
# Series SY3000/5000/7000

## Dimensions: Series SY5000

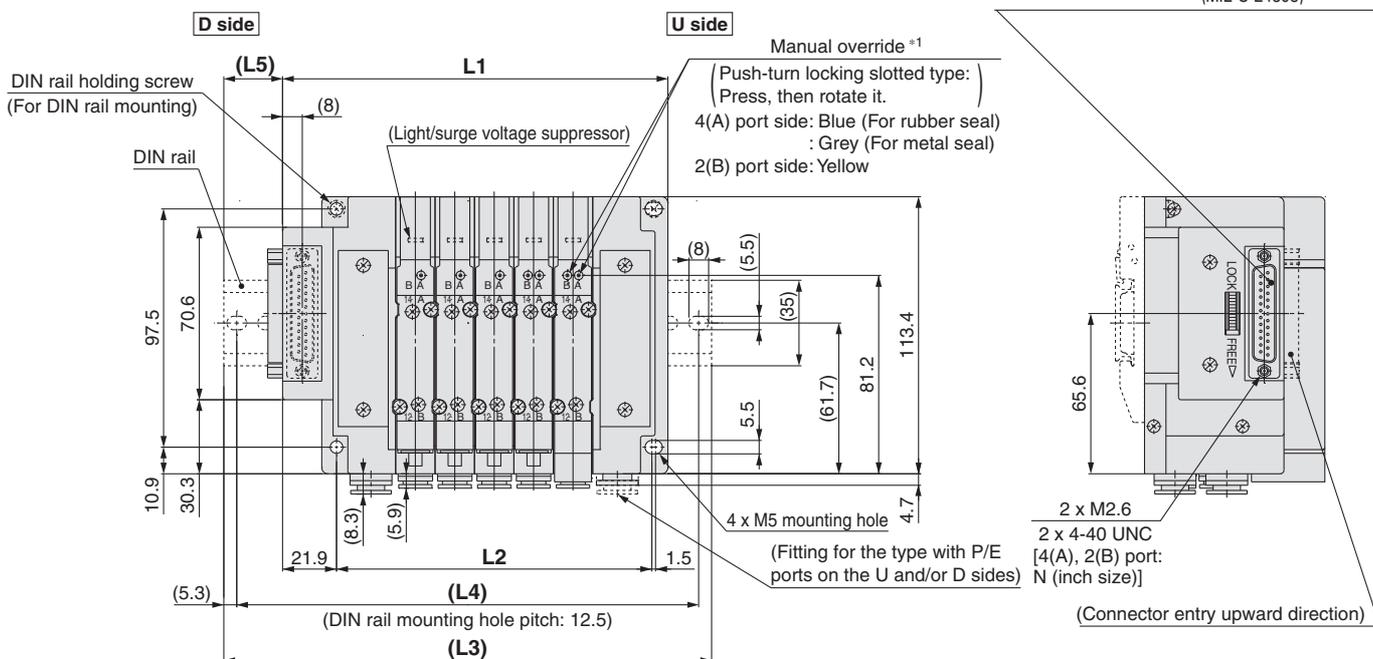
## Plug-in Connector Connecting Base

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

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



Applicable connector: D-sub  $\left( \begin{matrix} \text{JIS-X-5101} \\ \text{MIL-C-24308} \end{matrix} \right)$  equivalent



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

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

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

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



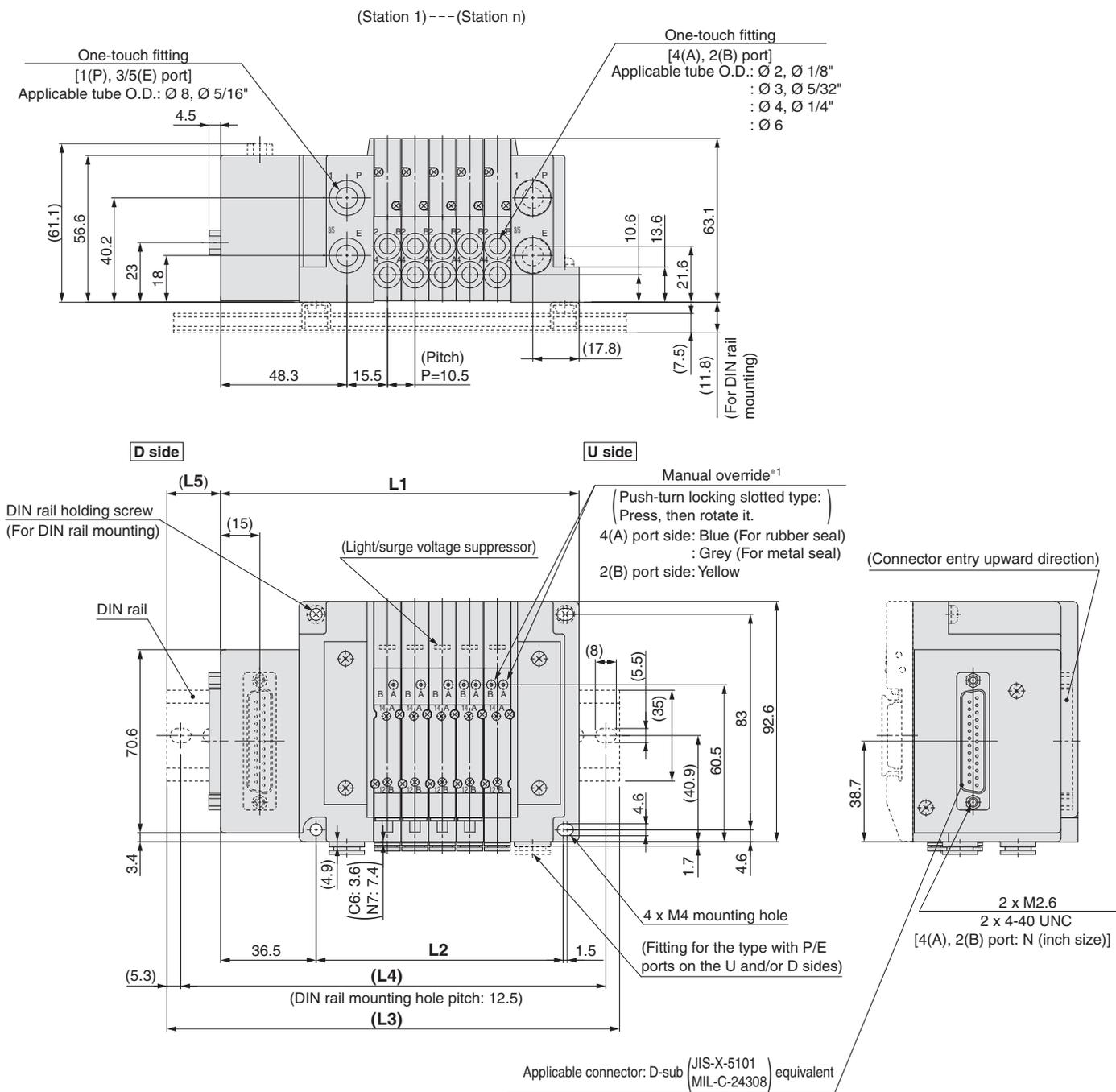
# Series SY3000/5000/7000

## Dimensions: Series SY3000

### Plug-in Connector Connecting Base

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

SS5Y3-10FW<sub>2</sub><sup>1</sup> - Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix}$  -  $\begin{matrix} \text{C}2 \\ \text{C}3, \text{N}1 \\ \text{C}4, \text{N}3 \\ \text{C}6, \text{N}7 \end{matrix}$  (D)



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

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

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

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

Dimensions: Series **SY5000**

Plug-in  
Connector Connecting Base

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

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

Valve

Plug-in Sub-plate

Plug-in Metal Base

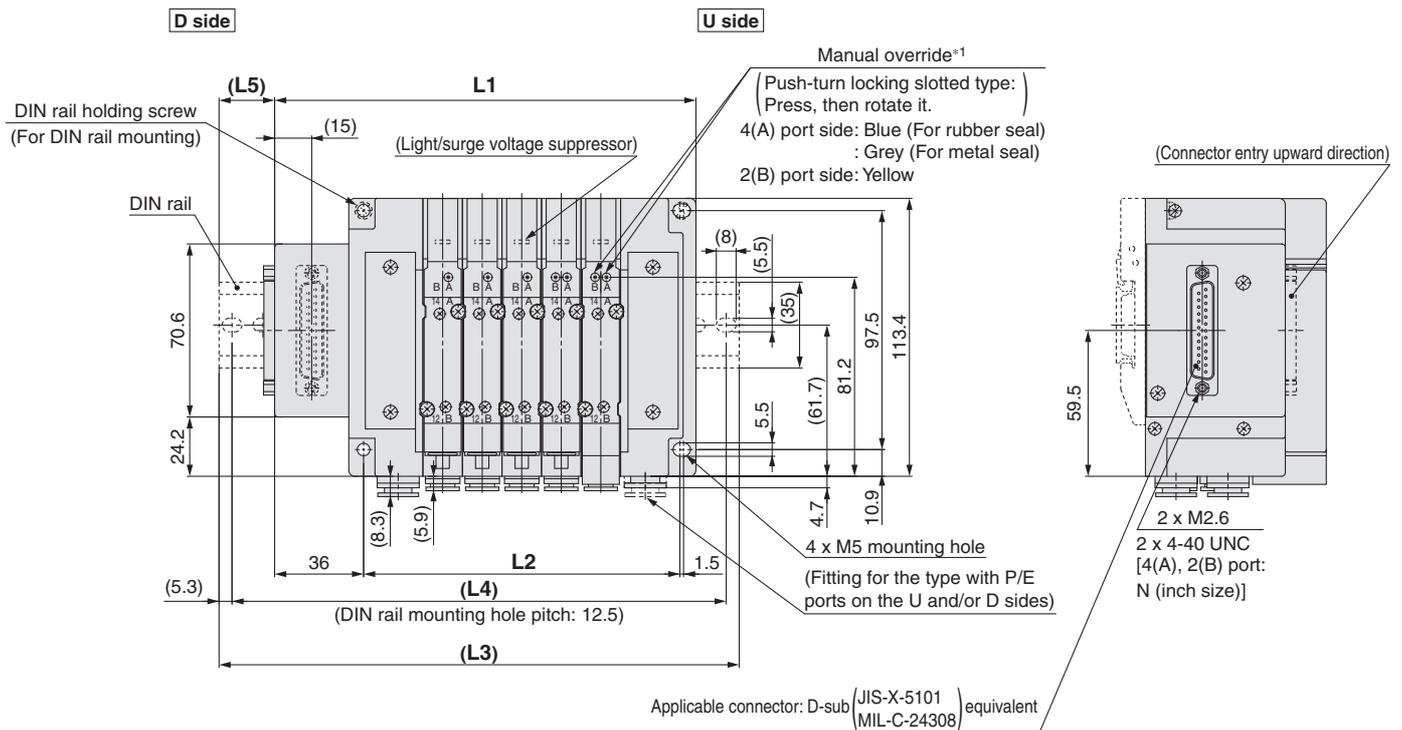
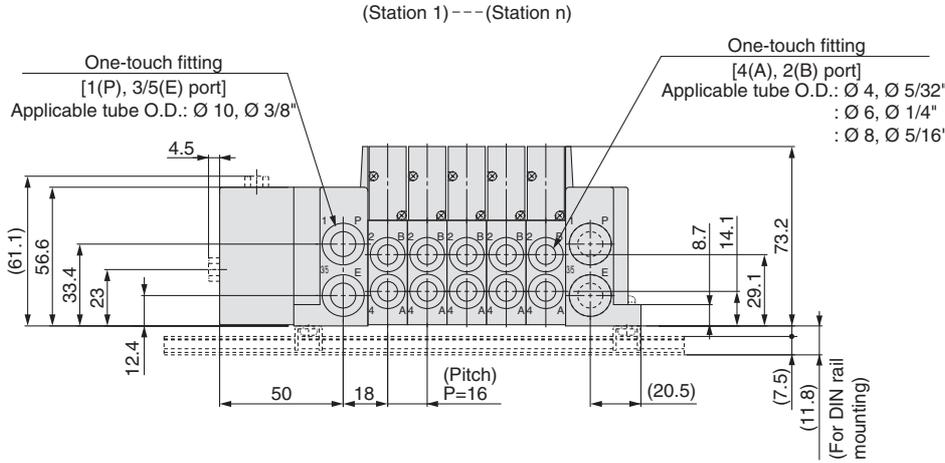
Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options



\*1: Refer to page 206 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y5-10FW2-05D-C8".  
\*: Refer to page 211 for dimensions of A or B port top-ported type.

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

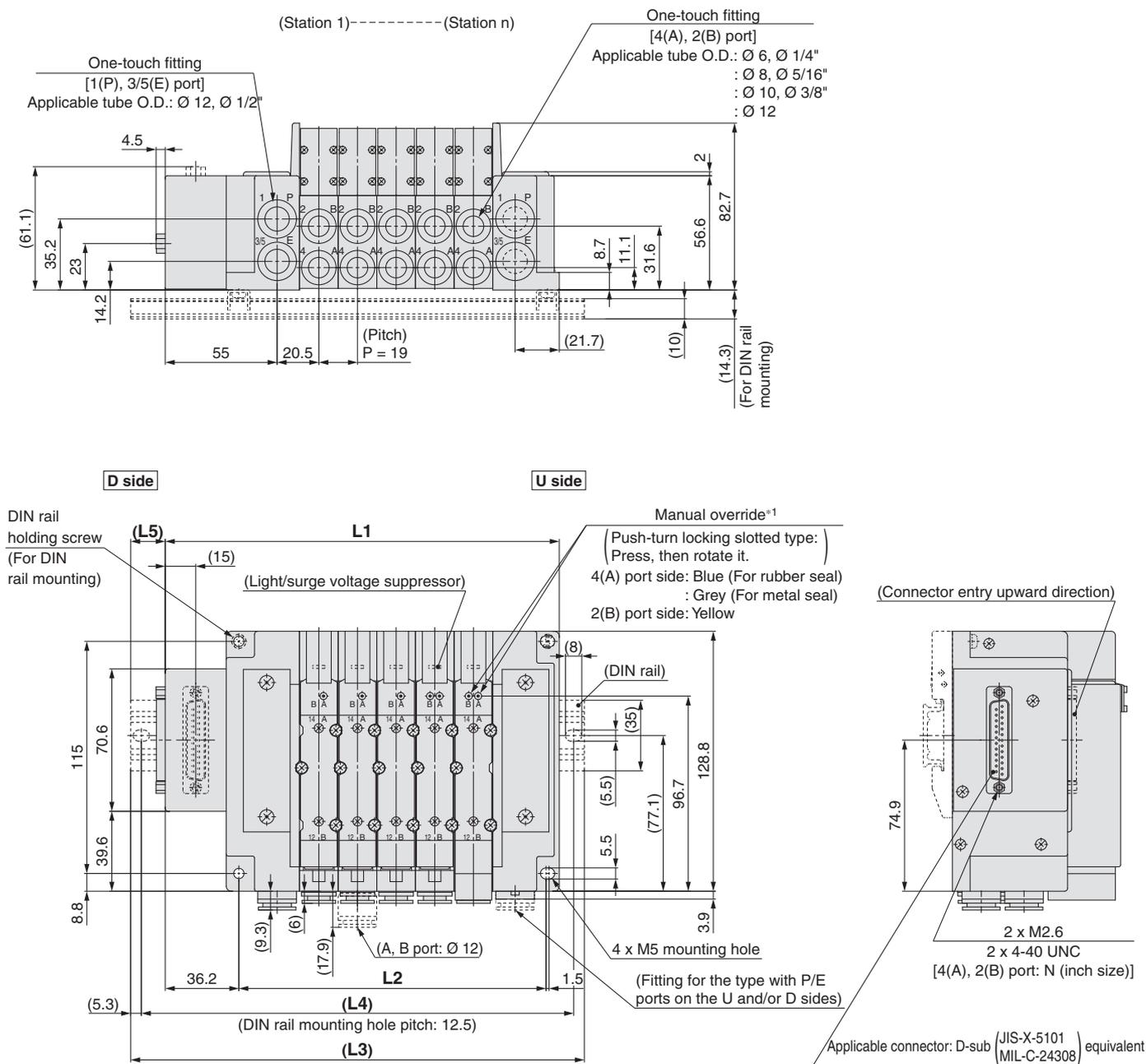
# Series SY3000/5000/7000

## Dimensions: Series SY7000

### Plug-in Connector Connecting Base

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

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



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

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

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

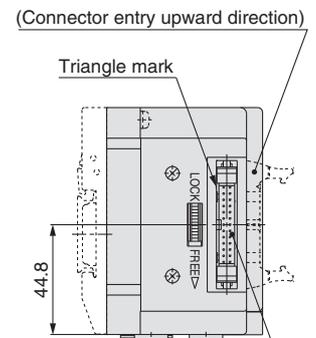
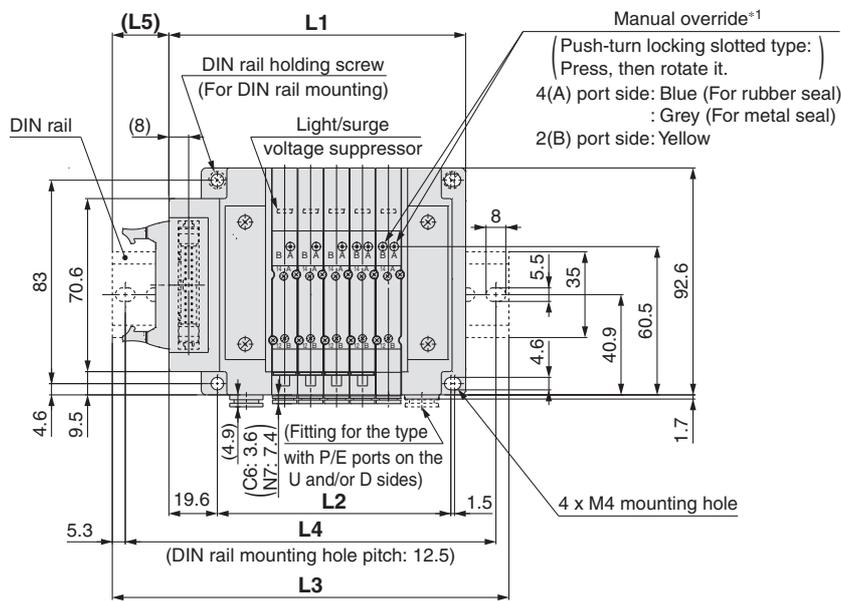
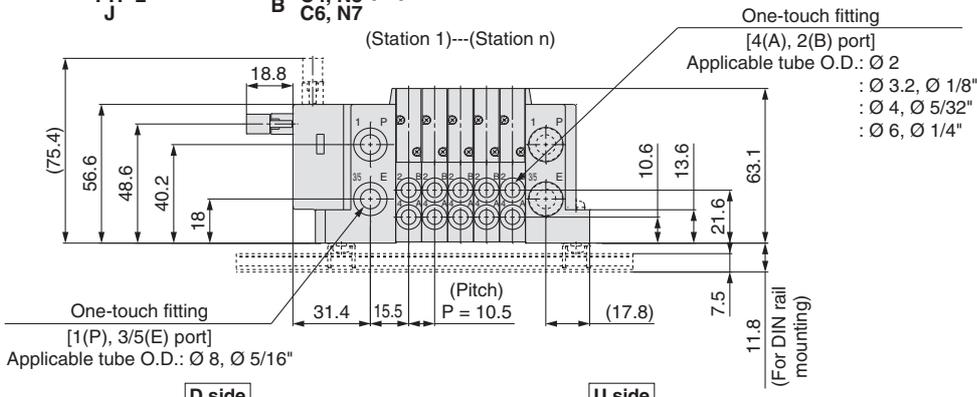
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	136.7	155.7	174.7	193.7	212.7	231.7	250.7	269.7	288.7	307.7	326.7	345.7	364.7	383.7	402.7	421.7	440.7	459.7	478.7	497.7	516.7	535.7	554.7
L2	94	113	132	151	170	189	208	227	246	265	284	303	322	341	360	379	398	417	436	455	474	493	512
L3	173	185.5	210.5	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
L4	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
L5	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

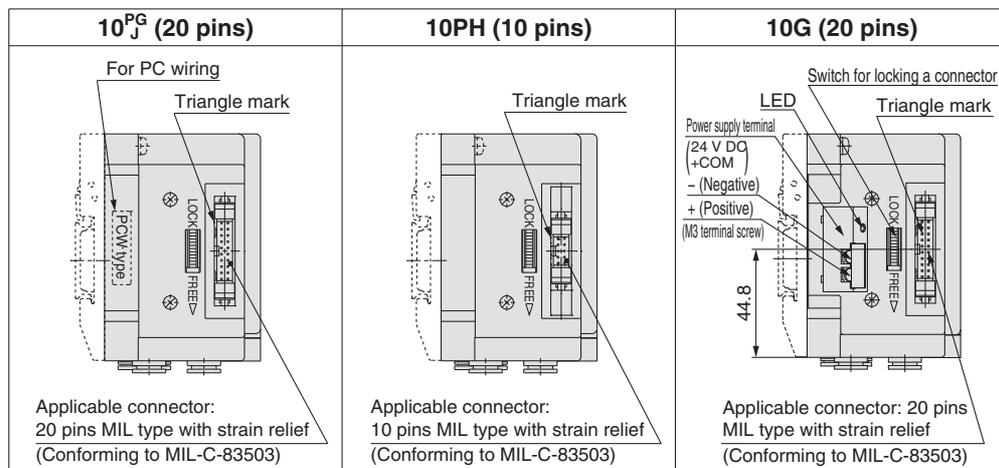
Type 10/Side Ported  
Flat Ribbon Cable

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



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

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



n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
<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  
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

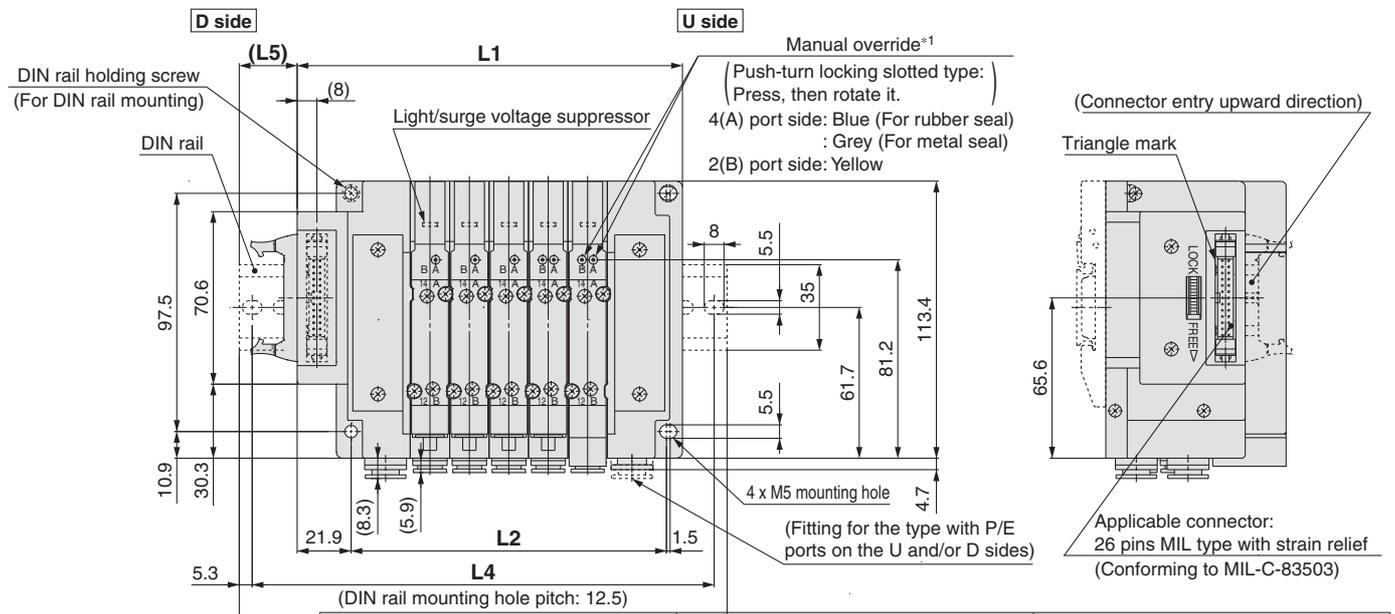
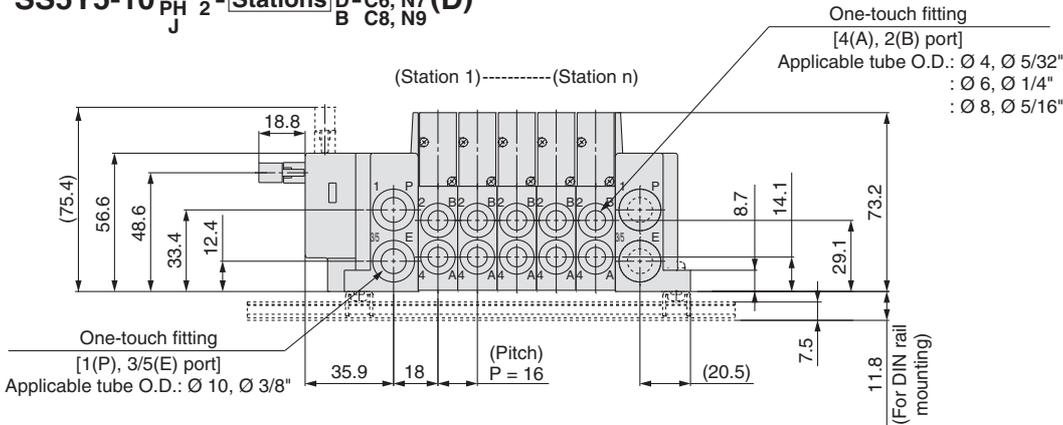
# Series SY3000/5000/7000

## Dimensions: Series SY5000

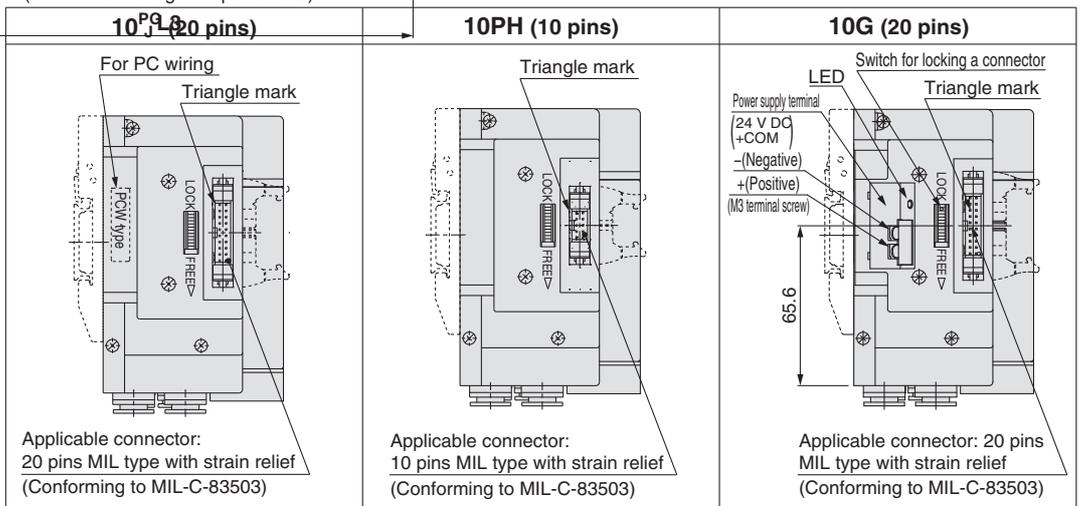
### Plug-in Connector Connecting Base

### Type 10/Side Ported Flat Ribbon Cable

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



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



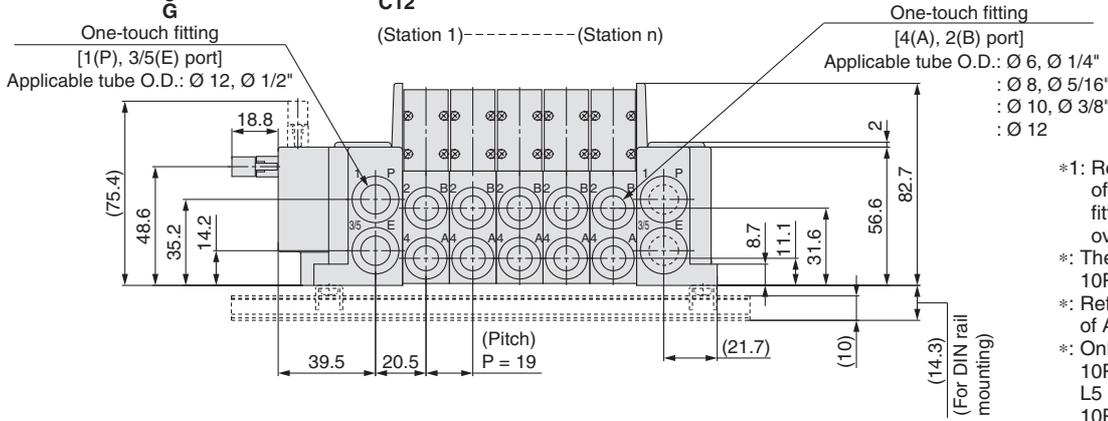
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	108.4	124.4	140.4	156.4	172.4	188.4	204.4	220.4	236.4	252.4	268.4	284.4	300.4	316.4	332.4	348.4	364.4	380.4	396.4	412.4	428.4	444.4	460.4
L2	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416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

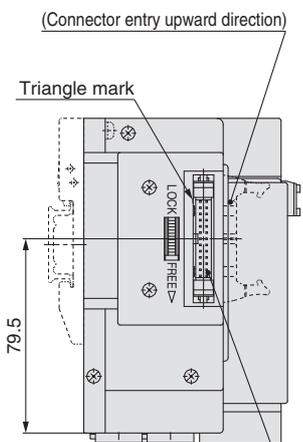
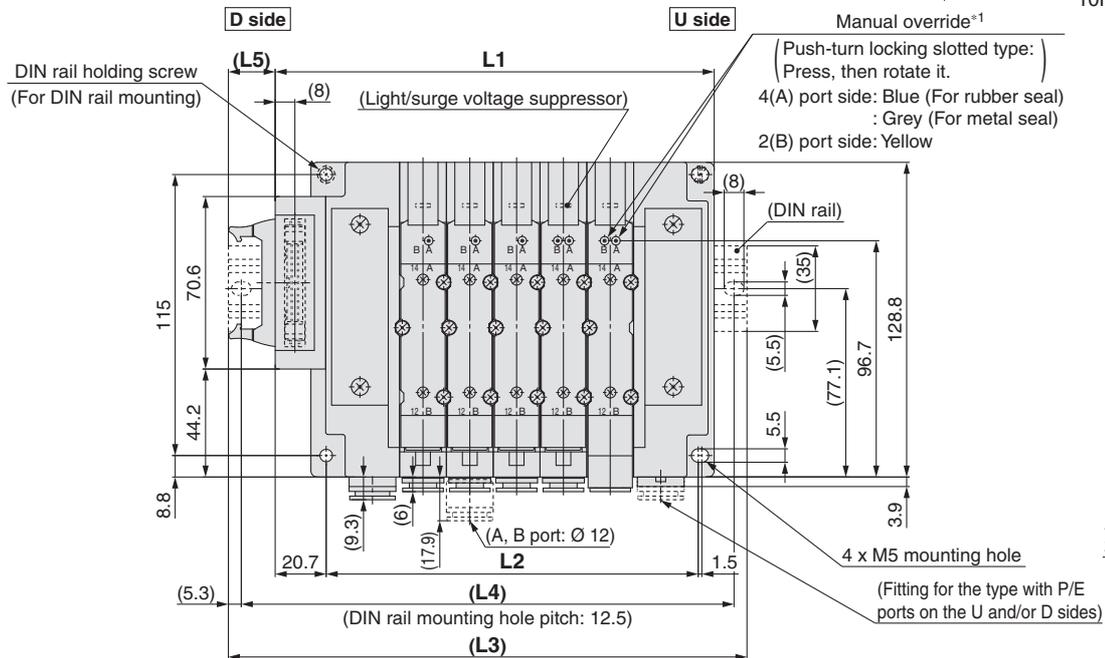
Plug-in  
Connector Connecting Base

Type 10/Side Ported  
Flat Ribbon Cable

SS5Y7-10 <sup>PG</sup> <sup>PH</sup> <sup>D</sup> <sup>2</sup> - Stations <sup>U</sup> <sup>D</sup> - <sup>C6, N7</sup> <sup>C8, N9</sup> <sup>C10, N11</sup> (D)



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



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

	10 <sup>PG</sup> (20 pins)	10 <sup>PH</sup> (10 pins)	10 <sup>G</sup> (20 pins)
For PC wiring	Triangle mark	Triangle mark	LED, Switch for locking a connector, Triangle mark
Applicable connector:	20 pins MIL type with strain relief (Conforming to MIL-C-83503)	10 pins MIL type with strain relief (Conforming to MIL-C-83503)	20 pins MIL type with strain relief (Conforming to MIL-C-83503)
Power supply terminal			24 V DC (+COM), -(Negative) (M3 terminal screw)
Triangle mark			65.6

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

Valve  
 Plug-in Sub-plate  
 Metal Base  
 Plug-in  
 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

# Plug-in Connector Connecting Base

D-sub Connector Flat Ribbon Cable PC Wiring

Type 12  
Top Ported

# Series SY3000/5000/7000

RoHS

## How to Order Manifold

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

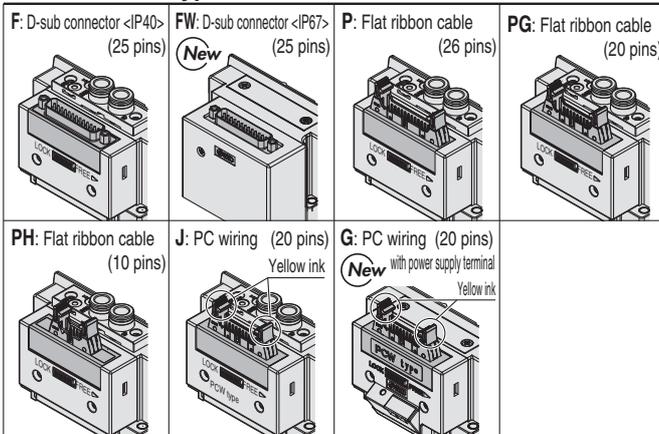
1 2 3 4 5 6 7 8

Refer to pages 210 to 212 for dimensions of Type 12/Top ported type.

### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Connector type

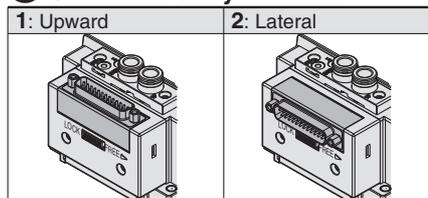


### 5 P, E port entry

U*1	U side (2 to 10 stations)
D*1	D side (2 to 10 stations)
B	Both sides (2 to 24 stations)

\*1: 6 For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

### 3 Connector entry direction



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

### 4 Valve stations

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

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

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

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

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

Symbol	Stations	Note
02	2 stations	Double wiring*1
⋮	⋮	
09	9 stations	Specified layout*2 (Available up to 18 solenoids)
⋮	⋮	
18	18 stations	

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

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

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

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

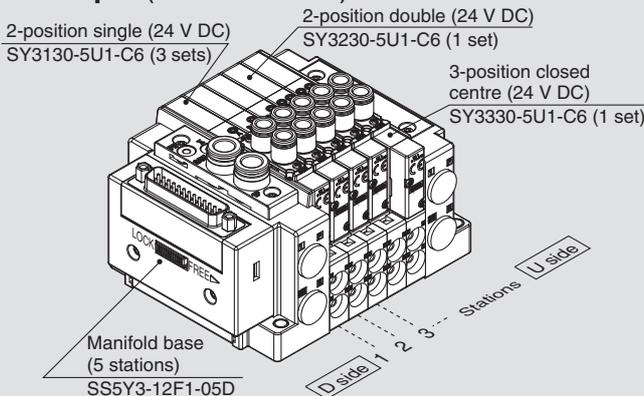
\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

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

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

## How to Order Manifold Assembly

### Example (SS5Y3-12F1-□)



SS5Y3-12F1-05D ..... 1 set (Type 12 5-station manifold base part no.)  
 \*SY3130-5U1-C6 ..... 3 sets (2-position single part no.)  
 \*SY3230-5U1-C6 ..... 1 set (2-position double part no.)  
 \*SY3330-5U1-C6 ..... 1 set (3-position closed centre part no.)

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

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

### 6 SUP/EXH block assembly

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

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

### 8 Mounting

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

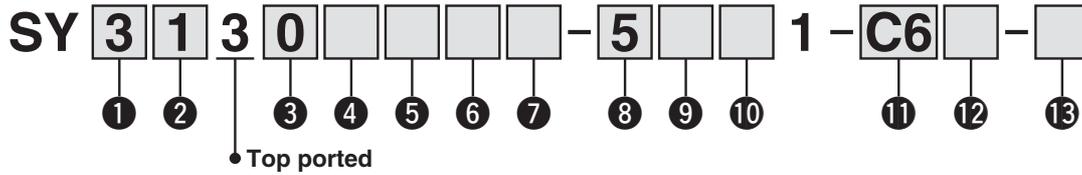
\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

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

Symbol	SY3000	SY5000	SY7000
—	Ø 8	Ø 10	Ø 12
N	Ø 5/16"	Ø 3/8"	Ø 1/2"

\*: For N, sizes are in inches.

**How to Order Valves (With mounting screw)** Refer to page 13 for valve specifications.



**1 Series**

3	SY3000
5	SY5000
7	SY7000

**2 Type of actuation**

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

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

**3 Seal type**

0	Rubber seal
1	Metal seal

**4 Pilot type**

—	Internal pilot
R	External pilot

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

—	None
H	Built-in

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

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

**6 Pilot valve option**

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

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

**7 Coil type**

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

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

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

**8 Rated voltage**

5	24 V DC
6	12 V DC

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

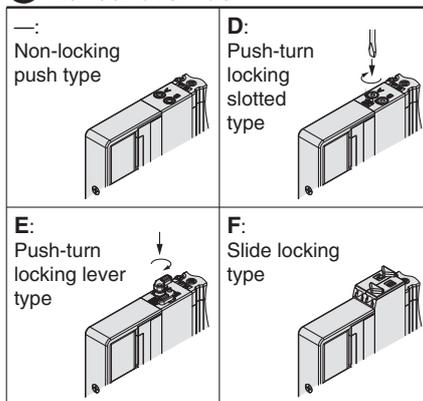
**9 Light/surge voltage suppressor and common specification**

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

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

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

**10 Manual override**



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

**11 A, B port size**

**Thread piping**

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

**One-touch fitting (Metric)**

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

**One-touch fitting (Inch)**

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

**12 Thread type**

—	Rc
F	G
N	NPT
T	NPTF

\*: Only — is available for M5.

**13 Type of mounting screw**

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

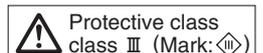
\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

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

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

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

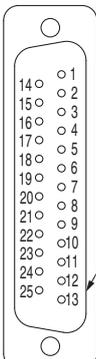
\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.



# Series SY3000/5000/7000

## Electrical Wiring Specifications

**D-sub connector**



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

Connector terminal no.

Station	Lead wire no.	Polarity	Terminal no.	Lead wire colour	Dot marking	
Station 1	SOL. a	1 (-)	(+)	1	Black	None
	SOL. b	14 (-)	(+)	2	Brown	None
Station 2	SOL. a	2 (-)	(+)	3	Red	None
	SOL. b	15 (-)	(+)	4	Orange	None
Station 3	SOL. a	3 (-)	(+)	5	Yellow	None
	SOL. b	16 (-)	(+)	6	Pink	None
Station 4	SOL. a	4 (-)	(+)	7	Blue	None
	SOL. b	17 (-)	(+)	8	Purple	White
Station 5	SOL. a	5 (-)	(+)	9	Grey	Black
	SOL. b	18 (-)	(+)	10	White	Black
Station 6	SOL. a	6 (-)	(+)	11	White	Red
	SOL. b	19 (-)	(+)	12	Yellow	Red
Station 7	SOL. a	7 (-)	(+)	13	Orange	Red
	SOL. b	20 (-)	(+)	14	Yellow	Black
Station 8	SOL. a	8 (-)	(+)	15	Yellow	Black
	SOL. b	21 (-)	(+)	16	Yellow	White
Station 9	SOL. a	9 (-)	(+)	17	White	None
	SOL. b	22 (-)	(+)	18	Grey	None
Station 10	SOL. a	10 (-)	(+)	19	Orange	Black
	SOL. b	23 (-)	(+)	20	Red	White
Station 11	SOL. a	11 (-)	(+)	21	Brown	White
	SOL. b	24 (-)	(+)	22	Pink	Red
Station 12	SOL. a	12 (-)	(+)	23	Grey	Red
	SOL. b	25 (-)	(+)	24	Black	White
COM.		13 (+)	(-)	25	White	None

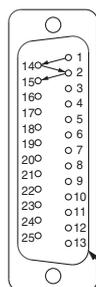
Positive common Negative common

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

\* Connector made in conformity with DIN47100.

## 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.

## Connector Cable

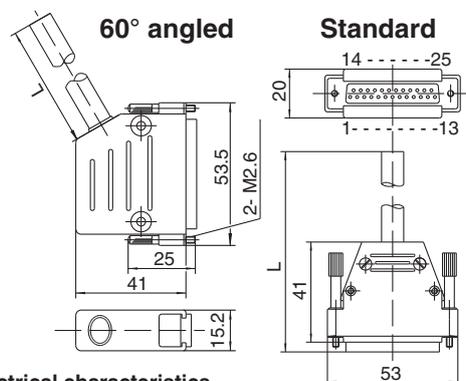
### GVVZS3000-21A-□ [IP40]

#### D-sub connector cable

Cable length (L)	Assembly part no.	Note
1 m	GVVZS3000-21A-160	60° angled
3 m	GVVZS3000-21A-260	60° angled
5 m	GVVZS3000-21A-360	60° angled
8 m	GVVZS3000-21A-460	60° angled
3 m	GVVZS3000-21A-2	Standard
5 m	GVVZS3000-21A-3	Standard
8 m	GVVZS3000-21A-4	Standard

#### Shielded cable

Cable length (L)	Assembly part no.	Note
1 m	GVVZS3000-21A-1S	Shielded
3 m	GVVZS3000-21A-2S	Shielded
5 m	GVVZS3000-21A-3S	Shielded
8 m	GVVZS3000-21A-4S	Shielded
20 m	GVVZS3000-21A-5S	Made to order



#### Electrical characteristics

Item	Property
Conductor resistance Ω/km, 20 °C	Max. 57
Voltage limit V, 5 minute, AC	1500
Insulation resistance MΩ/km, 20 °C	20

Standard  
D-Sub connector  
cable assembly (option)

**AXT100-DS25-015**  
**030** (According to  
**050 MIL-C24308)**

\* Please contact SMC for details.

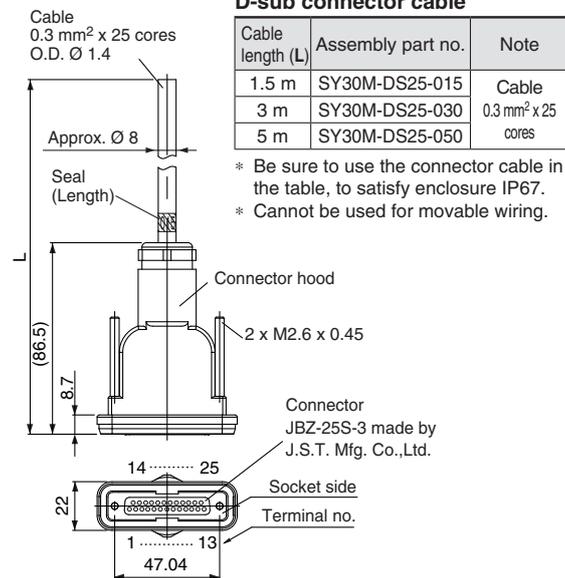
## Connector Cable [IP67]

### 015 SY30M-DS25-030 [IP67] 050

#### D-sub connector cable

Cable length (L)	Assembly part no.	Note
1.5 m	SY30M-DS25-015	Cable
3 m	SY30M-DS25-030	0.3 mm <sup>2</sup> x 25 cores
5 m	SY30M-DS25-050	

Cable  
0.3 mm<sup>2</sup> x 25 cores  
O.D. Ø 1.4



Approx. Ø 8

Seal (Length)

Connector hood

2 x M2.6 x 0.45

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

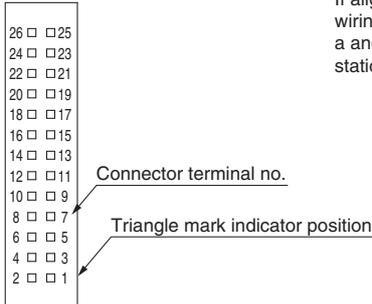
Socket side

Terminal no.

\* Be sure to use the connector cable in the table, to satisfy enclosure IP67.  
\* Cannot be used for movable wiring.

**Electrical Wiring Specifications**

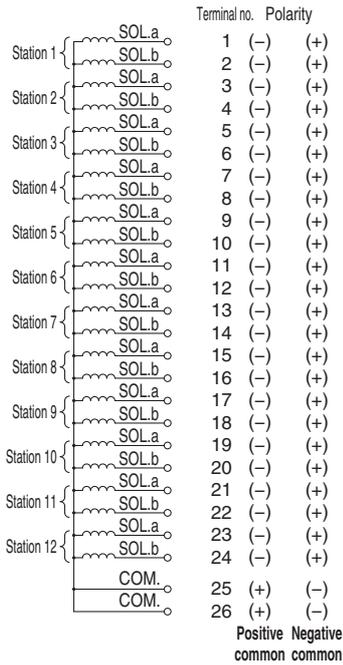
**Flat ribbon cable connector**



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

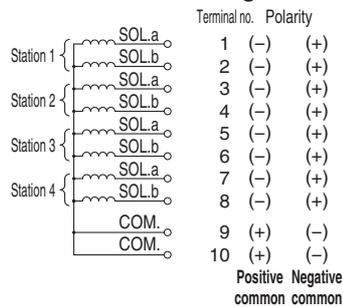
**P: Flat ribbon cable (26 pins)**

**<Double wiring>**



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

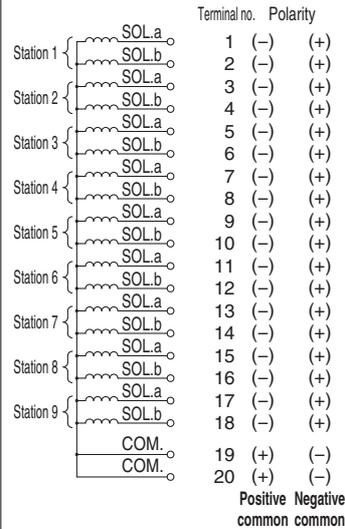
**<Double wiring>**



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

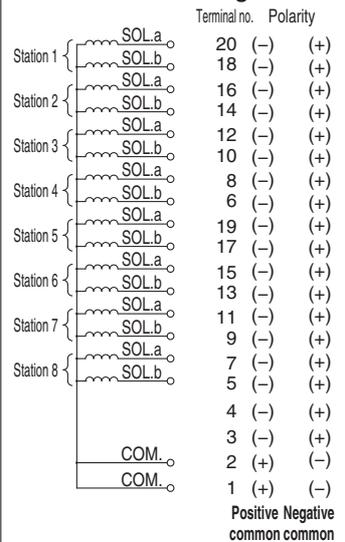
**PG: Flat ribbon cable (20 pins)**

**<Double wiring>**



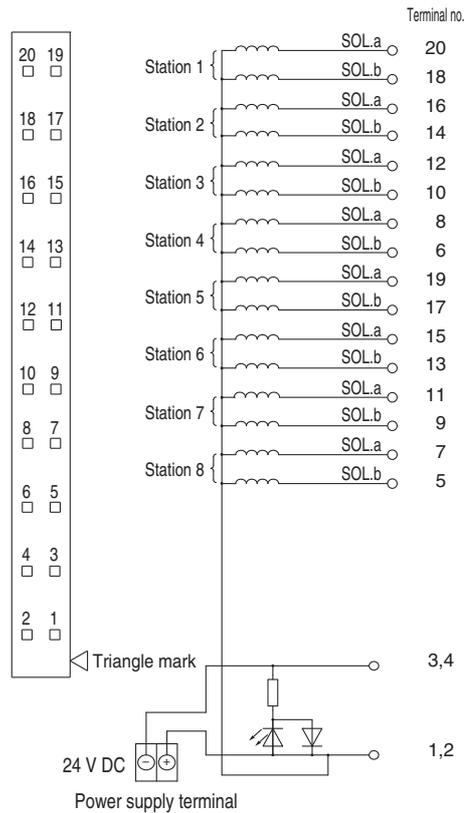
**J: Flat ribbon cable (20 pins)  
PC wiring**

**<Double wiring>**



\*: 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.

**G: Flat ribbon cable (20 pins)  
PC wiring (with power supply terminal)**



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

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

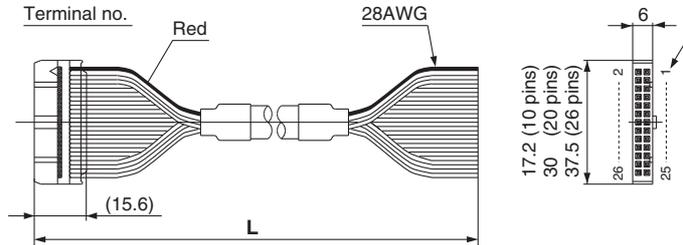
One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

# Series SY3000/5000/7000

## Flat Ribbon Cable Assembly

AXT100-FC  
 10 1  
 20-2  
 26 3



### Flat ribbon cable connector assembly

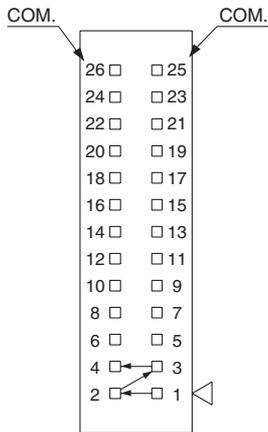
Cable length (L)	Assembly part no.		
	26 pins	20 pins	10 pins
1.5 m	AXT100-FC26-1	AXT100-FC20-1	AXT100-FC10-1
3 m	AXT100-FC26-2	AXT100-FC20-2	AXT100-FC10-2
5 m	AXT100-FC26-3	AXT100-FC20-3	AXT100-FC10-3

- \*: When using a standard commercial connector, use a 26-pin, 20-pin or 10-pin type connector conforming to MIL-C-83503 with strain relief.
- \*: Cannot be used for movable wiring.
- \*: Lengths other than the above are also available. Please contact SMC for details.

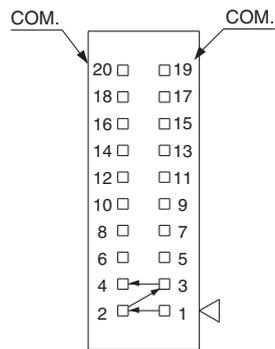
### Connector Manufacturers' Example

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

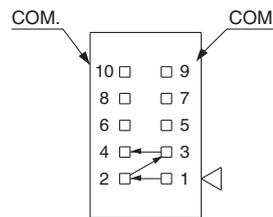
## Specified Layout



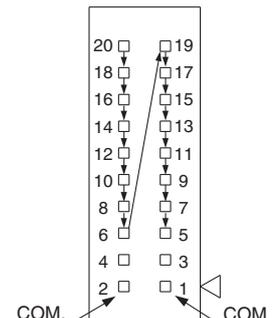
(P: 26 pins)



(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

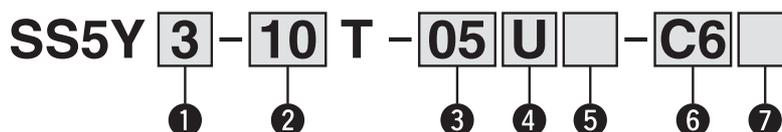
Terminal Block Box

# Series SY3000/5000/7000



## How to Order Manifold

Refer to pages 208 (SY5000) and 209 (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*1

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

### 3 Valve stations

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

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

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

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

### 4 P, E port entry

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 20 stations)

### 5 SUP/EXH block assembly

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

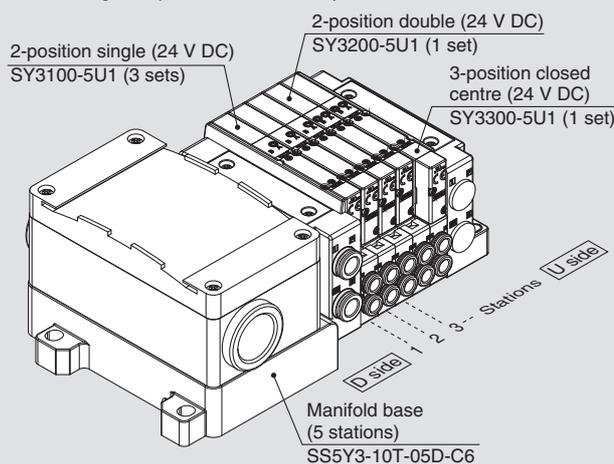
\*: 3/5(E) port is plugged for the built-in silencer type.

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

Refer to the page on the right for 6.

## How to Order Manifold Assembly

### Example (SS5Y3-10T-□)



SS5Y3-10T-05D-C6 ... 1 set (Type 10 5-station manifold base part no.)

\*SY3100-5U1 ..... 3 sets (2-position single part no.)

\*SY3200-5U1 ..... 1 set (2-position double part no.)

\*SY3300-5U1 ..... 1 set (3-position closed centre part no.)

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

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

### 7 Mounting and Option

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

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

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

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

#### DIN Rail Option

—	Direct mounting	
0	Without DIN rail (with bracket)	
3	For 3 stations	Specify a longer rail than the total length of specified stations.
⋮	⋮	
20	For 20 stations	

\*: When mixing top ported configurations, select from page 122. In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

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

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

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

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

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

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

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

Valve

Plug-in Sub-plate

Plug-in Metal Base

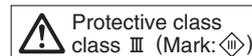
Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

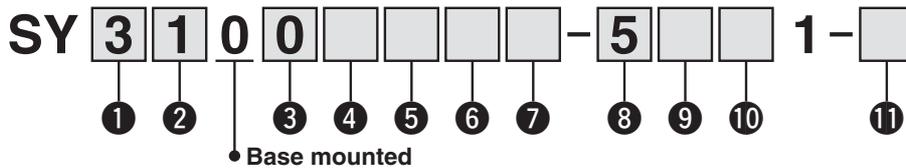
One-touch Fittings/  
Plug Assembly Part No.

Manifold Options



## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type of actuation

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

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

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

—	Internal pilot
R	External pilot

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

—	None
H	Built-in

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

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

### 6 Pilot valve option

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

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

### 7 Coil type

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

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

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

### 8 Rated voltage

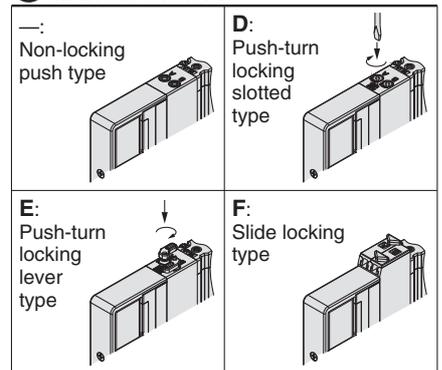
5	24 V DC
6	12 V DC

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

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

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

### 10 Manual override



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

### 11 Type of mounting screw

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

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

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

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

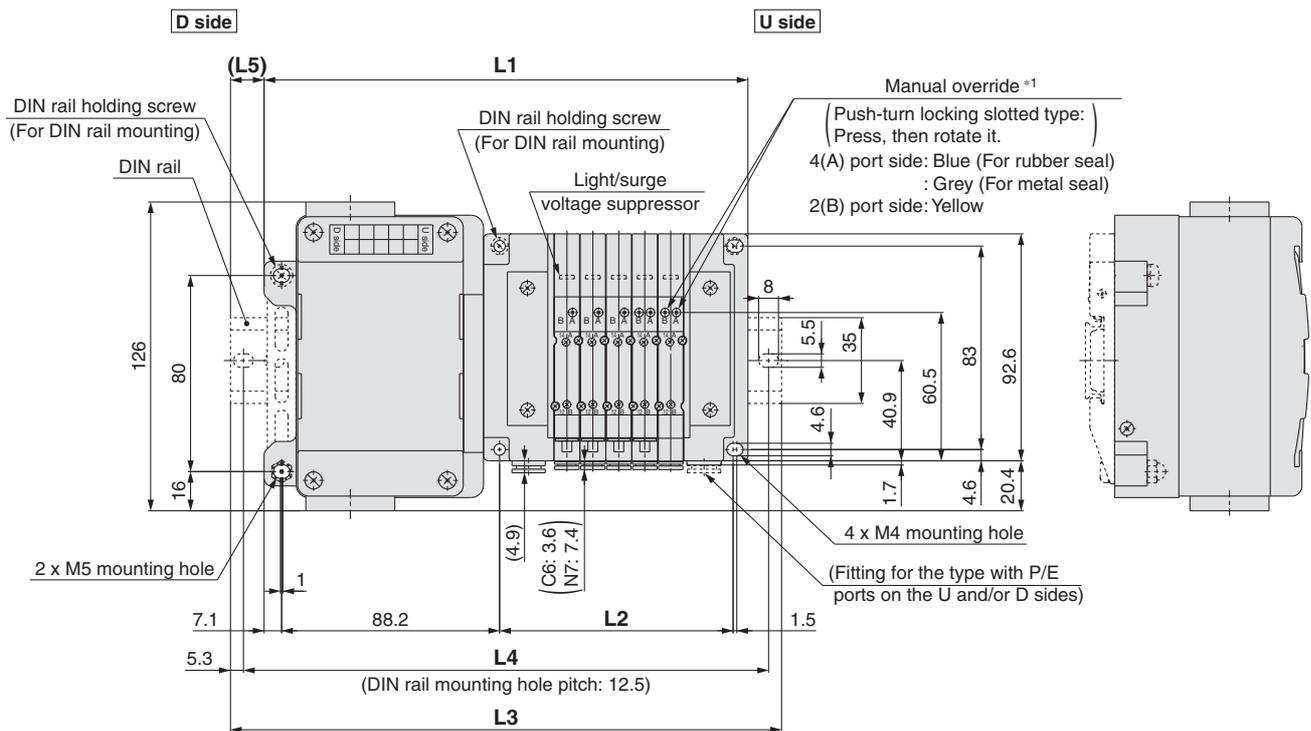
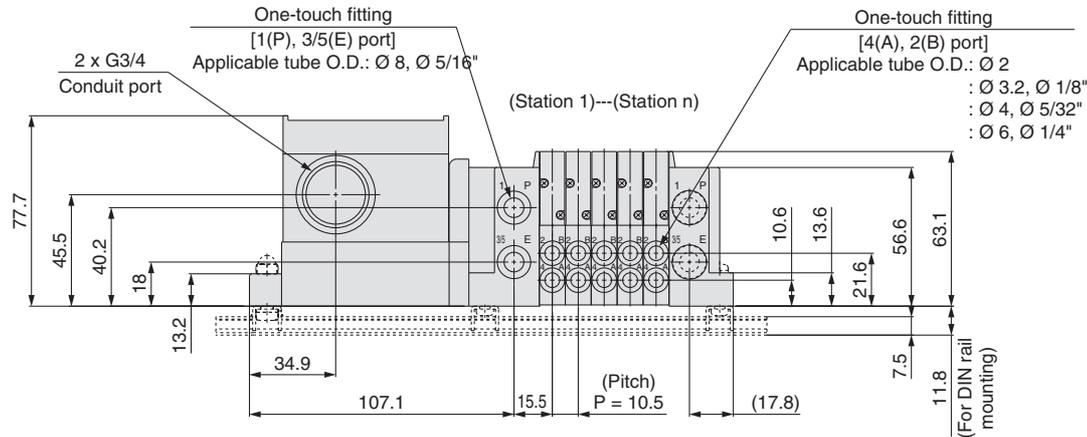
\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

Dimensions: Series **SY3000**

Plug-in  
Connector Connecting Base

Type 10/Side Ported  
Terminal Block Box

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



\*1: Refer to page 205 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y3-10T-05D-C6".  
\*: Refer to page 210 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	164.3	174.8	185.3	195.8	206.3	216.8	227.3	237.8	248.3	258.8	269.3	279.8	290.3	300.8	311.3	321.8	332.3	342.8	353.3
L2	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5	231	241.5	252
L3	198	198	210.5	223	235.5	248	260.5	273	273	285.5	298	310.5	323	335.5	335.5	348	360.5	373	385.5
L4	187.5	187.5	200	212.5	225	237.5	250	262.5	262.5	275	287.5	300	312.5	325	325	337.5	350	362.5	375
L5	17	11.5	12.5	13.5	14.5	15.5	16.5	17.5	12.5	13.5	14.5	15.5	16.5	17.5	12	13	14	15	16

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

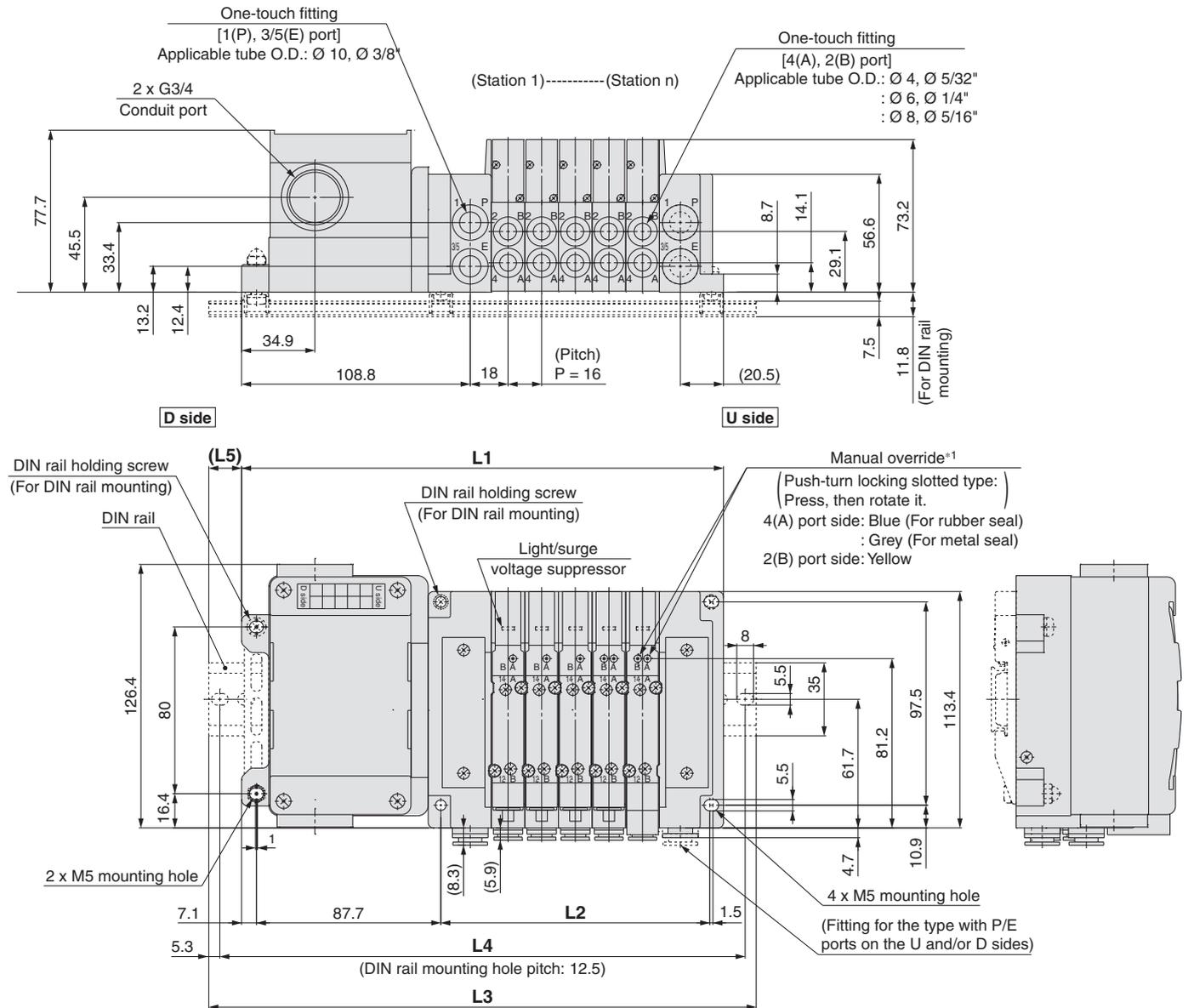
# Series SY3000/5000/7000

## Dimensions: Series SY5000

### Plug-in Connector Connecting Base

Type 10/Side Ported  
Terminal Block Box

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



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

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

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

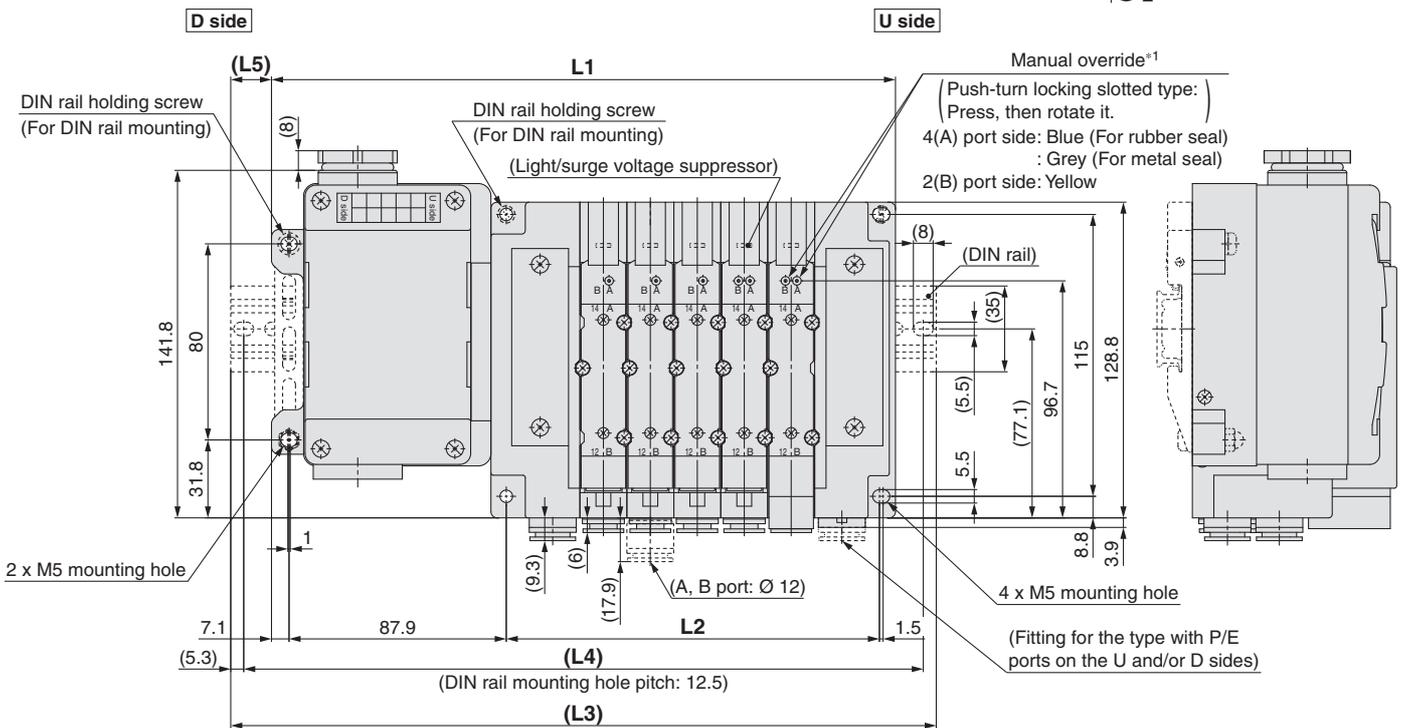
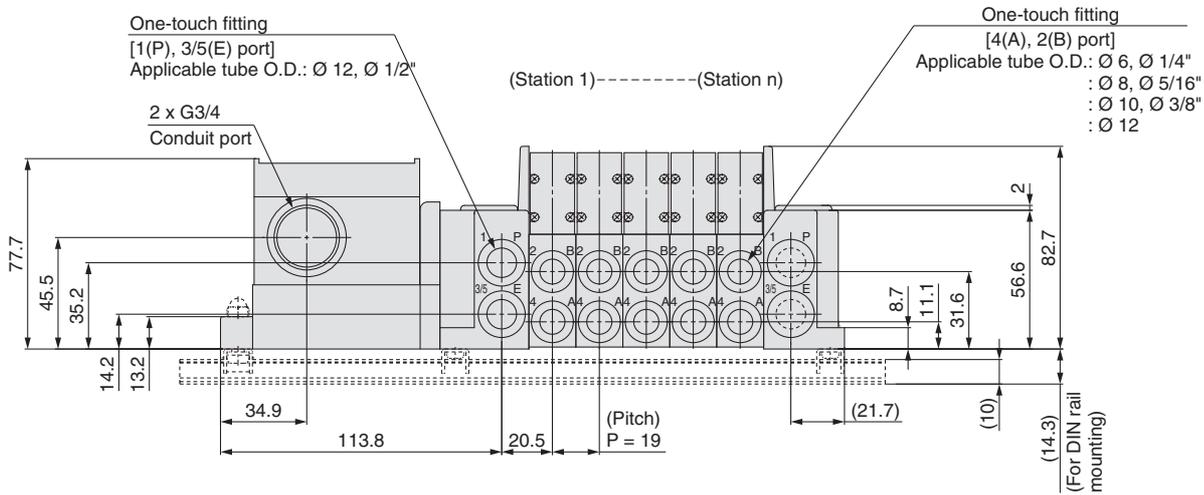
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	181.3	197.3	213.3	229.3	245.3	261.3	277.3	293.3	309.3	325.3	341.3	357.3	373.3	389.3	405.3	421.3	437.3	453.3	469.3
L2	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368
L3	210.5	223	248	260.5	273	285.5	310.5	323	335.5	360.5	373	385.5	398	423	435.5	448	460.5	485.5	498
L4	200	212.5	237.5	250	262.5	275	300	312.5	325	350	362.5	375	387.5	412.5	425	437.5	450	475	487.5
L5	14.5	13	17.5	15.5	14	12	16.5	15	13	17.5	16	14	12.5	17	15	13.5	11.5	16	14.5

Dimensions: Series **SY7000**

Plug-in  
Connector Connecting Base

Type 10/Side Ported  
Terminal Block Box

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



\*1: Refer to page 207 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y7-10T-05D-C10".  
\*: Refer to page 212 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
<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

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

# Plug-in Connector Connecting Base

## Terminal Block Box

Type 12  
Top Ported

# Series SY3000/5000/7000



### How to Order Manifold

SS5Y **3** - 12T - **05** **U**   -    

Refer to pages 210 to 212 for dimensions of Type 12/Top ported type.

#### 1 Series

3	SY3000
5	SY5000
7	SY7000

#### 3 P, E port entry

U*1	U side (2 to 10 stations)
D*1	D side (2 to 10 stations)
B	Both sides (2 to 20 stations)

\*1: 4 For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

#### 2 Valve stations

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

- \*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
- \*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)
- \*: This also includes the number of blanking plate assembly.

#### 4 SUP/EXH block assembly

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

- \*: For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)
- \*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

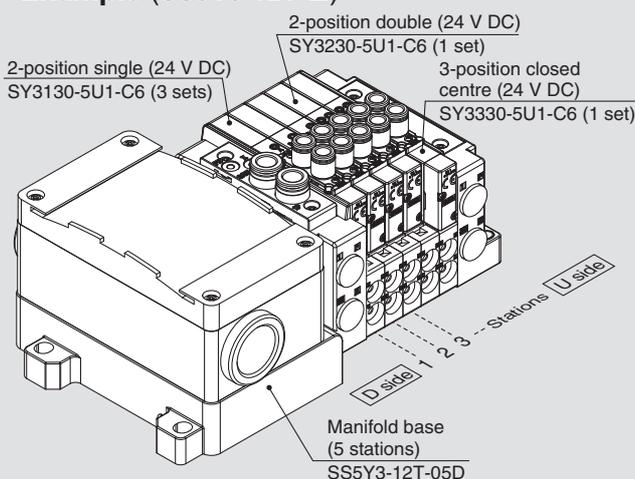
#### 5 P, E port size (One-touch fittings)

Symbol	SY3000	SY5000	SY7000
—	Ø 8	Ø 10	Ø 12
N	Ø 5/16"	Ø 3/8"	Ø 1/2"

\*: For N, sizes are in inches.

### How to Order Manifold Assembly

#### Example (SS5Y3-12T-□)



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

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

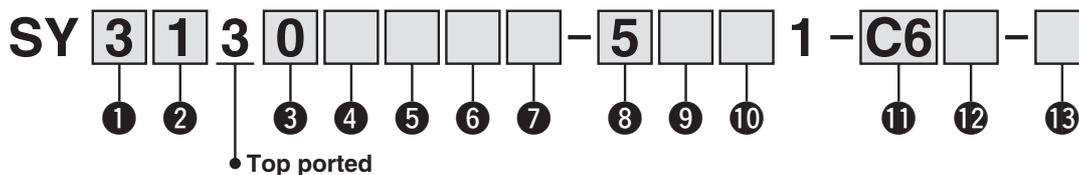
- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

#### 6 Mounting

—	Direct mounting
D	DIN rail mounting (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.

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

**How to Order Valves (With mounting screw)** Refer to page 13 for valve specifications.



**1 Series**

3	SY3000
5	SY5000
7	SY7000

**2 Type of actuation**

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

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

**3 Seal type**

0	Rubber seal
1	Metal seal

**4 Pilot type**

—	Internal pilot
R	External pilot

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

—	None
H	Built-in

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

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

**6 Pilot valve option**

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

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

**7 Coil type**

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

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

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

**8 Rated voltage**

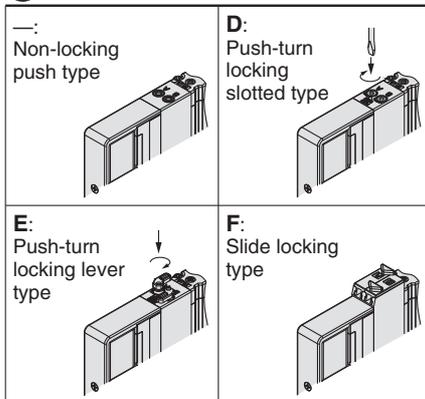
5	24 V DC
6	12 V DC

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

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

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

**10 Manual override**



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

**11 A, B port size**

**Thread piping**

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

**One-touch fitting (Metric)**

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

**One-touch fitting (Inch)**

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

**12 Thread type**

—	Rc
F	G
N	NPT
T	NPTF

\*: Only — is available for M5.

**13 Type of mounting screw**

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

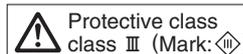
\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

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

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

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

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



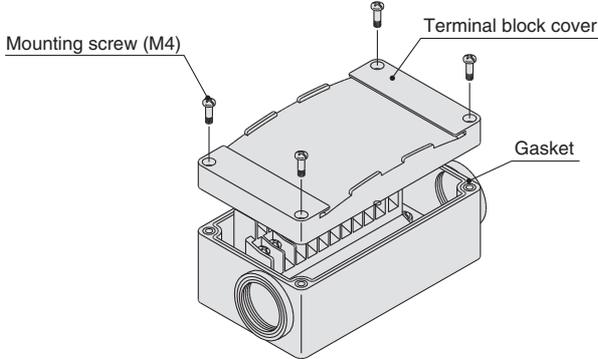
Valve  
Plug-in Sub-plate  
Metal Base  
Type 50, 51, 52  
Manifold Exploded View  
Plug-in Connector Connecting Base  
Type 10, 11, 12  
Manifold Exploded View  
One-touch Fittings/  
Plug Assembly Part No.  
Manifold Options

# Series SY3000/5000/7000

## Terminal Block Connection

### Step 1. Removing the terminal block cover

Loosen the 4 mounting screws (M4) to remove the terminal block cover.



### Step 3. Mounting the terminal block cover

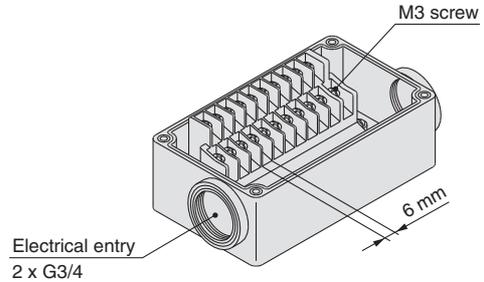
Securely tighten the screws to the torque shown in the below table only after confirming that the gasket is installed correctly.

Proper tightening torque [N·m]
0.7 to 1.2

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

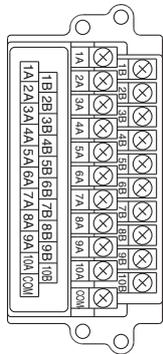
**All stations are provided with double wiring regardless of the mounted valves.**

Connect each wire to the power supply side, according to the markings provided inside the terminal block.



- Applicable crimped terminal: 1.25-3S, 1.25Y-3, 1.25Y-3N, 1.25Y-3.5
- Name plate: VVQ5000-N-T
- Drip-proof plug assembly (for G 3/4): AXT100-B06A

## Electrical Wiring Specifications (IP67 compatible)



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

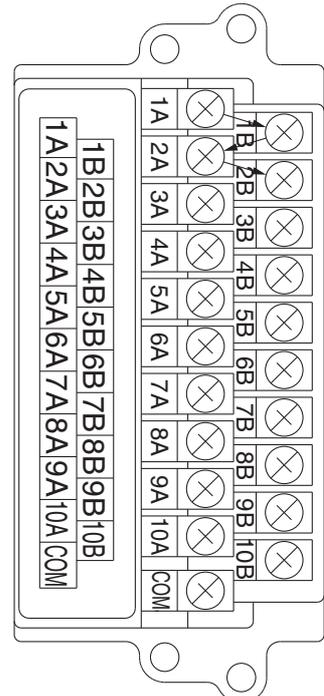
\*: When using a valve with no polarity, either positive common or negative common can be used.

Standard wiring		Terminal no.	Polarity	
Station 1	SOL.a	1A	(-)	(+)
	SOL.b	1B	(-)	(+)
Station 2	SOL.a	2A	(-)	(+)
	SOL.b	2B	(-)	(+)
Station 3	SOL.a	3A	(-)	(+)
	SOL.b	3B	(-)	(+)
Station 4	SOL.a	4A	(-)	(+)
	SOL.b	4B	(-)	(+)
Station 5	SOL.a	5A	(-)	(+)
	SOL.b	5B	(-)	(+)
Station 6	SOL.a	6A	(-)	(+)
	SOL.b	6B	(-)	(+)
Station 7	SOL.a	7A	(-)	(+)
	SOL.b	7B	(-)	(+)
Station 8	SOL.a	8A	(-)	(+)
	SOL.b	8B	(-)	(+)
Station 9	SOL.a	9A	(-)	(+)
	SOL.b	9B	(-)	(+)
Station 10	SOL.a	10A	(-)	(+)
	SOL.b	10B	(-)	(+)
	COM.		(+)	(-)

Positive common Negative common

### Specified Layout

Mixed wiring of single and double wiring can be specified on the manifold specification sheet. The maximum number of stations is determined according to the number of solenoids. The total number of solenoids should be 20 or less. 1 solenoid is required for 2-position single, and 2 solenoids for 2-position double, 3-position and 4-position.



Manifold Options

One-touch Fittings/  
Plug Assembly Part No.

Type 10, 11, 12  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Metal Base

Plug-in Sub-plate

Valve

Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

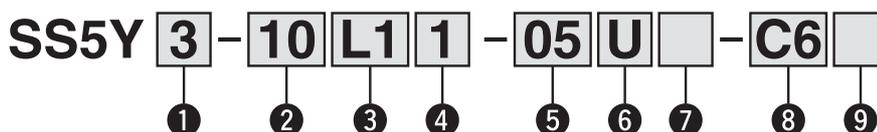
Lead Wire

# Series SY3000/5000/7000



## How to Order Manifold

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



### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type

10	Side ported
11	Bottom ported*1

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

### 3 Number of cores (Lead wire)

L1	34 cores
L2	17 cores
L3	9 cores

### 4 Lead wire length

1	0.6 m
2	1.5 m
3	3 m

### 5 Valve stations

#### (L1□)

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

#### (L3□)

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

#### (L2□)

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

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

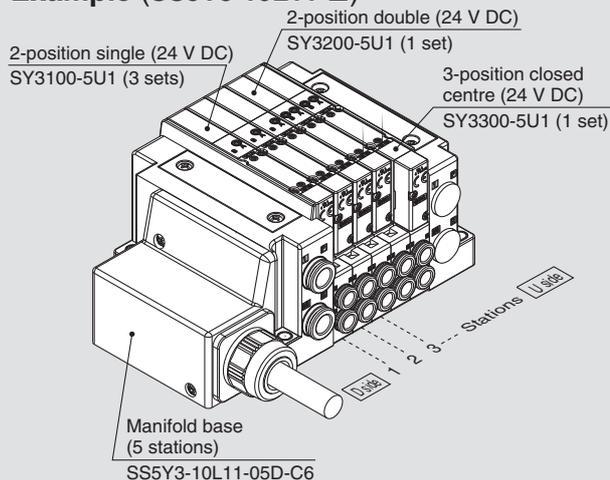
Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

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

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

## How to Order Manifold Assembly

### Example (SS5Y3-10L11-□)



SS5Y3-10L11-05D-C6 ... 1 set (Type 10 5-station manifold base part no.)  
 \*SY3100-5U1 ..... 3 sets (2-position single part no.)  
 \*SY3200-5U1 ..... 1 set (2-position double part no.)  
 \*SY3300-5U1 ..... 1 set (3-position closed centre part no.)

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

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

\*: When mixing top ported configurations, select from page 132.  
 In this case, use caution as there is also output on the A and B port on base side.  
 Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

### 6 P, E port entry

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

### 7 SUP/EXH block assembly

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

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

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

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

**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	∅ 2	●	—	—	—	—
C3	∅ 3.2	●	—	—	—	—
C4	∅ 4	●	●	—	●	—
C6	∅ 6	●	●	●	●	●
C8	∅ 8	—	●	●	●	●
C10	∅ 10	—	—	●	—	●
C12	∅ 12	—	—	●	—	●
CM*1	Straight port, mixed sizes	●	●	●	●	●
L4	∅ 4	●	●	—	—	—
L6	∅ 6	●	●	●	—	—
L8	∅ 8	—	●	●	—	—
L10	∅ 10	—	—	●	—	—
L12	∅ 12	—	—	●	—	—
B4	∅ 4	●	●	—	—	—
B6	∅ 6	●	●	●	—	—
B8	∅ 8	—	●	●	—	—
B10	∅ 10	—	—	●	—	—
B12	∅ 12	—	—	●	—	—
LM*1	Elbow port, mixed sizes (Including upward and downward piping)	●	●	●	—	—
P, E port size (One-touch fittings)		∅ 8	∅ 10	∅ 12	∅ 10	∅ 12

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

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

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

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

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

**9 Mounting and Option**

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

**DIN Rail Option**

Direct mounting	
0	Without DIN rail (with bracket)
3	For 3 stations
⋮	⋮
24	For 24 stations

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

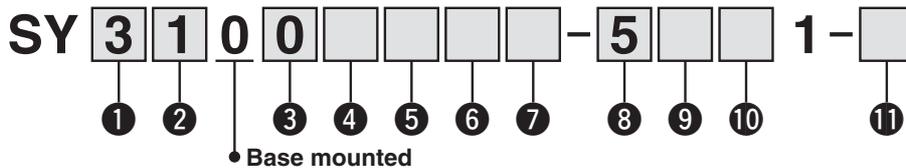
\*: Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" above.)

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

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

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type of actuation

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

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

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

—	Internal pilot
R	External pilot

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

—	None
H	Built-in

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

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

### 6 Pilot valve option

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

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

### 7 Coil type

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

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

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

### 8 Rated voltage

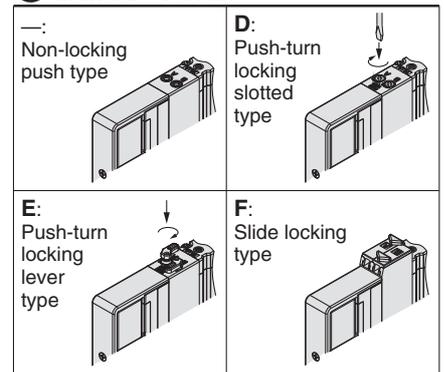
5	24 V DC
6	12 V DC

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

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

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

### 10 Manual override



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

### 11 Type of mounting screw

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

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

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

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

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

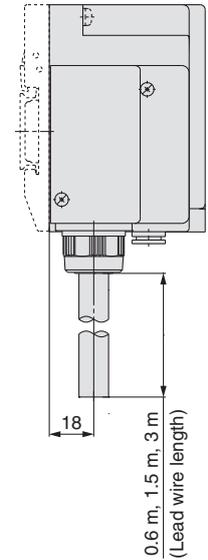
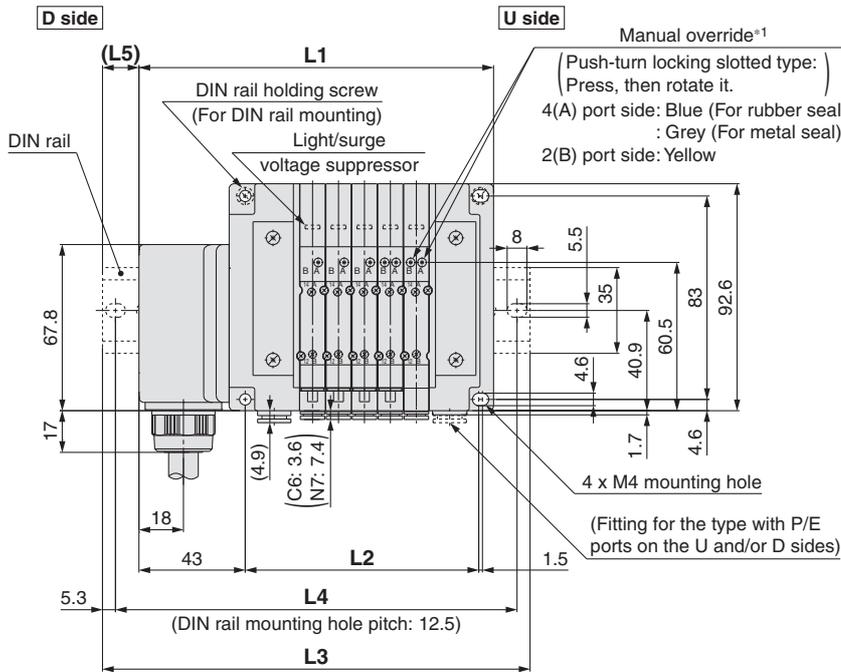
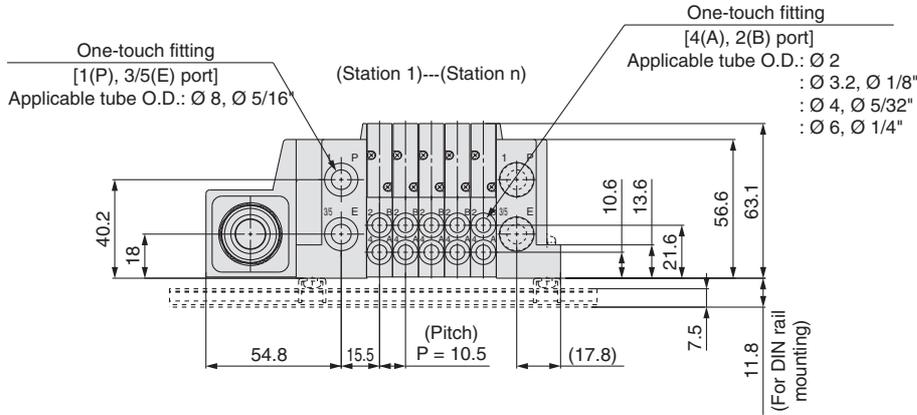
\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

Dimensions: Series **SY3000**

Plug-in  
Connector Connecting Base

Type 10/Side Ported  
Lead Wire

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



\*1: Refer to page 205 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
 \*: These figures show the "SS5Y3-10L1□-05D-C6".  
 \*: Refer to page 210 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
<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

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

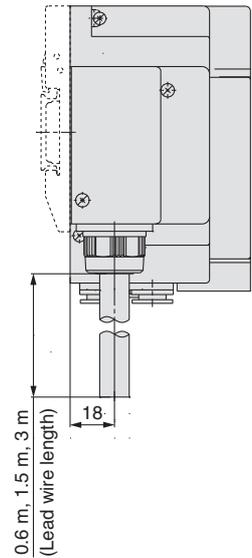
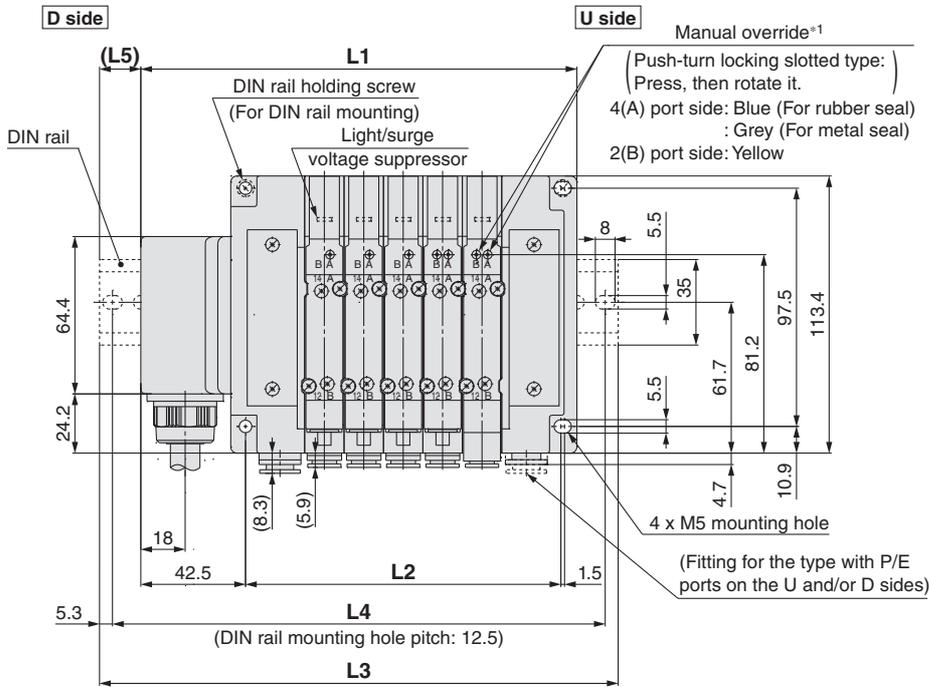
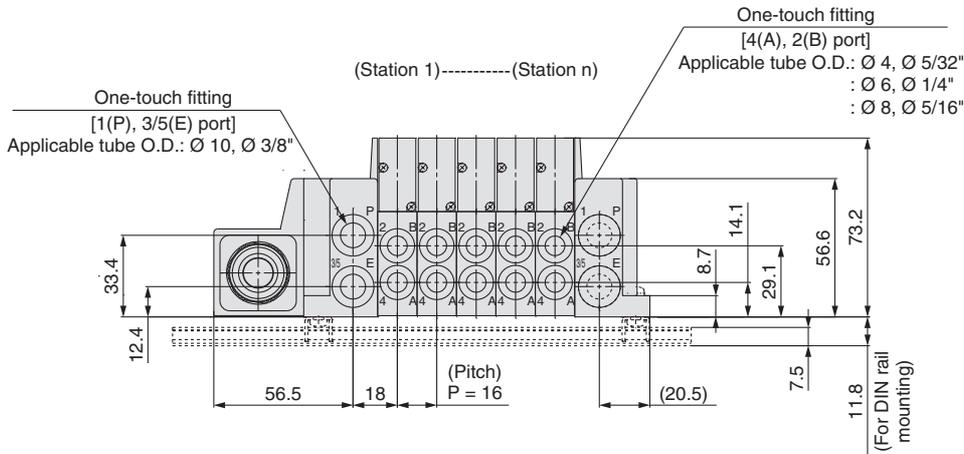
# Series SY3000/5000/7000

## Dimensions: Series SY5000

### Plug-in Connector Connecting Base

### Type 10/Side Ported Lead Wire

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



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

\*: These figures show the "SS5Y5-10L1□-05D-C8".

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

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	129	145	161	177	193	209	225	241	257	273	289	305	321	337	353	369	385	401	417	433	449	465	481
L2	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432
L3	160.5	173	185.5	210.5	223	235.5	260.5	273	285.5	298	323	335.5	348	360.5	385.5	398	410.5	435.5	448	460.5	473	498	510.5
L4	150	162.5	175	200	212.5	225	250	262.5	275	287.5	312.5	325	337.5	350	375	387.5	400	425	437.5	450	462.5	487.5	500
L5	16	14	12.5	17	15	13.5	18	16	14.5	12.5	17	15.5	13.5	12	16.5	14.5	13	17.5	15.5	14	12	16.5	15



# Plug-in Connector Connecting Base

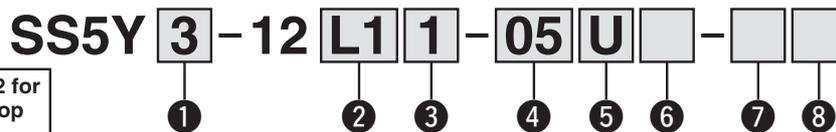
## Lead Wire

Type 12  
Top Ported

# Series SY3000/5000/7000



## How to Order Manifold



Refer to pages 210 to 212 for dimensions of Type 12/Top ported type.

### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Number of cores (Lead wire)

L1	34 cores
L2	17 cores
L3	9 cores

### 3 Lead wire length

1	0.6 m
2	1.5 m
3	3 m

### 5 P, E port entry

U*1	U side (2 to 10 stations)
D*1	D side (2 to 10 stations)
B	Both sides (2 to 24 stations)

\*1: 6 For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

### 4 Valve stations

#### (L1□)

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

#### (L3□)

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

#### (L2□)

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

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

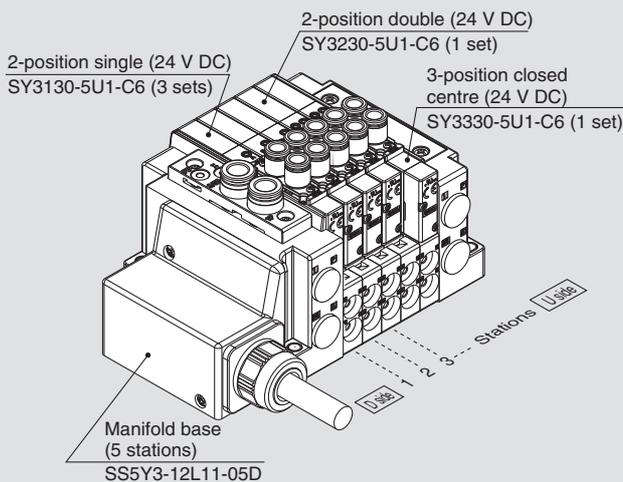
Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

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

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

## How to Order Manifold Assembly

### Example (SS5Y3-12L11-□)



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

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

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

### 6 SUP/EXH block assembly

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

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

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

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

Symbol	SY3000	SY5000	SY7000
—	∅ 8	∅ 10	∅ 12
N	∅ 5/16"	∅ 3/8"	∅ 1/2"

\*: For N, sizes are in inches.

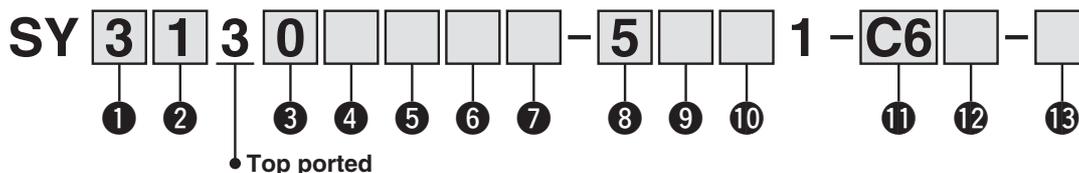
### 8 Mounting

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

Specify a longer rail than the standard length.

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

**How to Order Valves (With mounting screw)** Refer to page 13 for valve specifications.



**1 Series**

3	SY3000
5	SY5000
7	SY7000

**2 Type of actuation**

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

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

**3 Seal type**

0	Rubber seal
1	Metal seal

**4 Pilot type**

—	Internal pilot
R	External pilot

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

—	None
H	Built-in

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

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

**6 Pilot valve option**

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

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

**7 Coil type**

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

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

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

**8 Rated voltage**

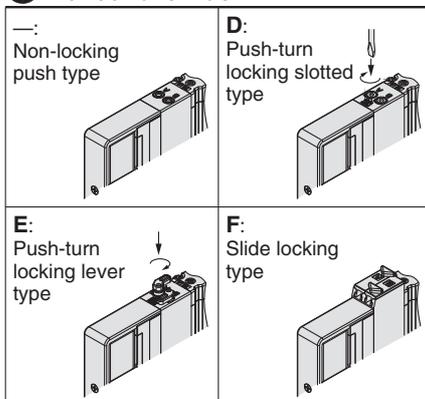
5	24 V DC
6	12 V DC

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

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

**11 A, B port size**

**Thread piping**

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

**One-touch fitting (Metric)**

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

**One-touch fitting (Inch)**

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

**12 Thread type**

—	Rc
F	G
N	NPT
T	NPTF

\*: Only — is available for M5.

**13 Type of mounting screw**

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

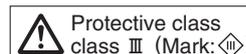
\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

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

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

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

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

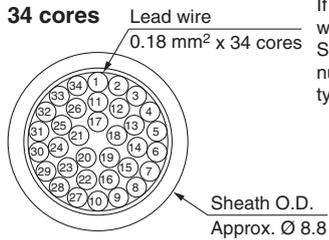


Valve  
Plug-in Sub-plate  
Metal Base  
Type 50, 51, 52 Manifold Exploded View  
Plug-in Connector Connecting Base  
Type 10, 11, 12 Manifold Exploded View  
One-touch Fittings/ Plug Assembly Part No.  
Manifold Options

# Series SY3000/5000/7000

## Electrical Wiring Specifications

### Lead wire



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 Ω/km, 20 °C	143 or less
Voltage limit V, 1 minute, AC	2000
Insulation resistance MΩ/km, 20 °C	10 or more

\*: Cannot be used for movable wiring.  
The minimum bending radius of the cable is 55 mm.

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

Positive common Negative common

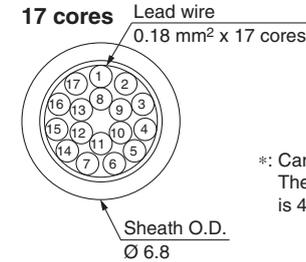
\*: For negative common specification, a valve for negative common or a valve without polarity should be used.

### Specified Layout

Mixed wiring of single and double wiring can be specified on the manifold specification. The maximum number of stations is determined according to the number of solenoids. The total number of solenoids should be 32 or less. 1 solenoid is required for 2-position single, and 2 solenoids for 2-position double, 3-position and 4-position.

**Electrical Wiring Specifications**

**Lead wire**



\*: Cannot be used for movable wiring.  
The minimum bending radius of the cable is 45 mm.

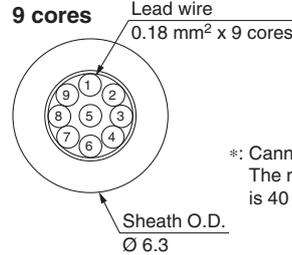
Station	Lead wire no.	Polarity
Station 1	SOL.a 1	(-) (+)
	SOL.b 2	(-) (+)
Station 2	SOL.a 3	(-) (+)
	SOL.b 4	(-) (+)
Station 3	SOL.a 5	(-) (+)
	SOL.b 6	(-) (+)
Station 4	SOL.a 7	(-) (+)
	SOL.b 8	(-) (+)
Station 5	SOL.a 9	(-) (+)
	SOL.b 10	(-) (+)
Station 6	SOL.a 11	(-) (+)
	SOL.b 12	(-) (+)
Station 7	SOL.a 13	(-) (+)
	SOL.b 14	(-) (+)
Station 8	SOL.a 15	(-) (+)
	SOL.b 16	(-) (+)
	COM. 17	(+) (-)

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

Lead wire colour	Printed mark (Both sides)	
	Type	Colour
Orange	—	Red Black
Light grey	—	Red Black
White	—	Red Black
Yellow	—	Red Black
Pink	—	Red Black
Orange	---	Red Black
Light grey	---	Red Black
White	---	Red Black
Yellow	---	Red

**Electrical characteristics**

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



\*: Cannot be used for movable wiring.  
The minimum bending radius of the cable is 40 mm.

Station	Lead wire 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	(-) (+)
	COM. 9	(+) (-)

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

Lead wire colour	Printed mark (Both sides)	
	Type	Colour
Orange	—	Red Black
Light grey	—	Red Black
White	—	Red Black
Yellow	—	Red Black
Pink	—	Red

\*: For negative common specification, a valve for negative common or a valve without polarity should be used.

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

Circular Connector

# Series SY3000/5000/7000



## How to Order Manifold

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



### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type

10	Side ported
11	Bottom ported*1

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

### 3 Valve stations

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

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

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

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

### 4 P, E port entry

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

### 5 SUP/EXH block assembly

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

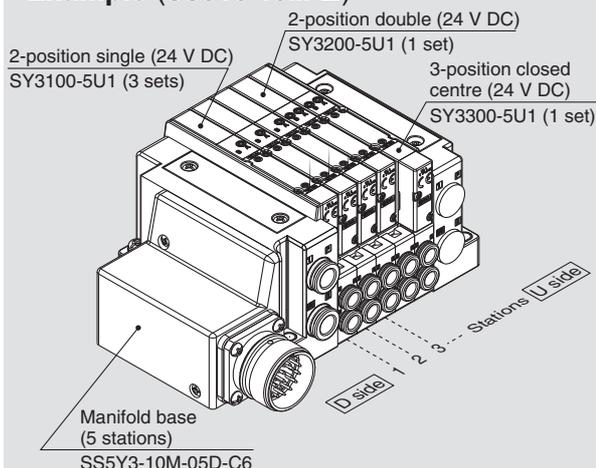
\*: 3/5(E) port is plugged for the built-in silencer type.

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

Refer to the page on the right for 6.

## How to Order Manifold Assembly

### Example (SS5Y3-10M-□)



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

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

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

\*: When mixing top ported configurations, select from page 142. In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

### 7 Mounting and Option

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

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

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

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

#### DIN Rail Option

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

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

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

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

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

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

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

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

Valve

Plug-in Sub-plate

Plug-in Metal Base

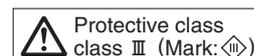
Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

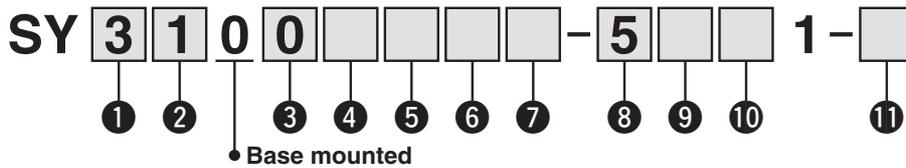
Manifold Options



# Series SY3000/5000/7000

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



### ① Series

3	SY3000
5	SY5000
7	SY7000

### ② Type of actuation

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

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

### ③ Seal type

0	Rubber seal
1	Metal seal

### ④ Pilot type

—	Internal pilot
R	External pilot

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

—	None
H	Built-in

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

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

### ⑥ Pilot valve option

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

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

### ⑦ Coil type

—	Standard
T	With power saving circuit (Continuous duty type)

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### ⑧ Rated voltage

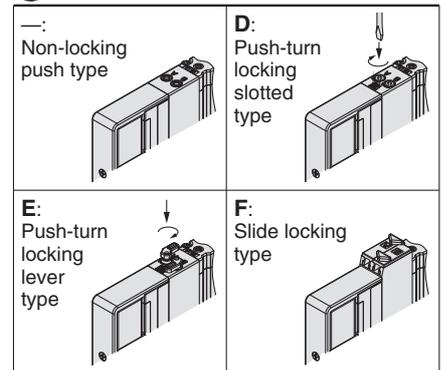
5	24 V DC
6	12 V DC

### ⑨ Light/surge voltage suppressor and common specification

Symbol	With light	Surge voltage suppressor	Common specification
—	—	—	Non-polar
R	—	●	
U	●		
S	—		Positive common
Z	●		
NS	—	Negative common	
NZ	●		

\*: Only "Z" and "NZ" types are available for with the power saving circuit.

### ⑩ Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### ⑪ Type of mounting screw

—	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

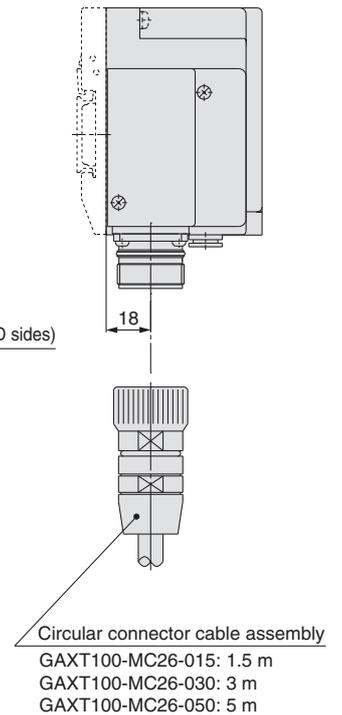
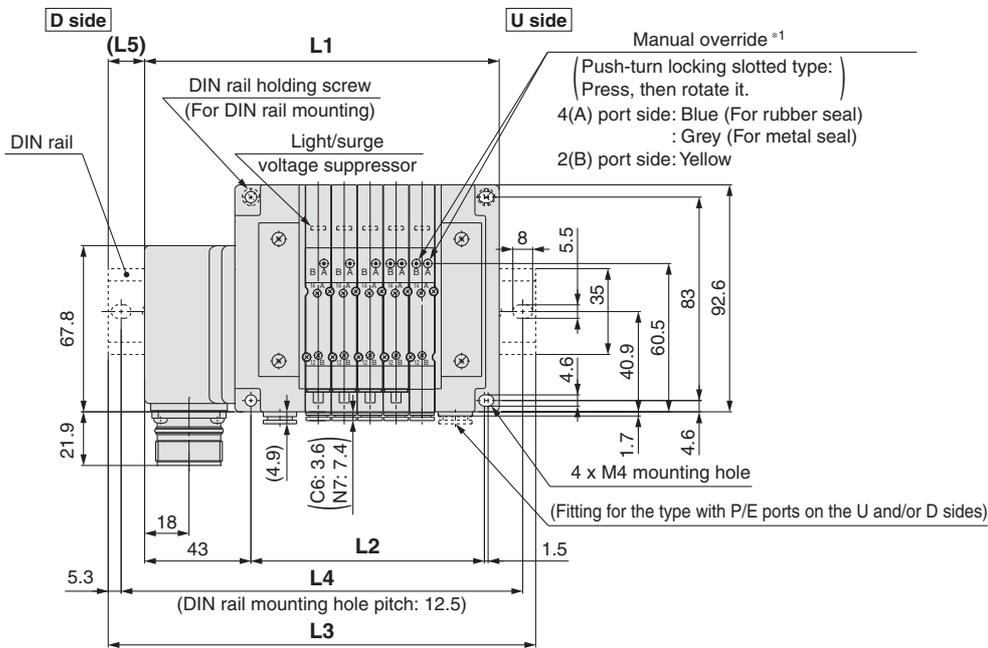
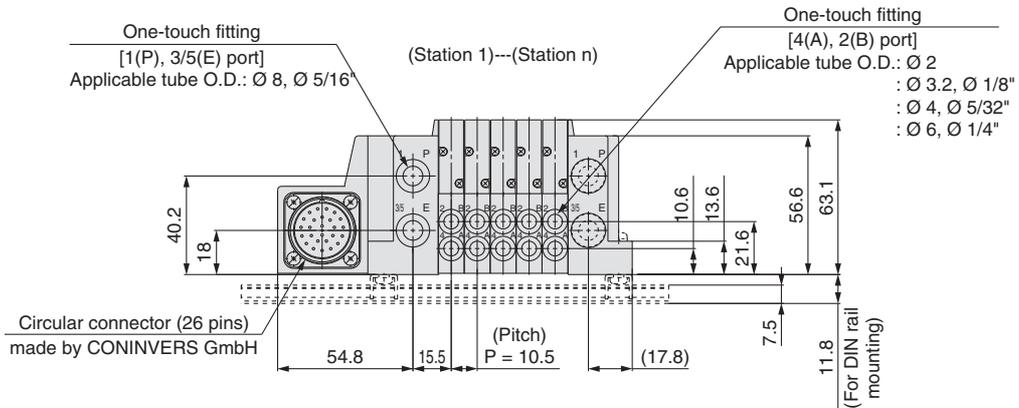
\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

Dimensions: Series **SY3000**

Plug-in  
Connector Connecting Base

Type 10/Side Ported  
Circular Connector

SS5Y3-10M- Stations  $\begin{matrix} U \\ D \end{matrix}$   $\begin{matrix} C2 \\ C3, N1 \\ C4, N3 \\ C6, N7 \end{matrix}$  (D)



\*1: Refer to page 205 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y3-10M-05D-C6".  
\*: Refer to page 210 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	112	122.5	133	143.5	154	164.5	175	185.5	196	206.5	217	227.5	238	248.5	259	269.5	280	290.5	301	311.5	322	332.5	343
L2	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5	231	241.5	252	262.5	273	283.5	294
L3	135.5	148	160.5	173	185.5	198	210.5	210.5	223	235.5	248	260.5	273	273	285.5	298	310.5	323	335.5	335.5	348	360.5	373
L4	125	137.5	150	162.5	175	187.5	200	200	212.5	225	237.5	250	262.5	262.5	275	287.5	300	312.5	325	325	337.5	350	362.5
L5	12	13	14	15	16	17	18	12.5	13.5	14.5	15.5	16.5	17.5	12.5	13.5	14.5	15.5	16.5	17.5	12	13	14	15

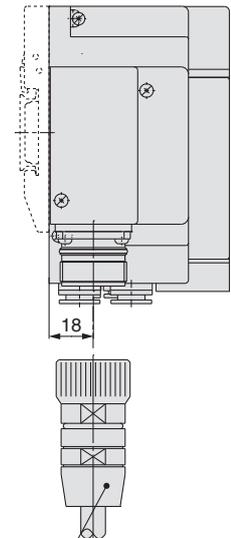
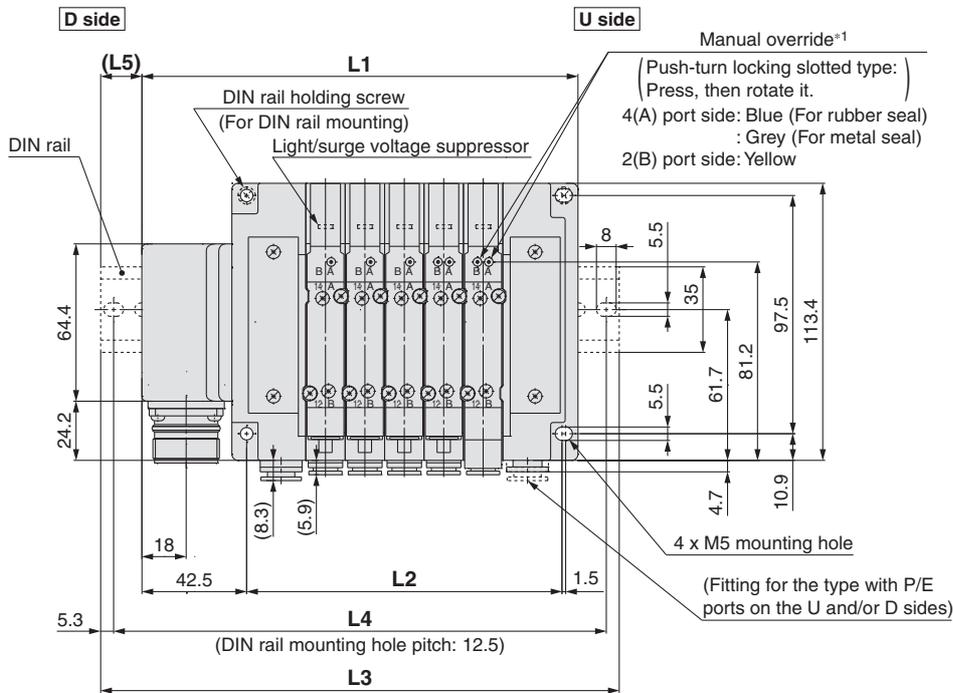
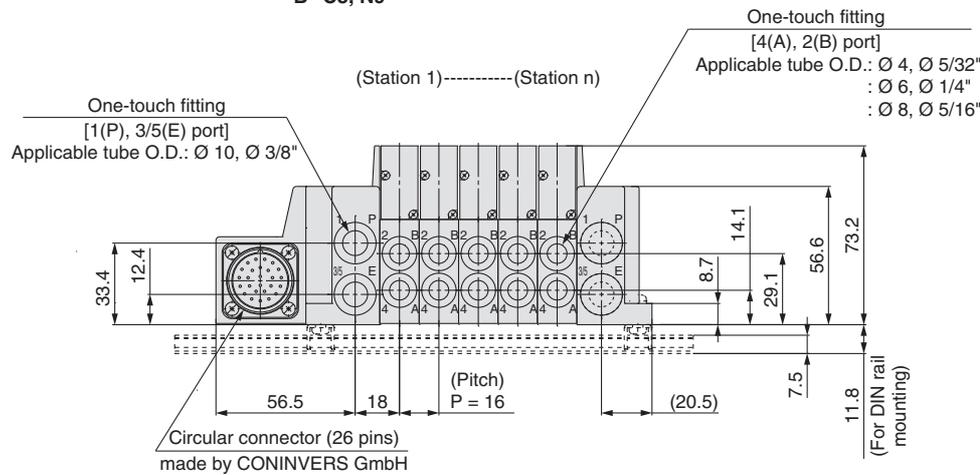
# Series SY3000/5000/7000

## Dimensions: Series SY5000

### Plug-in Connector Connecting Base

### Type 10/Side Ported Circular Connector

SS5Y5-10M-**Stations**  $\begin{matrix} \text{U} & \text{C4, N3} \\ \text{D} & \text{C6, N7 (D)} \\ \text{B} & \text{C8, N9} \end{matrix}$



Circular connector cable assembly  
 GAXT100-MC26-015: 1.5 m  
 GAXT100-MC26-030: 3 m  
 GAXT100-MC26-050: 5 m

\*1: Refer to page 206 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
 \*: These figures show the "SS5Y5-10M-05D-C8".  
 \*: Refer to page 211 for dimensions of A or B port top-ported type.

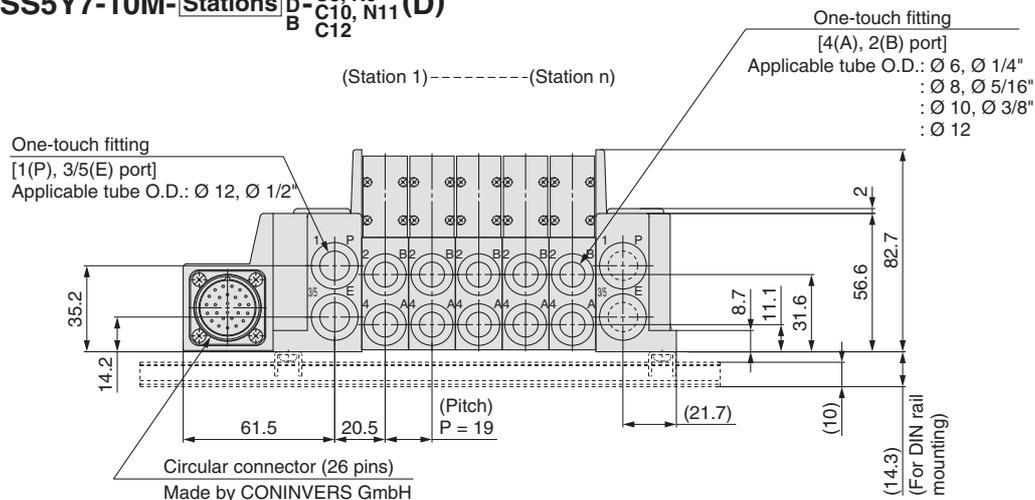
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	129	145	161	177	193	209	225	241	257	273	289	305	321	337	353	369	385	401	417	433	449	465	481
L2	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432
L3	160.5	173	185.5	210.5	223	235.5	260.5	273	285.5	298	323	335.5	348	360.5	385.5	398	410.5	435.5	448	460.5	473	498	510.5
L4	150	162.5	175	200	212.5	225	250	262.5	275	287.5	312.5	325	337.5	350	375	387.5	400	425	437.5	450	462.5	487.5	500
L5	16	14	12.5	17	15	13.5	18	16	14.5	12.5	17	15.5	13.5	12	16.5	14.5	13	17.5	15.5	14	12	16.5	15

Dimensions: Series **SY7000**

Plug-in  
Connector Connecting Base

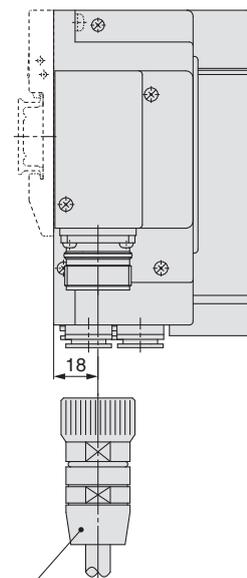
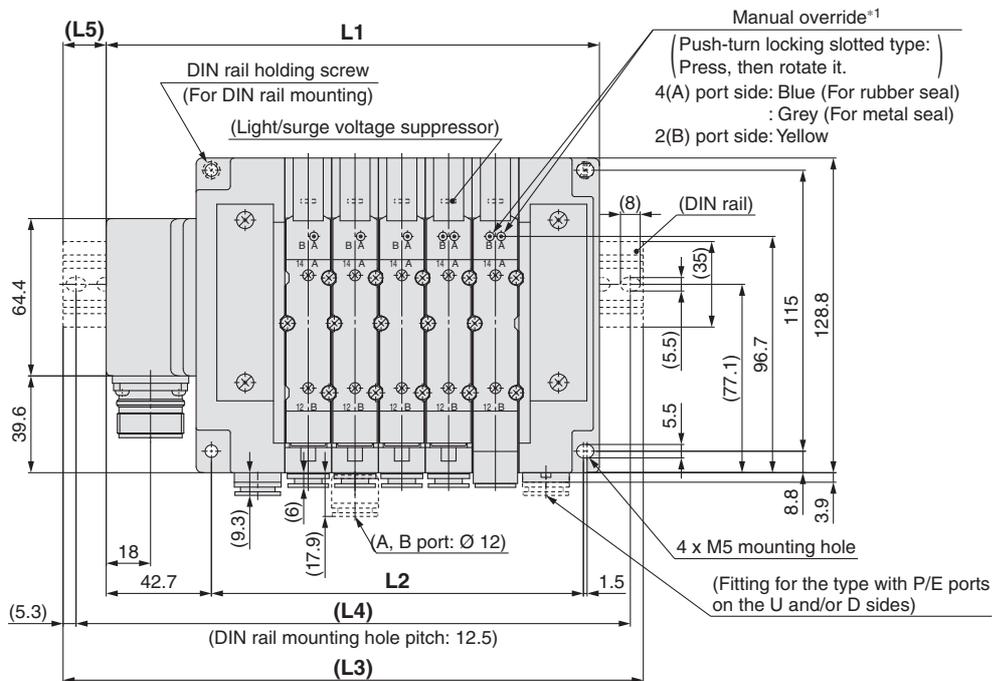
Type 10/Side Ported  
Circular Connector

SS5Y7-10M-**Stations**  $\begin{matrix} U \\ D \\ B \end{matrix}$   $\begin{matrix} C6, N7 \\ C8, N9 \\ C10, N11 (D) \\ C12 \end{matrix}$



D side

U side



Circular connector cable assembly  
GAXT100-MC26-015: 1.5 m  
GAXT100-MC26-030: 3 m  
GAXT100-MC26-050: 5 m

\*1: Refer to page 207 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y7-10M-05D-C10".  
\*: Refer to page 212 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
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

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

# Plug-in Connector Connecting Base

## Circular Connector

Type 12  
Top Ported

# Series SY3000/5000/7000



### How to Order Manifold

SS5Y **3** - 12M - **05** **U** **□** - **□** **□**

①
②
③
④
⑤
⑥

Refer to pages 210 to 212 for dimensions of Type 12/Top ported type.

#### ① Series

3	SY3000
5	SY5000
7	SY7000

#### ② Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring*1
⋮	⋮	
12	12 stations	
02	2 stations	Specified layout*2 (Available up to 24 solenoids)
⋮	⋮	
24	24 stations	

- \*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
- \*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)
- \*: This also includes the number of blanking plate assembly.

#### ③ P, E port entry

U*1	U side (2 to 10 stations)
D*1	D side (2 to 10 stations)
B	Both sides (2 to 24 stations)

- \*1: ④ For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

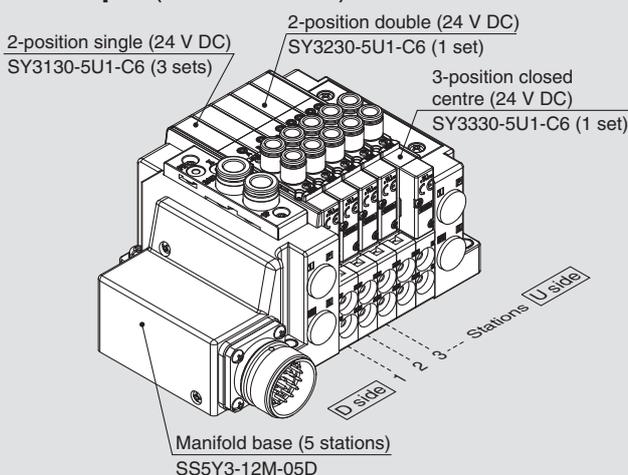
#### ④ SUP/EXH block assembly

—	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

- \*: For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)
- \*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

### How to Order Manifold Assembly

#### Example (SS5Y3-12M-□)



SS5Y3-12M-05D ..... 1 set (Type 12 5-station manifold base part no.)  
 \*SY3130-5U1-C6 ..... 3 sets (2-position single part no.)  
 \*SY3230-5U1-C6 ..... 1 set (2-position double part no.)  
 \*SY3330-5U1-C6 ..... 1 set (3-position closed centre part no.)

→ The asterisk denotes the symbol for assembly. Prefix it to the part numbers of the valve etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

#### ⑤ P, E port size (One-touch fittings)

Symbol	SY3000	SY5000	SY7000
—	∅ 8	∅ 10	∅ 12
N	∅ 5/16"	∅ 3/8"	∅ 1/2"

- \*: For N, sizes are in inches.

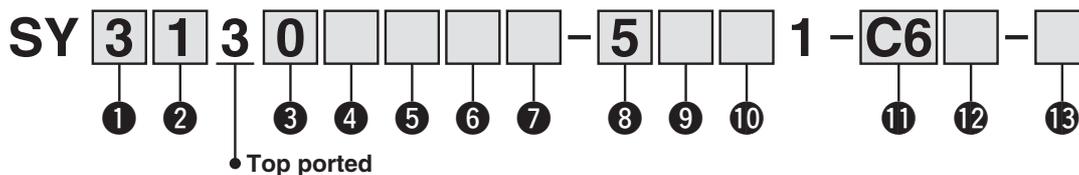
#### ⑥ Mounting

—	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	For 3 stations
⋮	⋮
D24	For 24 stations

Specify a longer rail than the standard length.

- \*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

**How to Order Valves (With mounting screw)** Refer to page 13 for valve specifications.



**1 Series**

3	SY3000
5	SY5000
7	SY7000

**2 Type of actuation**

1	2-position	Single
2	2-position	Double
3	3-position	Closed centre
4		Exhaust centre
5		Pressure centre
A*1	4-position dual 3-port	N.C./N.C.
B*1		N.O./N.O.
C*1		N.C./N.O.

\*1: Only rubber seal is available for the 4-position dual 3-port valve.

**3 Seal type**

0	Rubber seal
1	Metal seal

**4 Pilot type**

—	Internal pilot
R	External pilot

**5 Back pressure check valve (Built-in valve type)**

—	None
H	Built-in

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

**6 Pilot valve option**

—	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*1	High pressure type (1.0 MPa)

\*1: Only metal seal type is available for the high pressure type.

**7 Coil type**

—	Standard
T	With power saving circuit (Continuous duty type)

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

**8 Rated voltage**

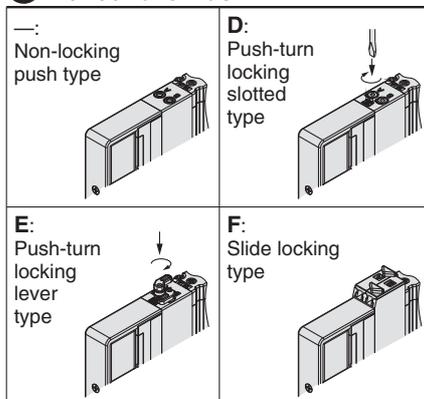
5	24 V DC
6	12 V DC

**9 Light/surge voltage suppressor and common specification**

Symbol	With light	Surge voltage suppressor	Common specification
—	—	—	Non-polar
R	—	●	
U	●		
S	—		Positive common
Z	●		
NS	—	Negative common	
NZ	●		

\*: Only "Z" and "NZ" types are available for with the power saving circuit.

**10 Manual override**



\*: Refer to page 31 for with the safety slide locking manual override.

**11 A, B port size**

**Thread piping**

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY3000
O1	1/8	SY5000
O2	1/4	SY7000

**One-touch fitting (Metric)**

Symbol	A, B port	SY3000	SY5000	SY7000
C2	Ø 2	●	—	—
C3	Ø 3.2	●	—	—
C4	Ø 4	●	●	—
C6	Ø 6	●	●	●
C8	Ø 8	—	●	●
C10	Ø 10	—	—	●
C12	Ø 12	—	—	●

**One-touch fitting (Inch)**

Symbol	A, B port	SY3000	SY5000	SY7000
N1	Ø 1/8"	●	—	—
N3	Ø 5/32"	●	●	—
N7	Ø 1/4"	●	●	●
N9	Ø 5/16"	—	●	●
N11	Ø 3/8"	—	—	●

**12 Thread type**

—	Rc
F	G
N	NPT
T	NPTF

\*: Only — is available for M5.

**13 Type of mounting screw**

—	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service. Refer to page 244 for part numbers of the base gasket and mounting screw.

\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.

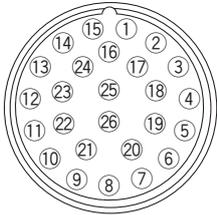


Valve  
Plug-in Sub-plate  
Metal Base  
Type 50, 51, 52  
Manifold Exploded View  
Plug-in Connector Connecting Base  
Type 10, 11, 12  
Manifold Exploded View  
One-touch Fittings/  
Plug Assembly Part No.  
Manifold Options

# Series SY3000/5000/7000

## Electrical Wiring Specifications

### Circular connector



If alignment is not specified, the internal wiring is double wiring (connected to SOL. a and SOL. b) regardless of number of stations, valve and option types.

	Terminal no.	Polarity
Station 1	SOL.a	1 (-) (+)
	SOL.b	2 (-) (+)
Station 2	SOL.a	3 (-) (+)
	SOL.b	4 (-) (+)
Station 3	SOL.a	5 (-) (+)
	SOL.b	6 (-) (+)
Station 4	SOL.a	7 (-) (+)
	SOL.b	8 (-) (+)
Station 5	SOL.a	9 (-) (+)
	SOL.b	10 (-) (+)
Station 6	SOL.a	11 (-) (+)
	SOL.b	12 (-) (+)
Station 7	SOL.a	13 (-) (+)
	SOL.b	14 (-) (+)
Station 8	SOL.a	15 (-) (+)
	SOL.b	16 (-) (+)
Station 9	SOL.a	17 (-) (+)
	SOL.b	18 (-) (+)
Station 10	SOL.a	19 (-) (+)
	SOL.b	20 (-) (+)
Station 11	SOL.a	21 (-) (+)
	SOL.b	22 (-) (+)
Station 12	SOL.a	23 (-) (+)
	SOL.b	24 (-) (+)
	COM.	25 (+) (-)
	COM.	26 (+) (-)

Positive Negative  
common common

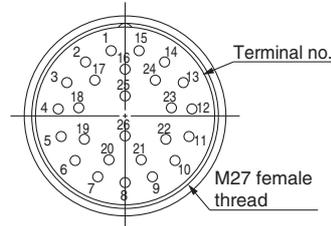
\*: When using a valve with no polarity, either positive common or negative common can be used.

### Specified Layout

Mixed wiring of single and double wiring can be specified on the manifold specification sheet. The maximum number of stations is determined according to the number of solenoids. The total number of solenoids should be 24 or less. 1 solenoid is required for 2-position single, and 2 solenoids for 2-position double, 3-position and 4-position.

## Cable Assembly

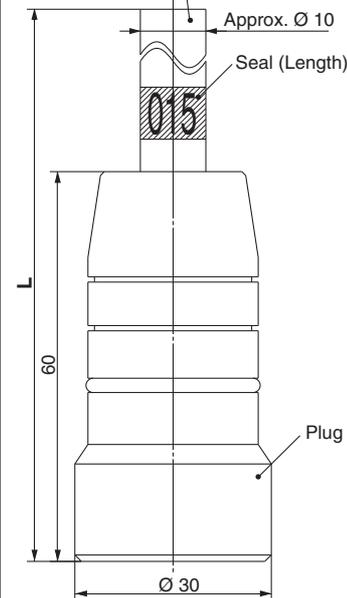
015  
AXT100-MC26-030  
050



### Lead wire colour for circular connector cable assembly by terminal number

Terminal no.	Lead wire colour	Dot marking
1	Black	None
2	Brown	None
3	Red	None
4	Orange	None
5	Yellow	None
6	Pink	None
7	Blue	None
8	Purple	White
9	Grey	Black
10	White	Black
11	White	Red
12	Yellow	Red
13	Orange	Red
14	Yellow	Black
15	Pink	Black
16	Blue	White
17	Purple	None
18	Grey	None
19	Orange	Black
20	Red	White
21	Brown	White
22	Pink	Red
23	Grey	Red
24	Black	White
25	White	None
26	White	None

Cable  
0.3 mm<sup>2</sup> x 26 cores  
O.D. Ø 1.4



### Circular connector cable assembly

Cable length (L)	Assembly part no.
	26 pins
1.5 m	GAXT100-MC26-015
3 m	GAXT100-MC26-030
5 m	GAXT100-MC26-050

\*: Cannot be used for movable wiring.

\*: Lengths other than the above is also available. Please contact SMC for details.

### 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

\*: The minimum bending radius of the circular connector cable is 20 mm.

Manifold Options

One-touch Fittings/  
Plug Assembly Part No.

Type 10, 11, 12  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Metal Base

Plug-in Sub-plate

Valve

Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

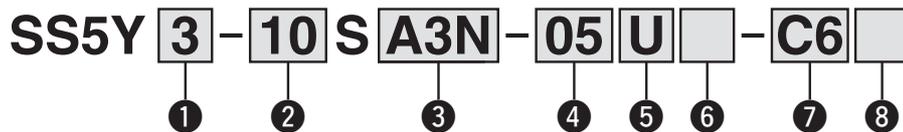
EX500 Gateway Decentralised System 2 (128 Points)

# Series SY3000/5000/7000



## How to Order Manifold

Refer to pages 208 (SY5000) and 209 (SY7000) for dimensions of Type 11/Bottom ported type.



### 1 Series

3	SY3000
5	SY5000
7	SY7000

\*: For mixed mounting, refer to page 213 and later.

### 2 Type

10	Side ported
11	Bottom ported* <sup>1</sup>

\*1: The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to "Plug-in Mixed Mounting Type Manifold" (from page 213).

\*: When mixing top ported configurations, select from page 158. In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

### 3 SI Unit (Number of outputs, Output polarity, Max. number of valve stations)

0	Without SI Unit
A3N	32 outputs* <sup>1</sup> * <sup>4</sup> , 1 to 16 stations (24 stations* <sup>3</sup> ), Negative common* <sup>2</sup>

- \*1: 16 outputs can be set by switching the built-in setting switch.
- \*2: Ensure a match with the common specification of the valve.
- \*3: ( ) : Maximum number of stations for mixed single and double wiring.
- \*4: When using the SI Unit with 32 outputs, use the GW Unit compatible with the EX500 Gateway Decentralised System 2 (128 points).

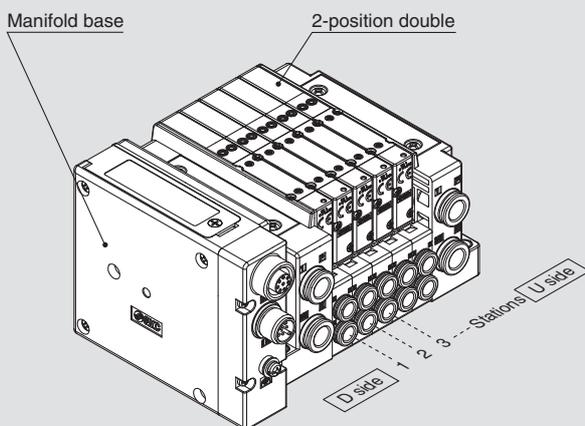
### 4 Valve stations

Stations	Note
02	Double wiring* <sup>1</sup>
:	
16	
02	Mixed wiring, Specified layout* <sup>2</sup> (Available up to 32 solenoids)
:	
24	

- \*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
- \*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)
- \*: When the product without the SI Unit (S0) is selected, note the maximum number of solenoids of the SI Unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.
- \*: This also includes the number of blanking plate assembly.

## How to Order Manifold Assembly

### Example



SS5Y3-10SA3N-05D-C6...1 set (Manifold base part number)  
 \* SY3200-5U1 .....5 sets (2-position double part number)  
 ↳ The asterisk denotes the symbol for assembly. Prefix it to the part numbers of the valve etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold base part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on the manifold specification sheet.

### 5 P, E port entry

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 24 stations)

### 6 SUP/EXH block assembly

—	Internal pilot
S	Internal pilot, Built-in silencer* <sup>1</sup> * <sup>2</sup>
R	External pilot

- \*1: 3/5(E) port is plugged for the built-in silencer type.
- \*2: When built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

\*: A separate GW Unit and communication cable are required.

For details about the EX 5 0 0 Gateway-type Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 235 in this catalogue. Please download the Operation Manual via SMC website, <http://www.smc.eu>

Valve

Plug-in Sub-plate

Metal Base

Plug-in Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Plug-in Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

**7 A, B port size (Metric/One-touch fitting)**

	A, B port	Type 10/Side Ported			Type 11/Bottom Ported			
		SY3000	SY5000	SY7000	SY5000	SY7000		
Straight	C2	∅ 2	●	—	—	—		
	C3	∅ 3.2	●	—	—	—		
	C4	∅ 4	●	●	—	●		
	C6	∅ 6	●	●	●	●		
	C8	∅ 8	—	●	●	●		
	C10	∅ 10	—	—	●	—		
	C12	∅ 12	—	—	●	—		
	CM*1	Mixed sizes	●	●	●	●		
	Elbow*2	Upward	L4	∅ 4	●	●	—	—
			L6	∅ 6	●	●	●	—
L8			∅ 8	—	●	●	—	
L10			∅ 10	—	—	●	—	
L12			∅ 12	—	—	●	—	
Downward			B4	∅ 4	●	●	—	—
		B6	∅ 6	●	●	●	—	
		B8	∅ 8	—	●	●	—	
		B10	∅ 10	—	—	●	—	
		B12	∅ 12	—	—	●	—	
		LM*1	Mixed sizes	●	●	●	—	
P, E port*3		∅ 8	∅ 10	∅ 12	∅ 10	∅ 12		

**A, B port size (Inch/One-touch fitting)**

	A, B port	Type 10/Side Ported			Type 11/Bottom Ported		
		SY3000	SY5000	SY7000	SY5000	SY7000	
Straight	N1	∅ 1/8"	●	—	—	—	
	N3	∅ 5/32"	●	●	—	●	
	N7	∅ 1/4"	●	●	●	●	
	N9	∅ 5/16"	—	●	●	●	
	N11	∅ 3/8"	—	—	●	—	
	CM*1	Mixed sizes	●	●	●	●	
Elbow*2	Upward	LN3	∅ 5/32"	●	—	—	—
		LN7	∅ 1/4"	●	●	—	—
		LN9	∅ 5/16"	—	●	—	—
		LN11	∅ 3/8"	—	—	●	—
		Downward	BN3	∅ 5/32"	●	—	—
	BN7		∅ 1/4"	●	●	—	—
	BN9		∅ 5/16"	—	●	—	—
	BN11		∅ 3/8"	—	—	●	—
	LM*1		Mixed sizes	●	●	●	—
	P, E port*3		∅ 5/16"	∅ 3/8"	∅ 1/2"	∅ 3/8"	∅ 1/2"

\*1: Indicate the sizes on the manifold specification sheet.

\*2: To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 250 to 252).

\*3: The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

**8 Mounting and Option**

	Mounting	Option	
		Name plate	Station number
—	Direct mounting	—	—
AA		●	●
BA		●	—
D□*1	DIN rail mounting	—	—
A□*1		●	●
B□*1		●	—

\*1: Refer to "DIN Rail Option" below.

\*: Select the direct mounting type for Type 11 (Bottom ported).

**DIN Rail Option**

—	With DIN bracket, DIN rail with standard length
0	With DIN bracket, without DIN rail
3*1	With DIN bracket, DIN rail for 3 stations
⋮	⋮
24*1	With DIN bracket, DIN rail for 24 stations

\*1: Specify a longer rail than the length of valve stations.

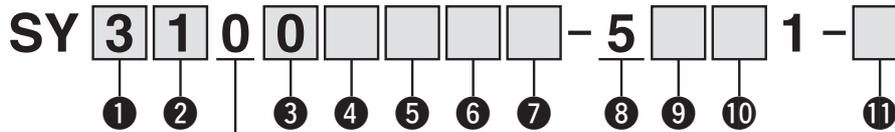
\*: If the DIN rail must be mounted without an SI Unit, select "D0" and order the DIN rail separately. Refer to L3 of the dimensions for the DIN rail length. Refer to page 249 for the DIN rail part number.

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

# Series SY3000/5000/7000

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



• Base mounted

### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed centre
4		Exhaust centre
5		Pressure centre
A*1	4-position dual 3-port valve	N.C./N.C.
B*1		N.O./N.O.
C*1		N.C./N.O.

\*1: Select the rubber seal type for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

—	Internal pilot
R	External pilot

### 5 Back pressure check valve

—	None
H*1	Built-in

\*1: Select the rubber seal type when the back pressure check valve is built-in. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. For ordering example, refer to page 256. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: Select "—" for 3-position type and the SY7000.

### 6 Pilot valve option

—	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*1	High pressure type (1.0 MPa)

\*1: Select the metal seal type for high pressure type.

### 7 Coil type

—	Standard
T	With power saving circuit (Continuous duty type)*1*2

\*1: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*2: Be careful of the energising time when the power saving circuit is selected. For details, refer to page 268.

### 8 Rated voltage

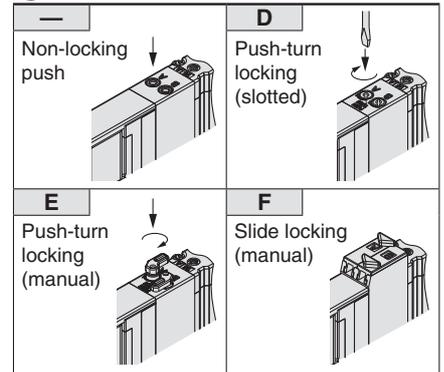
5	24 V DC
---	---------

### 9 Light/surge voltage suppressor and common specification

	With light	Surge voltage suppressor	Common specification
R	—	●	Non-polar
U	●		
NS	—		Negative common
NZ	●		

\*: Select "NZ" for with the power saving circuit.

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 Type of mounting screw

—	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)*1
H	Hexagon socket head cap screw (Falling-out-prevention type)*1

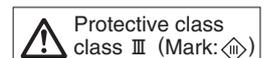
\*1: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

\*: Select "—" or "K" for the optional individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

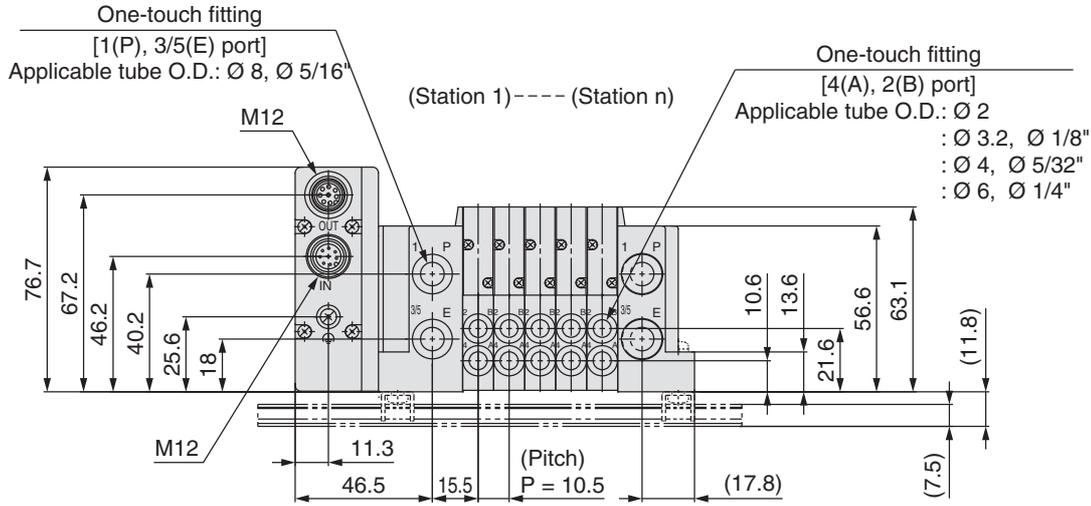


Dimensions: Series **SY3000**

Plug-in  
Connector Connecting Base

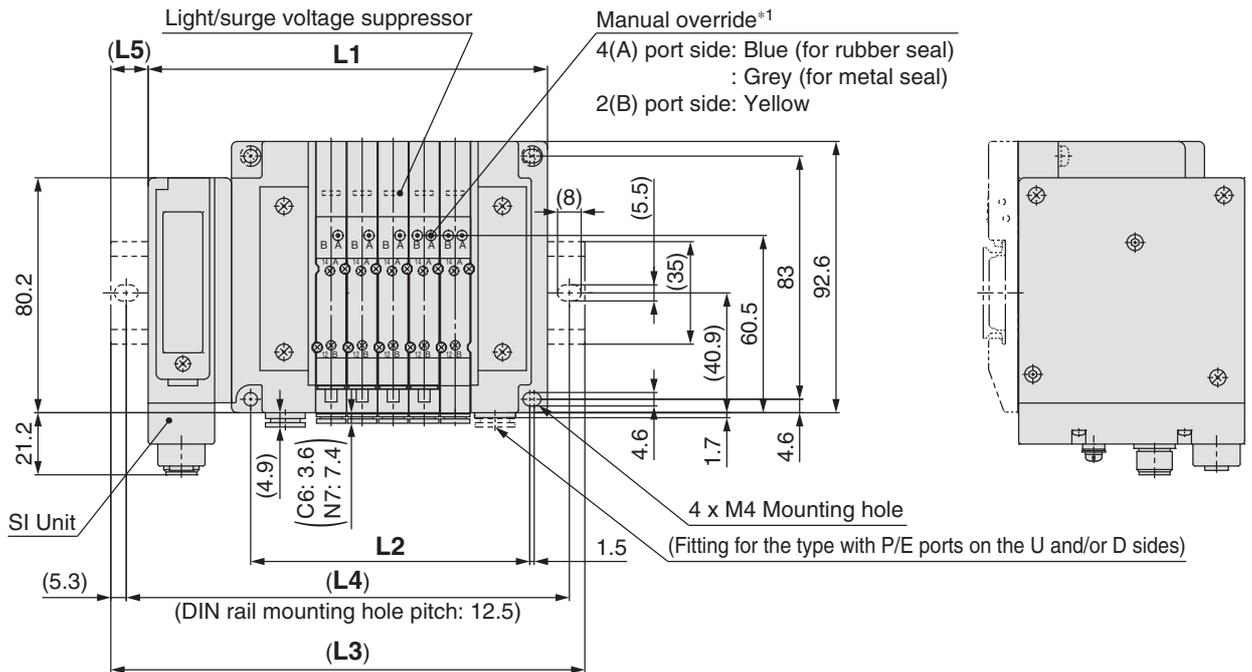
Type 10/Side Ported  
EX500 (128 Points)

SS5Y3-10SA3N- Stations  $\begin{matrix} U \\ D \\ B \end{matrix} \begin{matrix} C2 \\ C3, N1 \\ C4, N3 \\ C6, N7 \end{matrix} (D)$



D side

U side



\*1: Refer to page 205 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y3-10SA3N-05D-C6".

\*: Refer to page 210 for dimensions of A or B port top-ported type.

**L: Dimensions**

n: Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	103.7	114.2	124.7	135.2	145.7	156.2	166.7	177.2	187.7	198.2	208.7	219.2	229.7	240.2	250.7
L2	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210
L3	135.5	148	148	160.5	173	185.5	198	210.5	223	223	235.5	248	260.5	273	285.5
L4	125	137.5	137.5	150	162.5	175	187.5	200	212.5	212.5	225	237.5	250	262.5	275
L5	16	17	11.5	12.5	13.5	14.5	15.5	16.5	17.5	12.5	13.5	14.5	15.5	16.5	17.5

L \ n	17	18	19	20	21	22	23	24
L1	261.2	271.7	282.2	292.7	303.2	313.7	324.2	334.7
L2	220.5	231	241.5	252	262.5	273	283.5	294
L3	285.5	298	310.5	323	335.5	348	348	360.5
L4	275	287.5	300	312.5	325	337.5	337.5	350
L5	12	13	14	15	16	17	12	13

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

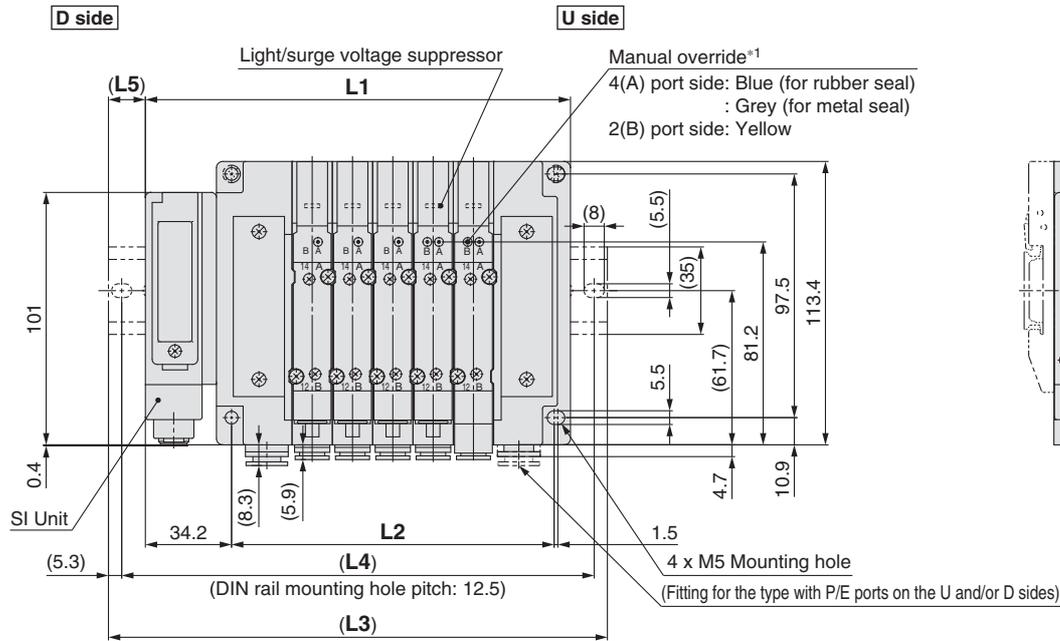
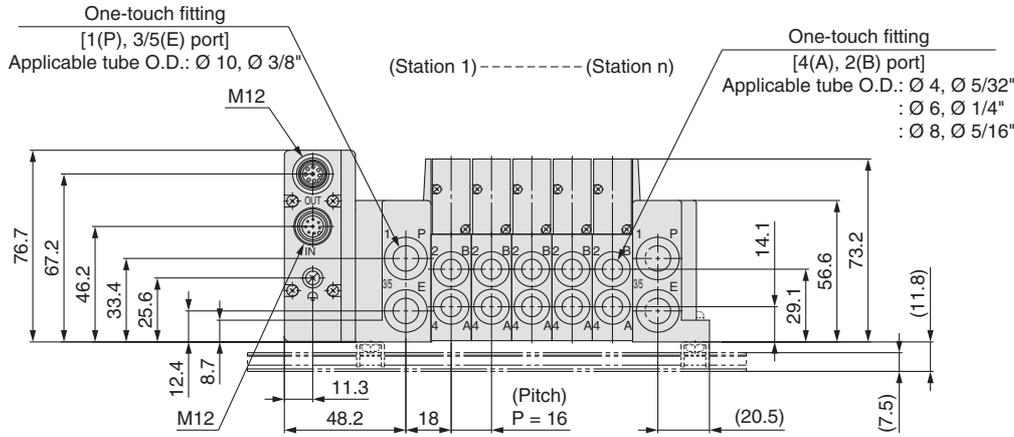
# Series SY3000/5000/7000

## Dimensions: Series SY5000

## Plug-in Connector Connecting Base

Type 10/Side Ported  
EX500 (128 Points)

SS5Y5-10SA3N- Stations U C4, N3  
D-C6, N7 (D)  
B C8, N9



\*1: Refer to page 206 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y5-10SA3N-05D-C8".  
\*: Refer to page 211 for dimensions of A or B port top-ported type.

### L: Dimensions

n: Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	120.7	136.7	152.7	168.7	184.7	200.7	216.7	232.7	248.7	264.7	280.7	296.7	312.7	328.7	344.7
L2	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304
L3	148	160.5	185.5	198	210.5	235.5	248	260.5	273	298	310.5	323	348	360.5	373
L4	137.5	150	175	187.5	200	225	237.5	250	262.5	287.5	300	312.5	337.5	350	362.5
L5	13.5	12	16.5	14.5	13	17.5	15.5	14	12	16.5	15	13	17.5	16	14

L \ n	17	18	19	20	21	22	23	24
L1	360.7	376.7	392.7	408.7	424.7	440.7	456.7	472.7
L2	320	336	352	368	384	400	416	432
L3	385.5	410.5	423	435.5	448	473	485.5	498
L4	375	400	412.5	425	437.5	462.5	475	487.5
L5	12.5	17	15	13.5	11.5	16	14.5	12.5



Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

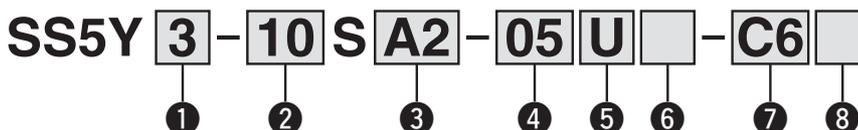
EX500 Gateway Decentralised System (64 Points)

# Series SY3000/5000/7000



## How to Order Manifold

Refer to pages 208 (SY5000) and 209 (SY7000) for dimensions of Type 11/Bottom ported type.



### 1 Series

3	SY3000
5	SY5000
7	SY7000

\*: For mixed mounting, refer to page 213 and later.

### 2 Type

10	Side ported
11	Bottom ported*1

\*1: The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to "Plug-in Mixed Mounting Type Manifold" (from page 213).

\*: When mixing top ported configurations, select from page 160. In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

### 3 SI Unit (Number of outputs, Output polarity, Max. number of valve stations)

0	Without SI Unit
A2	16 outputs, Positive common*1, 1 to 18 stations (16 stations)*2
A2N	16 outputs, Negative common*1, 1 to 18 stations (16 stations)*2

\*1: Ensure a match with the common specification of the valve to be used.

\*2: ( ): Maximum number of stations for mixed single and double wiring.

### 4 Valve stations

Stations	Note
02	2 stations
⋮	⋮
08	8 stations
02	2 stations
⋮	⋮
16	16 stations

\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

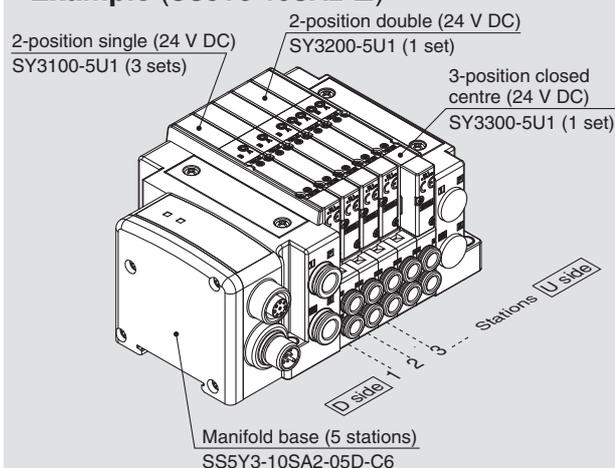
\*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

\*: When the product without the SI Unit (S0) is selected, note the maximum number of solenoids of the SI Unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

\*: This also includes the number of blanking plate assembly.

## How to Order Manifold Assembly

### Example (SS5Y3-10SA2-□)



SS5Y3-10SA2-05D-C6 ... 1 set (Type 10 5-station manifold base part no.)  
 \*SY3100-5U1 ..... 3 sets (2-position single part no.)  
 \*SY3200-5U1 ..... 1 set (2-position double part no.)  
 \*SY3300-5U1 ..... 1 set (3-position closed centre part no.)

The asterisk denotes the symbol for assembly. Prefix it to the part numbers of the valve etc.

• The valve arrangement is numbered as the 1st station from the D side.  
 • Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

### 5 P, E port entry

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 16 stations)

### 6 SUP/EXH block assembly

—	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

\*: 3/5(E) port is plugged for the built-in silencer type.

\*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

\*: A separate GW Unit and communication cable are required.

For details about the EX500 Gateway-type Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 236 in this catalogue. Please download the Operation Manual via SMC website, <http://www.smc.eu>

**7 A, B port size (Metric/One-touch fitting)**

	A, B port	Type 10/Side Ported			Type 11/Bottom Ported		
		SY3000	SY5000	SY7000	SY5000	SY7000	
Straight	C2	∅ 2	●	—	—	—	
	C3	∅ 3.2	●	—	—	—	
	C4	∅ 4	●	●	—	●	
	C6	∅ 6	●	●	●	●	
	C8	∅ 8	—	●	●	●	
	C10	∅ 10	—	—	●	—	
	C12	∅ 12	—	—	●	—	
	CM*1	Mixed sizes	●	●	●	●	
	Upward	L4	∅ 4	●	●	—	—
		L6	∅ 6	●	●	●	—
L8		∅ 8	—	●	●	—	
L10		∅ 10	—	—	●	—	
L12		∅ 12	—	—	●	—	
Downward		B4	∅ 4	●	●	—	—
	B6	∅ 6	●	●	●	—	
	B8	∅ 8	—	●	●	—	
	B10	∅ 10	—	—	●	—	
	B12	∅ 12	—	—	●	—	
	LM*1	Mixed sizes	●	●	●	—	
P, E port*3 (One-touch fittings)		∅ 8	∅ 10	∅ 12	∅ 10	∅ 12	

**A, B port size (Inch/One-touch fitting)**

	A, B port	Type 10/Side Ported			Type 11/Bottom Ported	
		SY3000	SY5000	SY7000	SY5000	SY7000
Straight	N1	∅ 1/8"	●	—	—	—
	N3	∅ 5/32"	●	●	—	●
	N7	∅ 1/4"	●	●	●	●
	N9	∅ 5/16"	—	●	●	●
	N11	∅ 3/8"	—	—	●	—
	CM*1	Mixed sizes	●	●	●	●
Upward	LN3	∅ 5/32"	●	—	—	—
	LN7	∅ 1/4"	●	●	—	—
	LN9	∅ 5/16"	—	●	—	—
Downward	BN3	∅ 5/32"	●	—	—	—
	BN7	∅ 1/4"	●	●	—	—
	BN9	∅ 5/16"	—	●	—	—
	BN11	∅ 3/8"	—	—	●	—
LM*1	Mixed sizes	●	●	●	—	
P, E port*3 (One-touch fittings)		∅ 5/16"	∅ 3/8"	∅ 1/2"	∅ 3/8"	∅ 1/2"

\*1: Indicate the sizes on the manifold specification sheet.

\*2: To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 250 to 252).

\*3: The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

**8 Mounting and Option**

	Mounting	Option	
		Name plate	Station number
—	Direct mounting	—	—
AA		●	●
BA		●	—
D□*1	DIN rail mounting	—	—
A□*1		●	●
B□*1		●	—

\*1: Refer to "DIN Rail Option" below.

\*: Select the direct mounting type for Type 11 (Bottom ported).

**DIN Rail Option**

—	With DIN bracket, DIN rail with standard length
0	With DIN bracket, without DIN rail
3*1	With DIN bracket, DIN rail for 3 stations
⋮	⋮
16*1	With DIN bracket, DIN rail for 16 stations

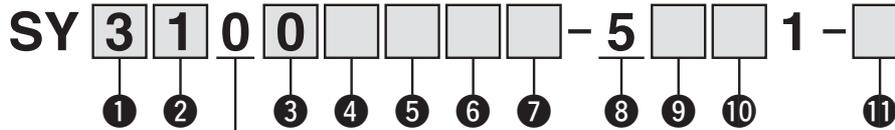
\*1: Specify a longer rail than the length of valve stations.

\*: If the DIN rail must be mounted without an SI Unit, select "D0" and order the DIN rail separately. Refer to L3 of the dimensions for the DIN rail length. Refer to page 249 for the DIN rail part number.

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



Base mounted

### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed centre
4		Exhaust centre
5		Pressure centre
A*1	4-position dual 3-port	N.C./N.C.
B*1		N.O./N.O.
C*1		N.C./N.O.

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

—	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

—	None
H	Built-in

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

—	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*1	High pressure type (1.0 MPa)

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

—	Standard
T	With power saving circuit (Continuous duty type)

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

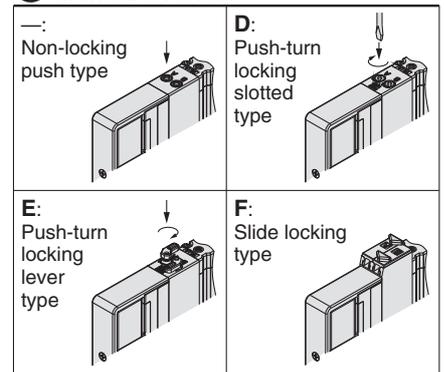
5	24 V DC
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### 9 Light/surge voltage suppressor and common specification

Symbol	With light	Surge voltage suppressor	Common specification
R	—	●	Non-polar
U	●		
S	—		Positive common
Z	●		
NS	—		
NZ	●		

\*: Only "Z" and "NZ" are available for with the power saving circuit. Select a valve from R, U, S or Z when the SI Unit specification is A2 (positive common). Select a valve from R, U, NS or NZ when the SI Unit specification is A2N (negative common).

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 Type of mounting screw

—	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

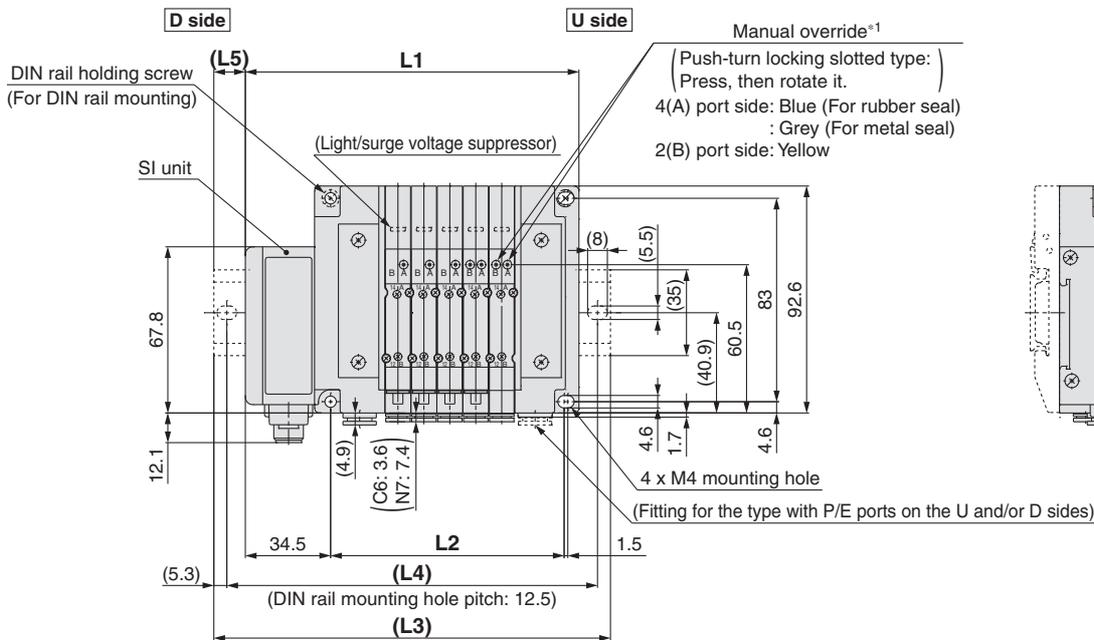
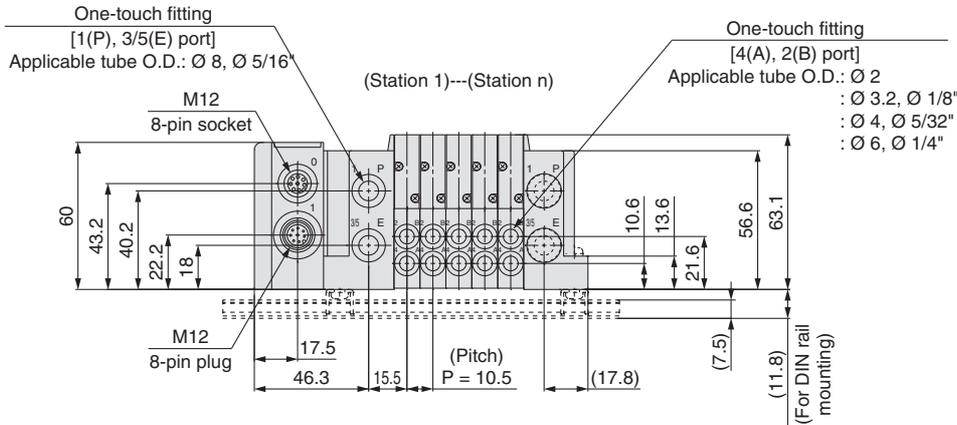
\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

Dimensions: Series **SY3000**

Plug-in  
Connector Connecting Base

Type 10/Side Ported  
EX500 (64 Points)

SS5Y3-10SA2- Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix}$   $\begin{matrix} \text{C2} \\ \text{C3}, \text{N1} \\ \text{C4}, \text{N3} \\ \text{C6}, \text{N7} \end{matrix}$  (D)



\*1: Refer to page 205 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y3-10SA2-05D-C6".  
\*: Refer to page 210 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	103.5	114	124.5	135	145.5	156	166.5	177	187.5	198	208.5	219	229.5	240	250.5
L2	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210
L3	135.5	148	148	160.5	173	185.5	198	210.5	223	223	235.5	248	260.5	273	285.5
L4	125	137.5	137.5	150	162.5	175	187.5	200	212.5	212.5	225	237.5	250	262.5	275
L5	16	17	12	13	14	15	16	17	18	12.5	13.5	14.5	15.5	16.5	17.5

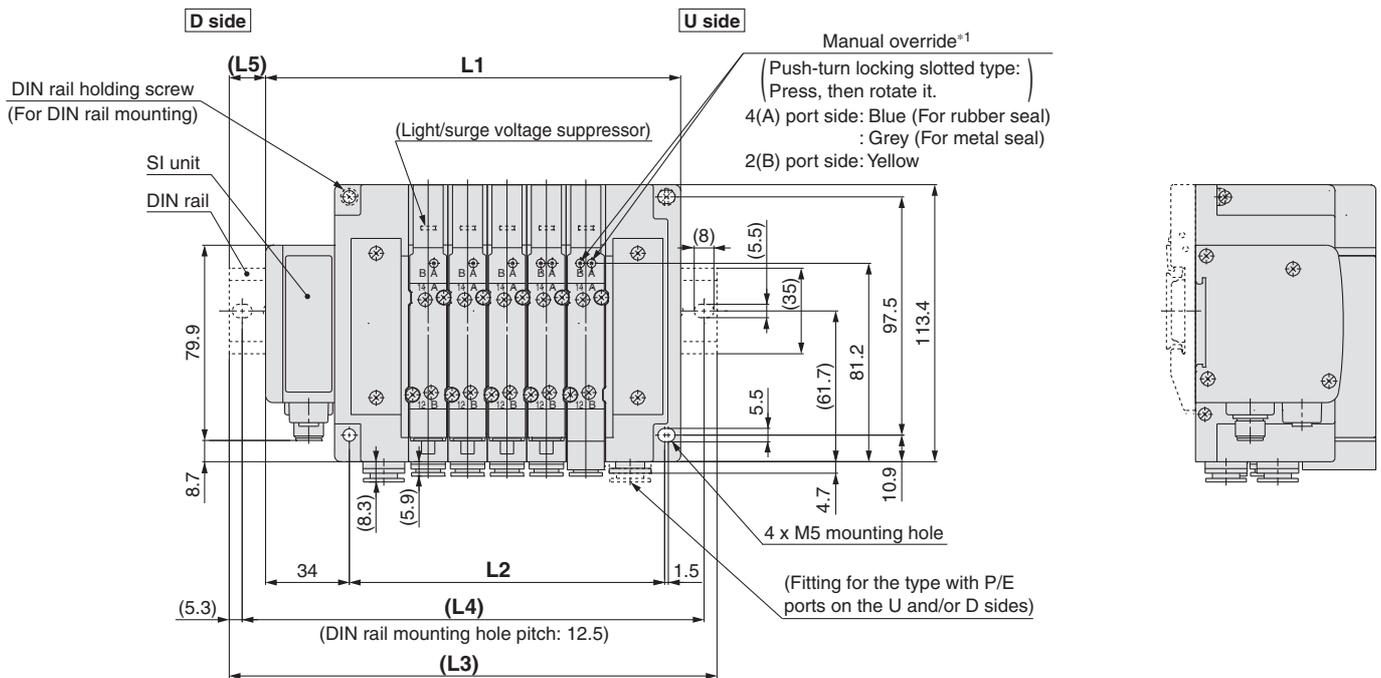
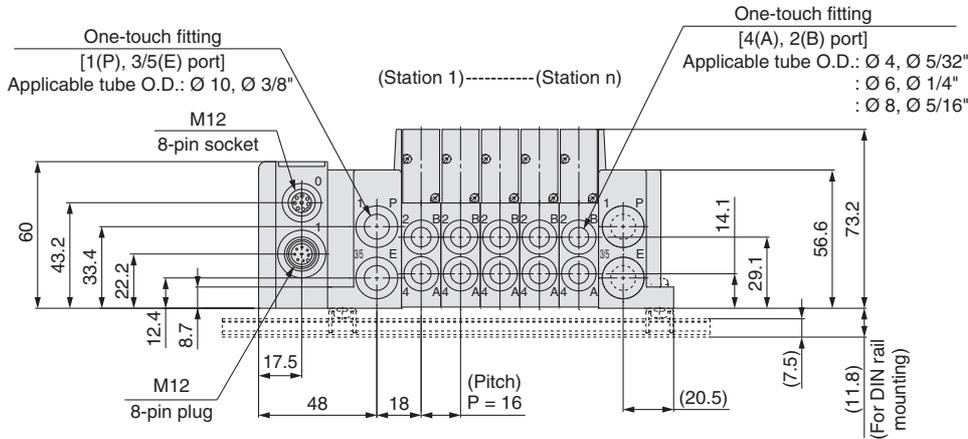
# Series SY3000/5000/7000

## Dimensions: Series SY5000

### Plug-in Connector Connecting Base

Type 10/Side Ported  
EX500 (64 Points)

SS5Y5-10SA2-**Stations** U C4, N3  
D C6, N7 (D)  
B C8, N9



\*1: Refer to page 206 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y5-10SA2-05D-C8".  
\*: Refer to page 211 for dimensions of A or B port top-ported type.

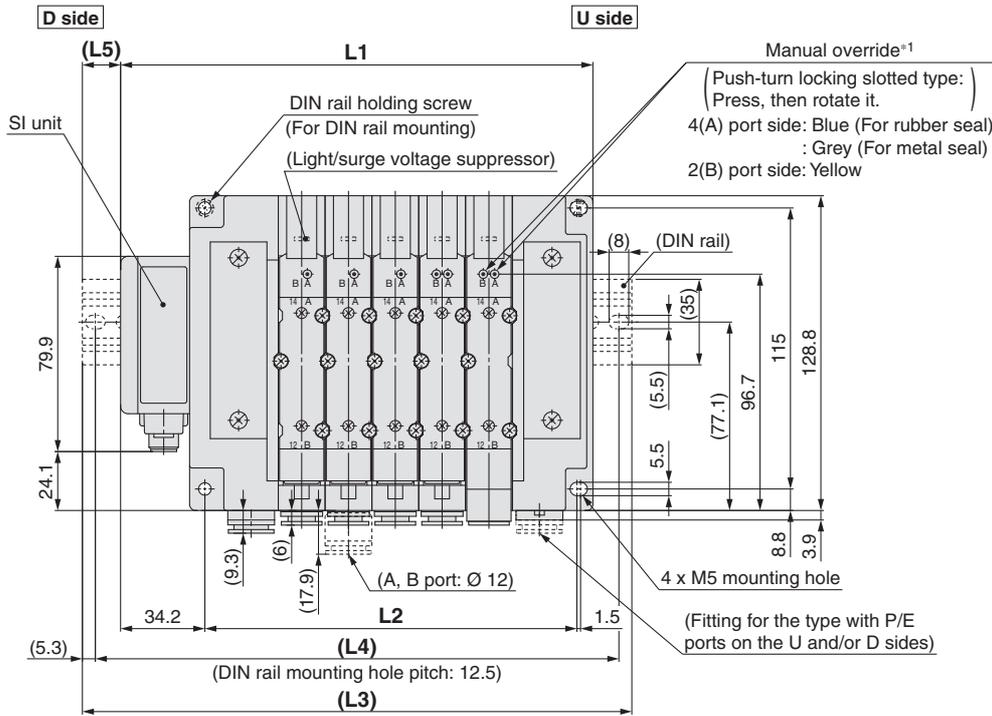
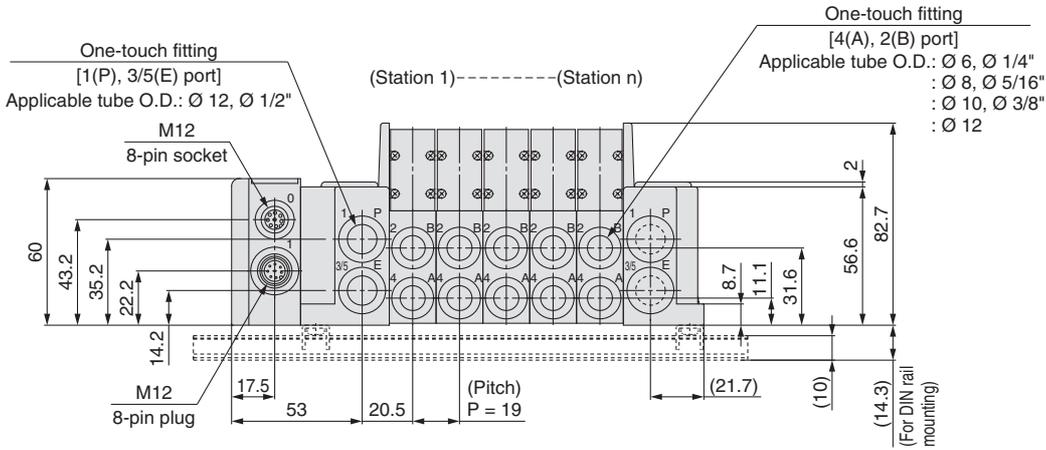
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>L1</b>	120.5	136.5	152.5	168.5	184.5	200.5	216.5	232.5	248.5	264.5	280.5	296.5	312.5	328.5	344.5
<b>L2</b>	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304
<b>L3</b>	148	160.5	185.5	198	210.5	235.5	248	260.5	273	298	310.5	323	348	360.5	373
<b>L4</b>	137.5	150	175	187.5	200	225	237.5	250	262.5	287.5	300	312.5	337.5	350	362.5
<b>L5</b>	14	12	16.5	15	13	17.5	16	14	12.5	17	15	13.5	18	16	14.5

Dimensions: Series **SY7000**

Plug-in  
Connector Connecting Base

Type 10/Side Ported  
EX500 (64 Points)

SS5Y7-10SA2- Stations  $\begin{matrix} U \\ D \\ B \end{matrix}$   $\begin{matrix} C6, N7 \\ C8, N9 \\ C10, N11 (D) \\ C12 \end{matrix}$



\*1: Refer to page 207 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y7-10SA2-05D-C10".  
\*: Refer to page 212 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	134.7	153.7	172.7	191.7	210.7	229.7	248.7	267.7	286.7	305.7	324.7	343.7	362.7	381.7	400.7
L2	94	113	132	151	170	189	208	227	246	265	284	303	322	341	360
L3	160.5	185.5	198	223	235.5	260.5	273	298	310.5	335.5	348	373	398	410.5	435.5
L4	150	175	187.5	212.5	225	250	262.5	287.5	300	325	337.5	362.5	387.5	400	425
L5	13	16	12.5	15.5	12.5	15.5	12	15	12	15	11.5	14.5	17.5	14.5	17.5

# Plug-in Connector Connecting Base

EX500 Gateway Decentralised System 2 (128 Points)

Type 12  
Top Ported

# Series SY3000/5000/7000



## How to Order Manifold

SS5Y **3** - 12S **A3N** - **05** **U** **□** - **□** **□**

1
2
3
4
5
6
7

Refer to pages 210 to 212 for dimensions of Type 12/Top ported type.

### 1 Series

3	SY3000
5	SY5000
7	SY7000

\*: For mixed mounting, refer to page 213 and later.

### 2 SI Unit (Number of outputs, Output polarity, Max. number of valve stations)

0	Without SI Unit
A3N	32 outputs*1*4, 1 to 16 stations (24 stations*3), Negative common*2

- \*1: 16 outputs can be set by switching the built-in setting switch.
- \*2: Ensure a match with the common specification of the valve.
- \*3: ( ): Maximum number of stations for mixed single and double wiring.
- \*4: When using the SI Unit with 32 outputs, use the GW Unit compatible with the EX500 Gateway Decentralised System 2 (128 points).

### 3 Valve stations

Stations	Note
02	Double wiring*1
2	
:	
16	Specified layout*2 (Available up to 32 solenoids)
02	
2	
:	
24	24 stations

- \*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
- \*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)
- \*3: When the product without the SI Unit (S0) is selected, note the maximum number of solenoids of the SI Unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.
- \*4: This also includes the number of blanking plate assembly.

### 4 P, E port entry

U*1	U side (2 to 10 stations)
D*1	D side (2 to 10 stations)
B	Both sides (2 to 24 stations)

\*1: For type "S", supply/exhaust block assembly with built-in silencer, choose "U" or "D" for P, E port entry.

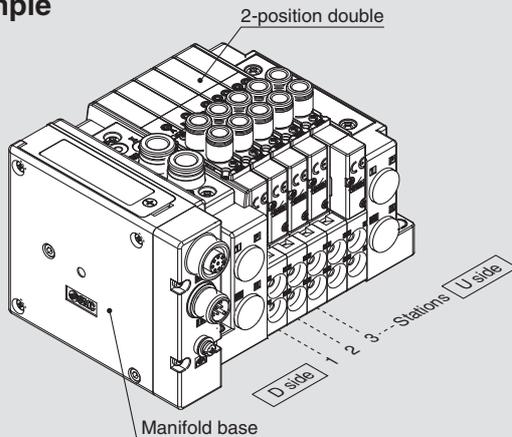
### 5 SUP/EXH block assembly

—	Internal pilot
S*1	Internal pilot, Built-in silencer*2
R	External pilot

- \*1: For type "S", supply/exhaust block assembly with built-in silencer, choose "U" or "D" for P, E port entry. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)
- \*2: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

## How to Order Manifold Assembly

### Example



SS5Y3-12SA3N-05D ..... 1 set (Manifold base part number)  
 \* SY3230-5U1-C6 ..... 5 sets (2-position double part number)  
 ↳ The asterisk denotes the symbol for assembly.  
 Prefix it to the part numbers of the valve etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold base part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on the manifold specification sheet.

### 6 P, E port size (One-touch fittings)

	SY3000	SY5000	SY7000
—	Ø 8	Ø 10	Ø 12
N*1	Ø 5/16"	Ø 3/8"	Ø 1/2"

\*1: For "N", sizes are in inches.

### 7 Mounting

—	Direct mounting
D	With DIN bracket, DIN rail with standard length
D0	With DIN bracket, without DIN rail
D3*1	With DIN bracket, DIN rail for 3 stations
:	:
D24*1	With DIN bracket, DIN rail for 24 stations

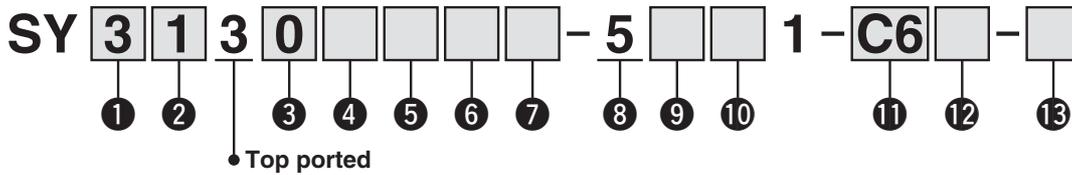
- \*1: Specify a longer rail than the length of valve stations.
- \*: If the DIN rail must be mounted without an SI Unit, select "D0". Then, refer to L3 of the dimensions for the DIN rail length and order separately. Refer to page 249 for the DIN rail part number.
- \*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

\*: A separate GW Unit and communication cable are required.

For details about the EX500 Gateway-type Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 235 in this catalogue. Please download the Operation Manual via SMC website, <http://www.smc.eu>

How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



**1 Series**

3	SY3000
5	SY5000
7	SY7000

**2 Type of actuation**

1	2-position	Single
2		Double
3	3-position	Closed centre
4		Exhaust centre
5		Pressure centre
A*1	4-position dual 3-port valve	N.C./N.C.
B*1		N.O./N.O.
C*1		N.C./N.O.

\*1: Select the rubber seal type for the 4-position dual 3-port valve.

**3 Seal type**

0	Rubber seal
1	Metal seal

**4 Pilot type**

—	Internal pilot
R	External pilot

**5 Back pressure check valve (Built-in valve type)**

—	None
H*1	Built-in

\*1: Select the rubber seal type when the back pressure check valve is built-in. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. For ordering example, refer to page 256. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: Select "—" for 3-position type and the SY7000.

**6 Pilot valve option**

—	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*1	High pressure type (1.0 MPa)

\*1: Select the metal seal type for high pressure type.

**7 Coil type**

—	Standard
T	With power saving circuit (Continuous duty type)*1*2

\*1: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*2: Be careful of the energising time when the power saving circuit is selected. For details, refer to page 268.

**8 Rated voltage**

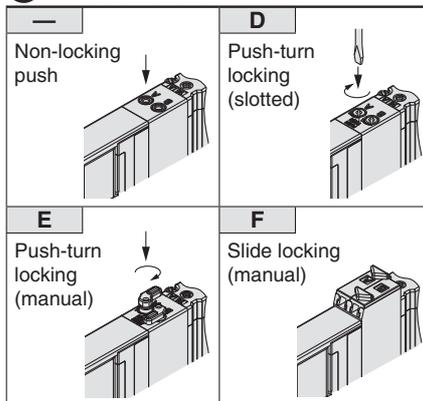
5	24 V DC
---	---------

**9 Light/surge voltage suppressor and common specification**

	With light	Surge voltage suppressor	Common specification
R	—	●	Non-polar
U	●		
NS	—		Negative common
NZ	●		

\*: Select "NZ" for with the power saving circuit.

**10 Manual override**



\*: Refer to page 31 for with the safety slide locking manual override.

**11 A, B port size**

Thread piping		SY3000	SY5000	SY7000
Port size				
M5	M5 x 0.8	●	—	—
O1	1/8	—	●	—
O2	1/4	—	—	●

**One-touch fitting (Metric)**

A, B port		SY3000	SY5000	SY7000
C2	Ø 2	●	—	—
C3	Ø 3.2	●	—	—
C4	Ø 4	●	●	—
C6	Ø 6	●	●	●
C8	Ø 8	—	●	●
C10	Ø 10	—	—	●
C12	Ø 12	—	—	●

**One-touch fitting (Inch)**

A, B port		SY3000	SY5000	SY7000
N1	Ø 1/8"	●	—	—
N3	Ø 5/32"	●	●	—
N7	Ø 1/4"	●	●	●
N9	Ø 5/16"	—	●	●
N11	Ø 3/8"	—	—	●

**12 A, B port thread type**

—	Rc
F	G
N	NPT
T	NPTF

\*: Select "—" for M5.

**13 Type of mounting screw**

—	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type*1)
H	Hexagon socket head cap screw (Falling-out-prevention type*1)

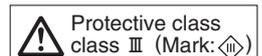
\*1: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

\*: Select "—" or "K" for the optional individual SUP/EXH spacer assembly or interface regulator.



# Plug-in Connector Connecting Base

EX500 Gateway Decentralised System (64 Points)

Type 12  
Top Ported

# Series SY3000/5000/7000



## How to Order Manifold

SS5Y **3** - 12S **A2** - 05 **U** **□** - **□** **□**

①
②
③
④
⑤
⑥
⑦

Refer to pages 210 to 212 for dimensions of Type 12/Top ported type.

### ① Series

3	SY3000
5	SY5000
7	SY7000

\*: For mixed mounting, refer to page 213 and later.

### ② SI Unit (Number of outputs, Output polarity, Max. number of valve stations)

0	Without SI Unit
A2	16 outputs, Positive common*1, 1 to 8 stations (16 stations)*2
A2N	16 outputs, Negative common*1, 1 to 8 stations (16 stations)*2

\*1: Ensure a match with the common specification of the valve to be used.

\*2: ( ): Maximum number of stations for mixed single and double wiring.

### ④ P, E port entry

U*1	U side (2 to 10 stations)
D*1	D side (2 to 10 stations)
B	Both sides (2 to 16 stations)

\*1: ⑤ For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

### ⑤ SUP/EXH block assembly

—	Internal pilot
S	Internal pilot/Built-in silencer
R	External pilot

\*: For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)

\*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

### ③ Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring*1
⋮	⋮	
08	8 stations	Specified layout*2 (Available up to 16 solenoids)
02	2 stations	
⋮	⋮	
16	16 stations	

\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

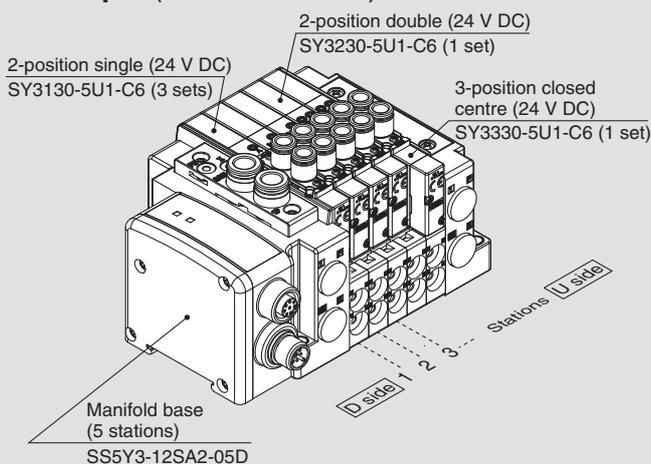
\*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

\*: When the product without the SI Unit (S0) is selected, note the maximum number of solenoids of the SI Unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

\*: This also includes the number of blanking plate assembly.

## How to Order Manifold Assembly

### Example (SS5Y3-12SA2-□)



SS5Y3-12SA2-05D ... 1 set (Type 12 5-station manifold base part no.)  
 \*SY3130-5U1-C6 ..... 3 sets (2-position single part no.)  
 \*SY3230-5U1-C6 ..... 1 set (2-position double part no.)  
 \*SY3330-5U1-C6 ..... 1 set (3-position closed centre part no.)

The asterisk denotes the symbol for assembly. Prefix it to the part numbers of the valve etc.

• The valve arrangement is numbered as the 1st station from the D side.  
 • Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

### ⑥ P, E port size (One-touch fittings)

Symbol	SY3000	SY5000	SY7000
—	Ø 8	Ø 10	Ø 12
N	Ø 5/16"	Ø 3/8"	Ø 1/2"

\*: For N, sizes are in inches.

### ⑦ Mounting

—	Direct mounting
D	With DIN bracket, DIN rail with standard length
D0	With DIN bracket, without DIN rail
D3*1	With DIN bracket, DIN rail for 3 stations
⋮	⋮
D16*1	With DIN bracket, DIN rail for 16 stations

\*1: Specify a longer rail than the length of valve stations.

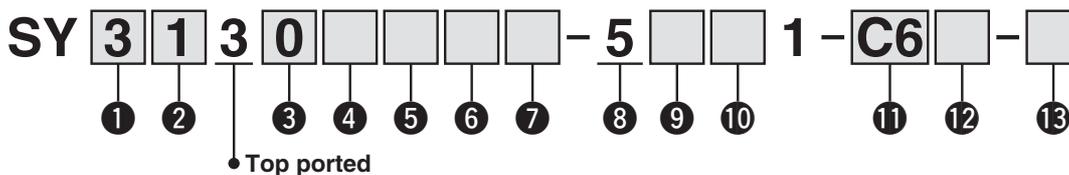
\*: If the DIN rail must be mounted without an SI Unit, select "D0". Then, refer to L3 of the dimensions for the DIN rail length and order separately. Refer to page 249 for the DIN rail part number.

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

\*: A separate GW Unit and communication cable are required.

For details about the EX500 Gateway-type Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 236 in this catalogue. Please download the Operation Manual via SMC website, <http://www.smc.eu>

**How to Order Valves (With mounting screw)** Refer to page 13 for valve specifications.



**1 Series**

3	SY3000
5	SY5000
7	SY7000

**2 Type of actuation**

1	2-position	Single
2		Double
3	3-position	Closed centre
4		Exhaust centre
5		Pressure centre
A*1	4-position dual 3-port	N.C./N.C.
B*1		N.O./N.O.
C*1		N.C./N.O.

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

**3 Seal type**

0	Rubber seal
1	Metal seal

**4 Pilot type**

—	Internal pilot
R	External pilot

**5 Back pressure check valve (Built-in valve type)**

—	None
H	Built-in

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

**6 Pilot valve option**

—	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*1	High pressure type (1.0 MPa)

\*1: Only metal seal type is available for the high pressure type.

**7 Coil type**

—	Standard
T	With power saving circuit (Continuous duty type)

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

**8 Rated voltage**

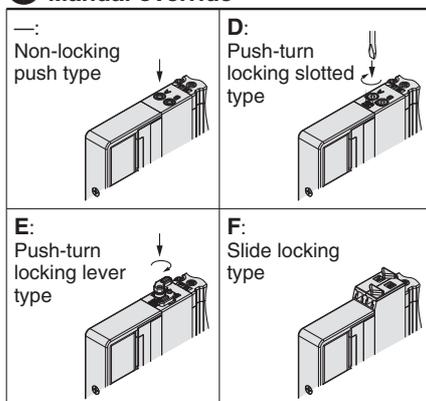
5	24 V DC
---	---------

**9 Light/surge voltage suppressor and common specification**

Symbol	With light	Surge voltage suppressor	Common specification
R	—	●	Non-polar
U	●		
S	—		Positive common
Z	●		
NS	—	Negative common	
NZ	●		

\*: Select "Z" or "NZ" for with the power saving circuit. Select a valve from R, U, S or Z when the SI Unit specification is A2 (positive common). Select a valve from R, U, NS or NZ when the SI Unit specification is A2N (negative common).

**10 Manual override**



\*: Refer to page 31 for with the safety slide locking manual override.

**11 A, B port size**

**Thread piping**

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY3000
O1	1/8	SY5000
O2	1/4	SY7000

**One-touch fitting (Metric)**

Symbol	A, B port	SY3000	SY5000	SY7000
C2	Ø 2	●	—	—
C3	Ø 3.2	●	—	—
C4	Ø 4	●	●	—
C6	Ø 6	●	●	●
C8	Ø 8	—	●	●
C10	Ø 10	—	—	●
C12	Ø 12	—	—	●

**One-touch fitting (Inch)**

Symbol	A, B port	SY3000	SY5000	SY7000
N1	Ø 1/8"	●	—	—
N3	Ø 5/32"	●	●	—
N7	Ø 1/4"	●	●	●
N9	Ø 5/16"	—	●	●
N11	Ø 3/8"	—	—	●

**12 Thread type**

—	Rc
F	G
N	NPT
T	NPTF

\*: Only — is available for M5.

**13 Type of mounting screw**

—	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

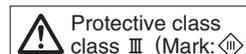
\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.



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

Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

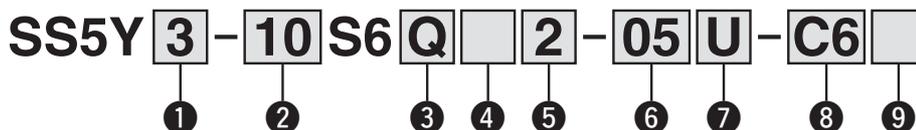
EX600

# Series SY3000/5000/7000



## How to Order Manifold

Refer to pages 208 (SY5000) and 209 (SY7000) for dimensions of Type 11/Bottom ported type.



### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type

10	Side ported
11	Bottom ported*1

\*1: The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to "Plug-in Mixed Mounting Type Manifold" (from page 213).

### 3 SI Unit

0	Without SI Unit
Q	DeviceNet™
N	PROFIBUS DP
V	CC-Link
ZE	EtherNet/IP™ (1 port)
EA	EtherNet/IP™ (2 ports)
D	EtherCAT®
F	PROFINET
WE	EtherNet/IP™ compatible wireless base *1
WF	PROFINET compatible wireless base *1
WS	Wireless remote *1

\*1 The wireless system is suitable for use only in a country where it is in accordance with the Radio Act and regulations of that country.

\*: I/O Unit cannot be mounted without SI Unit.

\*: Valve plate which connects manifold and SI Unit is not mounted to a valve without SI Unit. Refer to the EX600 catalogue (CAT.EU02-24E-UK) for mounting.

### 4 SI Unit output polarity, end plate type

SI Unit output polarity	Power supply with M12 connector	Power supply with 7/8 inch connector	Power supply with M12 connector. IN/OUT pin arrangement 1	Power supply with M12 connector. IN/OUT pin arrangement 2
Without SI Unit	—			
SI Unit positive common	2	3	6	8
SI Unit negative common	4	5	7	9

\*: Ensure a match with the common specification of the valve to be used.

\*: Without SI Unit, the symbol is —.

### 5 I/O Unit stations

—	None
1	1 station
⋮	⋮
9	9 stations

\*: Without SI Unit, the symbol is —.

\*: SI Unit is not included in I/O Unit stations.

\*: When I/O Unit is selected, it is shipped separately, and assembled by users. Refer to the attached operation manual for mounting.

### 6 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring*1
⋮	⋮	
16	16 stations	
02	2 stations	Specified layout*2 (Available up to 32 solenoids)
⋮	⋮	
24	24 stations	

\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

\*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

\*: This also includes the number of blanking plate assembly.

### 9 Mounting and Option

Symbol	Mounting	Option	
		Name plate	Station number
—	Direct mounting	—	—
AA		●	●
BA		●	—
D□	DIN rail mounting	—	—
A□		●	●
B□		●	—

\*: Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" below.)

\*: Only direct mounting is available for Type 11 (Bottom ported).

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

#### DIN Rail Option

—		Direct mounting
0	Without DIN rail (with bracket)	
3	For 3 stations	Specify a longer rail than the total length of specified stations.
⋮	⋮	
24	For 24 stations	

\*: If the DIN rail must be mounted without an SI Unit, select D0. Then, refer to L3 of the dimensions for the DIN rail length and order separately. (Refer to page 249 for the DIN rail part number.)

### 7 P, E port entry, SUP/EXH block assembly

P, E port entry	Internal pilot	Internal pilot, Built-in silencer	External pilot
U side (2 to 10 stations)	U	C	G
D side (2 to 10 stations)	D	E	H
Both sides (2 to 24 stations)	B	F	J

\*: 3/5(E) port is plugged for the built-in silencer type.

\*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

Refer to the page on the right for 8.

For details about the EX600 Integrated-type (For Input/Output) Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to pages 237 and 238 in this catalogue. (IP40 specifications may be required according to the I/O Unit to be selected.) Please download the Operation Manual via SMC website, <http://www.smc.eu>

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

**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	∅ 2	●	—	—	—	—
C3	∅ 3.2	●	—	—	—	—
C4	∅ 4	●	●	—	●	—
C6	∅ 6	●	●	●	●	●
C8	∅ 8	—	●	●	●	●
C10	∅ 10	—	—	●	—	●
C12	∅ 12	—	—	●	—	●
CM*1	Straight port, mixed sizes	●	●	●	●	●
L4	∅ 4	●	●	—	—	—
L6	∅ 6	●	●	●	—	—
L8	∅ 8	—	●	●	—	—
L10	∅ 10	—	—	●	—	—
L12	∅ 12	—	—	●	—	—
B4	∅ 4	●	●	—	—	—
B6	∅ 6	●	●	●	—	—
B8	∅ 8	—	●	●	—	—
B10	∅ 10	—	—	●	—	—
B12	∅ 12	—	—	●	—	—
LM*1	Elbow port, mixed sizes (Including upward and downward piping)	●	●	●	—	—
P, E port size (One-touch fittings)		∅ 8	∅ 10	∅ 12	∅ 10	∅ 12

**A, B port size (Inch/One-touch fitting)**

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported	
		SY3000	SY5000	SY7000	SY5000	SY7000
N1	∅ 1/8"	●	—	—	—	—
N3	∅ 5/32"	●	●	—	●	—
N7	∅ 1/4"	●	●	●	●	●
N9	∅ 5/16"	—	●	●	●	●
N11	∅ 3/8"	—	—	●	—	●
CM*1	Straight port, mixed sizes	●	●	●	●	●
LN3	∅ 5/32"	●	—	—	—	—
LN7	∅ 1/4"	●	●	—	—	—
LN9	∅ 5/16"	—	●	—	—	—
LN11	∅ 3/8"	—	—	●	—	—
BN3	∅ 5/32"	●	—	—	—	—
BN7	∅ 1/4"	●	●	—	—	—
BN9	∅ 5/16"	—	●	—	—	—
BN11	∅ 3/8"	—	—	●	—	—
LM*1	Elbow port, mixed sizes (Including upward and downward piping)	●	●	●	—	—
P, E port size (One-touch fittings)		∅ 5/16"	∅ 3/8"	∅ 1/2"	∅ 3/8"	∅ 1/2"

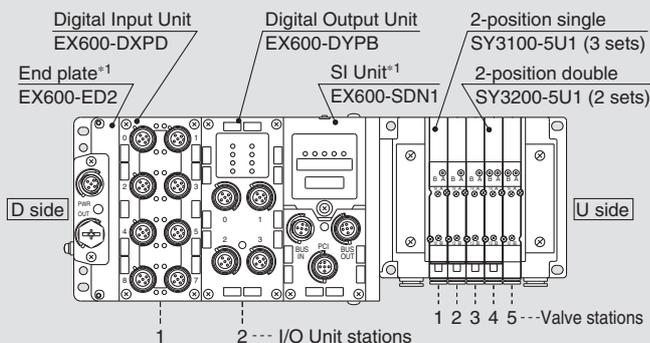
\*1: Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

\*2: To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 250 to 252).

**How to Order Manifold Assembly**

**Example (SS5Y3-10S6□-□)**



SS5Y3-10S6Q42-05B-C6... 1 set (Type 10 5-station manifold base part no.)

\*SY3100-5U1 ..... 3 sets (2-position single part no.)

\*SY3200-5U1 ..... 2 sets (2-position double part no.)

\*EX600-DXPD ..... 1 set I/O Unit part number (Station 1)

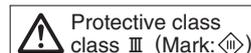
\*EX600-DYPB ..... 1 set I/O Unit part number (Station 2)

The asterisk denotes the symbol for assembly. Prefix it to the part numbers of the valve etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted, then the I/O Units in order from the 1st station as shown in the figure on the left. If the arrangement becomes complicated, specify on a manifold specification sheet.

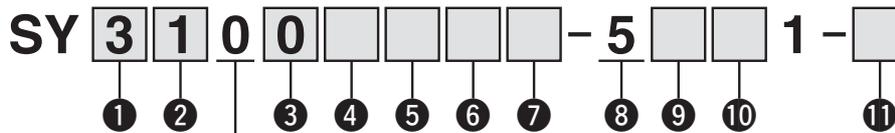
\*1: Do not enter the SI Unit part number and the end plate part number together.

\*2: When mixing top ported configurations, select from page 172. In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.



## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



• Base mounted

### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed centre
4		Exhaust centre
5		Pressure centre
A*1	4-position dual 3-port	N.C./N.C.
B*1		N.O./N.O.
C*1		N.C./N.O.

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

—	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

—	None
H	Built-in

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

—	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*1	High pressure type (1.0 MPa)

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

—	Standard
T	With power saving circuit (Continuous duty type)

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

5	24 V DC
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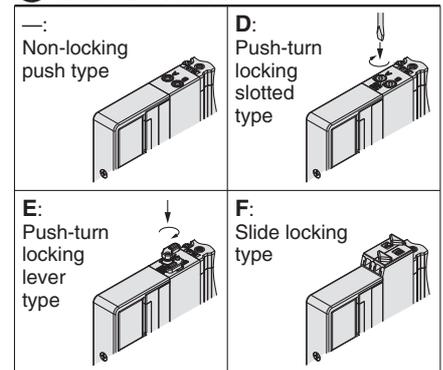
### 9 Light/surge voltage suppressor and common specification

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 polarity is positive common. Select a valve from R, U, NS or NZ when the SI Unit output polarity is negative common.

\*: Only "Z" and "NZ" types are available for with the power saving circuit.

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 Type of mounting screw

—	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.** Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

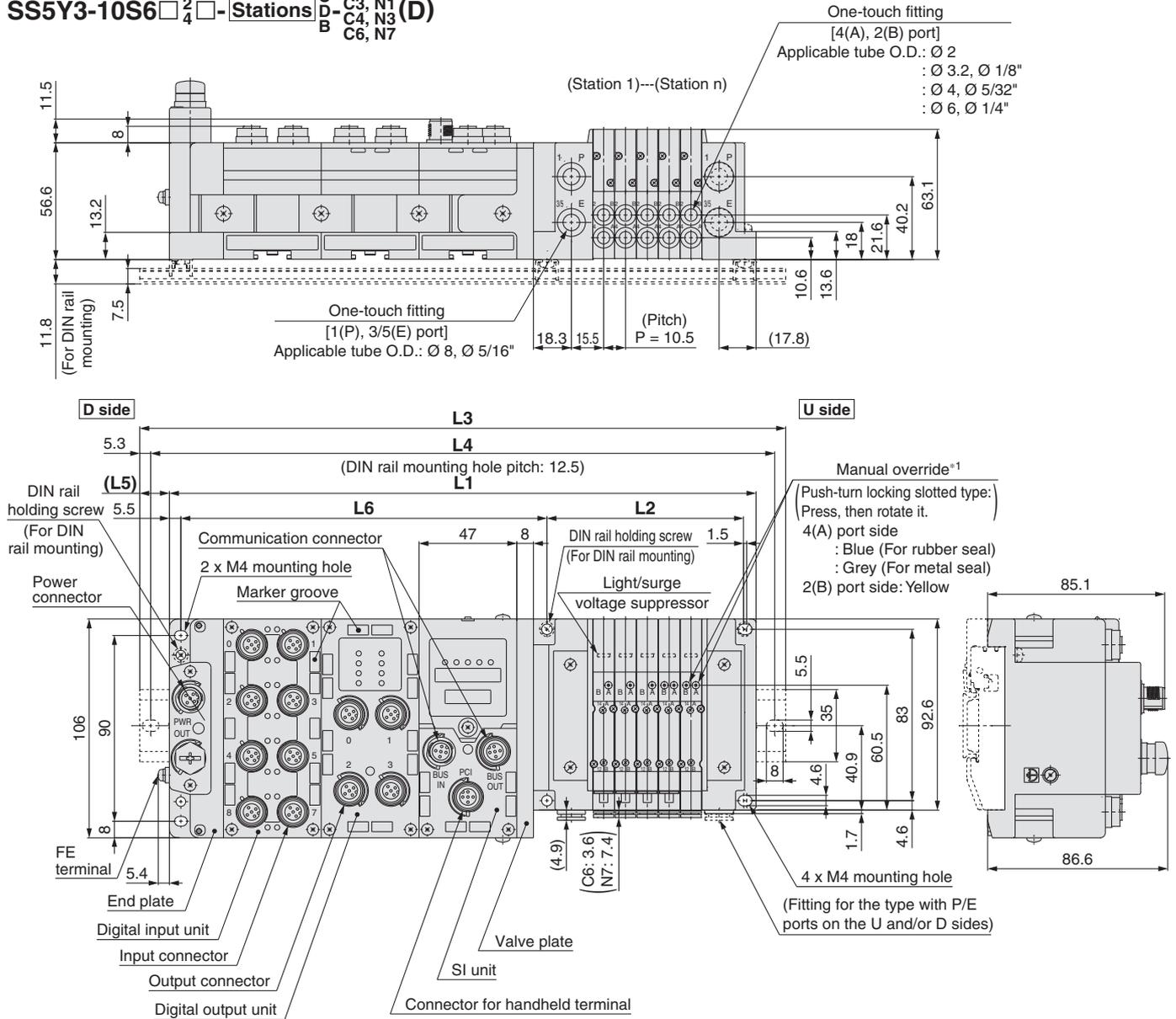
\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

Dimensions: Series **SY3000**

Plug-in Connector Connecting Base

Type 10/Side Ported  
EX600 (M12 Connector)

SS5Y3-10S6□ $\frac{2}{4}$ □ - Stations  $\begin{matrix} \text{U} \\ \text{D} \end{matrix}$   $\begin{matrix} \text{C}2 \\ \text{C}3, \text{N}1 (\text{D}) \\ \text{C}4, \text{N}3 \\ \text{C}6, \text{N}7 \end{matrix}$



$L1 = 10.5 \times n1 + 135.5 + 47 \times n2$   
 $L2 = 10.5 \times n1 + 42$   
 $L4 = L3 - 10.5$   
 $L5 = (L3 - L1)/2$   
 $L6 = 47 \times n2 + 82$

n1: Valve stations  
n2: I/O Unit stations

\*1: Refer to page 205 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y3-10S6Q22-05D-C6".  
\*: Refer to page 210 for dimensions of A or B port top-ported type.

**L3: DIN Rail Overall Length**

Valve stations (n1) / I/O Unit stations (n2)	Number of Stations																							
	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	398	410.5	423	435.5	448	448	460.5	473	
2	285.5	285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	410.5	423	435.5	448	460.5	473	485.5	498	510.5	523	
3	323	335.5	348	360.5	373	385.5	385.5	398	410.5	423	435.5	448	448	460.5	473	485.5	498	510.5	510.5	523	535.5	548	560.5	
4	373	385.5	398	410.5	410.5	423	435.5	448	460.5	473	473	485.5	498	510.5	523	535.5	548	560.5	573	573	585.5	598	610.5	
5	423	435.5	448	448	460.5	473	485.5	498	510.5	510.5	523	535.5	548	560.5	573	573	585.5	598	610.5	623	635.5	648	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	673	685.5	698	710.5	
7	510.5	523	535.5	548	560.5	573	573	585.5	598	610.5	623	635.5	648	660.5	673	685.5	698	710.5	723	723	735.5	748	760.5	
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	
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	

Valve  
Plug-in Sub-plate  
Plug-in Metal Base  
Type 50, 51, 52 Manifold Exploded View  
Plug-in Connector Connecting Base  
Type 10, 11, 12 Manifold Exploded View  
One-touch Fittings/ Plug Assembly Part No.  
Manifold Options

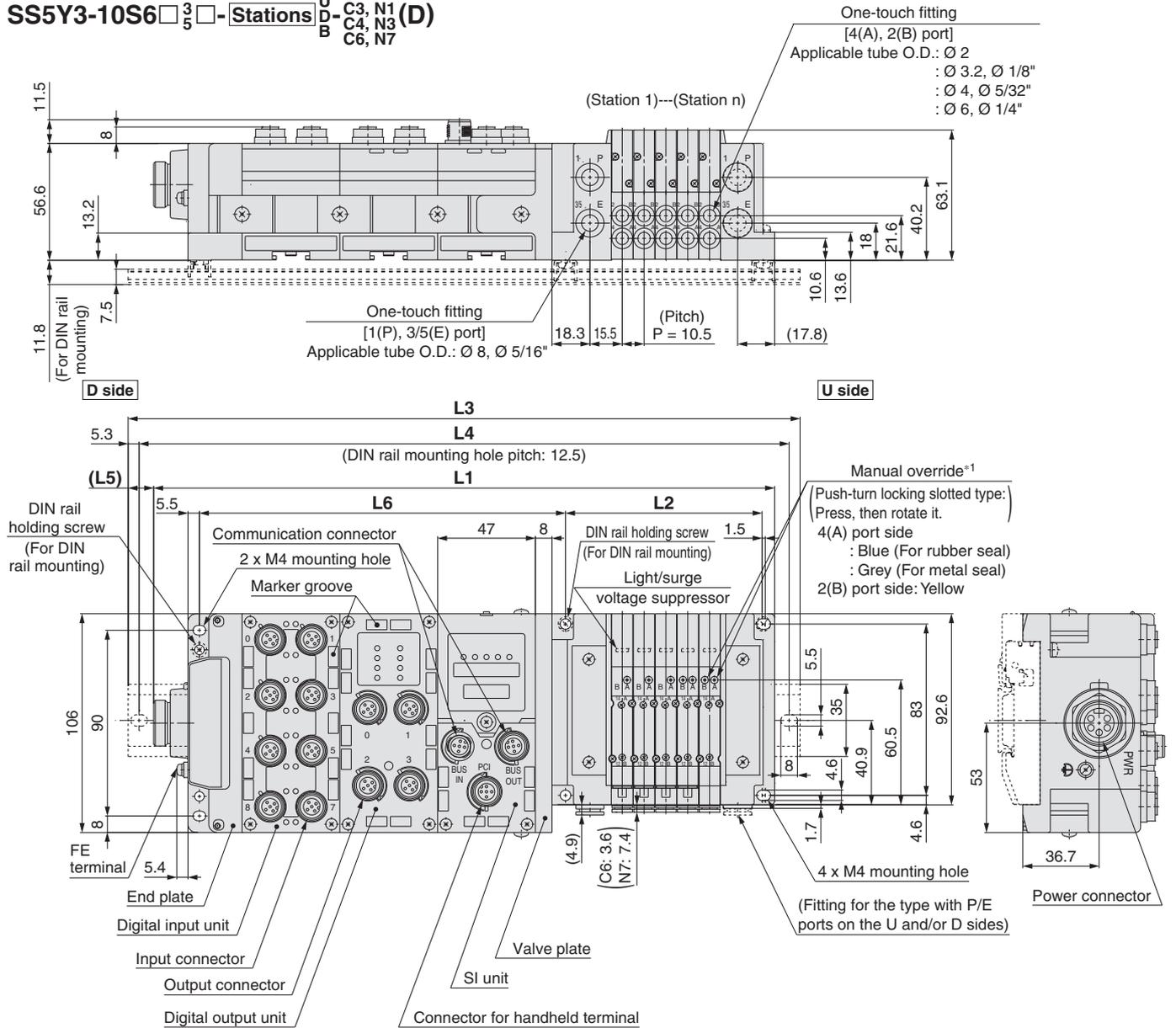
# Series SY3000/5000/7000

## Dimensions: Series SY3000

## Plug-in Connector Connecting Base

## Type 10/Side Ported EX600 (7/8 Inch Connector)

SS5Y3-10S6□<sub>5</sub>□<sub>3</sub>□<sub>5</sub>-Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix}$   $\begin{matrix} \text{C2} \\ \text{C3, N1 (D)} \\ \text{C4, N3} \\ \text{C6, N7} \end{matrix}$



$$L1 = 10.5 \times n1 + 152 + 47 \times n2$$

$$L2 = 10.5 \times n1 + 42$$

$$L4 = L3 - 10.5$$

$$L5 = (L3 - L1)/2$$

$$L6 = 47 \times n2 + 82$$

n1: Valve stations  
n2: I/O Unit stations

\*1: Refer to page 205 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y3-10S6Q32-05D-C6".  
\*: Refer to page 210 for dimensions of A or B port top-ported type.

### L3: DIN Rail Overall Length

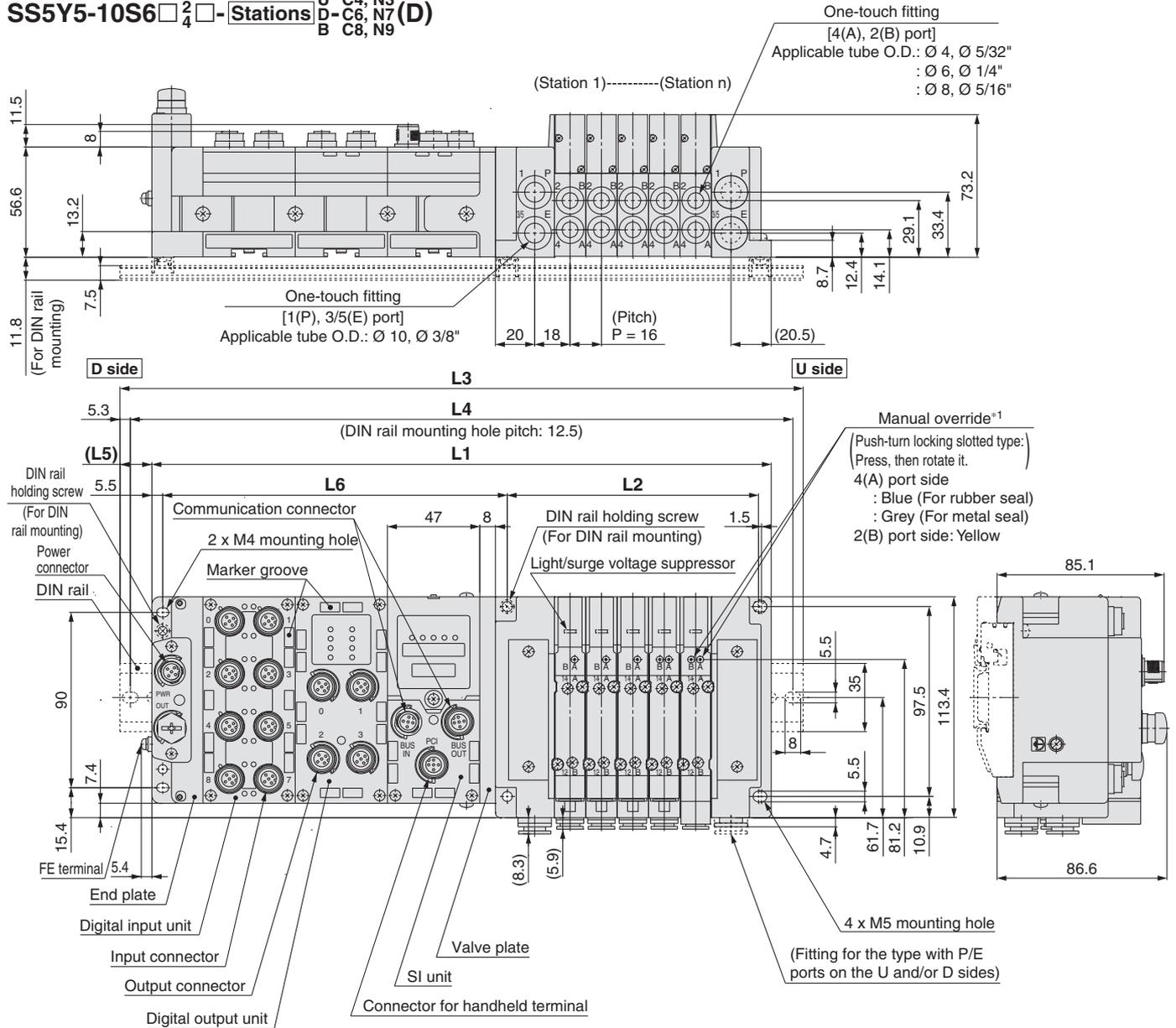
I/O Unit stations (n2) \ Valve stations (n1)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0	198	210.5	223	235.5	248	260.5	260.5	273	285.5	298	310.5	323	323	335.5	348	360.5	373	385.5	385.5	398	410.5	423	435.5
1	248	260.5	273	285.5	285.5	298	310.5	323	335.5	348	360.5	360.5	373	385.5	398	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	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	673
6	485.5	498	510.5	510.5	523	535.5	548	560.5	573	573	585.5	598	610.5	623	635.5	648	648	660.5	673	685.5	698	710.5	710.5
7	535.5	548	548	560.5	573	585.5	598	610.5	610.5	623	635.5	648	660.5	673	673	685.5	698	710.5	723	735.5	735.5	748	760.5
8	573	585.5	598	610.5	623	635.5	635.5	648	660.5	673	685.5	698	710.5	710.5	723	735.5	748	760.5	773	773	785.5	798	810.5
9	623	635.5	648	660.5	673	673	685.5	698	710.5	723	735.5	735.5	748	760.5	773	785.5	798	798	810.5	823	835.5	848	860.5

Dimensions: Series **SY5000**

Plug-in  
Connector Connecting Base

Type 10/Side Ported  
EX600 (M12 Connector)

SS5Y5-10S6□□□□-Stations  $\begin{matrix} U & C4, N3 \\ D & C6, N7 (D) \\ B & C8, N9 \end{matrix}$



$L1 = 16 \times n1 + 141.5 + 47 \times n2$   
 $L2 = 16 \times n1 + 48$   
 $L4 = L3 - 10.5$   
 $L5 = (L3 - L1)/2$   
 $L6 = 47 \times n2 + 81.5$

n1: Valve stations  
n2: I/O Unit stations

\*1: Refer to page 206 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y5-10S6Q22-05D-C8".  
\*: Refer to page 211 for dimensions of A or B port top-ported type.

**L3: DIN Rail Overall Length**

Valve stations (n1) / I/O Unit stations (n2)	L3: DIN Rail Overall Length																							
	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

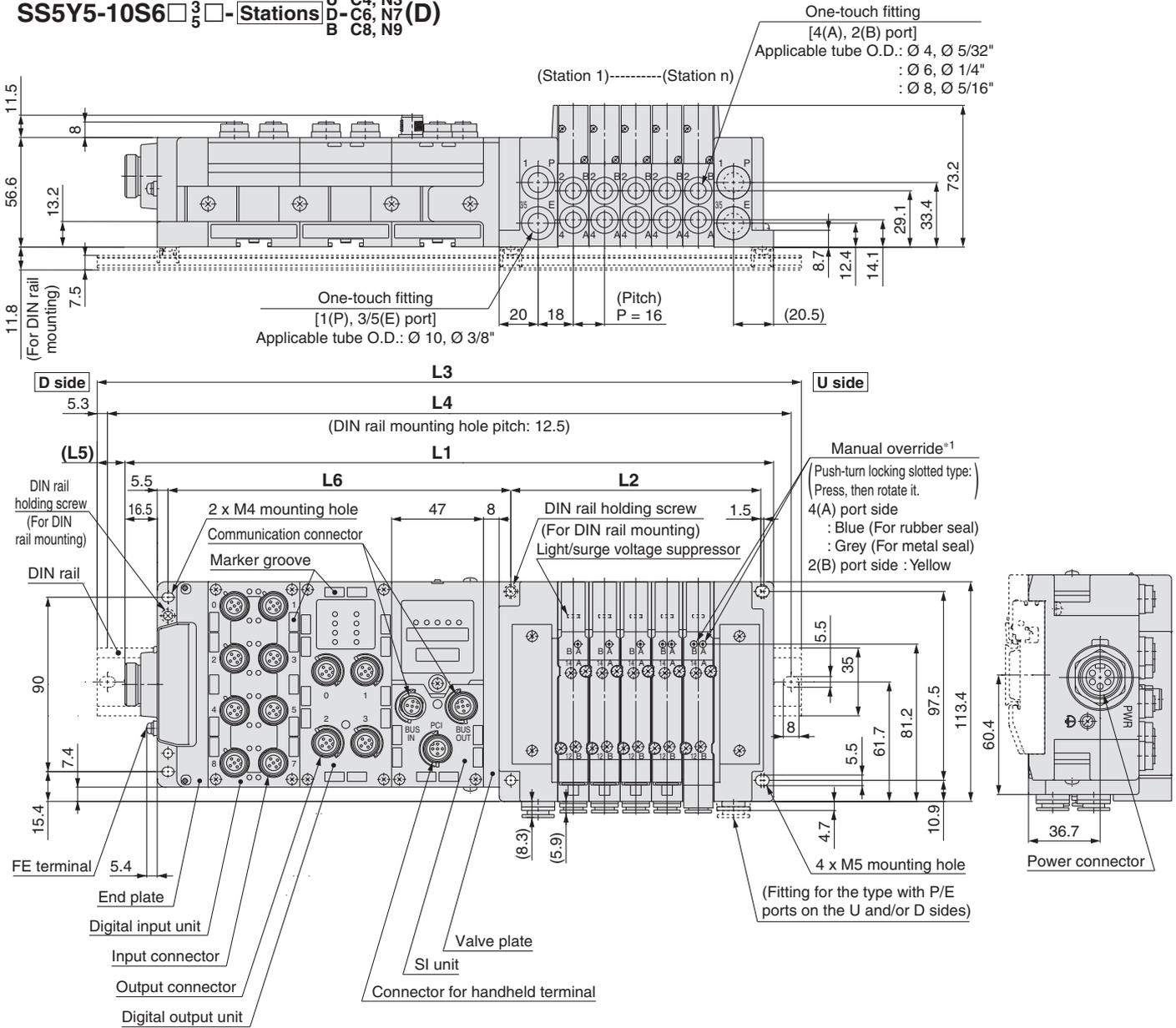
# Series SY3000/5000/7000

## Dimensions: Series SY5000

## Plug-in Connector Connecting Base

## Type 10/Side Ported EX600 (7/8 Inch Connector)

SS5Y5-10S6 □  $\frac{3}{5}$  □ - Stations  $\begin{matrix} \text{U} & \text{C4, N3} \\ \text{D} & \text{C6, N7 (D)} \\ \text{B} & \text{C8, N9} \end{matrix}$



$L1 = 16 \times n1 + 158 + 47 \times n2$   
 $L2 = 16 \times n1 + 48$   
 $L4 = L3 - 10.5$   
 $L5 = (L3 - L1)/2$   
 $L6 = 47 \times n2 + 81.5$

n1: Valve stations  
 n2: I/O Unit stations

\*1: Refer to page 206 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
 \*: These figures show the "SS5Y5-10S6Q32-05D-C8".  
 \*\*: Refer to page 211 for dimensions of A or B port top-ported type.

### L3: DIN Rail Overall Length

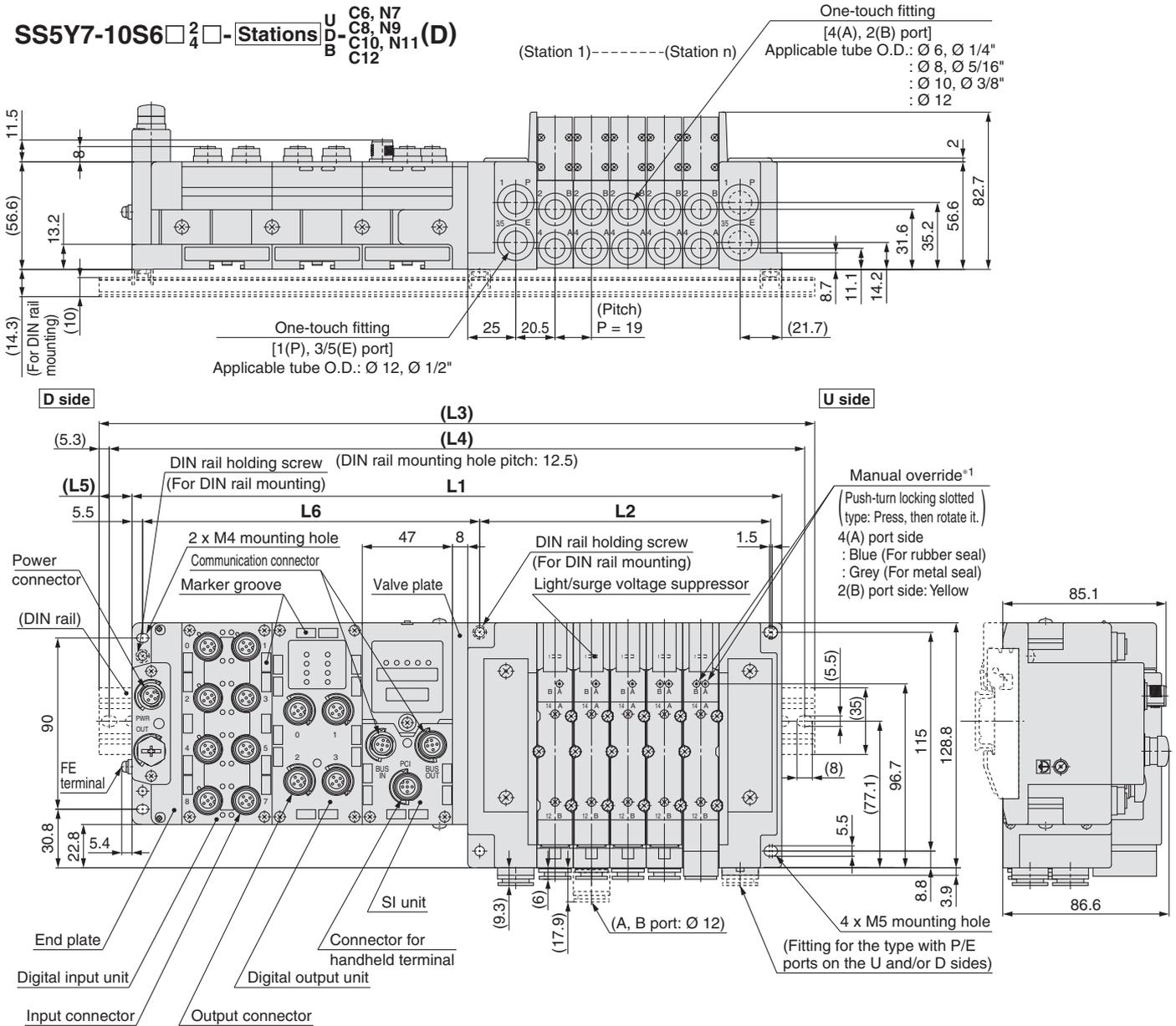
Valve stations (n1) / I/O Unit stations (n2)	Valve stations (n1) / I/O Unit stations (n2)																							
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
0	223	235.5	248	273	285.5	298	310.5	335.5	348	360.5	385.5	398	410.5	423	448	460.5	473	485.5	510.5	523	535.5	560.5	573	
1	260.5	285.5	298	310.5	335.5	348	360.5	373	398	410.5	423	448	460.5	473	485.5	510.5	523	535.5	560.5	573	585.5	598	623	
2	310.5	335.5	348	360.5	373	398	410.5	423	435.5	460.5	473	485.5	510.5	523	535.5	548	573	585.5	598	623	635.5	648	660.5	
3	360.5	373	398	410.5	423	435.5	460.5	473	485.5	510.5	523	535.5	548	573	585.5	598	610.5	635.5	648	660.5	685.5	698	710.5	
4	410.5	423	435.5	460.5	473	485.5	498	523	535.5	548	573	585.5	598	610.5	635.5	648	660.5	685.5	698	710.5	723	748	760.5	
5	460.5	473	485.5	498	523	535.5	548	560.5	585.5	598	610.5	635.5	648	660.5	673	698	710.5	723	748	760.5	773	785.5	810.5	
6	498	523	535.5	548	560.5	585.5	598	610.5	635.5	648	660.5	673	698	710.5	723	735.5	760.5	773	785.5	810.5	823	835.5	848	
7	548	560.5	585.5	598	610.5	623	648	660.5	673	698	710.5	723	735.5	760.5	773	785.5	810.5	823	835.5	848	873	885.5	898	
8	598	610.5	623	648	660.5	673	685.5	710.5	723	735.5	760.5	773	785.5	798	823	835.5	848	873	885.5	898	910.5	935.5	948	
9	648	660.5	673	685.5	710.5	723	735.5	760.5	773	785.5	798	823	835.5	848	860.5	885.5	898	910.5	935.5	948	960.5	973	—	

Dimensions: Series **SY7000**

Plug-in  
Connector Connecting Base

Type 10/Side Ported  
EX600 (M12 Connector)

SS5Y7-10S6 □  $\frac{2}{4}$  □ - Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix} \begin{matrix} \text{C6, N7} \\ \text{C8, N9} \\ \text{C10, N11} \end{matrix} (\text{D})$   
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

\*1: Refer to page 207 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y7-10S6Q22-05D-C10".  
\*: Refer to page 212 for dimensions of A or B port top-ported type.

n1: Valve stations  
n2: I/O Unit stations

**L3: DIN Rail Overall Length**

Valve stations (n1) / 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  
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

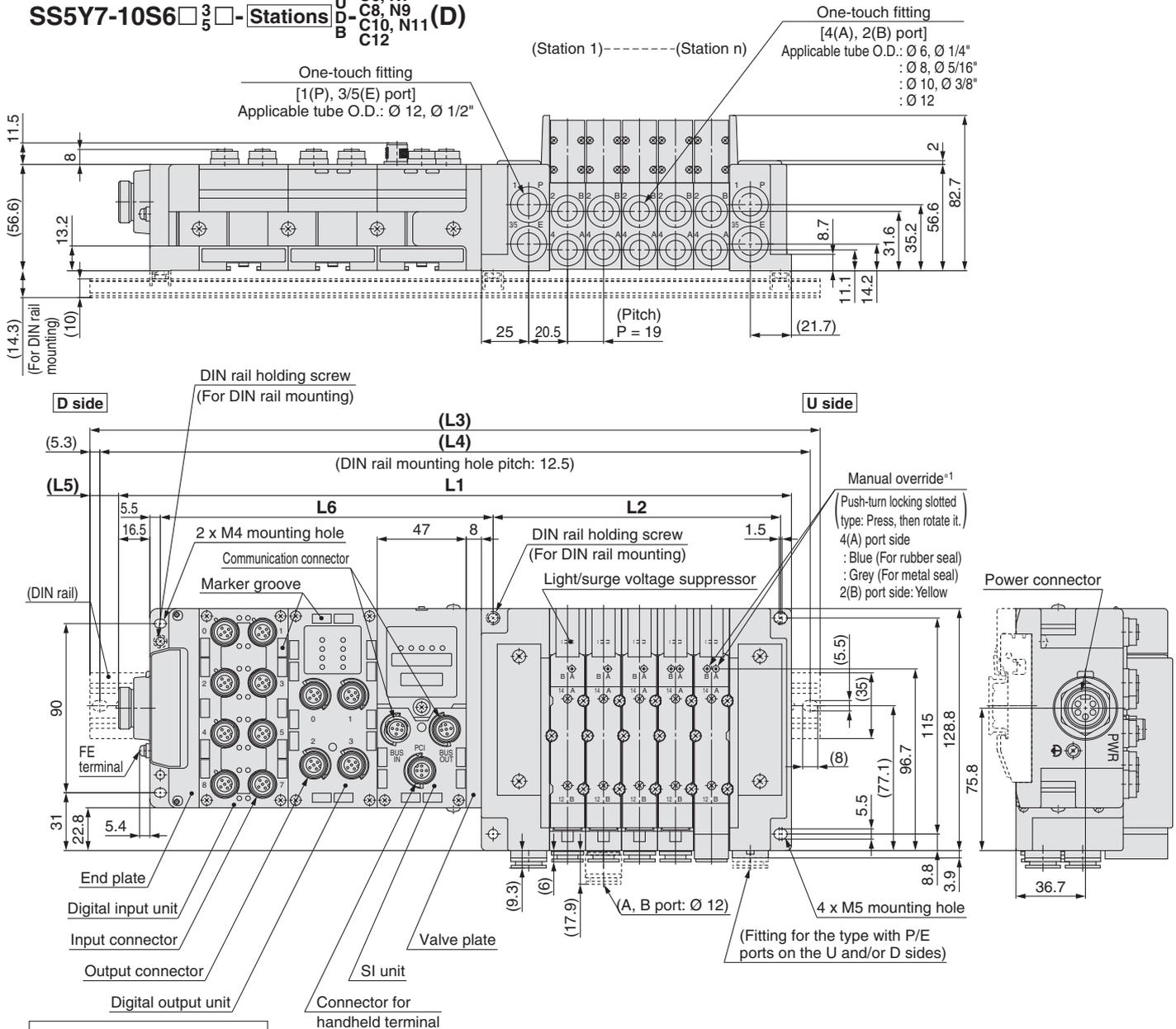
# Series SY3000/5000/7000

## Dimensions: Series SY7000

### Plug-in Connector Connecting Base

### Type 10/Side Ported EX600 (7/8 Inch Connector)

SS5Y7-10S6□<sub>5</sub>□<sub>3</sub>□<sub>1</sub>-Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix}$   $\begin{matrix} \text{C6, N7} \\ \text{C8, N9} \\ \text{C10, N11 (D)} \\ \text{C12} \end{matrix}$



$L1 = 19 \times n1 + 166.2 + 47 \times n2$   
 $L2 = 19 \times n1 + 56$   
 $L4 = L3 - 10.5$   
 $L5 = (L3 - L1)/2$   
 $L6 = 47 \times n2 + 81.7$

n1: Valve stations  
n2: I/O Unit stations

\*1: Refer to page 207 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\* : These figures show the "SS5Y7-10S6Q32-05D-C10".  
\* : Refer to page 212 for dimensions of A or B port top-ported type.

### L3: DIN Rail Overall Length

Valve stations (n1) / 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

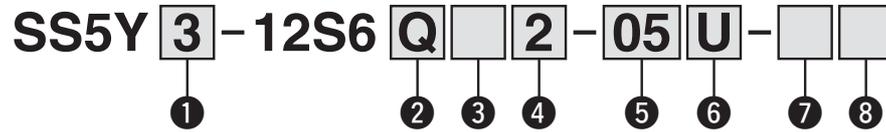
Type 12  
Top Ported

# Series SY3000/5000/7000



RoHS

## How to Order Manifold



Refer to pages 210 to 212 for dimensions of Type 12/Top ported type.

### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 3 SI Unit output polarity, end plate type

SI Unit output polarity	Power supply with M12 connector	Power supply with 7/8 inch connector	Power supply with M12 connector. IN/OUT pin arrangement 1	Power supply with M12 connector. IN/OUT pin arrangement 2
Without SI Unit	—			
SI Unit positive common	2	3	6	8
SI Unit negative common	4	5	7	9

\*: Ensure a match with the common specification of the valve to be used.  
\*: Without SI Unit, the symbol is —.

### 2 SI Unit

0	Without SI Unit
Q	DeviceNet™
N	PROFIBUS DP
V	CC-Link
ZE	EtherNet/IP™ (1 port)
EA	EtherNet/IP™ (2 ports)
D	EtherCAT®
F	PROFINET
WE	EtherNet/IP™ compatible wireless base *1
WF	PROFINET compatible wireless base *1
WS	Wireless remote *1

\*1 The wireless system is suitable for use only in a country where it is in accordance with the Radio Act and regulations of that country.  
\*: I/O Unit cannot be mounted without SI Unit.  
\*: Valve plate which connects manifold and SI Unit is not mounted to a valve without SI Unit. Refer to the EX600 catalogue (CAT.EU02-24E-UK) for mounting.

### 4 I/O Unit stations

—	None
1	1 station
⋮	⋮
9	9 stations

\*: Without SI Unit, the symbol is —.  
\*: SI Unit is not included in I/O Unit stations.  
\*: When I/O Unit is selected, it is shipped separately, and assembled by users. Refer to the attached operation manual for mounting.

### 5 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring*1
⋮	⋮	
16	16 stations	
02	2 stations	Specified layout*2 (Available up to 32 solenoids)
⋮	⋮	
24	24 stations	

\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.  
\*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)  
\*: 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*1	G
D side (2 to 10 stations)	D	E*1	H
Both sides (2 to 24 stations)	B	—	J

\*1: For SUP/EXH block assembly specifications, built-in silencer types will have P port entry stipulated.  
\*: For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)  
\*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

### 7 P, E port size (One-touch fittings)

Symbol	SY3000	SY5000	SY7000
—	Ø 8	Ø 10	Ø 12
N	Ø 5/16"	Ø 3/8"	Ø 1/2"

\*: For N, sizes are in inches.

### 8 Mounting

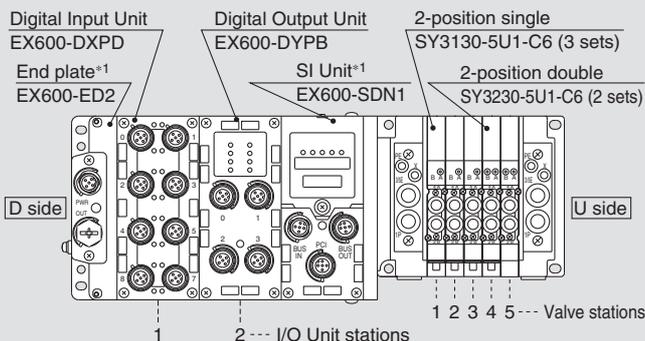
—	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	For 3 stations
⋮	⋮
D24	For 24 stations

Specify a longer rail than the standard length.

\*: When it is necessary to mount a DIN rail without an SI Unit, select D0 and order DIN rail length separately, referring to L3 in the dimensions. (Refer to page 249 for part numbers of DIN rail.)  
\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

## 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-DXP ..... 1 set I/O Unit part number (Station 1)  
 \*EX600-DYPB ..... 1 set I/O Unit part number (Station 2)

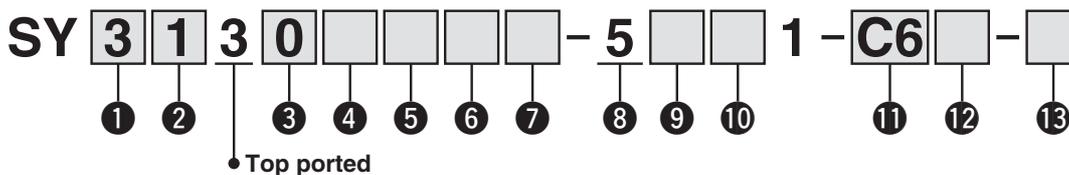
The asterisk denotes the symbol for assembly. Prefix it to the part numbers of the valve etc.

• 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.  
 \*1: Do not enter the SI Unit part number and the end plate part number together.

For details about the EX600 Integrated-type (For Input/Output) Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to pages 237 and 238 in this catalogue. (IP40 specifications may be required according to the I/O Unit to be selected.) Please download the Operation Manual via SMC website, <http://www.smc.eu>

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed centre
4		Exhaust centre
5		Pressure centre
A*1	4-position dual 3-port	N.C./N.C.
B*1		N.O./N.O.
C*1		N.C./N.O.

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

—	Internal pilot
R	External pilot

### 5 Back pressure check valve

—	None
H	Built-in

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.  
\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

—	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*1	High pressure type (1.0 MPa)

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

—	Standard
T	With power saving circuit (Continuous duty type)

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.  
\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

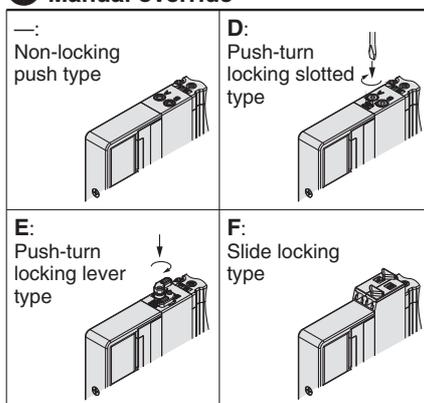
5	24 V DC
---	---------

### 9 Light/surge voltage suppressor and common specification

Symbol	With light	Surge voltage suppressor	Common specification
R	—	●	Non-polar
U	●		Positive common
S	—		Negative common
Z	●		
NS	—		
NZ	●		

\*: Select a valve from R, U, S or Z when the SI Unit polarity is positive common. Select a valve from R, U, NS or NZ when the SI Unit output polarity is negative common.  
\*: Only "Z" and "NZ" types are available for with the power saving circuit.

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 A, B port size

#### Thread piping

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY3000
O1	1/8	SY5000
O2	1/4	SY7000

#### One-touch fitting (Metric)

Symbol	A, B port	SY3000	SY5000	SY7000
C2	Ø 2	●	—	—
C3	Ø 3.2	●	—	—
C4	Ø 4	●	●	—
C6	Ø 6	●	●	●
C8	Ø 8	—	●	●
C10	Ø 10	—	—	●
C12	Ø 12	—	—	●

#### One-touch fitting (Inch)

Symbol	A, B port	SY3000	SY5000	SY7000
N1	Ø 1/8"	●	—	—
N3	Ø 5/32"	●	●	—
N7	Ø 1/4"	●	●	●
N9	Ø 5/16"	—	●	●
N11	Ø 3/8"	—	—	●

### 12 Thread type

—	Rc
F	G
N	NPT
T	NPTF

\*: Only — is available for M5.

### 13 Type of mounting screw

—	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.  
\*: **When ordering a valve individually, the base gasket is not included.** Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service. Refer to page 244 for part numbers of the base gasket and mounting screw.  
\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.

Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

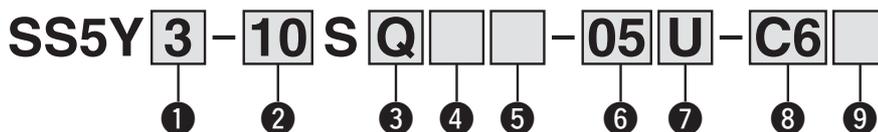
EX250

# Series SY3000/5000/7000



## How to Order Manifold

Refer to pages 208 (SY5000) and 209 (SY7000) for dimensions of Type 11/Bottom ported type.



### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type

10	Side ported
11	Bottom ported*1

\*1: The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to "Plug-in Mixed Mounting Type Manifold" (from page 213).

### 4 Input block stations

—	None
1	1 station
⋮	⋮
8	8 stations

\*: Without SI Unit, the symbol is —. The maximum number of stations is limited for the AS-Interface applicable SI Unit.

### 3 SI Unit

0	Without SI Unit	
Q	DeviceNet™ (Negative common)	
N	PROFIBUS DP (Negative common)	
V	CC-Link (Positive common)	
TA	AS-Interface (Negative common)	2 power supply systems
TB		4 in/4 out, 31 slave modes
TC		1 power supply systems
TD		4 in/4 out, 31 slave modes
Y	CANopen (Negative common)	
ZE	EtherNet/IP™ (Negative common)	

- \*: Ensure a match with the common specification of the valve to be used.
- \*: Input block cannot be mounted without SI Unit.
- \*: The supply current from the SI Unit of AS-Interface applicable 1 power supply system specification to the input block and valve is limited.

### 5 Input block type

	PNP sensor input	NPN sensor input
Without input block	—	
M12, 2 inputs	A	D
M12, 4 inputs	B	E
M8, 4 inputs	C	F

\*: Without SI Unit, the symbol is —.

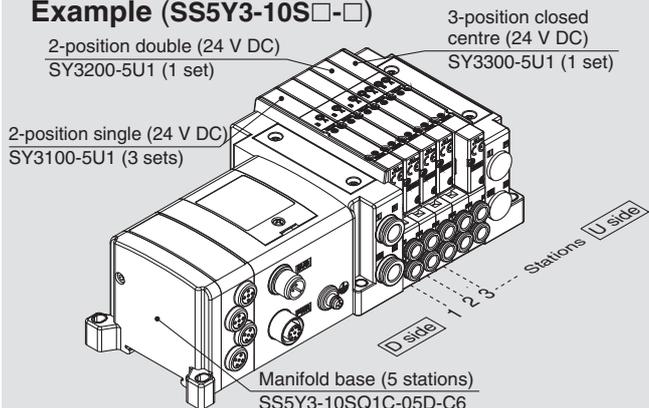
### 6 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring*1
⋮	⋮	
16	16 stations	
02	2 stations	Specified layout*2 (Available up to 32 solenoids)
⋮	⋮	
24	24 stations	

- \*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
- \*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.) When determining the number of valve stations, note that the maximum number of solenoids for the AS-Interface applicable SI Unit specification is as follows.
  - 8 in/8 out specification: Max. 8 solenoids
  - 4 in/4 out specification: Max. 4 solenoids
- \*: This also includes the number of blanking plate assembly.
- \*: For the product without the SI Unit (S0), note the maximum number of solenoids of the SI Unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

## How to Order Manifold Assembly

### Example (SS5Y3-10S□-□)



SS5Y3-10SQ1C-05D-C6... 1 set (Type 10 5-station manifold base part no.)  
 \*SY3100-5U1 ..... 3 sets (2-position single part no.)  
 \*SY3200-5U1 ..... 1 set (2-position double part no.)  
 \*SY3300-5U1 ..... 1 set (3-position closed centre part no.)

↳ The asterisk denotes the symbol for assembly. Prefix it to the part numbers of the valve etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

\*: When mixing top ported configurations, select from page 180. In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

### 7 P, E port entry, SUP/EXH block assembly

P, E port entry	Internal pilot	Internal pilot, Built-in silencer	External pilot
U side (2 to 10 stations)	U	C	G
D side (2 to 10 stations)	D	E	H
Both sides (2 to 24 stations)	B	F	J

- \*: 3/5(E) port is plugged for the built-in silencer type.
- \*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

For details about the EX250 Integrated-type (For Input/Output) Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 239 in this catalogue. Please download the Operation Manual via SMC website, <http://www.smc.eu>

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

**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	∅ 2	●	—	—	—	—
C3	∅ 3.2	●	—	—	—	—
C4	∅ 4	●	●	—	●	—
C6	∅ 6	●	●	●	●	●
C8	∅ 8	—	●	●	●	●
C10	∅ 10	—	—	●	—	●
C12	∅ 12	—	—	●	—	●
CM*1	Straight port, mixed sizes	●	●	●	●	●
L4	∅ 4	●	●	—	—	—
L6	∅ 6	●	●	●	—	—
L8	∅ 8	—	●	●	—	—
L10	∅ 10	—	—	●	—	—
L12	∅ 12	—	—	●	—	—
B4	∅ 4	●	●	—	—	—
B6	∅ 6	●	●	●	—	—
B8	∅ 8	—	●	●	—	—
B10	∅ 10	—	—	●	—	—
B12	∅ 12	—	—	●	—	—
LM*1	Elbow port, mixed sizes (Including upward and downward piping)	●	●	●	—	—
P, E port size (One-touch fittings)		∅ 8	∅ 10	∅ 12	∅ 10	∅ 12

**A, B port size (Inch/One-touch fitting)**

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported	
		SY3000	SY5000	SY7000	SY5000	SY7000
N1	∅ 1/8"	●	—	—	—	—
N3	∅ 5/32"	●	●	—	●	—
N7	∅ 1/4"	●	●	●	●	●
N9	∅ 5/16"	—	●	●	●	●
N11	∅ 3/8"	—	—	●	—	●
CM*1	Straight port, mixed sizes	●	●	●	●	●
LN3	∅ 5/32"	●	—	—	—	—
LN7	∅ 1/4"	●	●	—	—	—
LN9	∅ 5/16"	—	●	—	—	—
LN11	∅ 3/8"	—	—	●	—	—
BN3	∅ 5/32"	●	—	—	—	—
BN7	∅ 1/4"	●	●	—	—	—
BN9	∅ 5/16"	—	●	—	—	—
BN11	∅ 3/8"	—	—	●	—	—
LM*1	Elbow port, mixed sizes (Including upward and downward piping)	●	●	●	—	—
P, E port size (One-touch fittings)		∅ 5/16"	∅ 3/8"	∅ 1/2"	∅ 3/8"	∅ 1/2"

\*1: Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".  
The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.  
\*2: To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 250 to 252).

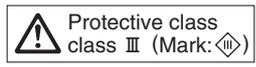
**9 Mounting and Option**

Symbol	Mounting	Option	
		Name plate	Station number
—	Direct mounting	—	—
AA		●	●
BA		●	—
D□	DIN rail mounting	—	—
A□		●	●
B□		●	—

DIN Rail Option	
—	Direct mounting
0	Without DIN rail (with bracket)
3	For 3 stations
⋮	⋮
24	For 24 stations

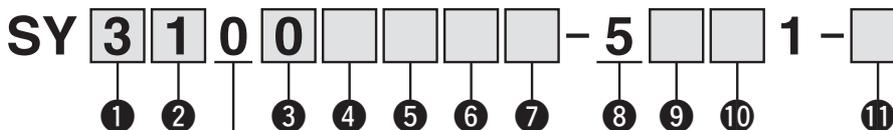
Specify a longer rail than the total length of specified stations.

\*: Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" above.)  
\*: Only direct mounting is available for Type 11 (Bottom ported).  
\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.  
\*: When it is necessary to mount a DIN rail without an SI Unit, select D0 and order DIN rail length separately, referring to L3 in the dimensions. (Refer to page 249 for part numbers of DIN rail.)



## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



• Base mounted

### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed centre
4		Exhaust centre
5		Pressure centre
A*1	4-position dual 3-port	N.C./N.C.
B*1		N.O./N.O.
C*1		N.C./N.O.

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

—	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

—	None
H	Built-in

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

—	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*1	High pressure type (1.0 MPa)

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

—	Standard
T	With power saving circuit (Continuous duty type)

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

5	24 V DC
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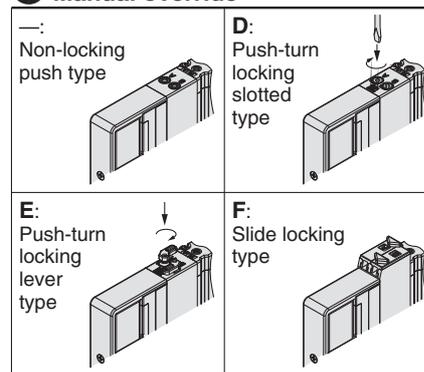
### 9 Light/surge voltage suppressor and common specification

Symbol	With light	Surge voltage suppressor	Common specification
R	—	●	Non-polar
U	●		
S	—		Positive common
Z	●		
NS	—		
NZ	●		

\*: "R" and "U" are applicable for every SI Unit. However, "S" and "Z" can be used only for CC-Link applicable Unit and "NS" and "NZ" are for Units which are not CC-Link applicable.

\*: Only "Z" and "NZ" types are available for with the power saving circuit.

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 Type of mounting screw

—	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

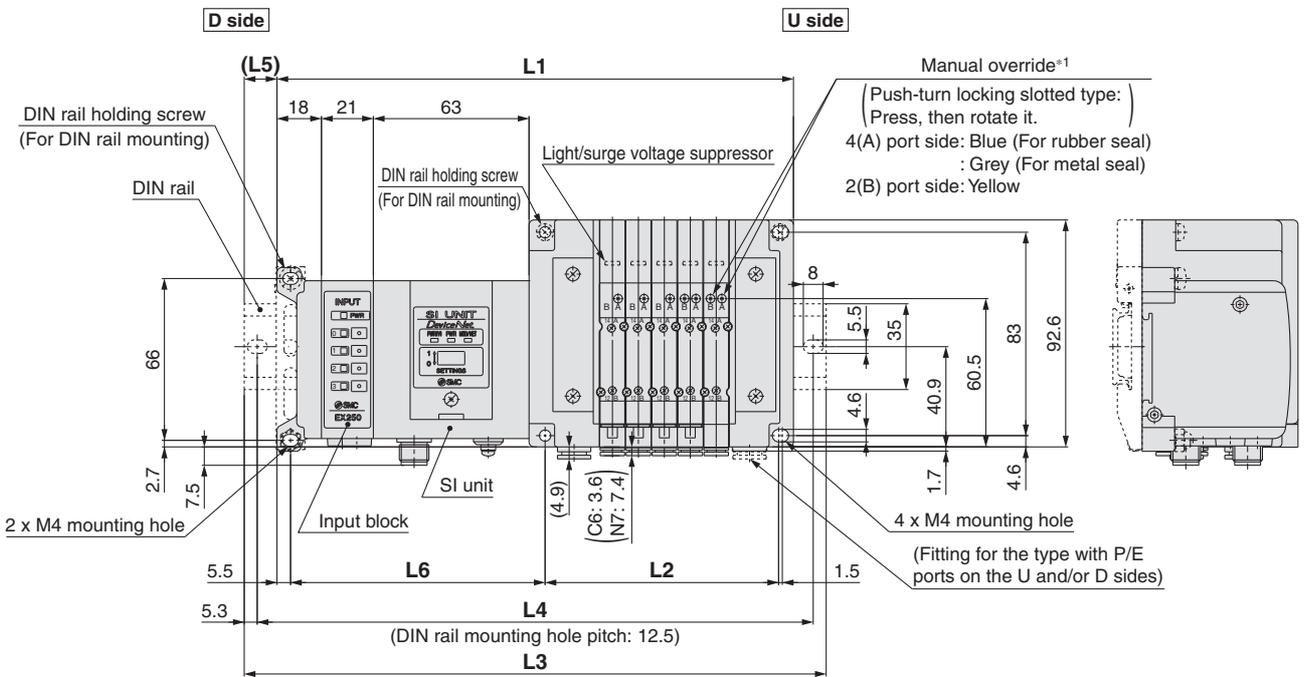
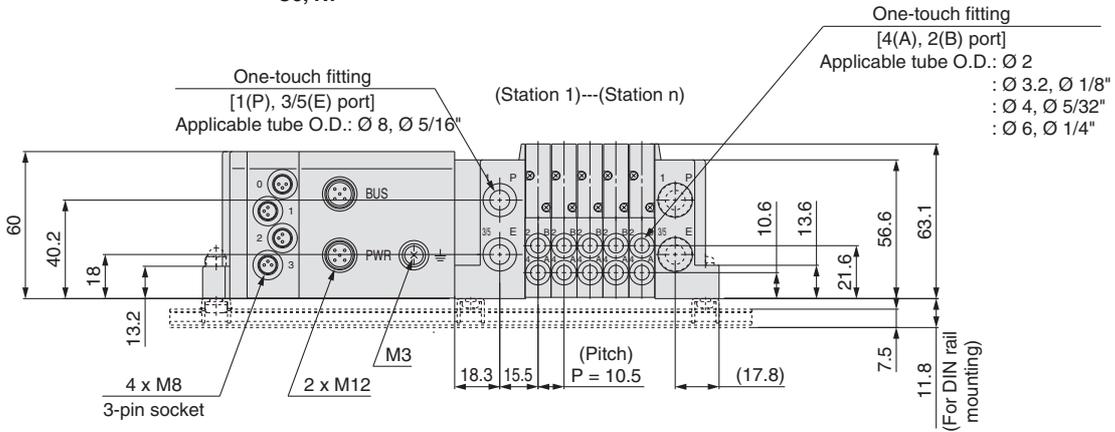
\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

Dimensions: Series **SY3000**

Plug-in  
Connector Connecting Base

Type 10/Side Ported  
EX250

SS5Y3-10S□□□-Stations  $\begin{matrix} U \\ D \\ B \end{matrix}$   $\begin{matrix} C2 \\ C3, N1 \\ C4, N3 \\ C6, N7 \end{matrix}$  (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

**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	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	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	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	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	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	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	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	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	585.5

\*1: Refer to page 205 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y3-10SQ1A-05D-C6".  
\*: Refer to page 210 for dimensions of A or B port top-ported type.

Valve  
Plug-in Sub-plate  
Metal Base  
Plug-in  
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

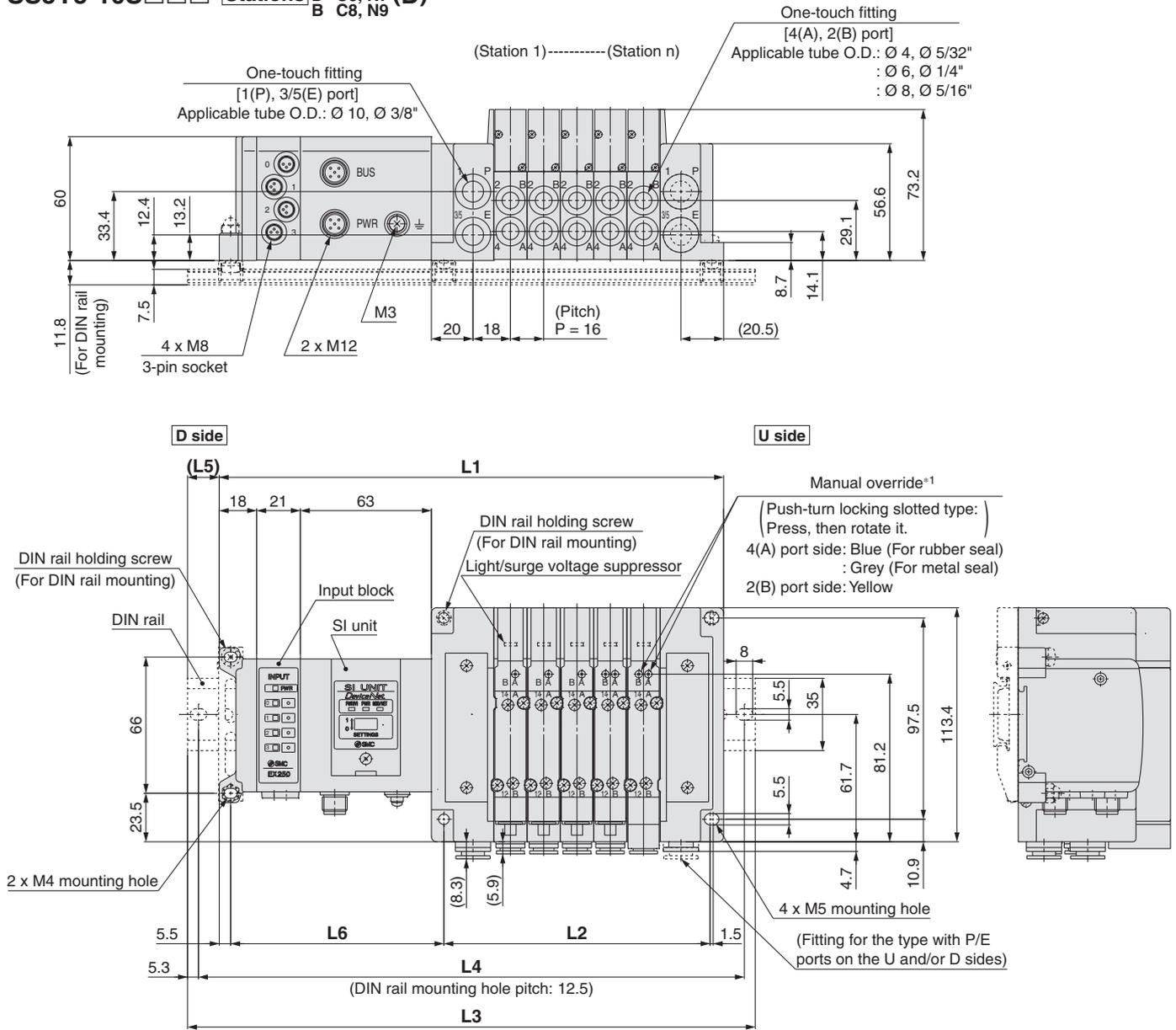
## Dimensions: Series SY5000

### Plug-in Connector Connecting Base

Type 10/Side Ported

EX250

SS5Y5-10S□□□-Stations  $\begin{matrix} U & C4, N3 \\ D & C6, N7 (D) \\ B & C8, N9 \end{matrix}$



$L1 = 16 \times n1 + 141.5 + 21 \times n2$   
 $L2 = 16 \times n1 + 48$   
 $L4 = L3 - 10.5$   
 $L5 = (L3 - L1)/2$   
 $L6 = 21 \times n2 + 81.5$

\*1: Refer to page 206 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
 \*: These figures show the "SS5Y5-10SQ1A-05D-C8".  
 \*: Refer to page 211 for dimensions of A or B port top-ported type.

n1: Valve stations  
 n2: Input block stations

### L3: DIN Rail Overall Length

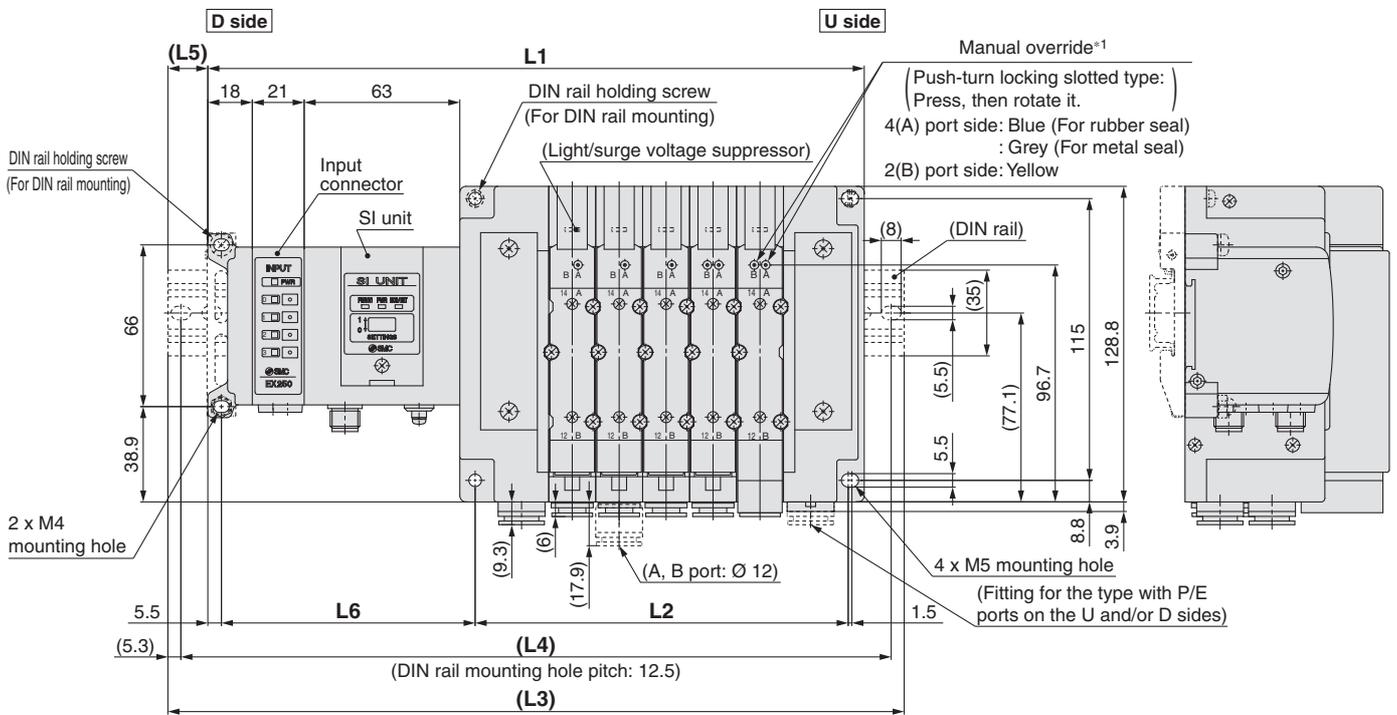
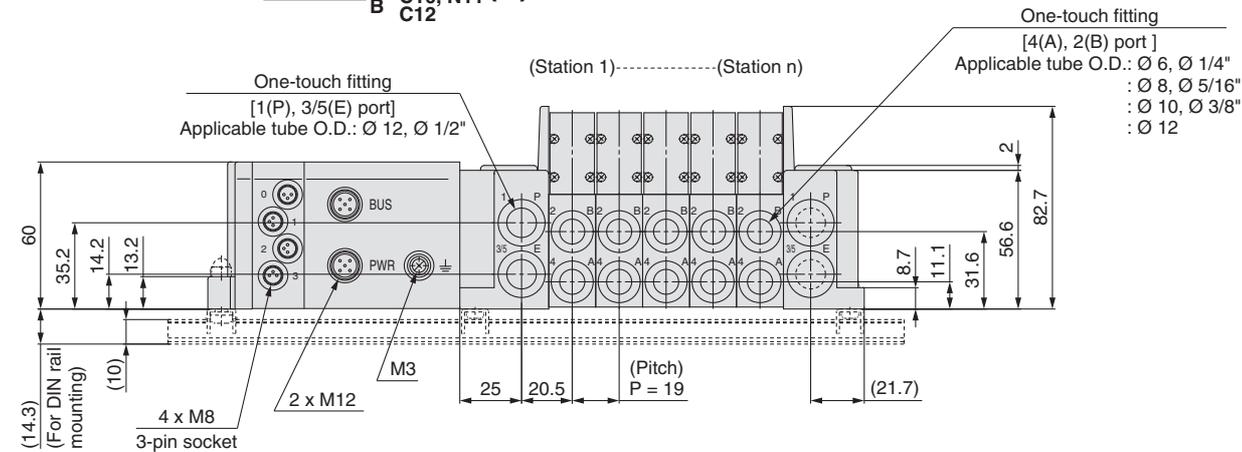
Input block stations (n2)	Valve stations (n1)																							
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
0	198	223	235.5	248	273	285.5	298	310.5	335.5	348	360.5	373	398	410.5	423	448	460.5	473	485.5	510.5	523	535.5	560.5	
1	223	235.5	260.5	273	285.5	298	323	335.5	348	373	385.5	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	560.5	585.5	598	
3	260.5	285.5	298	310.5	335.5	348	360.5	373	398	410.5	423	448	460.5	473	485.5	510.5	523	535.5	548	573	585.5	598	623	
4	285.5	298	323	335.5	348	373	385.5	398	410.5	435.5	448	460.5	473	498	510.5	523	548	560.5	573	585.5	610.5	623	635.5	
5	310.5	323	335.5	360.5	373	385.5	398	423	435.5	448	473	485.5	498	510.5	535.5	548	560.5	585.5	598	610.5	623	648	660.5	
6	323	348	360.5	373	398	410.5	423	435.5	460.5	473	485.5	510.5	523	535.5	548	573	585.5	598	623	635.5	648	660.5	685.5	
7	348	360.5	385.5	398	410.5	435.5	448	460.5	473	498	510.5	523	548	560.5	573	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	

Dimensions: Series **SY7000**

Plug-in  
Connector Connecting Base

Type 10/Side Ported  
EX250

SS5Y7-10S□□□-Stations  $\begin{matrix} U \\ D \\ B \end{matrix}$  C6, N7  
C8, N9  
C10, N11 (D)  
C12



$L1 = 19 \times n1 + 149.7 + 21 \times n2$   
 $L2 = 19 \times n1 + 56$   
 $L4 = L3 - 10.5$   
 $L5 = (L3 - L1)/2$   
 $L6 = 21 \times n2 + 81.7$

n1: Valve stations  
n2: Input block stations

\*1: Refer to page 207 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*2: These figures show the "SS5Y7-10SQ1A-05D-C10".  
\*3: Refer to page 212 for dimensions of A or B port top-ported type.

**L3: DIN Rail Overall Length**

Valve stations (n1) 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

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

# Plug-in Connector Connecting Base

EX250

Type 12  
Top Ported

# Series SY3000/5000/7000 C €

## How to Order Manifold

Refer to pages 210 to 212 for dimensions of Type 12/Top ported type.

SS5Y **3** - 12S **Q** **□** **□** - **05** **U** - **□** **□**

1 2 3 4 5 6 7 8

### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 3 Input block stations

—	None
1	1 station
⋮	⋮
8	8 stations

\*: Without SI Unit, the symbol is —. The maximum number of stations is limited for the AS-Interface applicable SI Unit.

### 4 Input block type

	PNP sensor input	NPN sensor input
Without input block	—	—
M12, 2 inputs	<b>A</b>	<b>D</b>
M12, 4 inputs	<b>B</b>	<b>E</b>
M8, 4 inputs	<b>C</b>	<b>F</b>

\*: Without SI Unit, the symbol is —.

### 2 SI Unit

0	Without SI Unit	
Q	DeviceNet™ (Negative common)	
N	PROFIBUS DP (Negative common)	
V	CC-Link (Positive common)	
TA	AS-Interface (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 system 8 in/8 out, 31 slave modes
TD		4 in/4 out, 31 slave modes
Y	CANopen (Negative common)	
ZE	EtherNet/IP™ (Negative common)	

- \*: Ensure a match with the common specification of the valve to be used.
- \*: Input block cannot be mounted without SI Unit.
- \*: The supply current from the SI Unit of AS-Interface applicable 1 power supply system specification to the input block and valve is limited.

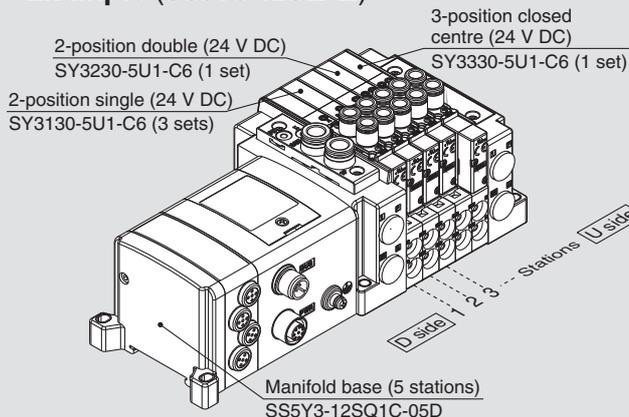
### 5 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring*1
⋮	⋮	
16	16 stations	Specified layout*2 (Available up to 32 solenoids)
02	2 stations	
⋮	⋮	
24	24 stations	

- \*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
- \*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.) When determining the number of valve stations, note that the maximum number of solenoids for the AS-Interface applicable SI Unit specification is as follows.
  - 8 in/8 out specification: Max. 8 solenoids
  - 4 in/4 out specification: Max. 4 solenoids
- \*: This also includes the number of blanking plate assembly.
- \*: For the product without the SI Unit (S0), note the maximum number of solenoids of the SI Unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

## How to Order Manifold Assembly

### Example (SS5Y3-12S□-□)



SS5Y3-12SQ1C-05D ... 1 set (Type 12 5-station manifold base part no.)  
 \*SY3130-5U1-C6 ..... 3 sets (2-position single part no.)  
 \*SY3230-5U1-C6 ..... 1 set (2-position double part no.)  
 \*SY3330-5U1-C6 ..... 1 set (3-position closed centre part no.)

↳ The asterisk denotes the symbol for assembly. Prefix it to the part numbers of the valve etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

### 6 P, E port entry, SUP/EXH block assembly

P, E port entry	Internal pilot	Internal pilot, Built-in silencer	External pilot
U side (2 to 10 stations)	<b>U</b>	<b>C</b> *1	<b>G</b>
D side (2 to 10 stations)	<b>D</b>	<b>E</b> *1	<b>H</b>
Both sides (2 to 24 stations)	<b>B</b>	—	<b>J</b>

- \*1: For SUP/EXH block assembly specifications, built-in silencer types will have P port entry stipulated.
- \*: For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)
- \*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

### 7 P, E port size (One-touch fittings)

Symbol	SY3000	SY5000	SY7000
—	Ø 8	Ø 10	Ø 12
N	Ø 5/16"	Ø 3/8"	Ø 1/2"

\*: For N, sizes are in inches.

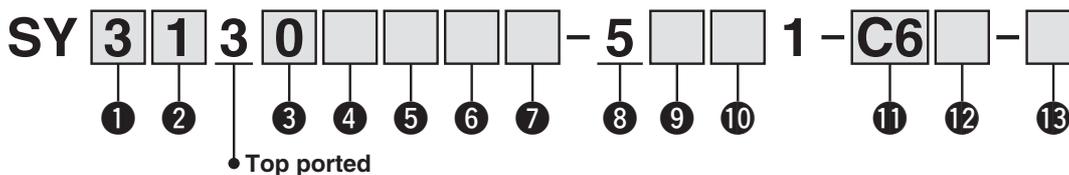
### 8 Mounting

—	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	For 3 stations Specify a longer rail than the standard length.
⋮	⋮
D24	For 24 stations

- \*: If the DIN rail must be mounted without an SI Unit, select D0. Then, refer to L3 of the dimensions for the DIN rail length and order separately. (Refer to page 249 for the DIN rail part number.)
- \*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

For details about the EX250 Integrated-type (For Input/Output) Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 239 in this catalogue. Please download the Operation Manual via SMC website, <http://www.smc.eu>

**How to Order Valves (With mounting screw)** Refer to page 13 for valve specifications.



**1 Series**

3	SY3000
5	SY5000
7	SY7000

**2 Type of actuation**

1	2-position	Single
2		Double
3	3-position	Closed centre
4		Exhaust centre
5		Pressure centre
A*1	4-position dual 3-port	N.C./N.C.
B*1		N.O./N.O.
C*1		N.C./N.O.

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

**3 Seal type**

0	Rubber seal
1	Metal seal

**4 Pilot type**

—	Internal pilot
R	External pilot

**5 Back pressure check valve (Built-in valve type)**

—	None
H	Built-in

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

**6 Pilot valve option**

—	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*1	High pressure type (1.0 MPa)

\*1: Only metal seal type is available for the high pressure type.

**7 Coil type**

—	Standard
T	With power saving circuit (Continuous duty type)

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

**8 Rated voltage**

5	24 V DC
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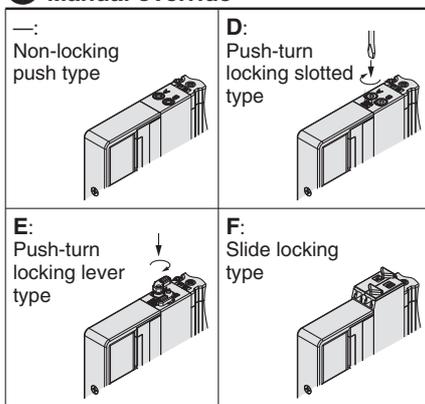
**9 Light/surge voltage suppressor and common specification**

Symbol	With light	Surge voltage suppressor	Common specification
R	—	●	Non-polar
U	●		
S	—		Positive common
Z	●		
NS	—		
NZ	●		

\*: "R" and "U" are applicable for every SI Unit. However, "S" and "Z" can be used only for CC-Link applicable Unit and "NS" and "NZ" are for Units which are not CC-Link applicable.

\*: Only "Z" and "NZ" types are available for with the power saving circuit.

**10 Manual override**



\*: Refer to page 31 for with the safety slide locking manual override.

**11 A, B port size**

**Thread piping**

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY3000
O1	1/8	SY5000
O2	1/4	SY7000

**One-touch fitting (Metric)**

Symbol	A, B port	SY3000	SY5000	SY7000
C2	Ø 2	●	—	—
C3	Ø 3.2	●	—	—
C4	Ø 4	●	●	—
C6	Ø 6	●	●	●
C8	Ø 8	—	●	●
C10	Ø 10	—	—	●
C12	Ø 12	—	—	●

**One-touch fitting (Inch)**

Symbol	A, B port	SY3000	SY5000	SY7000
N1	Ø 1/8"	●	—	—
N3	Ø 5/32"	●	●	—
N7	Ø 1/4"	●	●	●
N9	Ø 5/16"	—	●	●
N11	Ø 3/8"	—	—	●

**12 Thread type**

—	Rc
F	G
N	NPT
T	NPTF

\*: Only — is available for M5.

**13 Type of mounting screw**

—	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

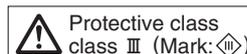
\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.



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

Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

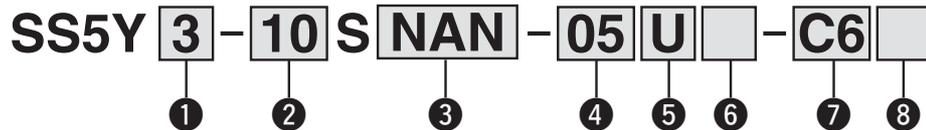
EX260

# Series SY3000/5000/7000



## How to Order Manifold

Refer to pages 208 (SY5000) and 209 (SY7000) for dimensions of Type 11/Bottom ported type.



### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type

10	Side ported
11	Bottom ported*1

\*1: The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to "Plug-in Mixed Type Manifold" (from page 213).

### 3 SI Unit specifications

(output polarity, protocol, number of outputs, communication connector)

Symbol (output polarity)		Protocol	Number of outputs	Communication connector
Positive common (NPN)	Negative common (PNP)			
0*1		Without SI unit		
QA	QAN	DeviceNet™	32	M12
QB	QBN		16	
NA	NAN	PROFIBUS DP	32	M12
NB	NBN		16	
NC	NCN		32	
ND	NDN		16	
VA	VAN	CC-Link	32	M12
VB	VBN		16	
DA	DAN	EtherCAT	32	M12
DB	DBN		16	
FA	FAN	PROFINET	32	M12
FB	FBN		16	
EA	EAN	EtherNet/IP™	32	M12
EB	EBN		16	
—*3	GAN	EtherNet POWERLINK	32	M12
—*3	GBN		16	

\*1 Without SI unit, the output polarity is decided by the SI unit used.

Ensure a match with the common specification of the valves to be used.

\*2 DIN rail cannot be mounted without SI Unit.

\*3 Positive common (NPN) type is not applicable.

\*4 IP40 for the D-sub applicable communication connector specification.

### 4 Valve stations

In the case of the 32-output SI Unit

Symbol	Stations	Note
02	2 stations	Double wiring*1
⋮	⋮	
16	16 stations	Specified layout*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*1
⋮	⋮	
08	8 stations	Specified layout*2 (Available up to 16 solenoids)
02	2 stations	
⋮	⋮	
16	16 stations	

\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout

\*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet.  
(Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

\*: This also includes the number of blanking plate assembly.

\*: For the model without the SI Unit (S0), note the maximum number of solenoids of the SI Unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

### 5 P, E port entry

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 24 stations)

### 6 SUP/EXH block assembly

—	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

\*: 3/5(E) port is plugged for the built-in silencer type.

\*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

Refer to the page on the right for 7.

### 8 Mounting and Option

Symbol	Mounting	Option	
		Name plate	Station number
—	Direct mounting	—	—
AA		●	●
BA	DIN rail mounting	—	—
D□		—	—
A□		●	●
B□		●	—

\*: Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" below.)

\*: Only direct mounting is available for Type 11 (Bottom ported).

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

#### DIN Rail Option

—	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 249 for part numbers of DIN rail.)

For details about the EX260 Integrated-type (For Output) Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 240 in this catalogue. Please download the Operation Manual via SMC website, <http://www.smc.eu>

Valve

Plug-in Sub-plate

Metal Base

Plug-in

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

**8 A, B port size (Metric/One-touch fitting)**

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported	
		SY3000	SY5000	SY7000	SY5000	SY7000
C2	Ø 2	●	—	—	—	—
C3	Ø 3.2	●	—	—	—	—
C4	Ø 4	●	●	—	●	—
C6	Ø 6	●	●	●	●	●
C8	Ø 8	—	●	●	●	●
C10	Ø 10	—	—	●	—	●
C12	Ø 12	—	—	●	—	●
CM*1	Straight port, mixed sizes	●	●	●	●	●
L4	Ø 4	●	●	—	—	—
L6	Ø 6	●	●	●	—	—
L8	Ø 8	—	●	●	—	—
L10	Ø 10	—	—	●	—	—
L12	Ø 12	—	—	●	—	—
B4	Ø 4	●	●	—	—	—
B6	Ø 6	●	●	●	—	—
B8	Ø 8	—	●	●	—	—
B10	Ø 10	—	—	●	—	—
B12	Ø 12	—	—	●	—	—
LM*1	Elbow port, mixed sizes (Including upward and downward piping)	●	●	●	—	—
P, E port size (One-touch fittings)		Ø 8	Ø 10	Ø 12	Ø 10	Ø 12

**A, B port size (Inch/One-touch fitting)**

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported	
		SY3000	SY5000	SY7000	SY5000	SY7000
N1	Ø 1/8"	●	—	—	—	—
N3	Ø 5/32"	●	●	—	●	—
N7	Ø 1/4"	●	●	●	●	●
N9	Ø 5/16"	—	●	●	●	●
N11	Ø 3/8"	—	—	●	—	●
CM*1	Straight port, mixed sizes	●	●	●	●	●
LN3	Ø 5/32"	●	—	—	—	—
LN7	Ø 1/4"	●	●	—	—	—
LN9	Ø 5/16"	—	●	—	—	—
LN11	Ø 3/8"	—	—	●	—	—
BN3	Ø 5/32"	●	—	—	—	—
BN7	Ø 1/4"	●	●	—	—	—
BN9	Ø 5/16"	—	●	—	—	—
BN11	Ø 3/8"	—	—	●	—	—
LM*1	Elbow port, mixed sizes (Including upward and downward piping)	●	●	●	—	—
P, E port size (One-touch fittings)		Ø 5/16"	Ø 3/8"	Ø 1/2"	Ø 3/8"	Ø 1/2"

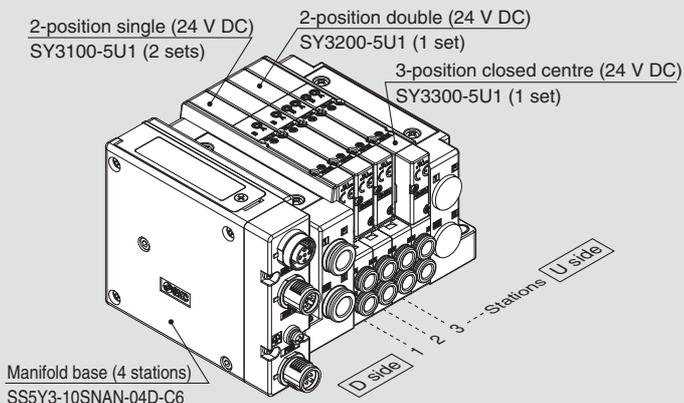
\*1: Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

\*2: To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 250 to 252).

**How to Order Manifold Assembly**

**Example (SS5Y3-10SNAN-□)**



**SS5Y3-10SNAN-04D-C6...1 set (Type 10 4-station manifold base part no.)**  
 \*SY3100-5U1.....2 sets (2-position single part no.)  
 \*SY3200-5U1.....1 set (2-position double part no.)  
 \*SY3300-5U1.....1 set (3-position closed centre part no.)

→ The asterisk denotes the symbol for assembly. Prefix it to the part numbers of the valve etc.

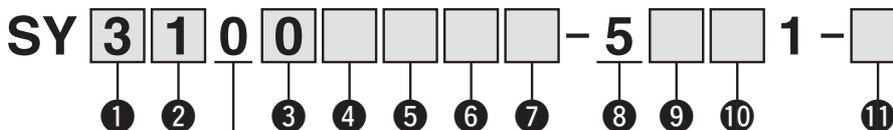
- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure on the left. If the arrangement becomes complicated, specify on a manifold specification sheet.

\*: When mixing top ported configurations, select from page 188. Specify on a manifold specification sheet if plugs are required on the A and B port on the manifold.



## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



● Base mounted

### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed centre
4		Exhaust centre
5		Pressure centre
A*1	4-position dual 3-port	N.C./N.C.
B*1		N.O./N.O.
C*1		N.C./N.O.

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

—	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

—	None
H	Built-in

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for details. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

—	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*1	High pressure type (1.0 MPa)

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

—	Standard
T	With power saving circuit (Continuous duty type)

\*: Be sure to select the power saving circuit type when a valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

5	24 V DC
---	---------

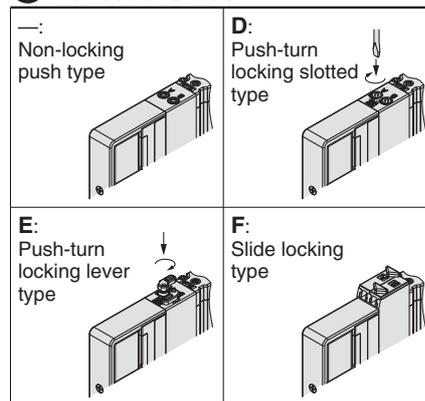
### 9 Light/surge voltage suppressor and common specification

Symbol	With light	Surge voltage suppressor	Common specification
R	—	●	Non-polar
U	●		
S	—		Positive common
Z	●		
NS	—		Negative common
NZ	●		

\*: Select a valve from R, U, S or Z when the SI Unit output polarity is — (positive common). Select a valve from R, U, NS or NZ when the SI Unit output polarity is N (negative common).

\*: Only "Z" and "NZ" types are available for with the power saving circuit.

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 Type of mounting screw

—	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

Dimensions: Series **SY3000**

Plug-in  
Connector Connecting Base

Type 10/Side Ported  
EX260

SS5Y3-10S□□-Stations  $\begin{matrix} U \\ D \end{matrix}$ - $\begin{matrix} C2 \\ C3, N1 \\ C4, N3 \\ C6, N7 \end{matrix}$  (D)

Valve

Plug-in Sub-plate

Plug-in Metal Base

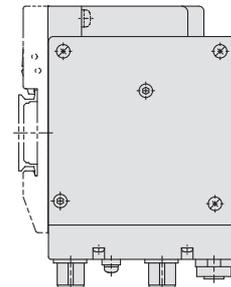
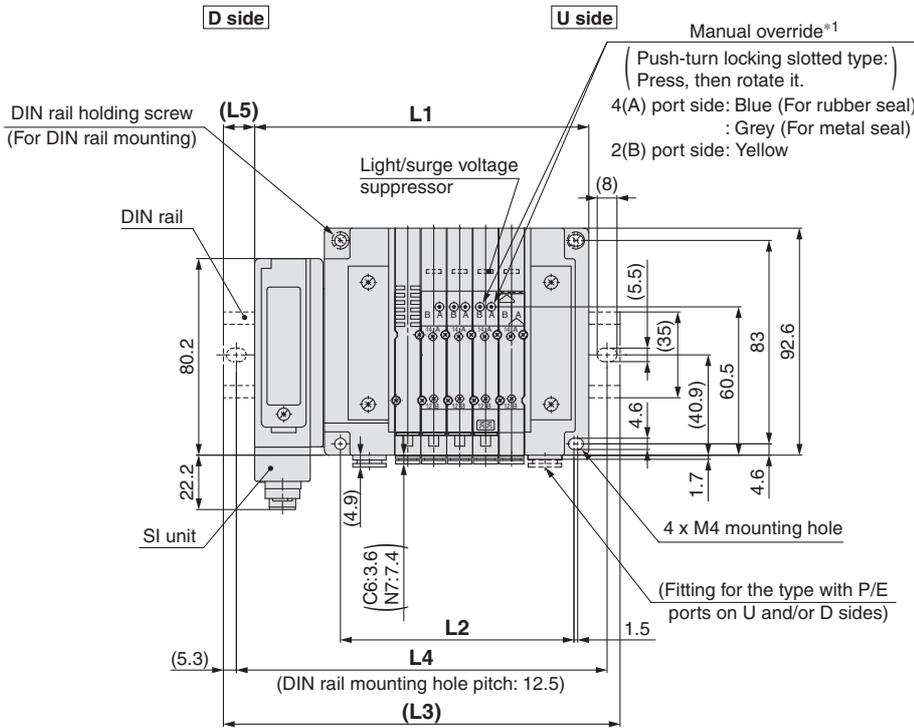
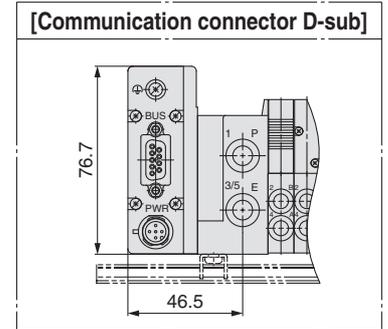
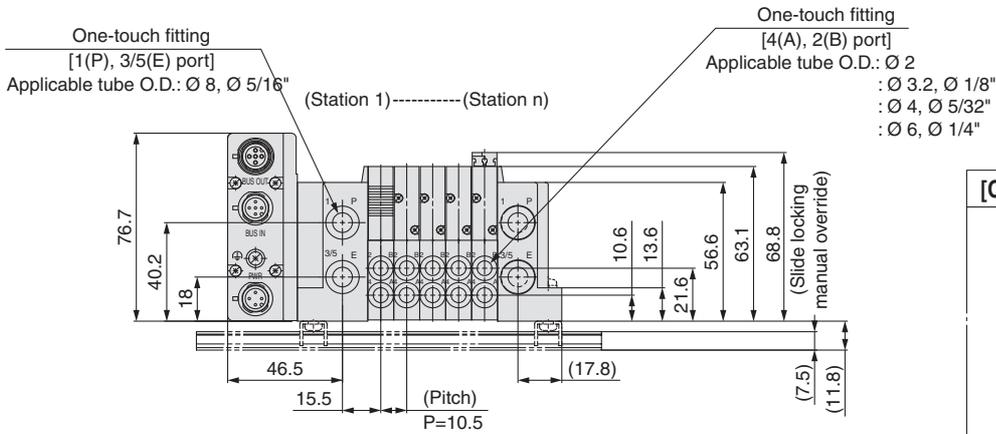
Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options



\*1: Refer to page 205 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y3-10SQA-05D-C6".  
\*: Refer to page 210 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
L1	103.7	114.2	124.7	135.2	145.7	156.2	166.7	177.2	187.7	198.2	208.7	219.2	229.7	240.2	250.7	261.2
L2	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5
L3	135.5	148	148	160.5	173	185.5	198	210.5	223	223	235.5	248	260.5	273	285.5	285.5
L4	125	137.5	137.5	150	162.5	175	187.5	200	212.5	212.5	225	237.5	250	262.5	275	275
L5	16	17	11.5	12.5	13.5	14.5	15.5	16.5	17.5	12.5	13.5	14.5	15.5	16.5	17.5	12

n: Stations	18	19	20	21	22	23	24
L1	271.7	282.2	292.7	303.2	313.7	324.2	334.7
L2	231	241.5	252	262.5	273	283.5	294
L3	298	310.5	323	335.5	348	348	360.5
L4	287.5	300	312.5	325	337.5	337.5	350
L5	13	14	15	16	17	12	13

# Series SY3000/5000/7000

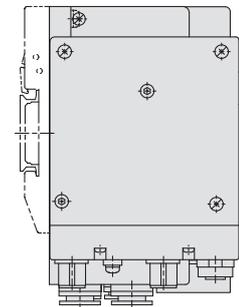
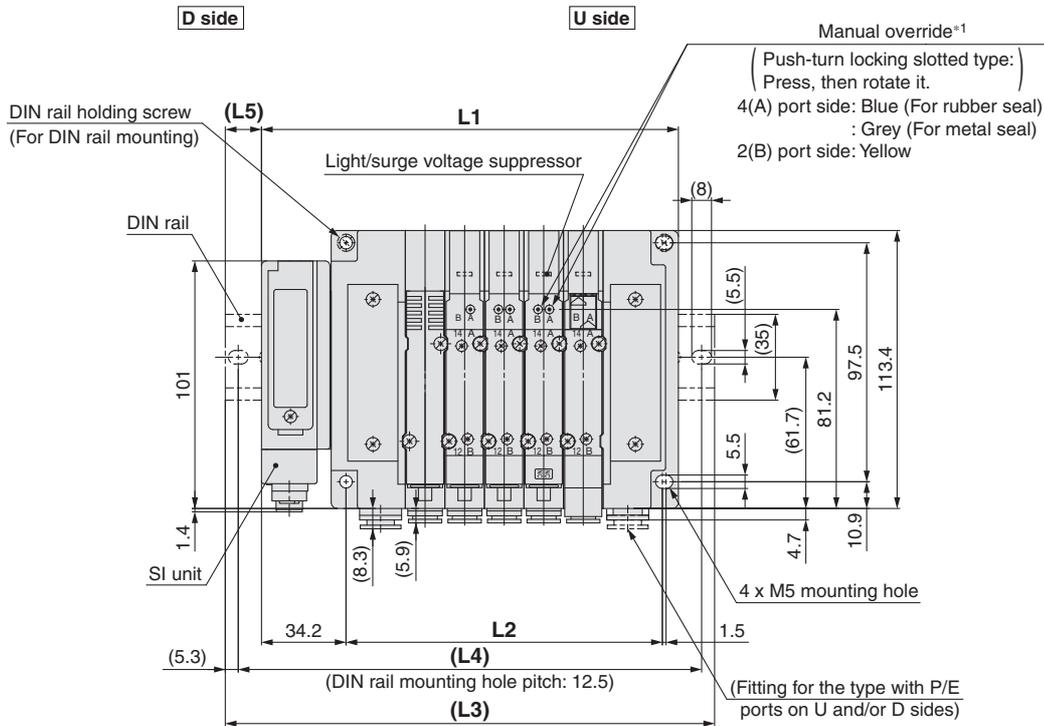
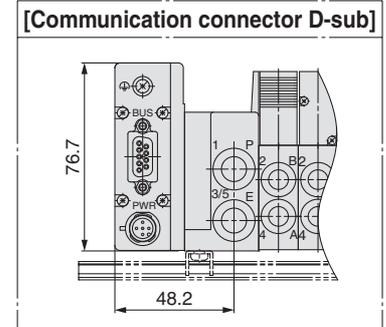
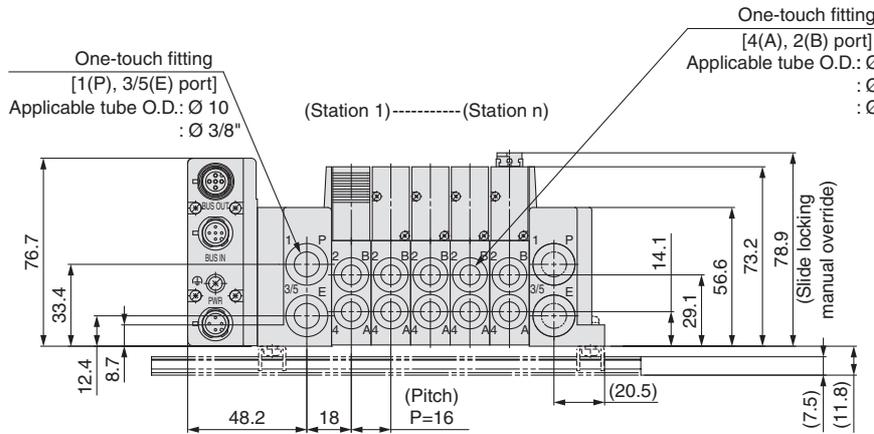
## Dimensions: Series SY5000

### Plug-in Connector Connecting Base

Type 10/Side Ported

EX260

SS5Y5-10S□□-Stations  $\begin{matrix} U \\ D \end{matrix}$  -  $\begin{matrix} C4, N3 \\ C6, N7 \\ C8, N9 \end{matrix}$  (D)



\*1: Refer to page 206 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y5-10SQA-05D-C8".

\*: Refer to page 211 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
L1	120.7	136.7	152.7	168.7	184.7	200.7	216.7	232.7	248.7	264.7	280.7	296.7	312.7	328.7	344.7	360.7
L2	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320
L3	148	160.5	185.5	198	210.5	235.5	248	260.5	273	298	310.5	323	348	360.5	373	385.5
L4	137.5	150	175	187.5	200	225	237.5	250	262.5	287.5	300	312.5	337.5	350	362.5	375
L5	13.5	12	16.5	14.5	13	17.5	15.5	14	12	16.5	15	13	17.5	16	14	12.5

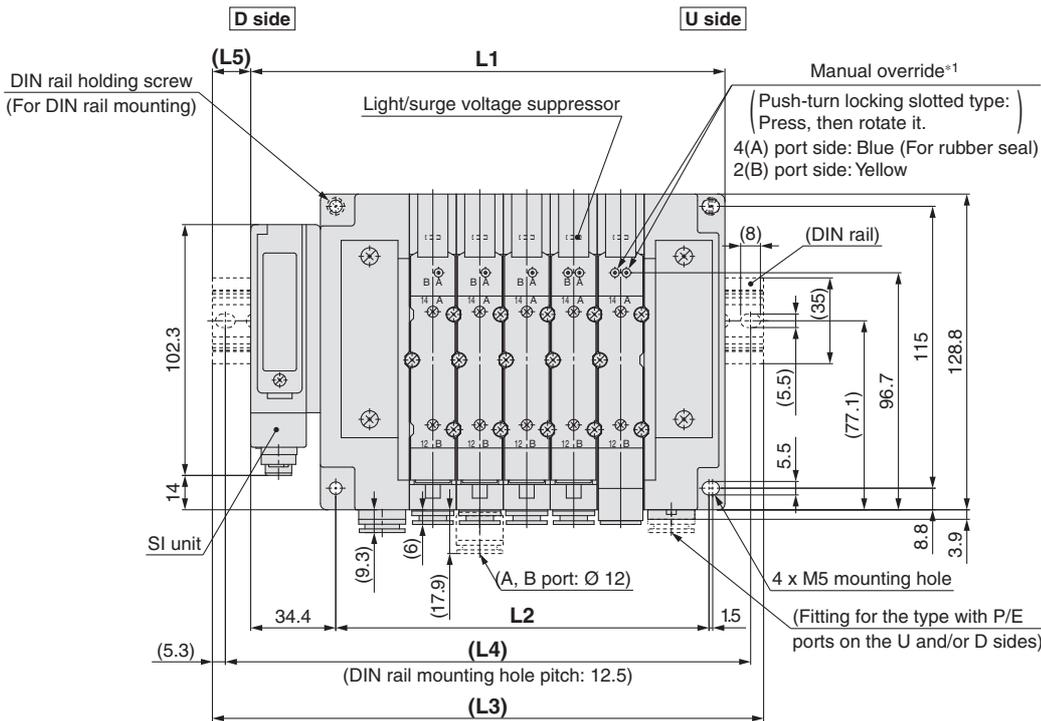
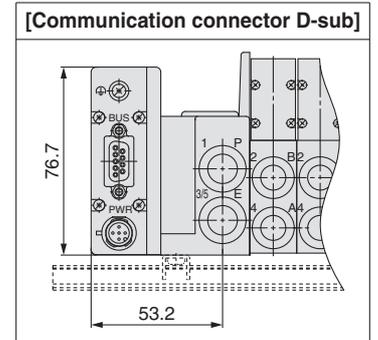
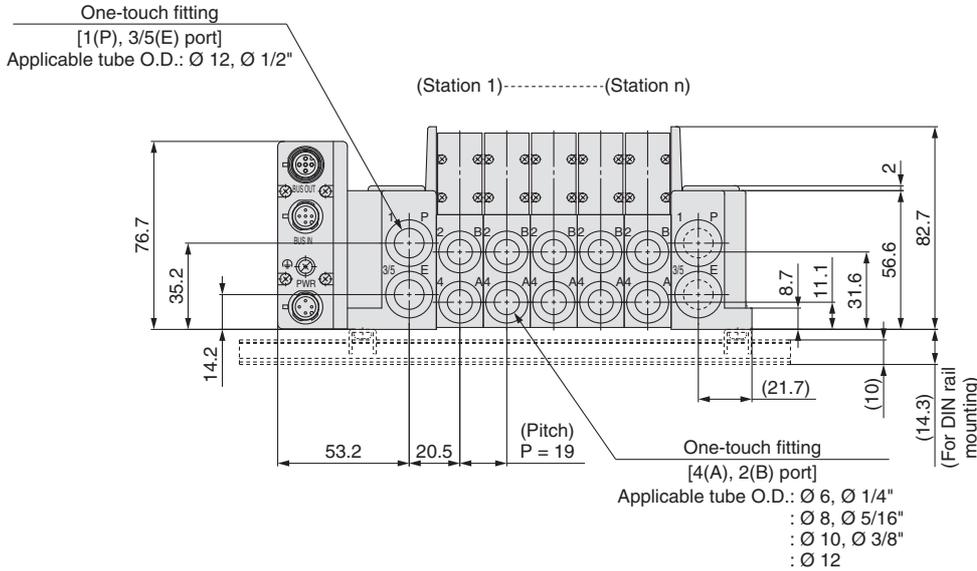
n: Stations	18	19	20	21	22	23	24
L1	376.7	392.7	408.7	424.7	440.7	456.7	472.7
L2	336	352	368	384	400	416	432
L3	410.5	423	435.5	448	473	485.5	498
L4	400	412.5	425	437.5	462.5	475	487.5
L5	17	15	13.5	11.5	16	14.5	12.5

Dimensions: Series **SY7000**

Plug-in  
Connector Connecting Base

Type 10/Side Ported  
EX260

SS5Y7-10S□□-Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix}$  C6, N7  
C8, N9  
C10, N11 (D)  
C12



\*1: Refer to page 207 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y7-10SQA-05D-C10".  
\*: Refer to page 212 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
<b>L1</b>	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
<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	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
<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	437.5	462.5	475	500	512.5	537.5	550	575
<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	14	17	14	17	13.5	16.5	13.5	16.5

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

# Plug-in Connector Connecting Base

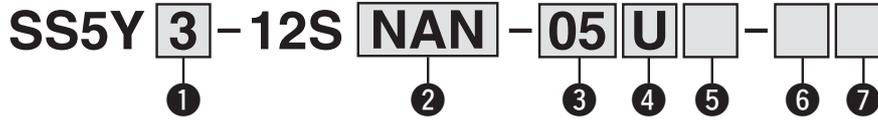
EX260

Type 12  
Top Ported

# Series SY3000/5000/7000 C €

RoHS

## How to Order Manifold



Refer to pages 210 to 212 for Type 12/Top ported dimensions.

### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 SI Unit specifications

(output polarity, protocol, number of outputs, communication connector)

Symbol (output polarity)		Protocol	Number of outputs	Communication connector
Positive common (NPN)	Negative common (PNP)			
0*1		Without SI unit		
QA	QAN	DeviceNet™	32	M12
QB	QBN		16	
NA	NAN	PROFIBUS DP	32	M12
NB	NBN		16	
NC	NCN	DP	32	*4
ND	NDN		16	
VA	VAN	CC-Link	32	M12
VB	VBN		16	
DA	DAN	EtherCAT	32	M12
DB	DBN		16	
FA	FAN	PROFINET	32	M12
FB	FBN		16	
EA	EAN	EtherNet/IP™	32	M12
EB	EBN		16	
—*3	GAN	EtherNet POWERLINK	32	M12
—*3	GBN		16	

\*1 Without SI unit, the output polarity is decided by the SI unit used.

Ensure a match with the common specification of the valves to be used.

\*2 DIN rail cannot be mounted without SI Unit.

\*3 Positive common (NPN) type is not applicable.

\*4 IP40 for the D-sub applicable communication connector specification.

### 3 Valve stations

In the case of the 32-output SI Unit

Symbol	Stations	Note
02	2 stations	Double wiring*1
⋮	⋮	
16	16 stations	Specified layout*2 (Available up to 32 solenoids)
02	2 stations	
⋮	⋮	
24	24 stations	

In the case of the 16-output SI Unit

Symbol	Stations	Note
02	2 stations	Double wiring*1
⋮	⋮	
08	8 stations	Specified layout*2 (Available up to 16 solenoids)
02	2 stations	
⋮	⋮	
16	16 stations	

\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

\*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet.

(Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

\*3: This also includes the number of blanking plate assembly.

\*4: For the model without the SI Unit (S0), note the maximum number of solenoids of the SI Unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

### 4 P, E port entry

U*1	U side (2 to 10 stations)
D*1	D side (2 to 10 stations)
B	Both sides (2 to 24 stations)

\*1: For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

### 5 SUP/EXH block assembly

—	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

\*: For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)

\*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

### 6 P, E port size (One-touch fittings)

Symbol	SY3000	SY5000	SY7000
—	Ø 8	Ø 10	Ø 12
N	Ø 5/16"	Ø 3/8"	Ø 1/2"

\*: For N, sizes are in inches.

### 7 Mounting

—	Direct mounting	
D	DIN rail mounting (With DIN rail)	
D0	DIN rail mounting (Without DIN rail)	
D3	For 3 stations	Specify a longer rail than the standard length.
⋮	⋮	
D24	For 24 stations	

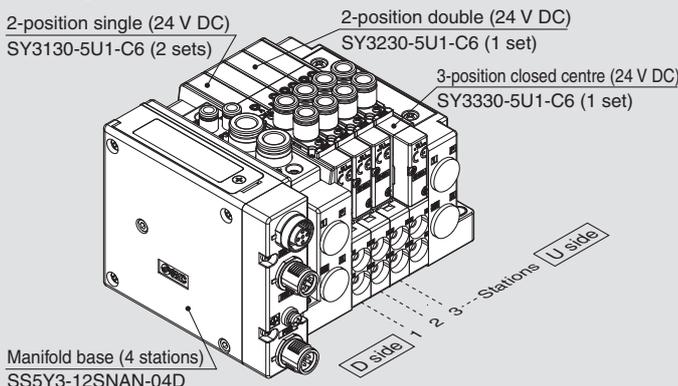
\*: When it is necessary to mount a DIN rail without an SI Unit, select D0 and order DIN rail length separately, referring to L3 in the dimensions. Refer to page 249 for part numbers of DIN rail.

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

For details about the EX260 Integrated-type (For Output) Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 240 in this catalogue. Please download the Operation Manual via SMC website, <http://www.smc.eu>

## How to Order Manifold Assembly

### Example (SS5Y3-12SNAN-□)

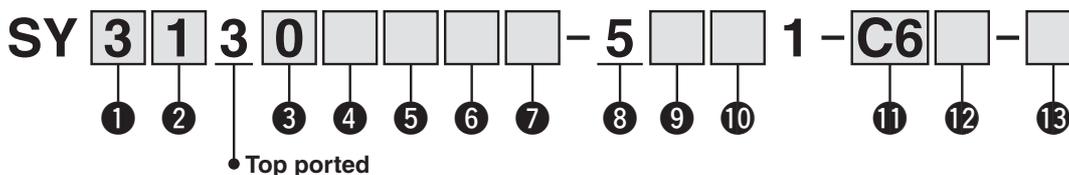


SS5Y3-12SNAN-04D ..... 1 set (Type 12 4-station manifold base part no.)  
 \*SY3130-5U1-C6 ..... 2 sets (2-position single part no.)  
 \*SY3230-5U1-C6 ..... 1 set (2-position double part no.)  
 \*SY3330-5U1-C6 ..... 1 set (3-position closed centre part no.)

The asterisk denotes the symbol for assembly. Prefix it to the part numbers of the valve etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure on the left. If the arrangement becomes complicated, specify on a manifold specification sheet.

How to Order Valves (With mounting screw) Refer to page 13 for valve specifications.



**1 Series**

3	SY3000
5	SY5000
7	SY7000

**2 Type of actuation**

1	2-position	Single
2		Double
3	3-position	Closed centre
4		Exhaust centre
5		Pressure centre
A*1	4-position dual 3-port	N.C./N.C.
B*1		N.O./N.O.
C*1		N.C./N.O.

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

**3 Seal type**

0	Rubber seal
1	Metal seal

**4 Pilot type**

—	Internal pilot
R	External pilot

**5 Back pressure check valve (Built-in valve type)**

—	None
H	Built-in

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for details. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

**6 Pilot valve option**

—	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*1	High pressure type (1.0 MPa)

\*1: Only metal seal type is available for the high pressure type.

**7 Coil type**

—	Standard
T	With power saving circuit (Continuous duty type)

\*: Be sure to select the power saving circuit type when a valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

**8 Rated voltage**

5	24 V DC
---	---------

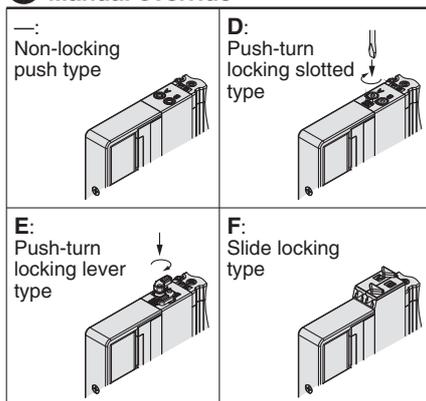
**9 Light/surge voltage suppressor and common specification**

Symbol	With light	Surge voltage suppressor	Common specification
R	—	●	Non-polar
U	●		
S	—		Positive common
Z	●		
NS	—		
NZ	●		

\*: Select a valve from R, U, S or Z when the SI Unit output polarity is — (positive common). Select a valve from R, U, NS or NZ when the SI Unit output polarity is N (negative common).

\*: Only "Z" and "NZ" types are available for with the power saving circuit.

**10 Manual override**



\*: Refer to page 31 for with the safety slide locking manual override.

**11 A, B port size**

**Thread piping**

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY3000
O1	1/8	SY5000
O2	1/4	SY7000

**One-touch fitting (Metric)**

Symbol	A, B port	SY3000	SY5000	SY7000
C2	Ø 2	●	—	—
C3	Ø 3.2	●	—	—
C4	Ø 4	●	●	—
C6	Ø 6	●	●	●
C8	Ø 8	—	●	●
C10	Ø 10	—	—	●
C12	Ø 12	—	—	●

**One-touch fitting (Inch)**

Symbol	A, B port	SY3000	SY5000	SY7000
N1	Ø 1/8"	●	—	—
N3	Ø 5/32"	●	—	—
N7	Ø 1/4"	●	●	●
N9	Ø 5/16"	—	●	●
N11	Ø 3/8"	—	—	●

**12 Thread type**

—	Rc
F	G
N	NPT
T	NPTF

\*: Only — is available for M5.

**13 Type of mounting screw**

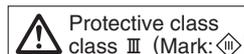
—	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service. Refer to page 244 for part numbers of the base gasket and mounting screw.

\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.



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

Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

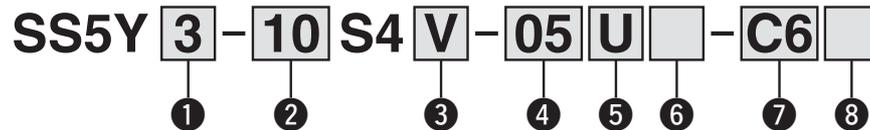
EX126

# Series SY3000/5000/7000



## How to Order Manifold

Refer to pages 208 (SY5000) and 209 (SY7000) for dimensions of Type 11/Bottom ported type.



### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type

10	Side ported
11	Bottom ported*1

\*1: The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to "Plug-in Mixed Mounting Type Manifold" (from page 213).

### 3 SI Unit

0	Without SI Unit
V	CC-Link (Positive common NPN)

\*: Only a terminal block plate is mounted for the valve without SI Unit.

### 4 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring*1
⋮	⋮	
08	8 stations	Specified layout*2 (Available up to 16 solenoids)
02	2 stations	
⋮	⋮	
16	16 stations	

\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

\*2: Specified layout: Indicate the wiring specifications with the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

\*: This also includes the number of blanking plate assembly.

### 5 P, E port entry

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 16 stations)

### 6 SUP/EXH block assembly

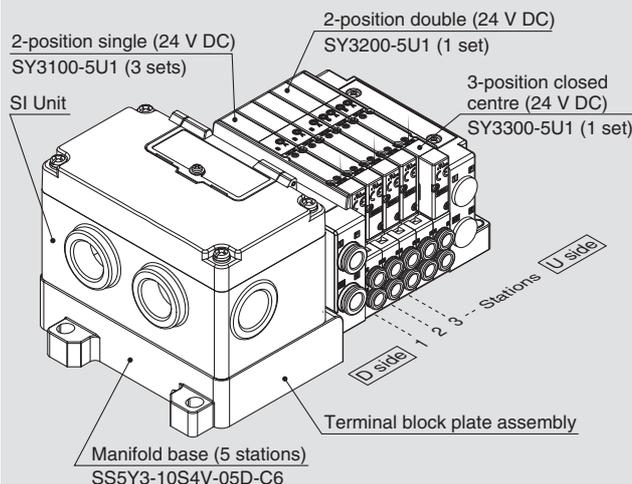
—	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

\*: 3/5(E) port is plugged for the built-in silencer type.

\*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

## How to Order Manifold Assembly

### Example (SS5Y3-10S4V-□-□)



SS5Y3-10S4V-05D-C6 ... 1 set (Type 10 5-station manifold base part no.)  
 \*SY3100-5U1 ..... 3 sets (2-position single part no.)  
 \*SY3200-5U1 ..... 1 set (2-position double part no.)  
 \*SY3300-5U1 ..... 1 set (3-position closed centre part no.)  
 The asterisk denotes the symbol for assembly.  
 Prefix it to the part numbers of the valve etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

\*: When mixing top ported configurations, select from page 196.  
 In this case, use caution as there is also output on the A and B port on base side.  
 Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

For details about the EX126 Integrated-type (For Output) Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 241 in this catalogue. Please download the Operation Manual via SMC website, <http://www.smc.eu>

**7 A, B port size (Metric/One-touch fitting)**

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported	
		SY3000	SY5000	SY7000	SY5000	SY7000
C2	∅ 2	●	—	—	—	—
C3	∅ 3.2	●	—	—	—	—
C4	∅ 4	●	●	—	●	—
C6	∅ 6	●	●	●	●	●
C8	∅ 8	—	●	●	●	●
C10	∅ 10	—	—	●	—	●
C12	∅ 12	—	—	●	—	●
CM*1	Straight port, mixed sizes	●	●	●	●	●
L4	∅ 4	●	●	—	—	—
L6	∅ 6	●	●	●	—	—
L8	∅ 8	—	●	●	—	—
L10	∅ 10	—	—	●	—	—
L12	∅ 12	—	—	●	—	—
B4	∅ 4	●	●	—	—	—
B6	∅ 6	●	●	●	—	—
B8	∅ 8	—	●	●	—	—
B10	∅ 10	—	—	●	—	—
B12	∅ 12	—	—	●	—	—
LM*1	Elbow port, mixed sizes (Including upward and downward piping)	●	●	●	—	—
P, E port size (One-touch fittings)		∅ 8	∅ 10	∅ 12	∅ 10	∅ 12

**A, B port size (Inch/One-touch fitting)**

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported	
		SY3000	SY5000	SY7000	SY5000	SY7000
N1	∅ 1/8"	●	—	—	—	—
N3	∅ 5/32"	●	●	—	●	—
N7	∅ 1/4"	●	●	●	●	●
N9	∅ 5/16"	—	●	●	●	●
N11	∅ 3/8"	—	—	●	—	●
CM*1	Straight port, mixed sizes	●	●	●	●	●
LN3	∅ 5/32"	●	—	—	—	—
LN7	∅ 1/4"	●	●	—	—	—
LN9	∅ 5/16"	—	●	—	—	—
LN11	∅ 3/8"	—	—	●	—	—
BN3	∅ 5/32"	●	—	—	—	—
BN7	∅ 1/4"	●	●	—	—	—
BN9	∅ 5/16"	—	●	—	—	—
BN11	∅ 3/8"	—	—	●	—	—
LM*1	Elbow port, mixed sizes (Including upward and downward piping)	●	●	●	—	—
P, E port size (One-touch fittings)		∅ 5/16"	∅ 3/8"	∅ 1/2"	∅ 3/8"	∅ 1/2"

\*1: Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

\*2: To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 250 to 252).

**8 Mounting and Option**

Symbol	Mounting	Option	
		Name plate	Station number
—	Direct mounting	—	—
AA BA		●	●
D□ A□ B□	DIN rail mounting	—	—
		●	●
		●	—

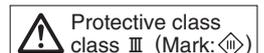
\*: Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" below.)

\*: Only direct mounting is available for Type 11 (Bottom ported).

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

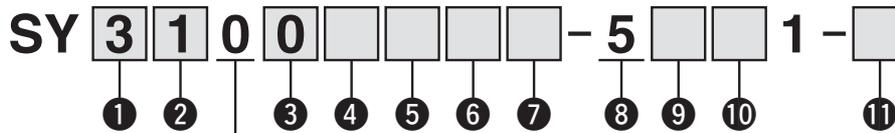
**DIN Rail Option**

—	Direct mounting	
0	Without DIN rail (with bracket)	
3	For 3 stations	Specify a longer rail than the total length of specified stations.
⋮	⋮	
16	For 16 stations	



## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed centre
4		Exhaust centre
5		Pressure centre
A*1	4-position dual 3-port	N.C./N.C.
B*1		N.O./N.O.
C*1		N.C./N.O.

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

—	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

—	None
H	Built-in

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

—	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*1	High pressure type (1.0 MPa)

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

—	Standard
T	With power saving circuit (Continuous duty type)

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

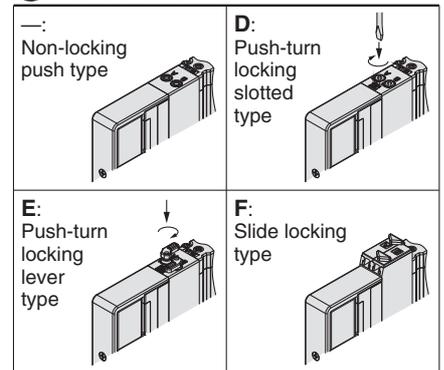
5	24 V DC
---	---------

### 9 Light/surge voltage suppressor and common specification

Symbol	With light	Surge voltage suppressor	Common specification
R	—	●	Non-polar
U	●		
S	—		Positive common
Z	●		

\*: Only "Z" type is available for with the power saving circuit.

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 Type of mounting screw

—	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of base gasket and mounting screw.

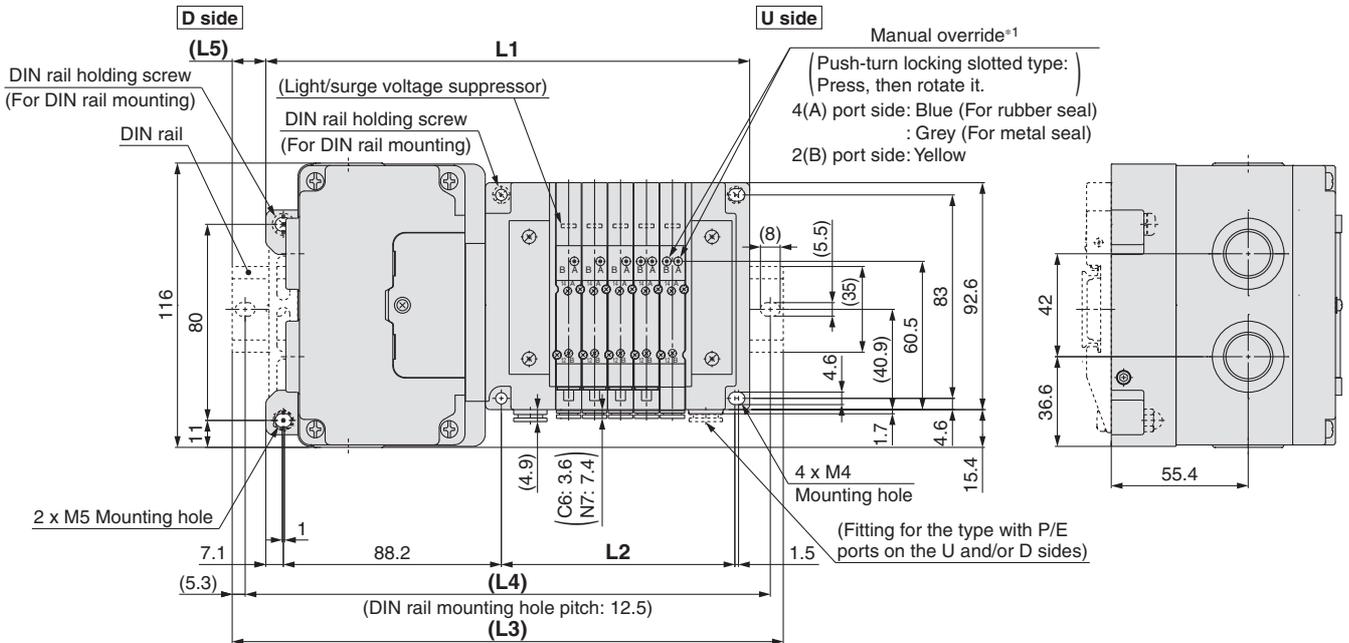
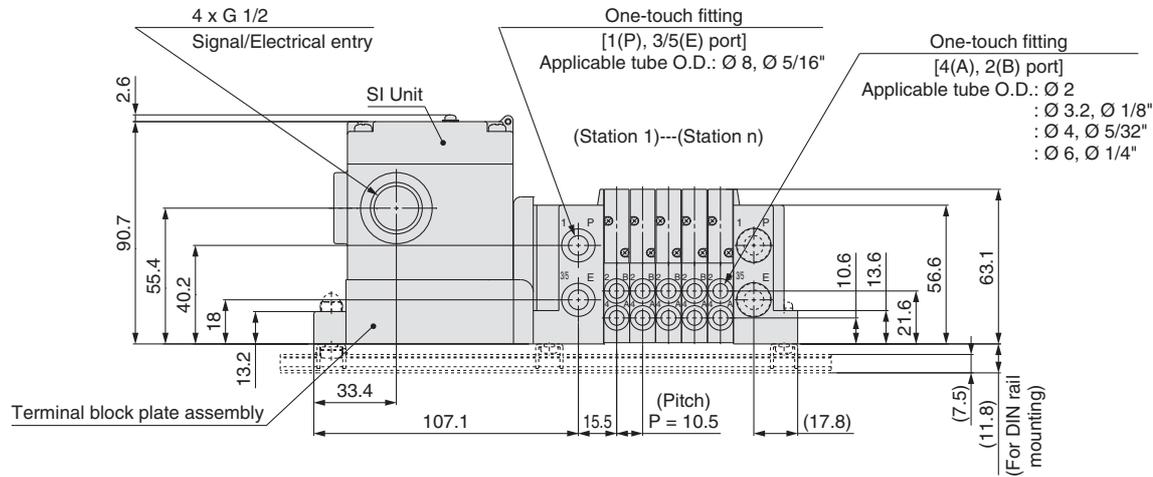
\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

Dimensions: Series **SY3000**

Plug-in  
Connector Connecting Base

Type 10/Side Ported  
EX126

SS5Y3-10S4V - Stations  $\begin{matrix} U \\ D \\ B \end{matrix}$ - $\begin{matrix} C2 \\ C3, N1 \\ C4, N3 \\ C6, N7 \end{matrix}$  (D)



\*1: Refer to page 205 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
 \*: These figures show the "SS5Y3-10S4V-05D-C6".  
 \*: Refer to page 210 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>L1</b>	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
<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
<b>L3</b>	198	198	210.5	223	235.5	248	260.5	273	273	285.5	298	310.5	323	335.5	335.5
<b>L4</b>	187.5	187.5	200	212.5	225	237.5	250	262.5	262.5	275	287.5	300	312.5	325	325
<b>L5</b>	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

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

# Series SY3000/5000/7000

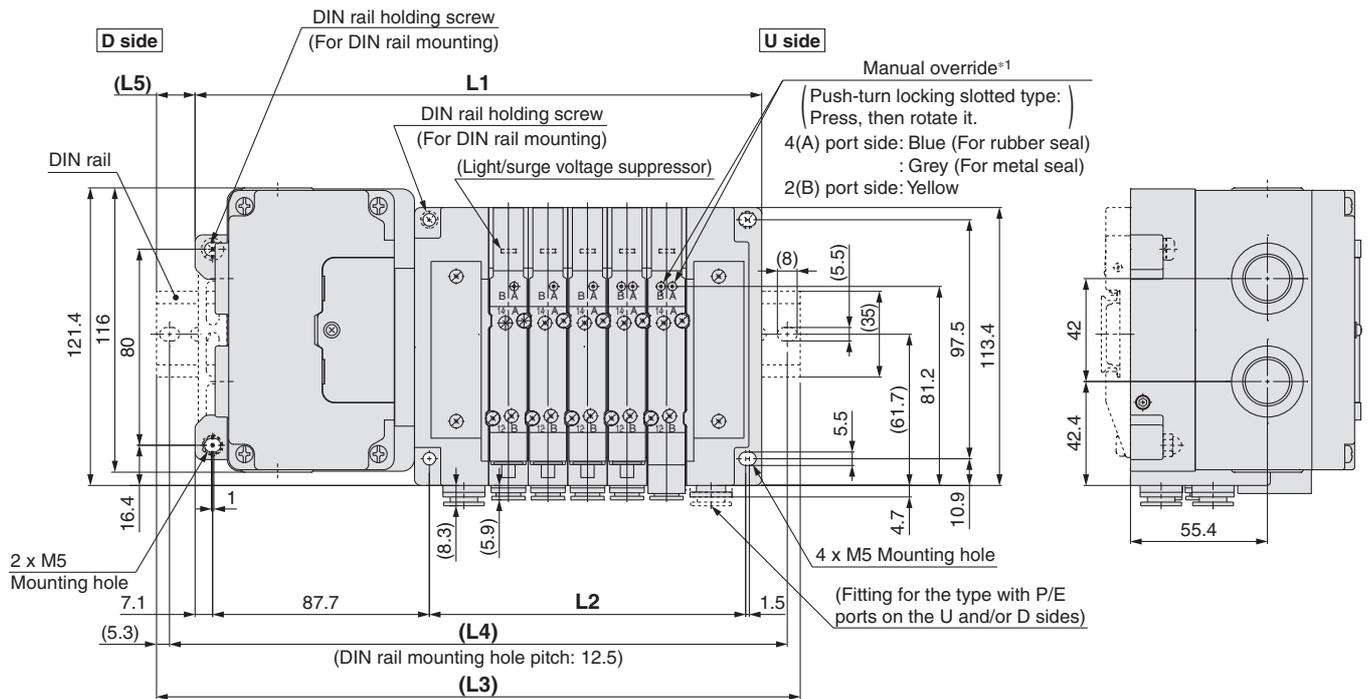
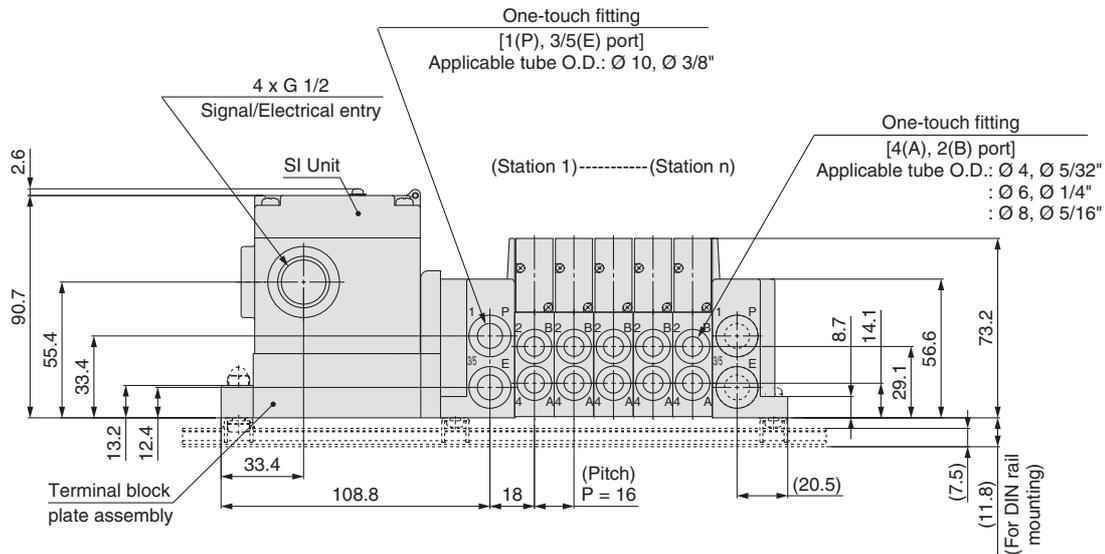
## Dimensions: Series SY5000

### Plug-in Connector Connecting Base

Type 10/Side Ported

EX126

SS5Y5-10S4V - Stations  $\begin{matrix} \text{U} & \text{C4, N3} \\ \text{D} & \text{C6, N7 (D)} \\ \text{B} & \text{C8, N9} \end{matrix}$



\*1: Refer to page 206 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y5-10S4V-05D-C8".

\*: Refer to page 211 for dimensions of A or B port top-ported type.

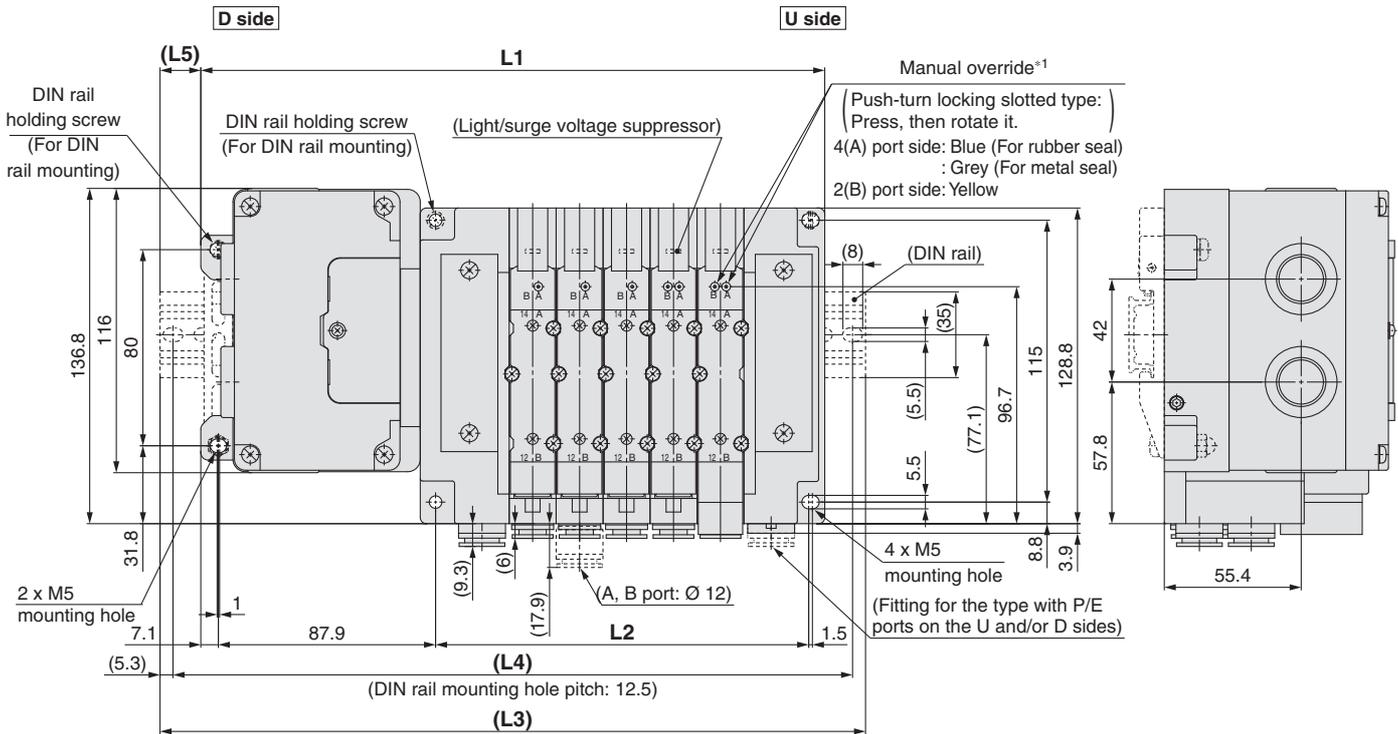
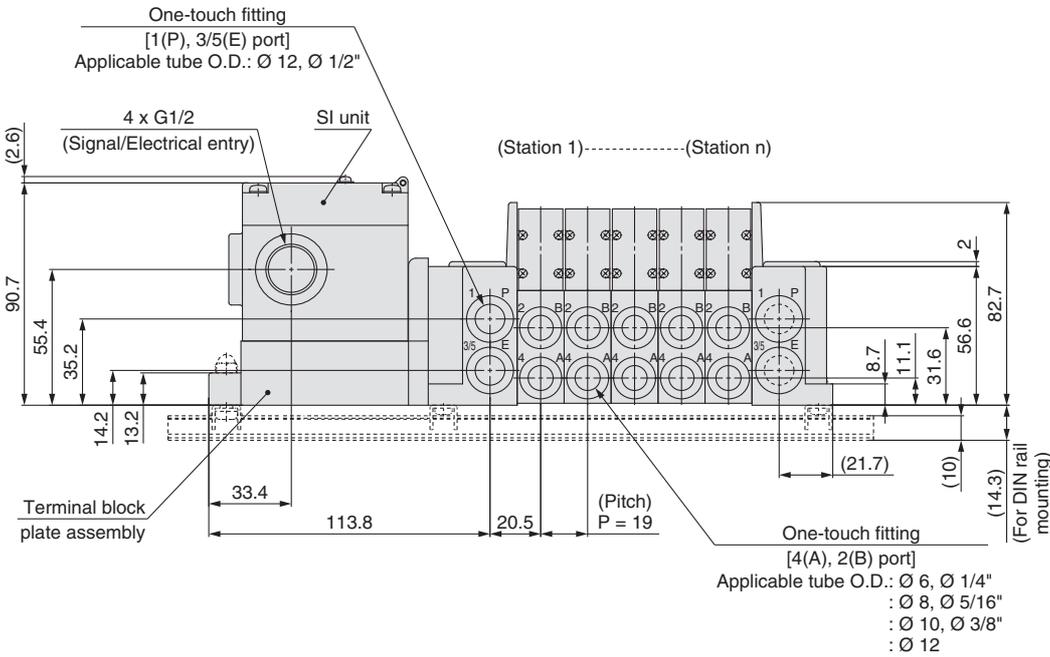
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	181.3	197.3	213.3	229.3	245.3	261.3	277.3	293.3	309.3	325.3	341.3	357.3	373.3	389.3	405.3
L2	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304
L3	210.5	223	248	260.5	273	285.5	310.5	323	335.5	360.5	373	385.5	398	423	435.5
L4	200	212.5	237.5	250	262.5	275	300	312.5	325	350	362.5	375	387.5	412.5	425
L5	14.5	13	17.5	15.5	14	12	16.5	15	13	17.5	16	14	12.5	17	15

Dimensions: Series **SY7000**

Plug-in  
Connector Connecting Base

Type 10/Side Ported  
EX126

SS5Y7-10S4□ - Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix}$  C6, N7  
C8, N9  
C10, N11 (D)  
C12



\*1: Refer to page 207 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y7-10S4V-05D-C10".  
\*: Refer to page 212 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<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
<b>L2</b>	94	113	132	151	170	189	208	227	246	265	284	303	322	341	360
<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
<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
<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

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

# Plug-in Connector Connecting Base

EX126

Type 12  
Top Ported

# Series SY3000/5000/7000



## How to Order Manifold

Refer to pages 210 to 212 for dimensions of Type 12/Top ported type.

SS5Y **3** - 12S4 **V** - 05 **U** - **□** - **□** - **□**

①                      ②                      ③                      ④                      ⑤                      ⑥                      ⑦

### ① Series

3	SY3000
5	SY5000
7	SY7000

### ② SI Unit

0	Without SI Unit
V	CC-Link (Positive common NPN)

\*: Only a terminal block plate is mounted for the valve without SI Unit.

### ③ Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring*1
⋮	⋮	
08	8 stations	Specified layout*2 (Available up to 16 solenoids)
02	2 stations	
⋮	⋮	
16	16 stations	

\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

\*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

\*: This also includes the number of blanking plate assembly.

### ④ P, E port entry

U*1	U side (2 to 10 stations)
D*1	D side (2 to 10 stations)
B	Both sides (2 to 16 stations)

\*1: ⑤ For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

### ⑤ SUP/EXH block assembly

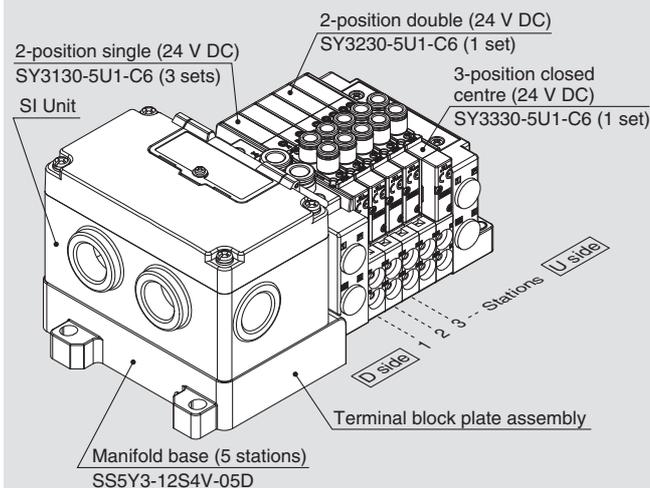
—	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

\*: For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)

\*: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

## How to Order Manifold Assembly

### Example (SS5Y3-12S4V-□-□)



SS5Y3-12S4V-05D ... 1 set (Type 12 5-station manifold base part no.)  
 \*SY3130-5U1-C6 ..... 3 sets (2-position single part no.)  
 \*SY3230-5U1-C6 ..... 1 set (2-position double part no.)  
 \*SY3330-5U1-C6 ..... 1 set (3-position closed centre part no.)

The asterisk denotes the symbol for assembly. Prefix it to the part numbers of the valve etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

### ⑥ P, E port size (One-touch fittings)

Symbol	SY3000	SY5000	SY7000
—	Ø 8	Ø 10	Ø 12
N	Ø 5/16"	Ø 3/8"	Ø 1/2"

\*: For N, sizes are in inches.

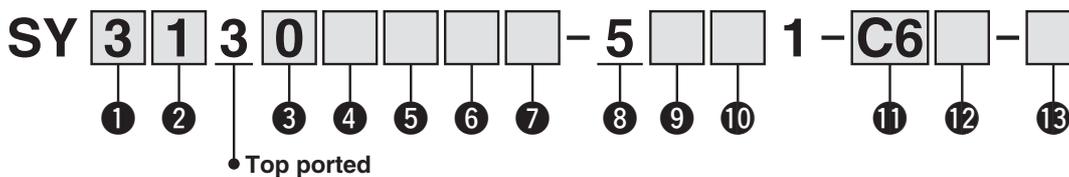
### ⑦ Mounting

—	Direct mounting	
D	DIN rail mounting (With DIN rail)	
D0	DIN rail mounting (Without DIN rail)	
D3	For 3 stations	Specify a longer rail than the standard length.
⋮	⋮	
D16	For 16 stations	

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

For details about the EX126 Integrated-type (For Output) Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 241 in this catalogue. Please download the Operation Manual via SMC website, <http://www.smc.eu>

**How to Order Valves (With mounting screw)** Refer to page 13 for valve specifications.



**1 Series**

3	SY3000
5	SY5000
7	SY7000

**2 Type of actuation**

1	2-position	Single
2		Double
3	3-position	Closed centre
4		Exhaust centre
5		Pressure centre
A*1	4-position dual 3-port	N.C./N.C.
B*1		N.O./N.O.
C*1		N.C./N.O.

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

**3 Seal type**

0	Rubber seal
1	Metal seal

**4 Pilot type**

—	Internal pilot
R	External pilot

**5 Back pressure check valve (Built-in valve type)**

—	None
H	Built-in

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

**6 Pilot valve option**

—	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*1	High pressure type (1.0 MPa)

\*1: Only metal seal type is available for the high pressure type.

**7 Coil type**

—	Standard
T	With power saving circuit (Continuous duty type)

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

**8 Rated voltage**

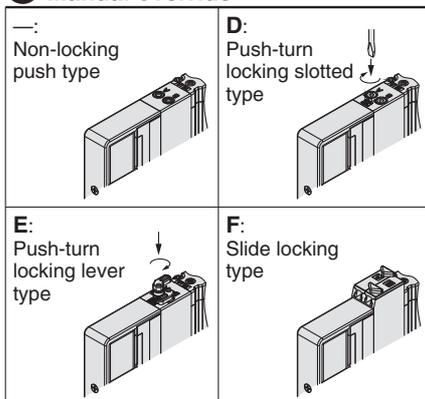
5	24 V DC
---	---------

**9 Light/surge voltage suppressor and common specification**

Symbol	With light	Surge voltage suppressor	Common specification
R	—	●	Non-polar
U	●		
S	—		Positive common
Z	●		

\*: Only "Z" type is available for with the power saving circuit.

**10 Manual override**



\*: Refer to page 31 for with the safety slide locking manual override.

**11 A, B port size**

**Thread piping**

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY3000
O1	1/8	SY5000
O2	1/4	SY7000

**One-touch fitting (Metric)**

Symbol	A, B port	SY3000	SY5000	SY7000
C2	Ø 2	●	—	—
C3	Ø 3.2	●	—	—
C4	Ø 4	●	●	—
C6	Ø 6	●	●	●
C8	Ø 8	—	●	●
C10	Ø 10	—	—	●
C12	Ø 12	—	—	●

**One-touch fitting (Inch)**

Symbol	A, B port	SY3000	SY5000	SY7000
N1	Ø 1/8"	●	—	—
N3	Ø 5/32"	●	●	—
N7	Ø 1/4"	●	●	●
N9	Ø 5/16"	—	●	●
N11	Ø 3/8"	—	—	●

**12 Thread type**

—	Rc
F	G
N	NPT
T	NPTF

\*: Only — is available for M5.

**13 Type of mounting screw**

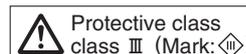
—	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service. Refer to page 244 for part numbers of 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  
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

EX120

# Series SY3000/5000/7000



## How to Order Manifold

Refer to pages 208 (SY5000) and 209 (SY7000) for dimensions of Type 11/Bottom ported type.



### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type

10	Side ported
11	Bottom ported*1

\*1: The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to "Plug-in Mixed Mounting Type Manifold" (from page 213).

### 3 SI Unit

0	Without SI Unit	
Q	DeviceNet™ (Positive common NPN)	
R1	OMRON CompoBus/S	16 outputs
R2	(Positive common NPN)	8 outputs
V	CC-Link (Positive common NPN)	
ZB*1	CompoNet™	Positive common NPN
ZBN*1		Negative common PNP

\*1: The communication connector (for the opposite side) is not provided. Please order it separately.

\*: Ensure a match with the common specification of the valve to be used.

### 4 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring*1
:	:	
08	8 stations	Specified layout*2 (Available up to 16 solenoids)
02	2 stations	
:	:	
16	16 stations	

\*1: Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

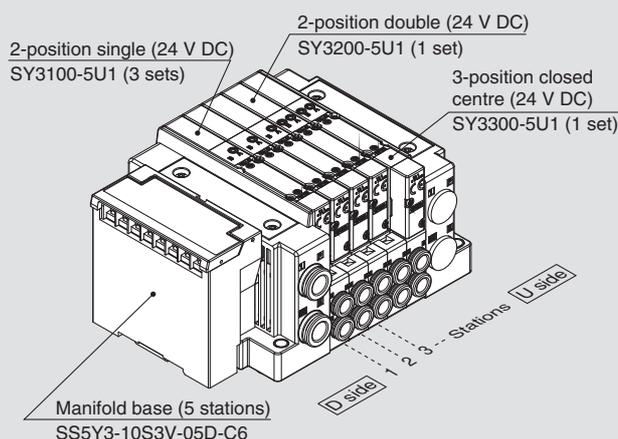
\*2: Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

\*: This also includes the number of blanking plate assembly.

\*: Since R2 type SI Unit has 8 outputs, note that up to 8 solenoids can be accommodated.

## How to Order Manifold Assembly

### Example (SS5Y3-10S3V-□)



SS5Y3-10S3V-05D-C6 ... 1 set (Type 10 5-station manifold base part no.)

\*SY3100-5U1 ..... 3 sets (2-position single part no.)

\*SY3200-5U1 ..... 1 set (2-position double part no.)

\*SY3300-5U1 ..... 1 set (3-position closed centre part no.)

→ The asterisk denotes the symbol for assembly. Prefix it to the part numbers of the valve etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

\*: When mixing top ported configurations, select from page 204. In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

### 5 P, E port entry

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 16 stations)

### 6 SUP/EXH block assembly

—	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

\*: 3/5(E) port is plugged for the built-in silencer type.

For details about the EX120 Integrated-type (For Output) Serial Transmission System, refer to the WEB catalogue on SMC website [www.smc.eu](http://www.smc.eu) and the Operation Manual. For details about part numbers of SI Units to be mounted, refer to page 242 in this catalogue. Please download the Operation Manual via SMC website, <http://www.smc.eu>

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

**7 A, B port size (Metric/One-touch fitting)**

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported	
		SY3000	SY5000	SY7000	SY5000	SY7000
C2	Ø 2	●	—	—	—	—
C3	Ø 3.2	●	—	—	—	—
C4	Ø 4	●	●	—	●	—
C6	Ø 6	●	●	●	●	●
C8	Ø 8	—	●	—	●	●
C10	Ø 10	—	—	●	—	●
C12	Ø 12	—	—	●	—	●
CM*1	Straight port, mixed sizes	●	●	●	●	●
L4	Ø 4	●	●	—	—	—
L6	Ø 6	●	●	●	—	—
L8	Ø 8	—	●	●	—	—
L10	Ø 10	—	—	●	—	—
L12	Ø 12	—	—	●	—	—
B4	Ø 4	●	●	—	—	—
B6	Ø 6	●	●	●	—	—
B8	Ø 8	—	●	●	—	—
B10	Ø 10	—	—	●	—	—
B12	Ø 12	—	—	●	—	—
LM*1	Elbow port, mixed sizes (Including upward and downward piping)	●	●	●	—	—
P, E port size (One-touch fittings)		Ø 8	Ø 10	Ø 12	Ø 10	Ø 12

**A, B port size (Inch/One-touch fitting)**

Symbol	A, B port	Type 10/Side ported			Type 11/Bottom ported	
		SY3000	SY5000	SY7000	SY5000	SY7000
N1	Ø 1/8"	●	—	—	—	—
N3	Ø 5/32"	●	●	—	●	—
N7	Ø 1/4"	●	●	●	●	●
N9	Ø 5/16"	—	●	●	●	●
N11	Ø 3/8"	—	—	●	—	●
CM*1	Straight port, mixed sizes	●	●	●	●	●
LN3	Ø 5/32"	●	—	—	—	—
LN7	Ø 1/4"	●	●	—	—	—
LN9	Ø 5/16"	—	●	—	—	—
LN11	Ø 3/8"	—	—	●	—	—
BN3	Ø 5/32"	●	—	—	—	—
BN7	Ø 1/4"	●	●	—	—	—
BN9	Ø 5/16"	—	●	—	—	—
BN11	Ø 3/8"	—	—	●	—	—
LM*1	Elbow port, mixed sizes (Including upward and downward piping)	●	●	●	—	—
P, E port size (One-touch fittings)		Ø 5/16"	Ø 3/8"	Ø 1/2"	Ø 3/8"	Ø 1/2"

\*1: Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

\*2: To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 250 to 252).

**8 Mounting and Option**

Symbol	Mounting	Option	
		Name plate	Station number
—	Direct mounting	—	—
AA		●	●
BA	Direct mounting	●	—
D□	DIN rail mounting	—	—
A□		●	●
B□		●	—

\*: Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" below.)

\*: Only direct mounting is available for Type 11 (Bottom ported).

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

**DIN Rail Option**

—	Direct mounting	
0	Without DIN rail (with bracket)	
3	For 3 stations	Specify a longer rail than the total length of specified stations.
⋮	⋮	
16	For 16 stations	

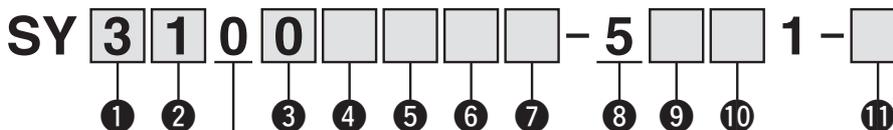
\*: When it is necessary to mount a DIN rail without an SI Unit, select D0 and order DIN rail length separately, referring to L3 in the dimensions. (Refer to page 249 for part numbers of DIN rail.)



# Series SY3000/5000/7000

## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



• Base mounted

### 1 Series

3	SY3000
5	SY5000
7	SY7000

### 2 Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed centre
4		Exhaust centre
5		Pressure centre
A*1	4-position dual 3-port	N.C./N.C.
B*1		N.O./N.O.
C*1		N.C./N.O.

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

—	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

—	None
H	Built-in

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

—	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*1	High pressure type (1.0 MPa)

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

—	Standard
T	With power saving circuit (Continuous duty type)

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

5	24 V DC
---	---------

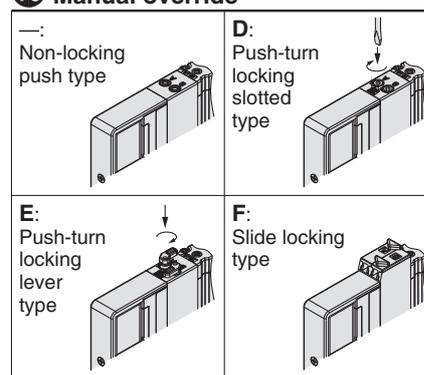
### 9 Light/surge voltage suppressor and common specification

Symbol	With light	Surge voltage suppressor	Common specification
R	—	●	Non-polar
U	●		Positive common
S	—		
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 31 for with the safety slide locking manual override.

### 11 Type of mounting screw

—	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

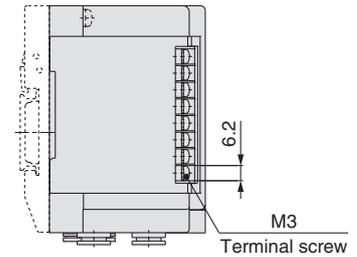
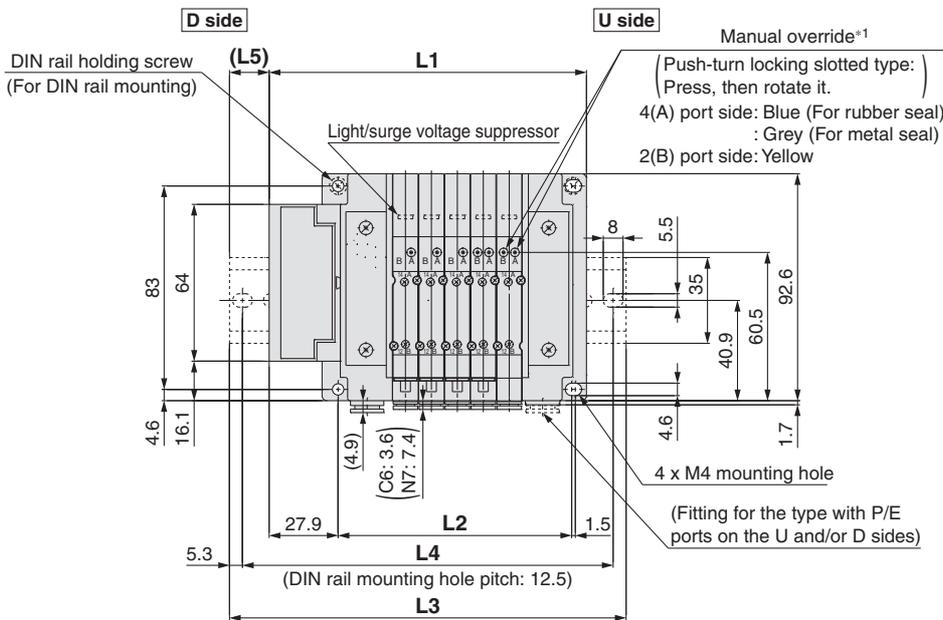
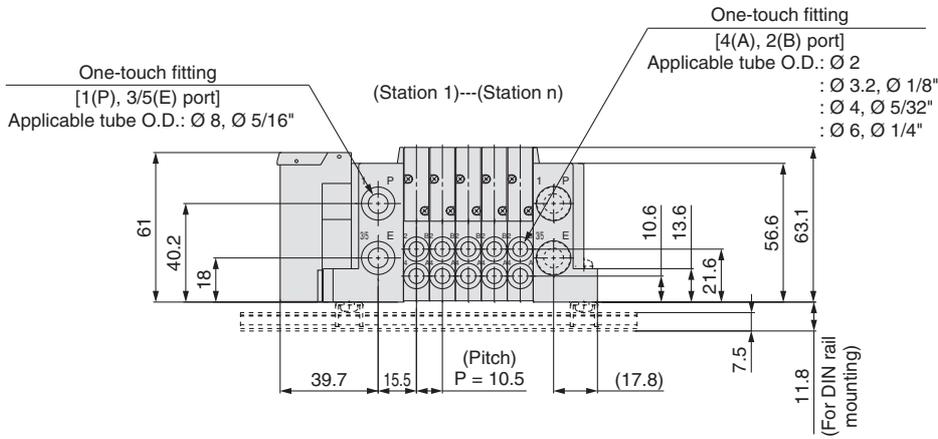
\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

Dimensions: Series **SY3000**

Plug-in  
Connector Connecting Base

Type 10/Side Ported  
EX120

SS5Y3-10S3□-Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix}$ - $\begin{matrix} \text{C2} \\ \text{C3}, \text{N1} \\ \text{C4}, \text{N3} \\ \text{C6}, \text{N7} \end{matrix}$  (D)



\*1: Refer to page 205 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
 \*: These figures show the "SS5Y3-10S3V-05D-C6".  
 \*: Refer to page 210 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>L1</b>	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
<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
<b>L3</b>	123	135.5	148	160.5	173	173	185.5	198	210.5	223	235.5	235.5	248	260.5	273
<b>L4</b>	112.5	125	137.5	150	162.5	162.5	175	187.5	200	212.5	225	225	237.5	250	262.5
<b>L5</b>	13	14	15	16	17	12	13	14	15	16	17	11.5	12.5	13.5	14.5

# Series SY3000/5000/7000

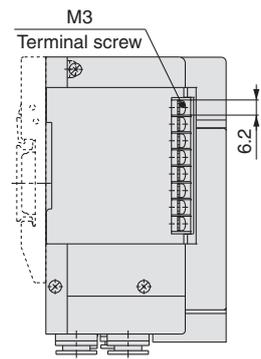
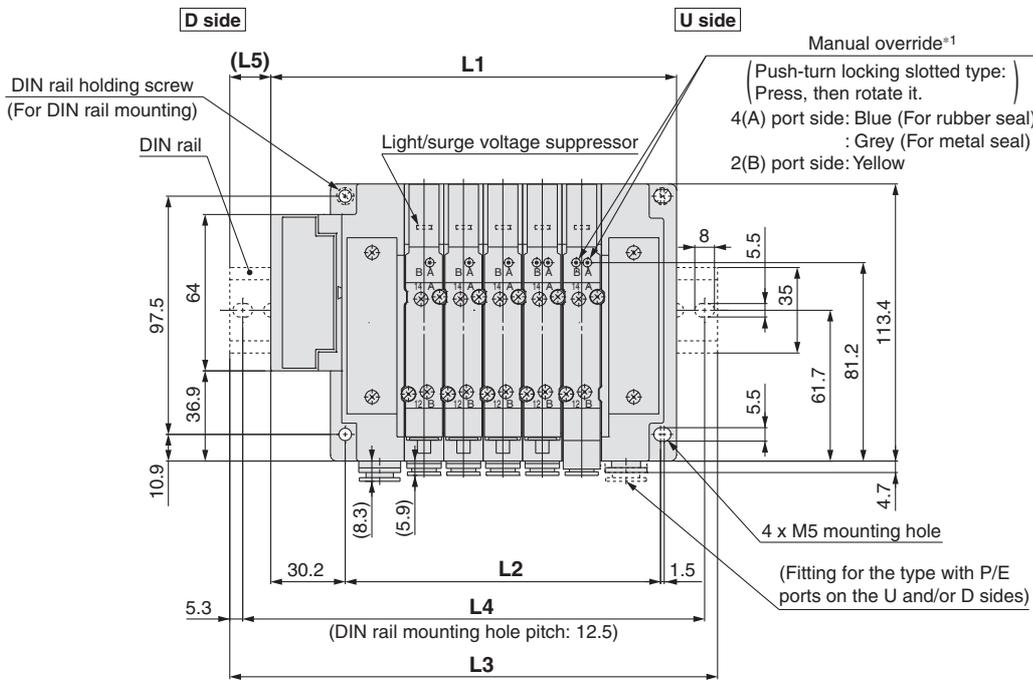
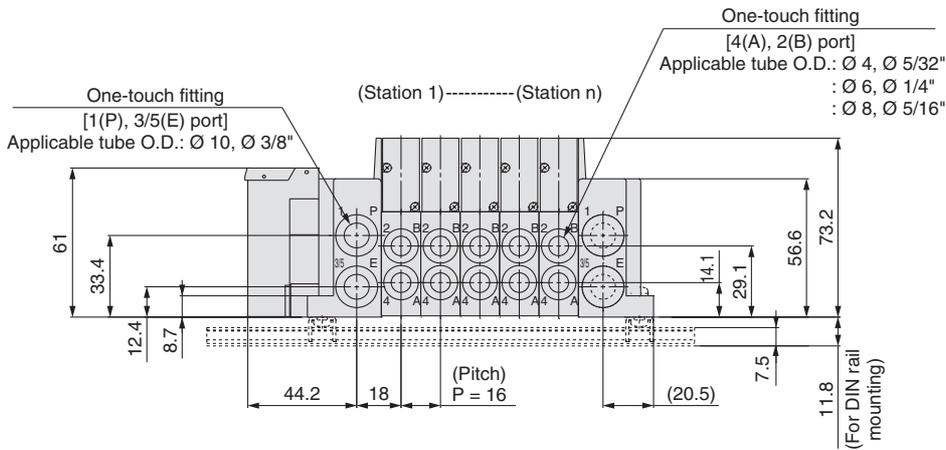
## Dimensions: Series SY5000

### Plug-in Connector Connecting Base

Type 10/Side Ported

EX120

SS5Y5-10S3□ - Stations  $\begin{matrix} \text{U} & \text{C4, N3} \\ \text{D} & \text{C6, N7 (D)} \\ \text{B} & \text{C8, N9} \end{matrix}$



\*1: Refer to page 206 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

\*: These figures show the "SS5Y5-10S3V-05D-C8".

\*: Refer to page 211 for dimensions of A or B port top-ported type.

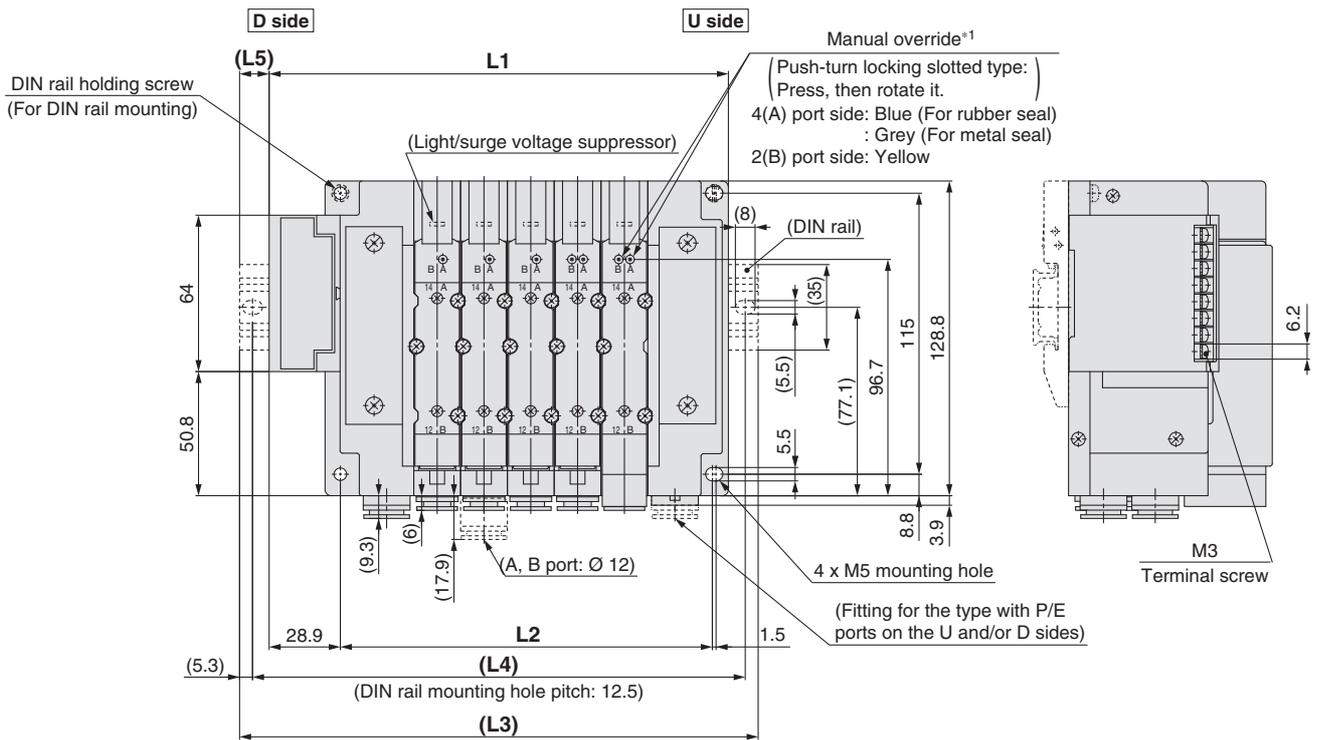
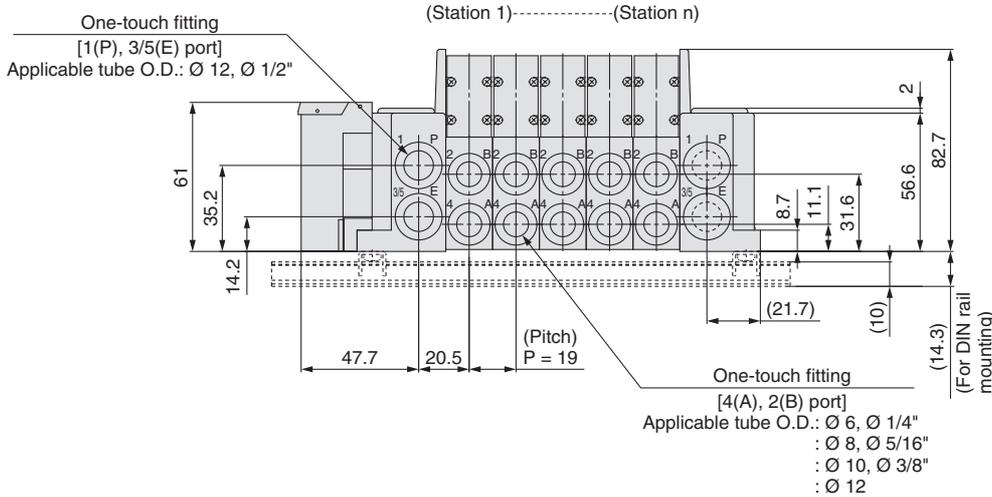
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>L1</b>	116.7	132.7	148.7	164.7	180.7	196.7	212.7	228.7	244.7	260.7	276.7	292.7	308.7	324.7	340.7
<b>L2</b>	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304
<b>L3</b>	148	160.5	173	198	210.5	223	248	260.5	273	285.5	310.5	323	335.5	348	373
<b>L4</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

Dimensions: Series **SY7000**

Plug-in  
Connector Connecting Base

Type 10/Side Ported  
EX120

SS5Y7-10S3□-Stations  $\begin{matrix} U \\ D \\ B \end{matrix}$   $\begin{matrix} C6, N7 \\ C8, N9 \\ C10, N11 \end{matrix}$  (D)  
C12



\*1: Refer to page 207 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
\*: These figures show the "SS5Y7-10S3V-05D-C10".  
\*: Refer to page 212 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<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

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

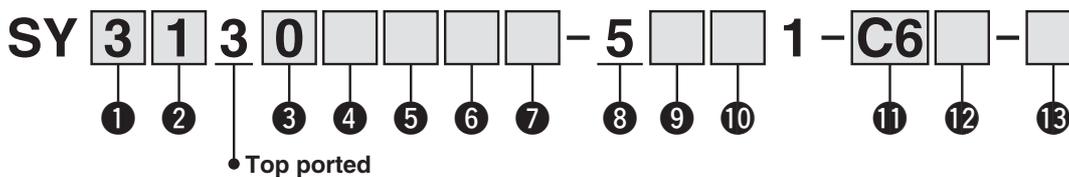
Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options



**How to Order Valves (With mounting screw)** Refer to page 13 for valve specifications.



**1 Series**

3	SY3000
5	SY5000
7	SY7000

**2 Type of actuation**

1	2-position	Single
2		Double
3	3-position	Closed centre
4		Exhaust centre
5		Pressure centre
A*1	4-position dual 3-port	N.C./N.C.
B*1		N.O./N.O.
C*1		N.C./N.O.

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

**3 Seal type**

0	Rubber seal
1	Metal seal

**4 Pilot type**

—	Internal pilot
R	External pilot

**5 Back pressure check valve (Built-in valve type)**

—	None
H	Built-in

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.  
 \*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

**6 Pilot valve option**

—	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*1	High pressure type (1.0 MPa)

\*1: Only metal seal type is available for the high pressure type.

**7 Coil type**

—	Standard
T	With power saving circuit (Continuous duty type)

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.  
 \*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

**8 Rated voltage**

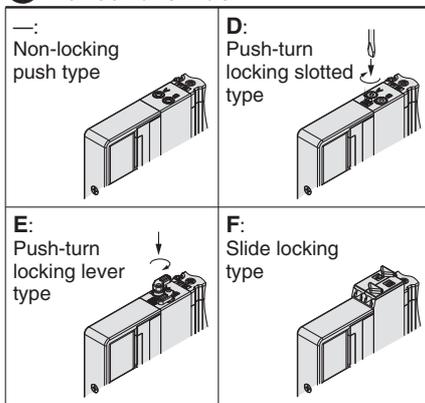
5	24 V DC
---	---------

**9 Light/surge voltage suppressor and common specification**

Symbol	With light	Surge voltage suppressor	Common specification
R	—	●	Non-polar
U	●		Non-polar
S	—		Positive common
Z	●		Positive common
NS	—	●	Negative common
NZ	●		Negative common

\*: Select a valve from R, U, S or Z when the SI Unit specification is positive common. Select a valve from R, U, NS or NZ when the SI Unit specification is ZBN (negative common).  
 \*: Only "Z" and "NZ" types are available for with the power saving circuit.

**10 Manual override**



\*: Refer to page 31 for with the safety slide locking manual override.

**11 A, B port size**

**Thread piping**

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY3000
O1	1/8	SY5000
O2	1/4	SY7000

**One-touch fitting (Metric)**

Symbol	A, B port	SY3000	SY5000	SY7000
C2	Ø 2	●	—	—
C3	Ø 3.2	●	—	—
C4	Ø 4	●	●	—
C6	Ø 6	●	●	●
C8	Ø 8	—	●	●
C10	Ø 10	—	—	●
C12	Ø 12	—	—	●

**One-touch fitting (Inch)**

Symbol	A, B port	SY3000	SY5000	SY7000
N1	Ø 1/8"	●	—	—
N3	Ø 5/32"	●	●	—
N7	Ø 1/4"	●	●	●
N9	Ø 5/16"	—	●	●
N11	Ø 3/8"	—	—	●

**12 Thread type**

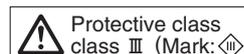
—	Rc
F	G
N	NPT
T	NPTF

\*: Only — is available for M5.

**13 Type of mounting screw**

—	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.  
 \*: **When ordering a valve individually, the base gasket is not included.** Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.  
 Refer to page 244 for part numbers of the base gasket and mounting screw.  
 \*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.

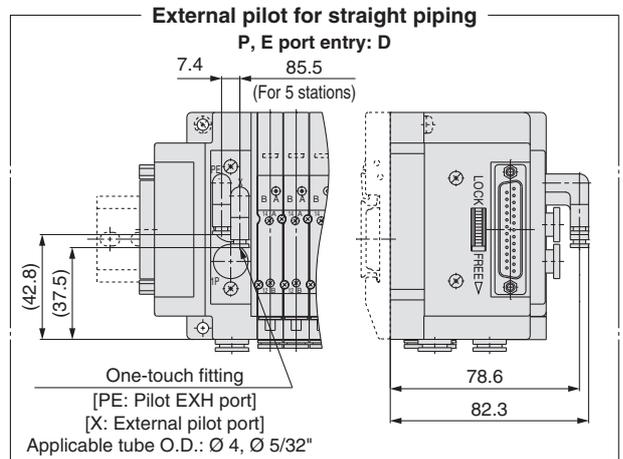
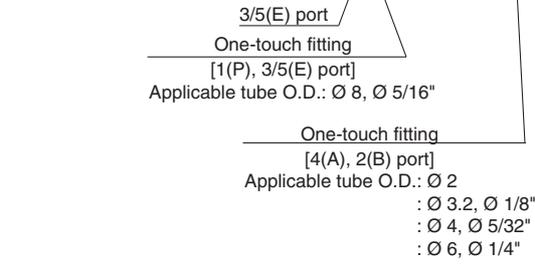
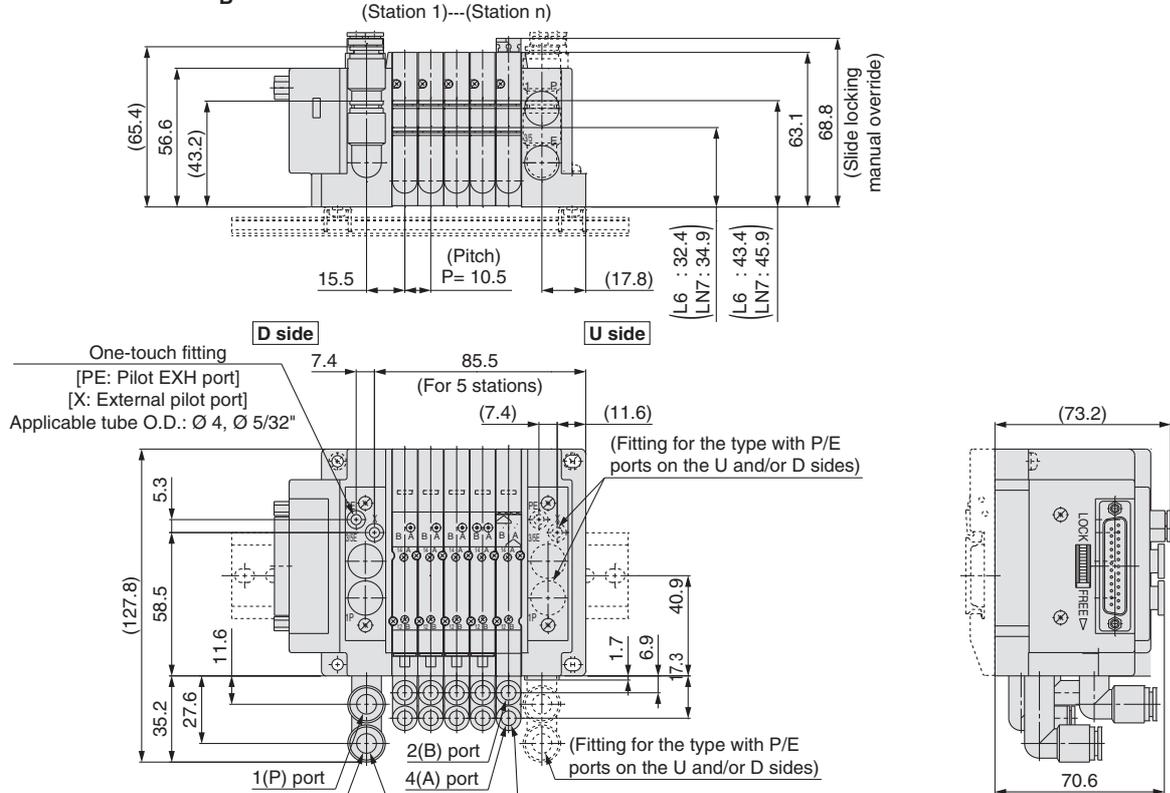


Valve  
Plug-in Sub-plate  
Metal Base  
Type 50, 51, 52 Manifold Exploded View  
Plug-in Connector Connecting Base  
Type 10, 11, 12 Manifold Exploded View  
One-touch Fittings/ Plug Assembly Part No.  
Manifold Options

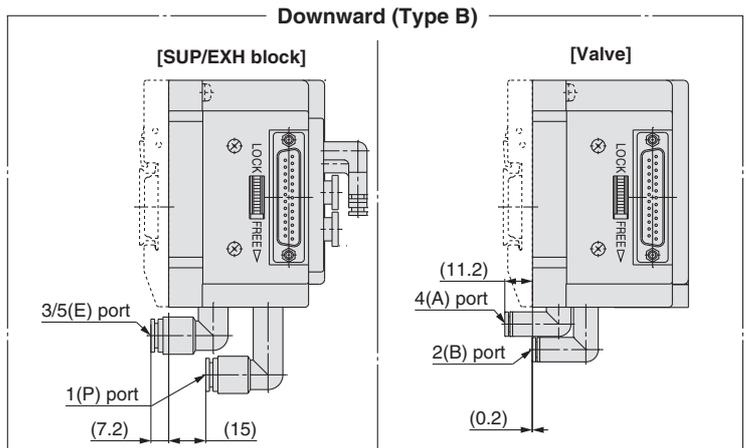
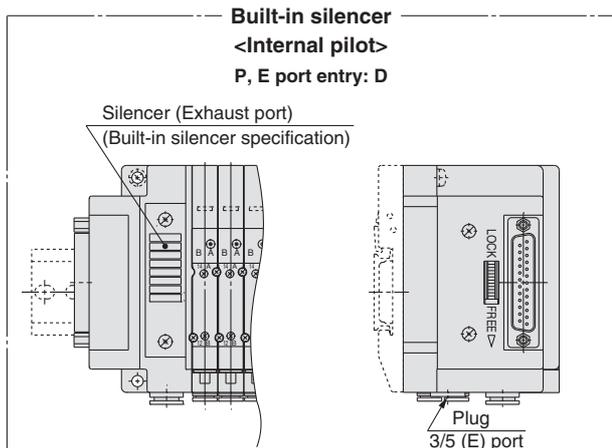
# Series SY3000/5000/7000 Common Dimensions

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) -  $\frac{L}{B}$  □



\*: These figures show the "SS5Y3-10F2-05DR-L6".



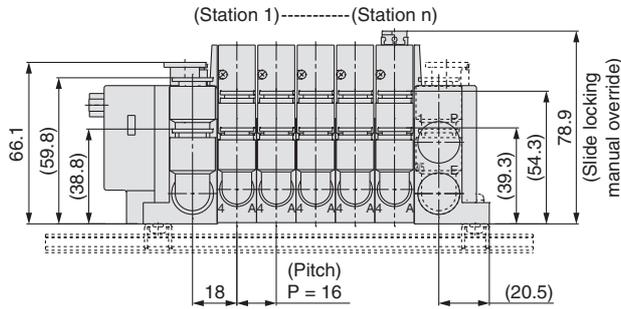
## Series SY5000

## Plug-in Connector Connecting Base

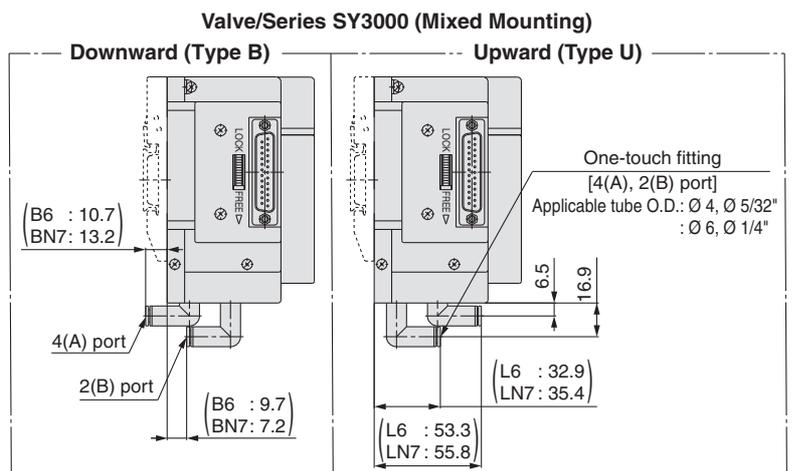
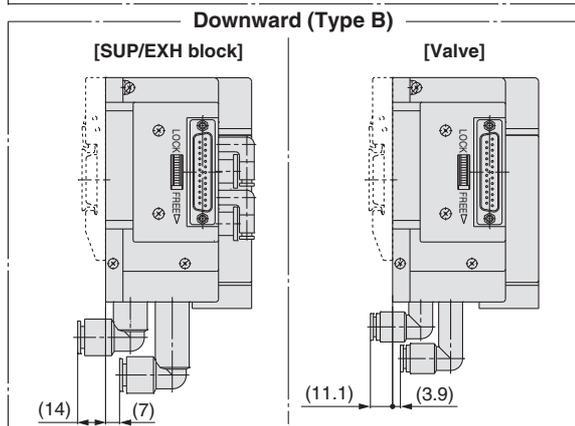
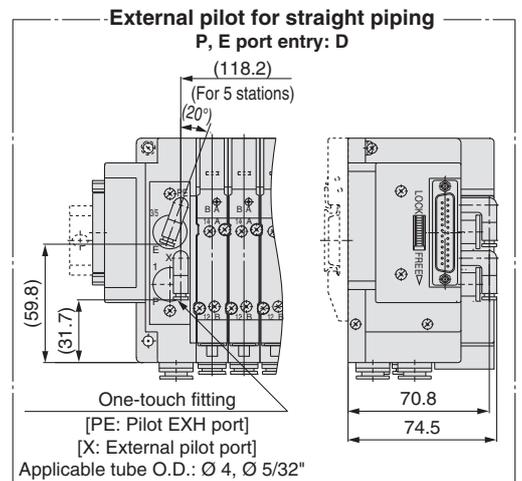
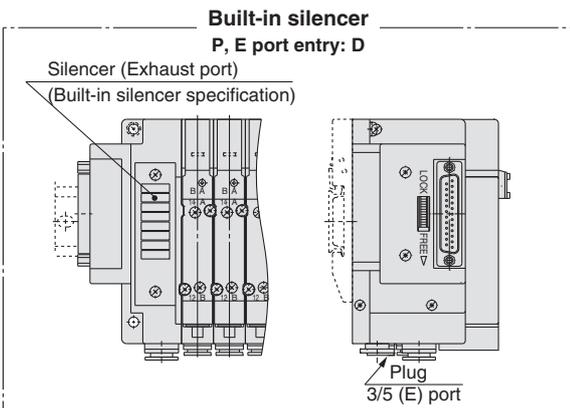
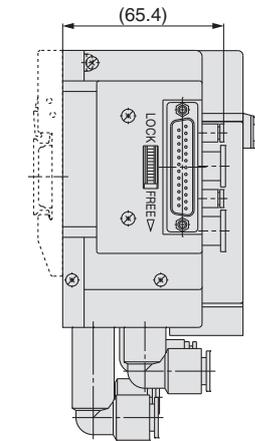
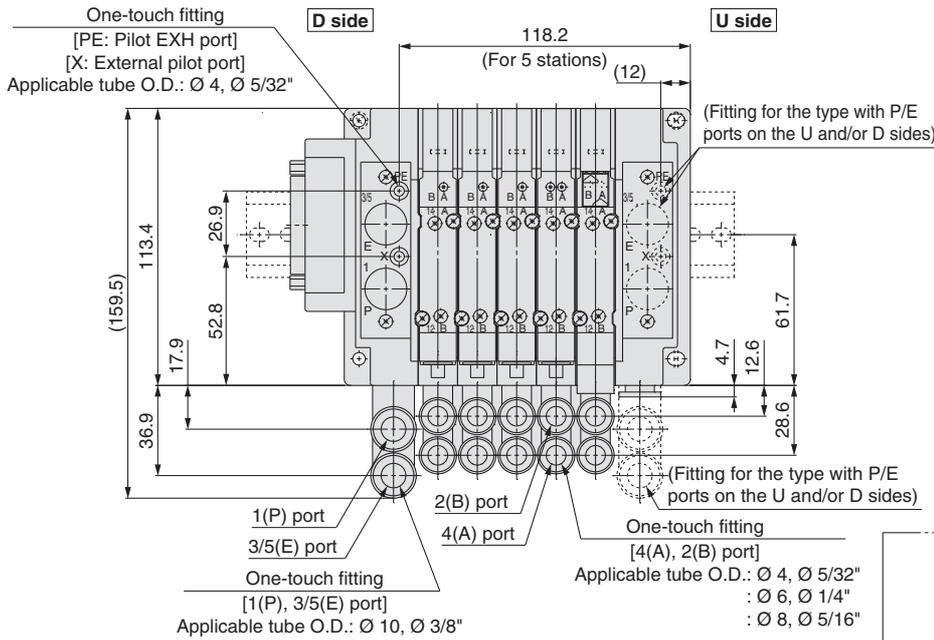
Type 10/Side Ported

External Pilot, Silencer, Elbow Fittings, Slide Locking Manual Override

SS5Y5-10□-Stations  $\frac{U}{D}$  (S, R)-L□



\*: These figures show the "SS5Y5-10F2-05DR-L8".

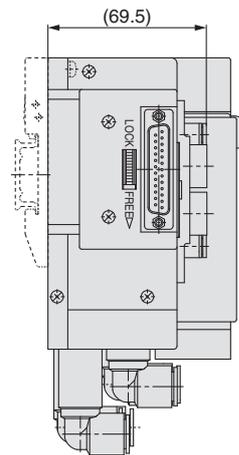
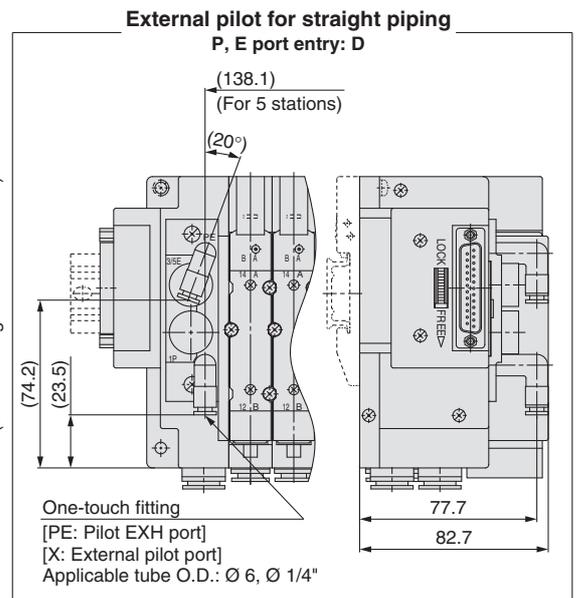
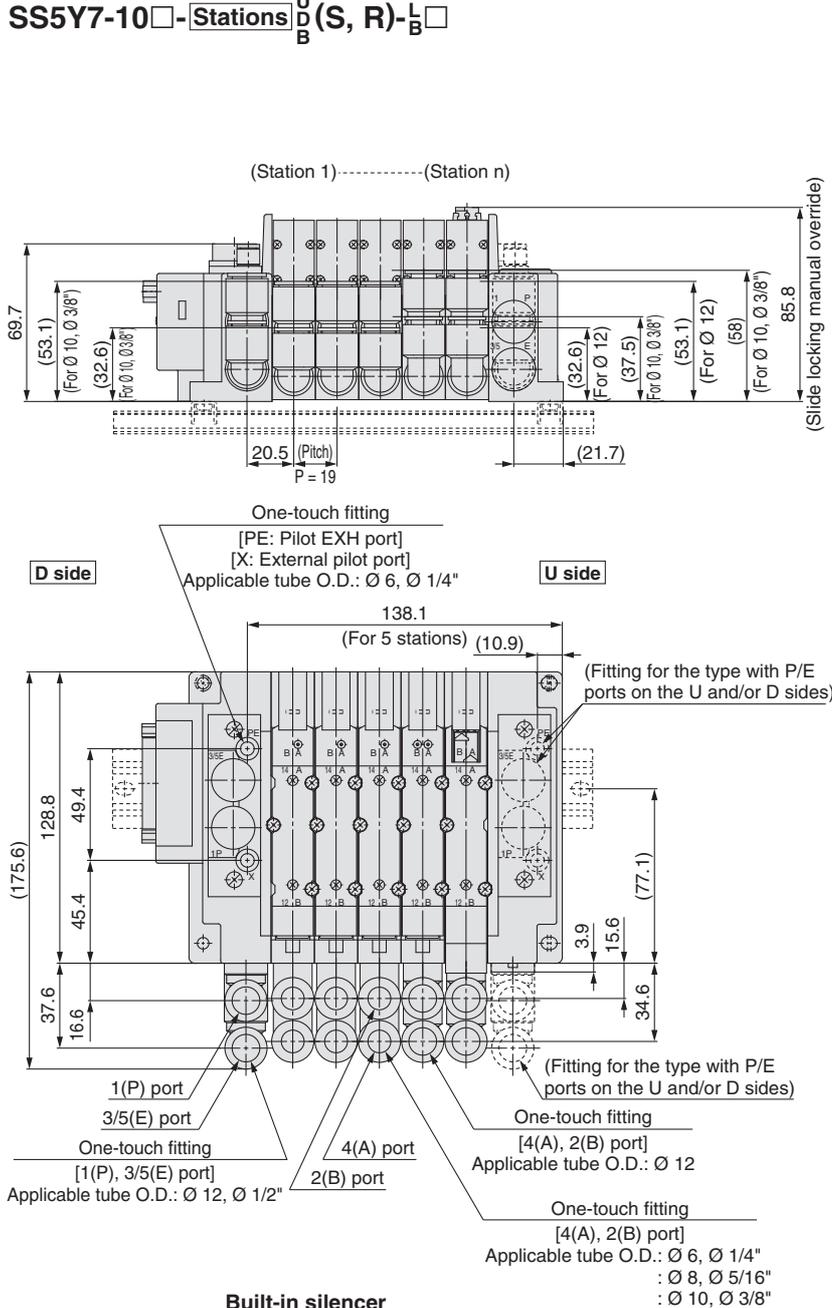


# Series SY3000/5000/7000

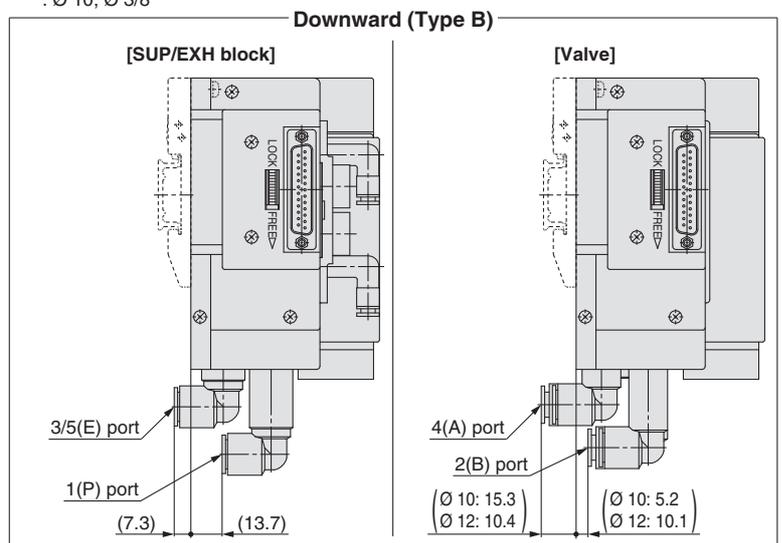
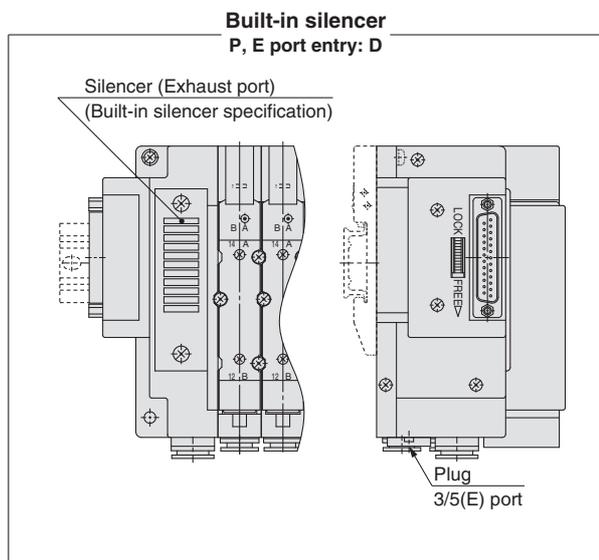
## Series SY7000 Plug-in Connector Connecting Base

## Type 10/Side Ported External Pilot, Silencer, Elbow Fittings, Slide Locking Manual Override

SS5Y7-10□-Stations<sub>D</sub><sup>U</sup>(S, R)-L□<sub>B</sub>



\*: These figures show the "SS5Y7-10F2-05DR-LM".

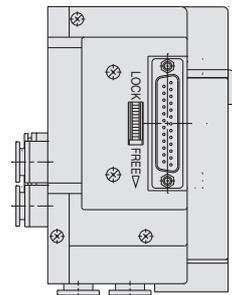
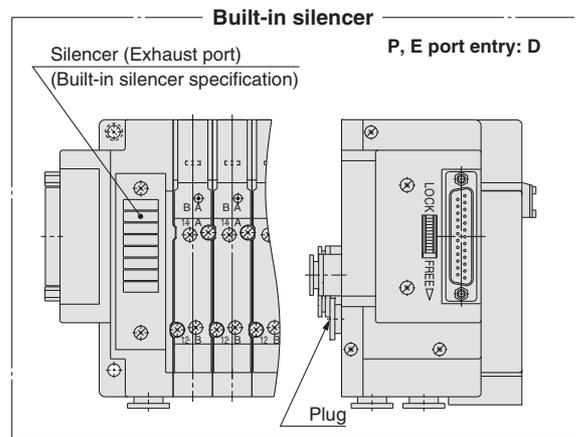
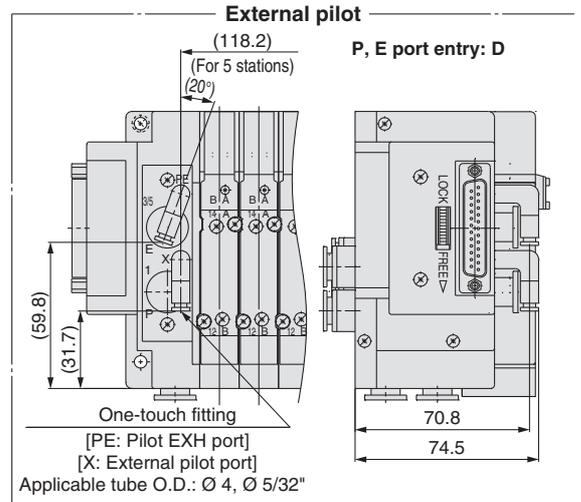
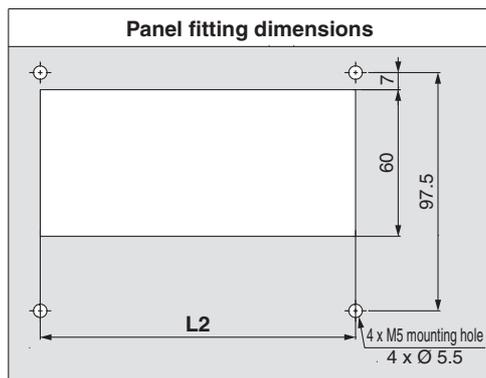
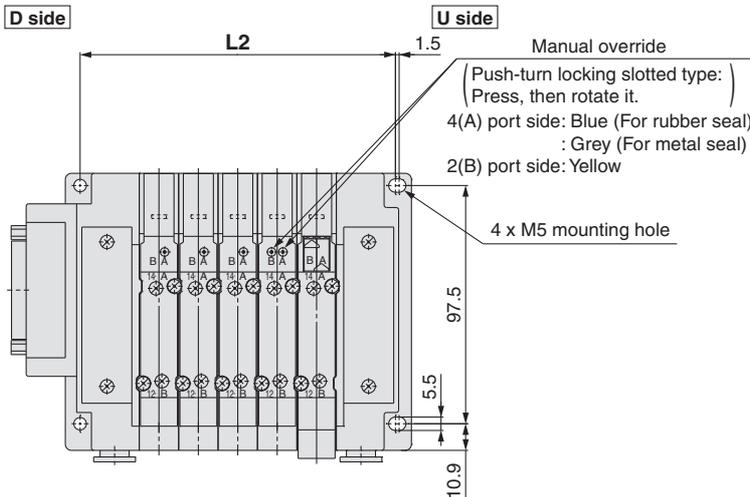
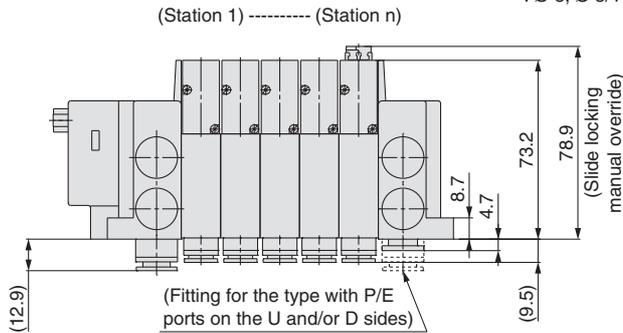
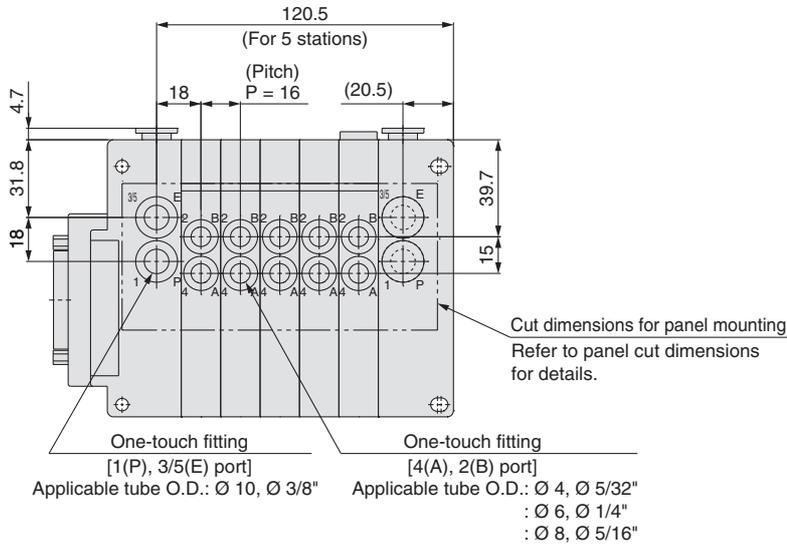


## Series SY5000

### Plug-in Connector Connecting Base

### Type 11/Bottom Ported All Wirings

SS5Y5-11 □ - Stations  $\begin{matrix} U \\ D \end{matrix}$



- \*: These figures show the "SS5Y5-11F2-05D-C8".  
\*: Refer to the below pages for L2 dimensions and other dimensions that are not specified in each wiring specification.
- D-sub connector <IP40>: P. 101
  - D-sub connector <IP67>: P. 104
  - Flat ribbon cable : P. 107
  - Terminal block box : P. 119
  - Lead wire : P. 129
  - Circular connector : P. 139
  - EX500 (128 points) : P. 149
  - EX500 (64 points) : P. 155
  - EX600 : P. 166, 167
  - EX250 : P. 177
  - EX260 : P. 185
  - EX126 : P. 193
  - EX120 : P. 201

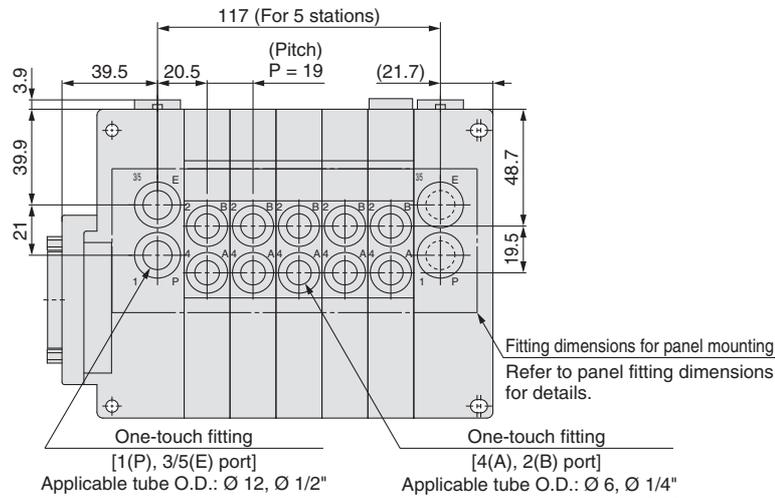
# Series SY3000/5000/7000

## Series SY7000

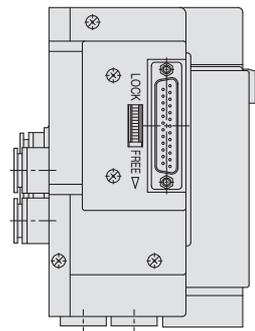
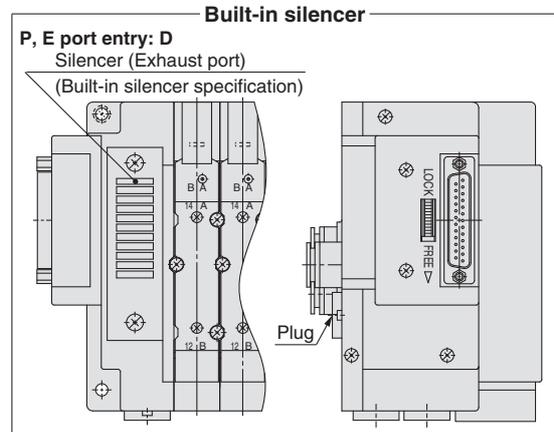
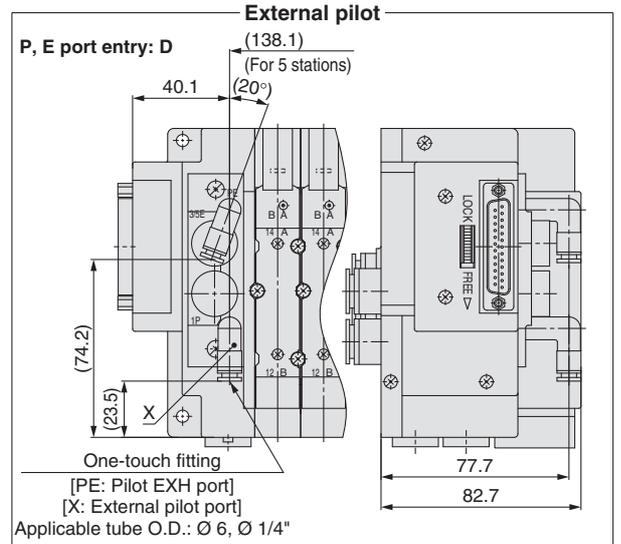
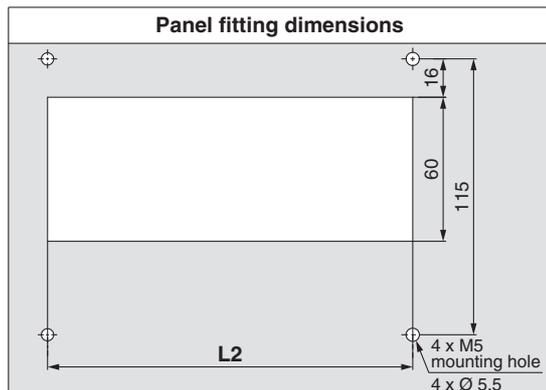
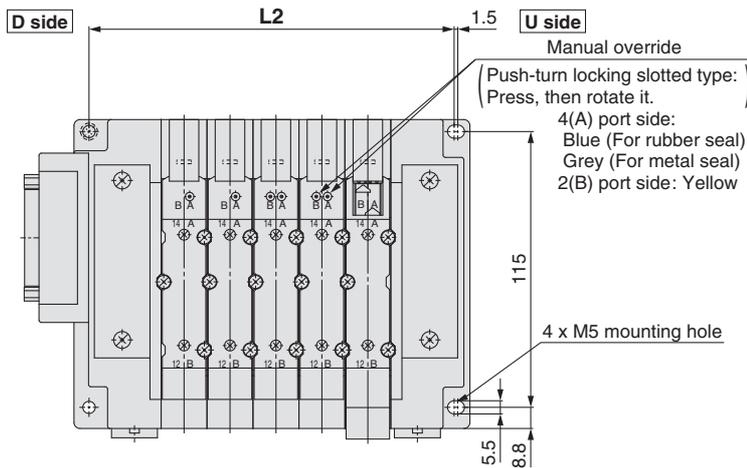
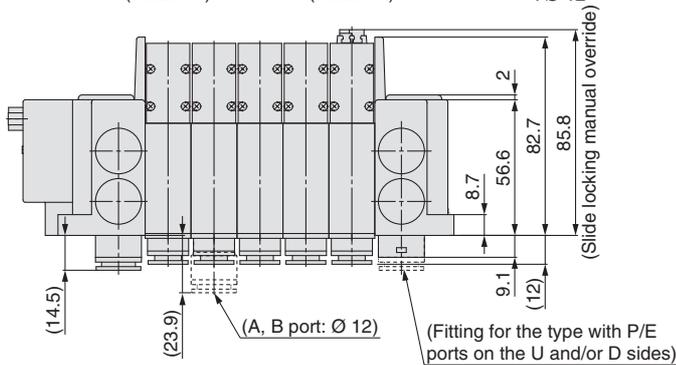
### Plug-in Connector Connecting Base

### Type 11/Bottom Ported All Wirings

SS5Y7-11 □ - Stations  $\begin{matrix} U \\ D \\ B \end{matrix}$



(Station 1)------(Station n)



- \*: These figures show the "SS5Y7-11F2-05D-C10".  
\*: Refer to the below pages for L2 dimensions and other dimensions that are not specified in each wiring specification.
- D-sub connector <IP40>: P. 102
  - D-sub connector <IP67>: P. 105
  - Flat ribbon cable : P. 108
  - Terminal block box : P. 120
  - Lead wire : P. 130
  - Circular connector : P. 140
  - EX500 (128 points) : P. 150
  - EX500 (64 points) : P. 156
  - EX600 : P. 168, 169
  - EX250 : P. 178
  - EX260 : P. 186
  - EX126 : P. 194
  - EX120 : P. 202

## Series SY3000

SS5Y3-12□ - Stations  $\frac{U}{D}$  (R)

Plug-in  
Connector Connecting Base

Type 12/Top Ported  
All Wirings

Valve

Plug-in Sub-plate

Plug-in Metal Base

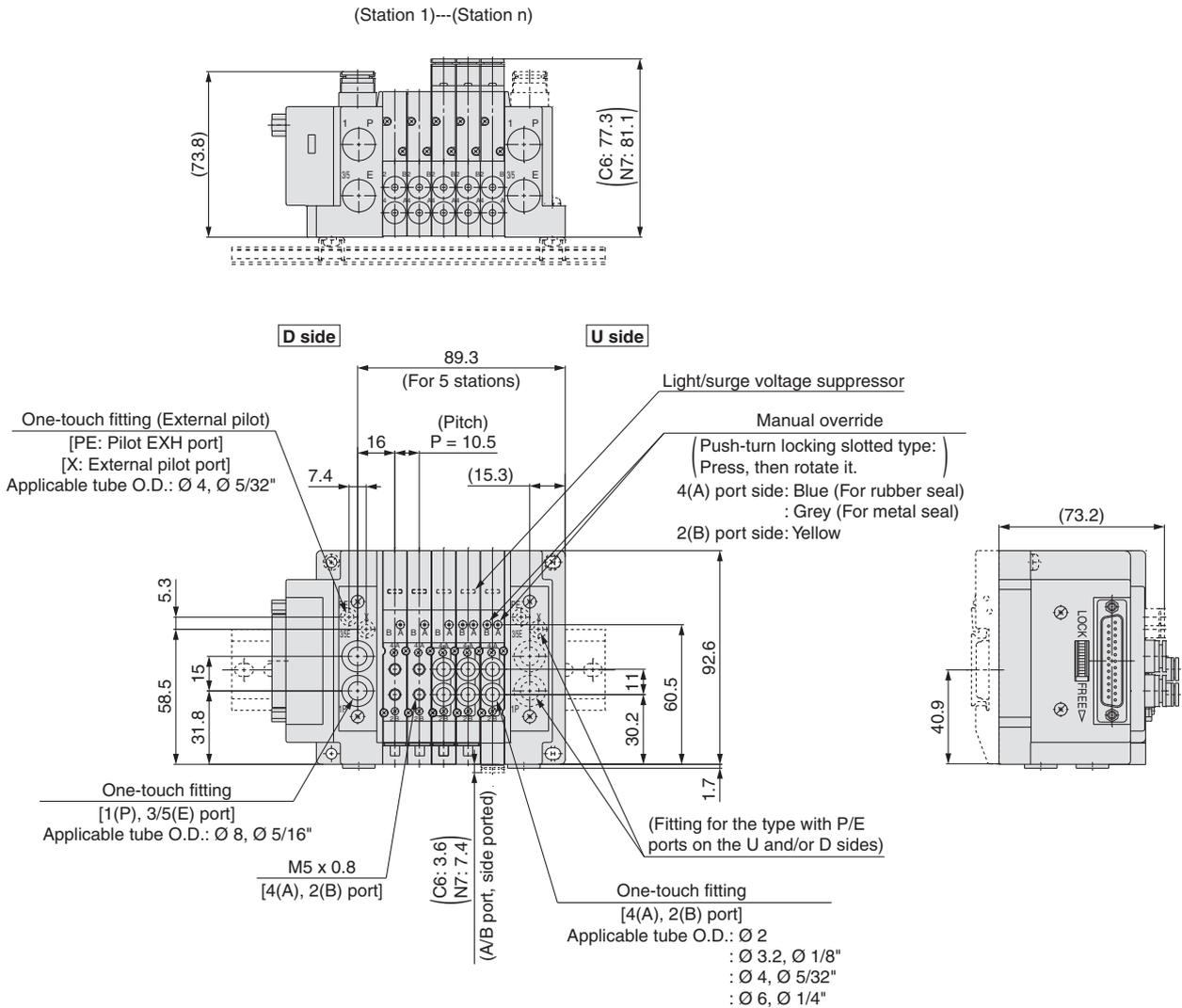
Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options



\*: These figures show the "SS5Y3-12F2-05D".

\*: For built-in silencer type, a silencer is mounted on the opposite side of U or D side with P or E port. Refer to page 205 for dimensions of silencer.

\*: Refer to the below pages for dimensions that are not specified in each wiring specification.

D-sub connector <IP40>:	P. 100
D-sub connector <IP67>:	P. 103
Flat ribbon cable	: P. 106
Terminal block box	: P. 118
Lead wire	: P. 128
Circular connector	: P. 138
EX500 (128 points)	: P. 148
EX500 (64 points)	: P. 154
EX600	: P. 164, 165
EX250	: P. 176
EX260	: P. 184
EX126	: P. 192
EX120	: P. 200

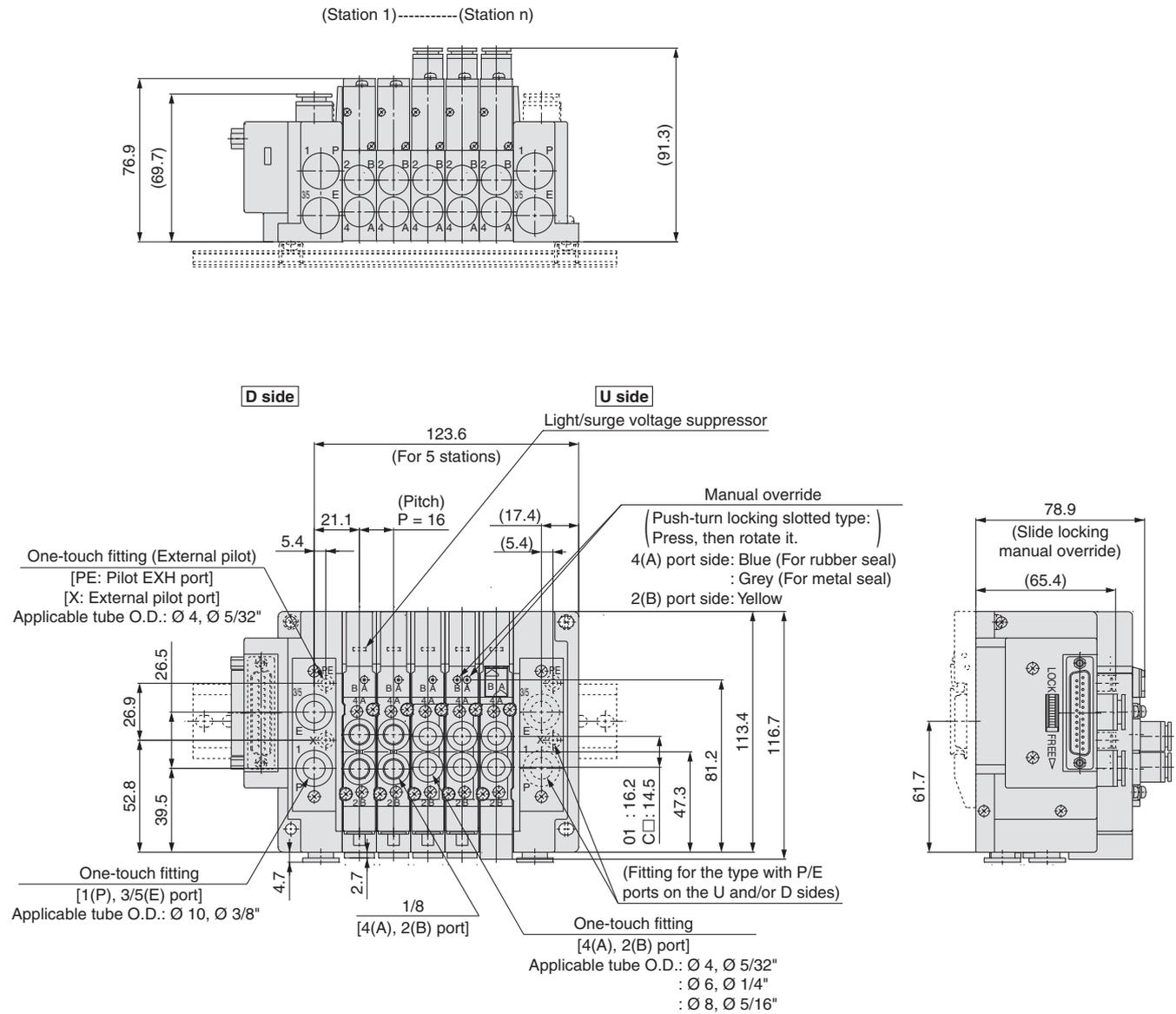
# Series SY3000/5000/7000

## Series SY5000

### Plug-in Connector Connecting Base

Type 12/Top Ported  
All Wirings

SS5Y5-12□ - Stations  $\frac{U}{D}$  (R)



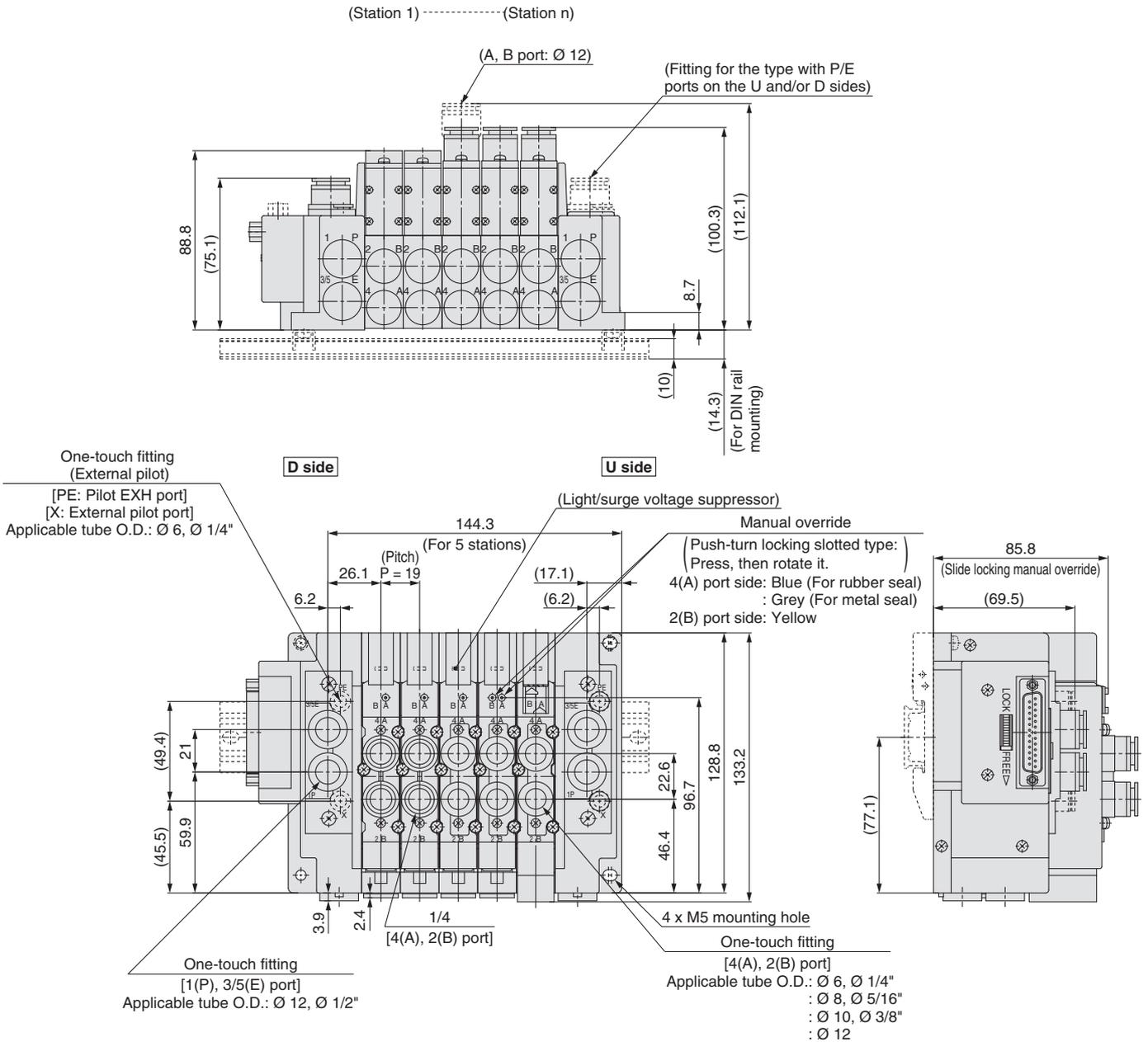
- \*: These figures show the "SS5Y5-12F2-05D".
  - \*: For built-in silencer type, a silencer is mounted on the opposite side of U or D side with P or E port. Refer to page 206 for dimensions of silencer.
  - \*: Refer to the below pages for dimensions that are not specified in each wiring specification.
- |                        |               |
|------------------------|---------------|
| D-sub connector <IP40> | : P. 101      |
| D-sub connector <IP67> | : P. 104      |
| Flat ribbon cable      | : P. 107      |
| Terminal block box     | : P. 119      |
| Lead wire              | : P. 129      |
| Circular connector     | : P. 139      |
| EX500 (128 points)     | : P. 149      |
| EX500 (64 points)      | : P. 155      |
| EX600                  | : P. 166, 167 |
| EX250                  | : P. 177      |
| EX260                  | : P. 185      |
| EX126                  | : P. 193      |
| EX120                  | : P. 201      |

## Series SY7000

### Plug-in Connector Connecting Base

Type 12/Top Ported  
All Wirings

SS5Y7-12□ - Stations  $\frac{U}{D}$  (R)



- \*: These figures show the "SS5Y7-12F2-05D".
  - \*: For built-in silencer type, a silencer is mounted on the opposite side of U or D side with P or E port. Refer to page 207 for dimensions of silencer.
  - \*: Refer to the below pages for dimensions that are not specified in each wiring specification.
- |                         |               |
|-------------------------|---------------|
| D-sub connector <IP40>: | P. 102        |
| D-sub connector <IP67>: | P. 105        |
| Flat ribbon cable       | : P. 108      |
| Terminal block box      | : P. 120      |
| Lead wire               | : P. 130      |
| Circular connector      | : P. 140      |
| EX500 (128 points)      | : P. 150      |
| EX500 (64 points)       | : P. 156      |
| EX600                   | : P. 168, 169 |
| EX250                   | : P. 178      |
| EX260                   | : P. 186      |
| EX126                   | : P. 194      |
| EX120                   | : P. 202      |

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

**Type 10**  
Side Ported

**Type 11**  
Bottom Ported

# Plug-in Connector Connecting Base: Plug-in Mixed Mounting Type Manifold

D-sub Connector (IP40/67) Flat Ribbon Cable PC Wiring Terminal Block Box (IP67)

Lead Wire (IP67) Circular Connector (IP67) EX500 (IP67) EX600 (IP67)

EX250 (IP67) EX260 (IP67) EX126 (IP67) EX120

# Series SY3000/5000



The SY3000 can be mounted onto the SY5000 size manifold.

## How to Order Manifold

Refer to page 222 for dimensions of Type 11/Bottom ported type.

**SS5Y5 - M 10 F 1 - 05 U - C 8 6**

Mixed Mounting Type

It is possible to mount the SY3000 size valves on all stations. In this case, there is no need to fill in part ③ in the order code. However, the manifold block width should be 12.5 mm.

### ① Type

10	Side ported
11	Bottom ported

### ② Connector type

Symbol	Type	Page	
F	D-sub connector	97	
FW	(25 pins)		
P	26 pins		
PG	Flat ribbon cable		
PH	20 pins	115	
J	10 pins		
G	PC wiring (20 pins)	With power supply terminal	
T	Terminal block box	115	
L1	Lead wire	34 cores	125
L2		17 cores	
L3		9 cores	
M	Circular connector	135	
S□	Serial transmission	EX500 Gateway Decentralised System 2 (128 Points)	145
S□		EX500 Gateway Decentralised System (64 Points)	151
S6□		EX600	161
S□		EX250	173
S□		EX260	181
S4□		EX126	189
S3□		EX120	197

\*: Refer to the pages shown in the table above for details.

### ③

• With Lead wire

#### Lead wire length

1	0.6 m
2	1.5 m
3	3 m

• With D-sub connector (IP40/67), Flat ribbon cable and PC wiring

#### Connector entry direction

1	Upward
2	Lateral

\*: It is not necessary to select the items above for the valve with terminal block box or with circular connector or the serial transmission type.

### ④ Valve stations

Symbol	Stations	Note
02	2 stations	Some connectors have a limitation on the number of stations. Refer to the pages shown in the table "Connector type" for details.
:	:	
24	24 stations	

### ⑤ P, E port entry

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 24 stations)

\*: Refer to page 161 for the EX600 and ⑦ on page 173 for the EX250.

### ⑦ Fitting type: One-touch fitting

Symbol	A, B port	
C	Straight	
L	Metric size	Upward* <sup>2</sup>
B		Downward* <sup>2</sup>
N	Straight	
LN	Inch size	Upward* <sup>2</sup>
BN		Downward* <sup>2</sup>
CM* <sup>1</sup>	Mixed sizes	Straight
LM* <sup>1</sup>		Elbow (Including upward and downward piping)* <sup>2</sup>

\*1: Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

\*2: To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 250 to 252). Elbow fittings are not available for Type 11 (Bottom ported).

\*: Elbow fittings: Ø 2, Ø 3.2 and Ø 1.8" are not available for the SY3000 series. Ø 2, Ø 3.2, Ø 1.8" and Ø 5/32" are not available for the SY5000 series.

### 8 SY5000: A, B port size

(Metric/One-touch fitting)

Symbol	Port size
4	Ø 4
6	Ø 6
8	Ø 8
—	For all stations of SY3000

(Inch/One-touch fitting)

Symbol	Port size
3	Ø 5/32"
7	Ø 1/4"
9	Ø 5/16"
—	For all stations of SY3000

\*: No symbol needs to be specified when fitting type "CM", "LM" is selected.

### 9 SY3000: A, B port size

(Metric/One-touch fitting)

Symbol	Port size
2	Ø 2
3	Ø 3.2
4	Ø 4
6	Ø 6
8	Ø 8*1

(Inch/One-touch fitting)

Symbol	Port size
1	Ø 1/8"
3	Ø 5/32"
7	Ø 1/4"
9	Ø 5/16"*1

\*1: The valve pitch is the same as the SY5000.

\*: No symbol needs to be specified when fitting type "CM", "LM" is selected.

### 10 Mounting

—		Direct mounting
<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. [The SY5000 valve is now at a mountable length (manifold block length of 16 mm).]
⋮	⋮	
<b>D24</b>	For 24 stations	

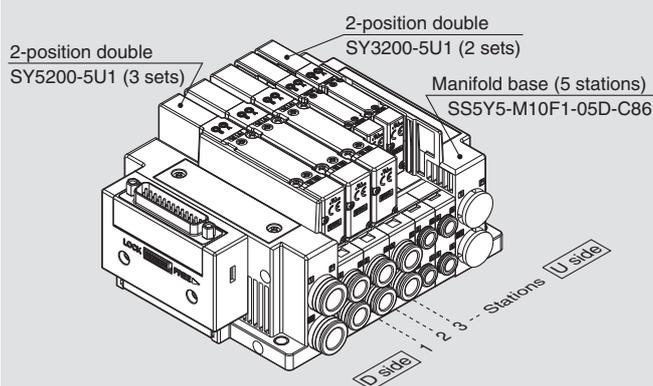
\*: Only direct mounting is available for Type 11 (Bottom ported).

\*: Refer to page 220 to determine the L3 using "Calculation formula" for the DIN rail length.

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

## How to Order Manifold Assembly

### Example (SS5Y5-M10F1-□)



SS5Y5-M10F1-05D-C86 ... 1 set (Type M10 5-station manifold base part no.)  
 \*SY5200-5U1 ..... 3 sets (2-position double part no.)  
 \*SY3200-5U1 ..... 2 sets (2-position double part no.)

→ The asterisk denotes the symbol for assembly.  
 Prefix it to the part numbers of the valve etc.

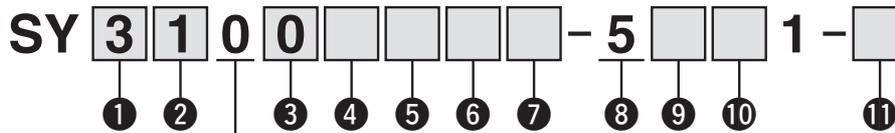
- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

\*: When mixing top ported configurations, select from page 226.  
 In this case, use caution as there is also output on the A and B port on base side.  
 Specify on a manifold specification sheet if plugs are required on the A and B port on base side.



## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



● Base mounted

### 1 Series

3	SY3000
5	SY5000

### 2 Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed centre
4		Exhaust centre
5		Pressure centre
A*1	4-position dual 3-port	N.C./N.C.
B*1		N.O./N.O.
C*1		N.C./N.O.

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

—	None
H	Built-in

\*: Only rubber seal type. Manifold installed type is available if back pressure check valve is required for the valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type.

### 6 Pilot valve option

—	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*1	High pressure type (1.0 MPa)

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

—	Standard
T	With power saving circuit (Continuous duty type)

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

5	24 V DC
6	12 V DC

\*: Only 24 V DC is available for the serial transmission type.

### 9 Light/surge voltage suppressor and common specification

Symbol	With light	Surge voltage suppressor	Common specification
—	—	—	Non-polar
R	—	●	
U	●		
S	—		
Z	●		Positive common
NS	—		
NZ	●	Negative common	

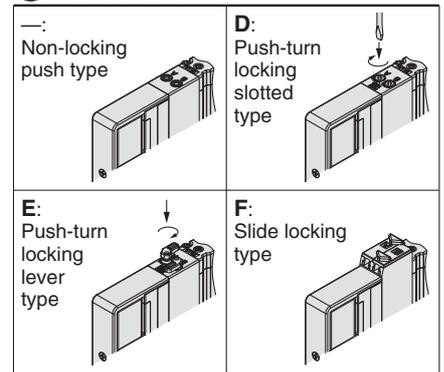
\*: "—" is not available for the SI Unit manifold.

\*: Only "Z" and "NZ" types are available for with the power saving circuit. Select a valve which is suited to the SI Unit output polarity or SI Unit specification when the SI Unit is selected.

Refer to the pages below for details.

EX500: P.147, 153    EX600: P.163  
EX250: P.175        EX260: P.183  
EX126: P.191        EX120: P.199

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 Type of mounting screw

—	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

Manifold Options

One-touch Fittings/  
Plug Assembly Part No.

Type 10, 11, 12  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Metal Base

Plug-in Sub-plate

Valve

**Type 10**  
Side Ported

**Type 11**  
Bottom Ported

# Plug-in Connector Connecting Base: Plug-in Mixed Mounting Type Manifold

D-sub Connector (IP40/67) Flat Ribbon Cable PC Wiring Terminal Block Box (IP67)

Lead Wire (IP67) Circular Connector (IP67) EX500 (IP67) EX600 (IP67)

EX250 (IP67) EX260 (IP67) EX126 (IP67) EX120

# Series SY5000/7000



The SY5000 can be mounted onto the SY7000 size manifold.

## How to Order Manifold

Refer to page 223 for dimensions of Type 11/Bottom ported type.

**SS5Y7 – M 10 F 1 – 05 U – C 10 8**

Mixed Mounting Type

It is possible to mount the SY5000 size valves on all stations. In this case, there is no need to fill in part ③ in the order code. However, the manifold block width should be 19 mm.

### ① Type

10	Side ported
11	Bottom ported

### ② Connector type

Symbol	Type	Page	
F	D-sub connector	97	
FW	(25 pins)		
P	26 pins		
PG	Flat ribbon cable		
PH	20 pins		
J	PC wiring (20 pins)	—	
G			With power supply terminal
T	Terminal block box	115	
L1	Lead wire	34 cores	125
L2		17 cores	
L3		9 cores	
M	Circular connector	135	
S□	Serial transmission	EX500 Gateway Decentralised System 2 (128 Points)	145
S□		EX500 Gateway Decentralised System (64 Points)	151
S6□		EX600	161
S□		EX250	173
S□		EX260	181
S4□		EX126	189
S3□		EX120	197

\*: Refer to the pages shown in the table above for details.

### ③

#### • With Lead wire

#### Lead wire length

1	0.6 m
2	1.5 m
3	3 m

#### • With D-sub connector (IP40/67), Flat ribbon cable and PC wiring

#### Connector entry direction

1	Upward
2	Lateral

\*: It is not necessary to select the items above for the valve with terminal block box or with circular connector or the serial transmission type.

### ④ Valve stations

Symbol	Stations	Note
02	2 stations	Some connectors have a limitation on the number of stations. Refer to the pages shown in the table "Connector type" for details.
⋮	⋮	
24	24 stations	

### ⑤ P, E port entry

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 24 stations)

\*: Refer to page 161 for the EX600 and ⑦ on page 173 for the EX250.

### ⑦ Fitting type: One-touch fitting

Symbol	A, B port	
C	Straight	
L	Metric size	Upward* <sup>2</sup>
B		Downward* <sup>2</sup>
N	Straight	
LN	Inch size	Upward* <sup>2</sup>
BN		Downward* <sup>2</sup>
CM* <sup>1</sup>	Mixed sizes	Straight
LM* <sup>1</sup>		Elbow (Including upward and downward piping)* <sup>2</sup>

\*1: Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

\*2: To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 250 to 252). Elbow fittings are not available for Type 11 (Bottom ported).

\*: Elbow fittings: Ø 1/4" and Ø 5/16" are not available.

**8 SY7000: A, B port size**

(Metric/One-touch fitting)

Symbol	Port size
6	Ø 6
8	Ø 8
10	Ø 10
12	Ø 12
—	For all stations of SY5000

(Inch/One-touch fitting)

Symbol	Port size
7	Ø 1/4"
9	Ø 5/16"
11	Ø 3/8"
—	For all stations of SY5000

\*: No symbol needs to be specified when fitting type "CM", "LM" is selected.

**9 SY5000: A, B port size**

(Metric/One-touch fitting)

Symbol	Port size
6	Ø 6
8	Ø 8
10	Ø 10
12	Ø 12

(Inch/One-touch fitting)

Symbol	Port size
7	Ø 1/4"
9	Ø 5/16"
11	Ø 3/8"

\*: The valve pitch is 19 mm, the same as the SY7000.  
\*: No symbol needs to be specified when fitting type "CM", "LM" is selected.

**10 Mounting and Option**

Symbol	Mounting	Option	
		Name plate	Station number
—		—	—
AA	Direct mounting	●	●
BA		●	—
D□	DIN rail mounting	—	—
A□		●	●
B□		●	—

**DIN Rail Option**

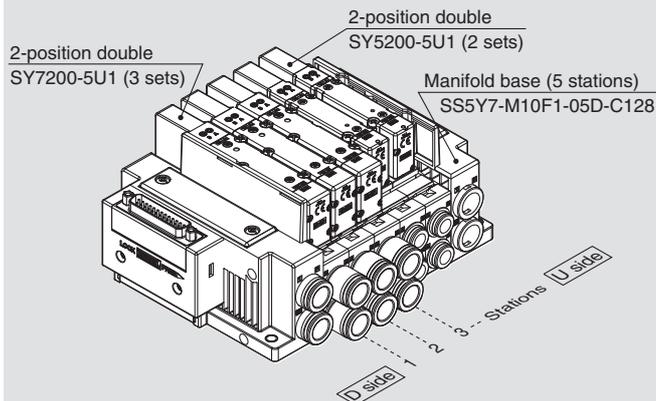
—	Direct mounting
0	Without DIN rail (with bracket)
3	For 3 stations
:	:
24	For 24 stations

Specify a longer rail than the total length of specified stations.

\*: Enter the number of stations inside □ when it is larger than the number of valve stations. (Refer to "DIN Rail Option" above.)  
\*: Only direct mounting is available for Type 11 (Bottom ported).  
\*: Refer to page 220 to determine the L3 using "Calculation formula" for the DIN rail length. (For the SY3000 and SY5000 mixed mounting type)  
\*: The manifold block width is 19 mm for both the SY5000 and SY7000 sizes.  
\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

**How to Order Manifold Assembly**

**Example (SS5Y7-M10F1-□)**

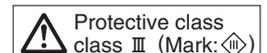


SS5Y7-M10F1-05D-C128.. 1 set (Type M10 5-station manifold base part no.)  
\*SY7200-5U1 ..... 3 sets (2-position double part no.)  
\*SY5200-5U1 ..... 2 sets (2-position double part no.)

→ The asterisk denotes the symbol for assembly.  
Prefix it to the part numbers of the valve etc.

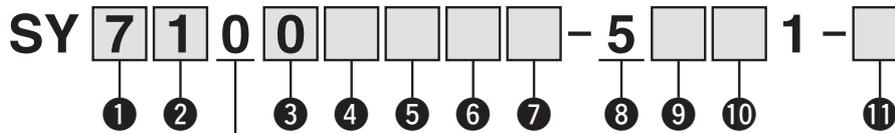
- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

\*: When mixing top ported configurations, select from page 226.  
In this case, use caution as there is also output on the A and B port on base side.  
Specify on a manifold specification sheet if plugs are required on the A and B port on base side.



## How to Order Valves (With mounting screw)

Refer to page 13 for valve specifications.



● Base mounted

### 1 Series

5	SY5000
7	SY7000

### 2 Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed centre
4		Exhaust centre
5		Pressure centre
A*1	4-position dual 3-port	N.C./N.C.
B*1		N.O./N.O.
C*1		N.C./N.O.

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

—	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

—	None
H	Built-in

\*: Only rubber seal type. Manifold installed type is available if back pressure check valve is required for the valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

### 6 Pilot valve option

—	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*1	High pressure type (1.0 MPa)

\*1: Only metal seal type is available for the high pressure type.

### 7 Coil type

—	Standard
T	With power saving circuit (Continuous duty type)

\*: Be sure to select the power saving circuit type when the valve is continuously energised for long periods of time.

\*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

### 8 Rated voltage

5	24 V DC
6	12 V DC

\*: Only 24 V DC is available for the serial transmission type.

### 9 Light/surge voltage suppressor and common specification

Symbol	With light	Surge voltage suppressor	Common specification
—	—	—	Non-polar
R	—	●	
U	●		
S	—		
Z	●		Positive common
NS	—	Negative common	
NZ	●		

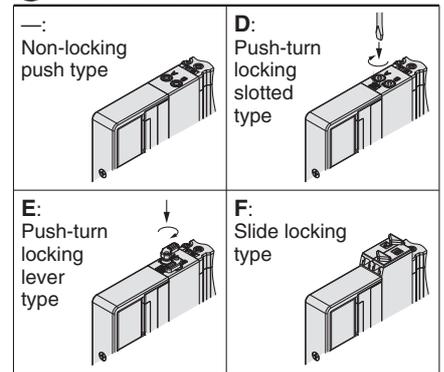
\*: "—" is not available for the SI Unit manifold.

\*: Only "Z" and "NZ" types are available for with the power saving circuit. Select a valve which is suited to the SI Unit output polarity or SI Unit specification when the SI Unit is selected.

Refer to the pages below for details.

EX500: P.147, 153    EX600: P.163  
EX250: P.175        EX260: P.183  
EX126: P.191        EX120: P.199

### 10 Manual override



\*: Refer to page 31 for with the safety slide locking manual override.

### 11 Type of mounting screw

—	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\*: **When ordering a valve individually, the base gasket is not included.**

Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 244 for part numbers of the base gasket and mounting screw.

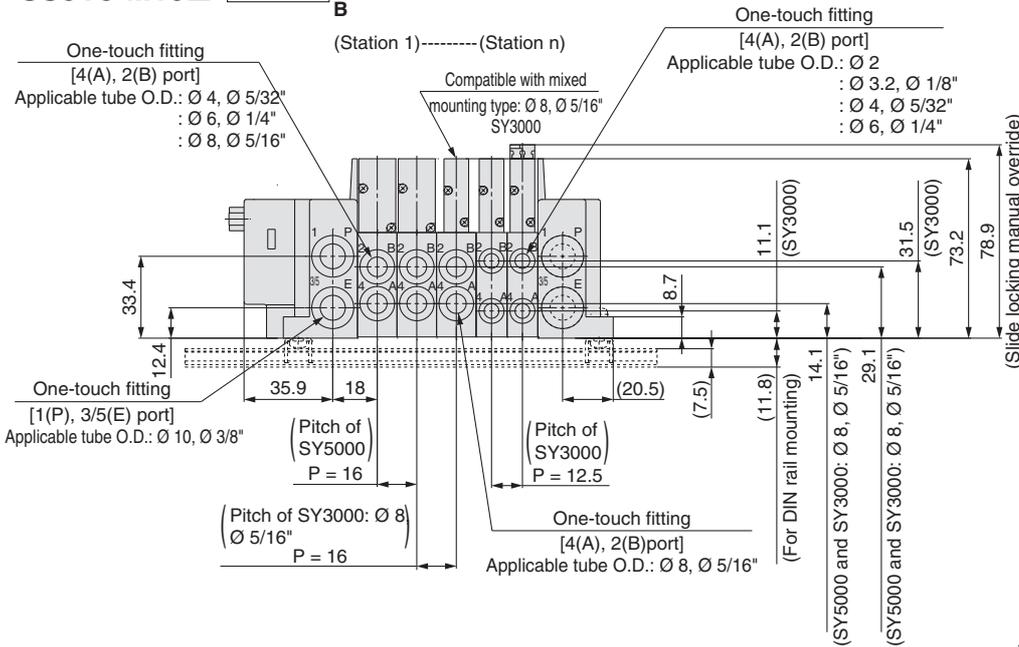
\*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly, interface regulator or double check spacer assembly with residual pressure release valve.

Dimensions: Series **SY3000/5000**

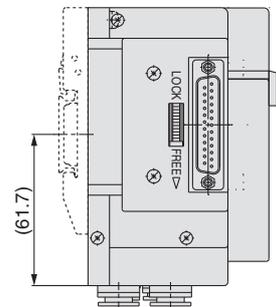
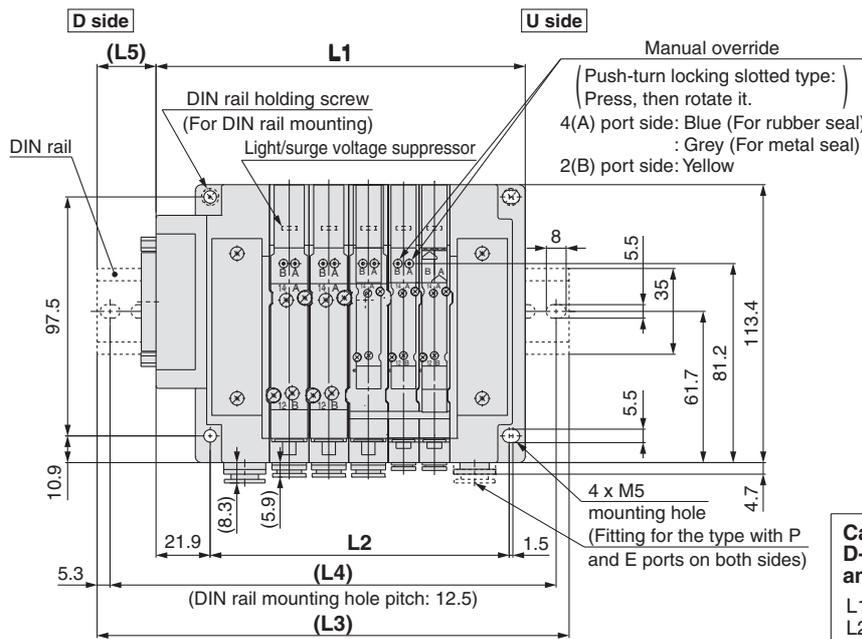
Plug-in  
Connector Connecting Base

Type 10/Side Ported  
Mixed Mounting Type

SS5Y5-M10 □ - Stations  $\frac{U}{D}$



\*: Refer to pages 205 and 206 for dimensions of external pilot, built-in silencer and elbow fittings.



**Calculation formula for dimensions with D-sub connector <IP67>, Terminal block box, Lead wire, Circular connector, EX500/600/250/260/126/120 serial transmission**

$$L1 = 12.5 \times n1 + 16 \times n2 + a + b \times n3$$

$$L2 = 12.5 \times n1 + 16 \times n2 \times 48$$

$$M = L1/12.5 + 1 \quad \text{Decimal fractions are truncated.}$$

$$L3 = 12.5 \times M + 23$$

$$L4 = L3 - 10.5$$

$$L5 = (L3 - L1)/2$$

$$L6 = b \times n3 + c$$

n1: Number of valve stations of the SY3000  
n2: Number of valve stations of the SY5000 (Including the stations of the SY3000: Ø 8, Ø 5/16")  
n3: Number of I/O units or input block stations  
\*: Refer to pages 166 to 167 for dimensions of the EX600 serial transmission with I/O unit and page 177 for the EX250 serial transmission with input block when L6, b and c are used for the calculation formula.

**Calculation formula for dimensions with D-sub connector <IP40>, Flat ribbon cable and PC wiring**

$$L1 = 12.5 \times n1 + 16 \times n2 + 76.4$$

$$L2 = 12.5 \times n1 + 16 \times n2 + 48$$

$$M = (L1 + 6.1)/12.5 + 1 \quad \text{Decimal fractions are truncated.}$$

$$L3 = 12.5 \times M + 23$$

$$L4 = L3 - 10.5$$

$$L5 = (L3 - L1 + 6.1)/2$$

n1: Number of valve stations of the SY3000  
n2: Number of valve stations of the SY5000 (Including the stations of the SY3000: Ø 8, Ø 5/16")

	Coefficient	a	b	c
D-sub connector <IP67>		90.5	—	—
Terminal block box <Serial transmission: EX126		149.3	—	—
Lead wire or Circular connector		97	—	—
EX500 Gateway Decentralised System 2 (128 Points)		88.7	—	—
EX500 Gateway Decentralised System (64 Points)		88.5	—	—
Serial transmission: EX600 (M12 connector)		141.5	47	81.5
Serial transmission: EX600 (7/8 inch connector)		158	47	81.5
Serial transmission: EX250		141.5	21	81.5
Serial transmission: EX260		88.7	—	—
Serial transmission: EX120		84.7	—	—

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

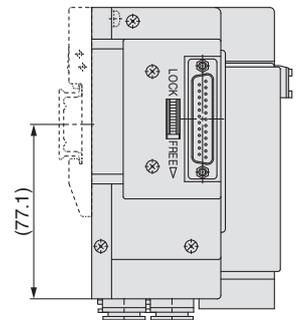
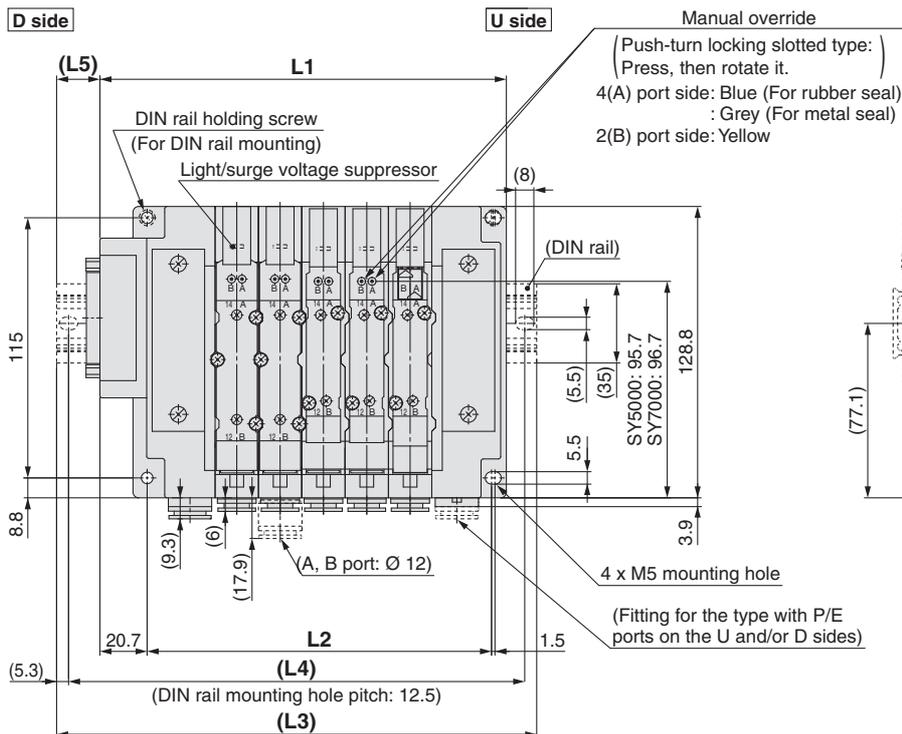
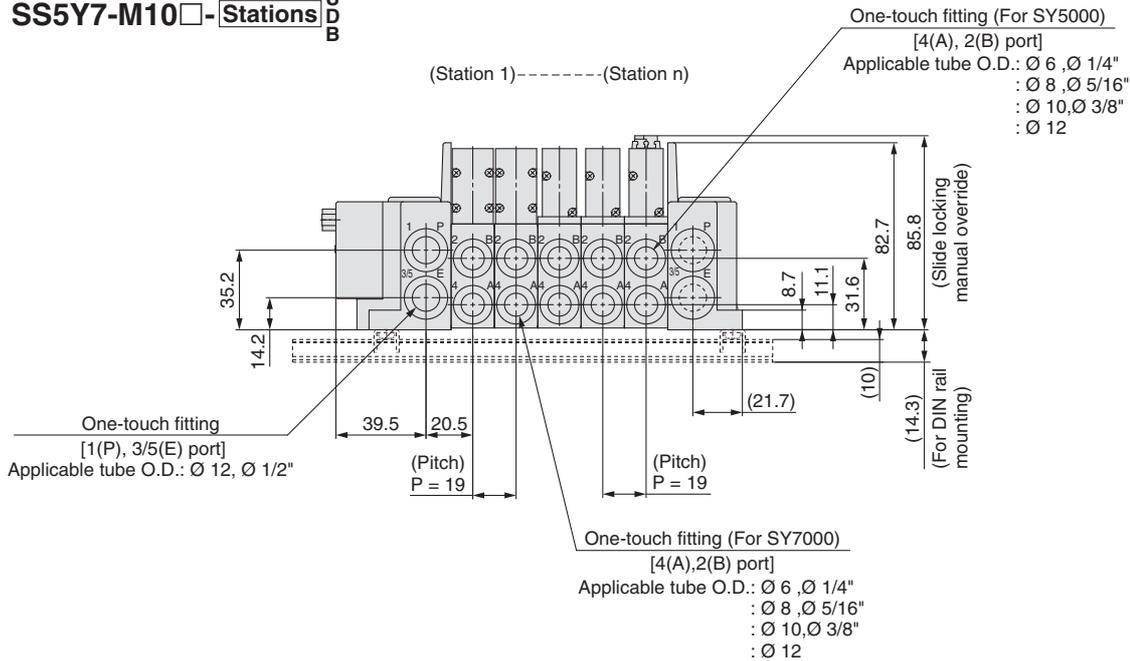
# Series SY3000/5000/7000

## Dimensions: Series SY5000/7000

### Plug-in Connector Connecting Base

### Type 10/Side Ported Mixed Mounting Type

SS5Y7-M10□ - Stations  $\frac{U}{D}$



\*: Refer to page 207 for dimensions of external pilots and built-in silencers.

\*: Refer to the below pages for L1, L2, L3, L4 dimensions and other dimensions that are not specified in each wiring specification.

D-sub connector <IP40>:	P. 102
D-sub connector <IP67>:	P. 105
Flat ribbon cable	: P. 108
Terminal block box	: P. 120
Lead wire	: P. 130
Circular connector	: P. 140
EX500 (128 points)	: P. 150
EX500 (64 points)	: P. 156
EX600	: P. 168, 169
EX250	: P. 178
EX260	: P. 186
EX126	: P. 194
EX120	: P. 202



# Series SY3000/5000/7000

## Dimensions: Series SY5000/7000

### Plug-in Connector Connecting Base

### Type 11/Bottom Ported Mixed Mounting Type

SS5Y7-M11 □ - Stations  $\frac{U}{D}$

\*: Refer to page 209 for dimensions of external pilots and built-in silencers.

\*: Refer to the below pages for L1, L2 dimensions and other dimensions

that are not specified in each wiring specification.

Dimensions of Type 11/Bottom ported: P. 209

D-sub connector <IP40> : P. 102

D-sub connector <IP67> : P. 105

Flat ribbon cable : P. 108

Terminal block box : P. 120

Lead wire : P. 130

Circular connector : P. 140

EX500 (128 points) : P. 150

EX500 (64 points) : P. 156

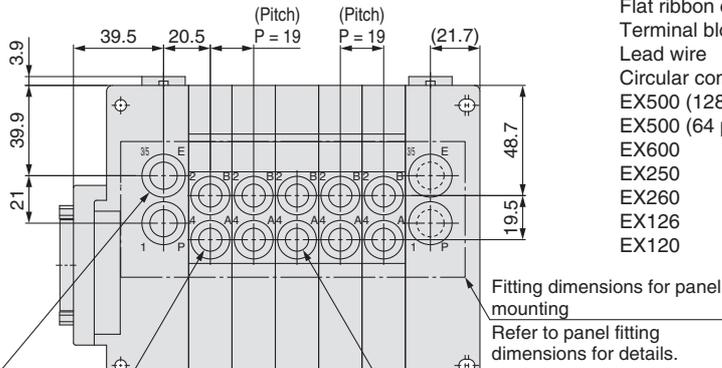
EX600 : P. 168, 169

EX250 : P. 178

EX260 : P. 186

EX126 : P. 194

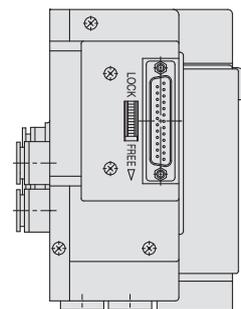
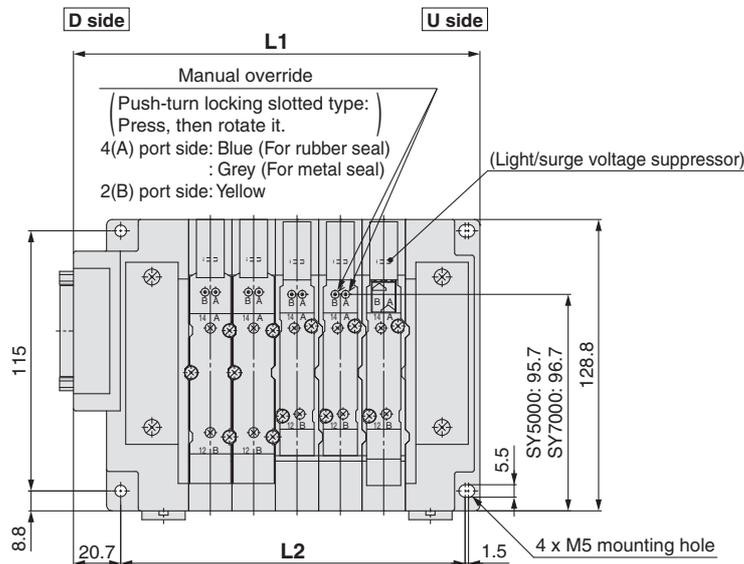
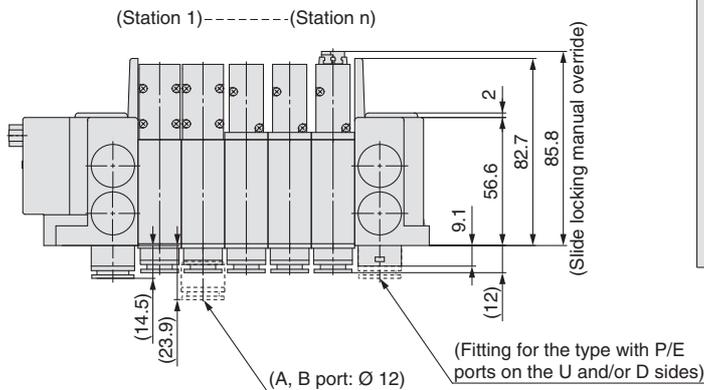
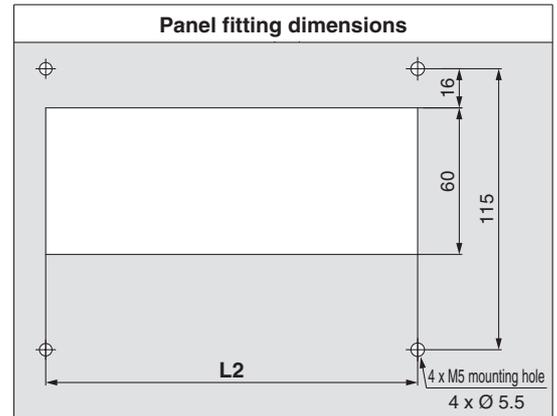
EX120 : P. 202



One-touch fitting (For SY7000) [4(A), 2(B) port]  
 Applicable tube O.D.:  $\varnothing 6, \varnothing 1/4"$   
 $\varnothing 8, \varnothing 5/16"$   
 $\varnothing 10, \varnothing 3/8"$   
 $\varnothing 12$

One-touch fitting (For SY5000) [4(A), 2(B) port]  
 Applicable tube O.D.:  $\varnothing 6, \varnothing 1/4"$   
 $\varnothing 8, \varnothing 5/16"$   
 $\varnothing 10, \varnothing 3/8"$   
 $\varnothing 12$

One-touch fitting [1(P), 3/5(E) port]  
 Applicable tube O.D.:  $\varnothing 12, \varnothing 1/2"$



Manifold Options

One-touch Fittings/  
Plug Assembly Part No.

Type 10, 11, 12  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Metal Base

Plug-in Sub-plate

Valve

# Plug-in Connector Connecting Base: Plug-in Mixed Mounting Type Manifold

D-sub Connector (IP40/67) Flat Ribbon Cable PC Wiring Terminal Block Box (IP67)

Lead Wire (IP67) Circular Connector (IP67) EX500 (IP67) EX600 (IP67)

EX250 (IP67) EX260 (IP67) EX126 (IP67) EX120

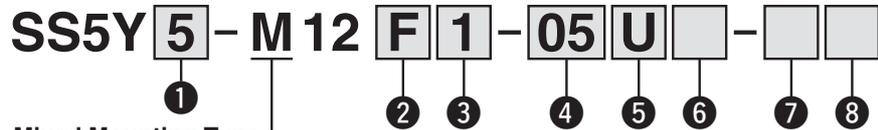
Type 12  
Top Ported

# Series SY3000/5000/7000 C €

For the SY5000 series, the SY5000 and the SY3000 can be mounted on the same manifold.  
For the SY7000 series, the SY7000 and the SY5000 can be mounted on the same manifold.

## How to Order Manifold

Refer to pages 211 and 212 for dimensions of Type 12/Top ported type.



### Mixed Mounting Type

For the SY5000 series, it is possible to mount the SY3000 size valves on all stations. However, the SY3000 manifold block width should be 12.5 mm. (16 mm for Ø 8 or Ø 5/16" One-touch fitting)

Also, for the SY7000 series, it is possible to mount the SY5000 size valves on all stations. However, the SY3000 cannot be mounted onto the SY7000 series.

### 1 Series

5	SY5000
7	SY7000

### 3

• With Lead wire

#### Lead wire length

1	0.6 m
2	1.5 m
3	3 m

• With D-sub connector (IP40/67), Flat ribbon cable and PC wiring

#### Connector entry direction

1	Upward
2	Lateral

\*: It is not necessary to select the items above for the valve with terminal block box or with circular connector or the serial transmission type.

### 4 Valve stations

Symbol	Stations	Note
02	2 stations	Some connectors have a limitation on the number of stations. Refer to the pages shown in the table "Connector type" for details.
:	:	
24	24 stations	

### 7 P, E port size (One-touch fittings)

Symbol	SY5000	SY7000	Note
—	Ø 10	Ø 12	Metric size
N	Ø 3/8"	Ø 1/2"	Inch size

### 2 Connector type

Symbol	Type	Page	
F	D-sub connector (25 pins)	IP40	
FW			IP67
P	Flat ribbon cable	26 pins	
PG		20 pins	
PH		10 pins	
J	PC wiring (20 pins)	—	
G		With power supply terminal	
T	Terminal block box	121	
L1	Lead wire	34 cores	
L2		17 cores	
L3		9 cores	
M	Circular connector	141	
S□	Serial transmission	EX500 Gateway Decentralised System 2 (128 Points)	157
S□		EX500 Gateway Decentralised System (64 Points)	159
S6□		EX600	171
S□		EX250	179
S□		EX260	187
S4□		EX126	195
S3□		EX120	203

\*: Refer to the pages shown in the table above for details.

### 5 P, E port entry

U*1	U side (2 to 10 stations)
D*1	D side (2 to 10 stations)
B	Both sides (2 to 24 stations)

\*1: For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

\*: Refer to page 171 for the EX600 and 6 on

### 6 SUP/EXH block assembly

—	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

\*: For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)

\*: Refer to page 171 for the EX600 and 6 on page 179 for the EX250.

### 8 Mounting

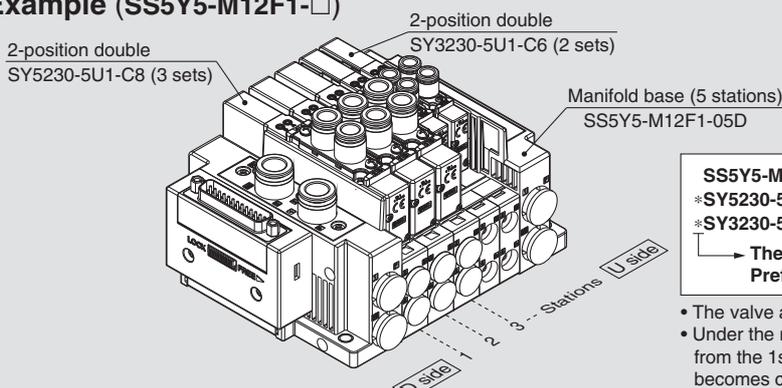
		Direct mounting
D	DIN rail mounting (With DIN rail)	
D0	DIN rail mounting (Without DIN rail)	
D3	For 3 stations	Specify a longer rail than the standard length.
:	:	[For the SS5Y5-M12, the SY5000 valve is now at a mountable length (manifold block length of 16 mm).]
D24	For 24 stations	

\*: Refer to page 227 to determine the L3 using "Calculation formula" for the DIN rail length. (For the SY3000 and SY5000 mixed mounting type)

\*: Refer to page 271 for the fixation of DIN rail mounting type manifold.

## How to Order Manifold Assembly

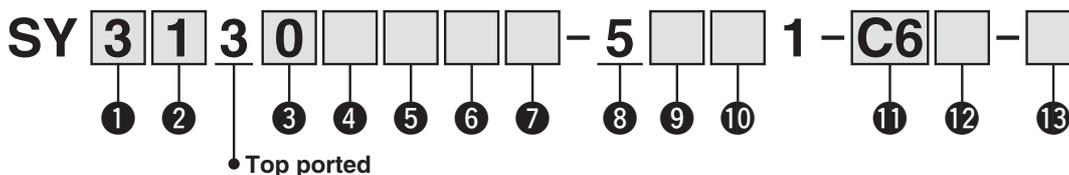
### Example (SS5Y5-M12F1-□)



SS5Y5-M12F1-05D ... 1 set (Type M12 5-station manifold base part no.)  
 \*SY5230-5U1-C8 ..... 3 sets (2-position double part no.)  
 \*SY3230-5U1-C6 ..... 2 sets (2-position double part no.)  
 The asterisk denotes the symbol for assembly. Prefix it to the part numbers of the valve etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure on the left. If the arrangement becomes complicated, specify on a manifold specification sheet.

**How to Order Valves (With mounting screw)** Refer to page 13 for valve specifications.



**1 Series**

3	SY3000
5	SY5000
7	SY7000

**2 Type of actuation**

1	2-position	Single
2		Double
3	3-position	Closed centre
4		Exhaust centre
5		Pressure centre
A*1	4-position dual 3-port	N.C./N.C.
B*1		N.O./N.O.
C*1		N.C./N.O.

\*1: Only rubber seal type is available for the 4-position dual 3-port valve.

**3 Seal type**

0	Rubber seal
1	Metal seal

**4 Pilot type**

—	Internal pilot
R	External pilot

**5 Back pressure check valve (Built-in valve type)**

—	None
H	Built-in

\*: Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 256 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.  
 \*: The built-in valve type back pressure check valve is not available for the 3-position type and the SY7000.

**6 Pilot valve option**

—	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*1	High pressure type (1.0 MPa)

\*1: Only metal seal type is available for the high pressure type.

**7 Coil type**

—	Standard
T	With power saving circuit (Continuous duty type)

\*: Be sure to select the power saving circuit type when a valve is continuously energised for long periods of time.  
 \*: Be careful of the energising time when the power saving circuit is selected. Refer to page 268 for details.

**8 Rated voltage**

5	24 V DC
6	12 V DC

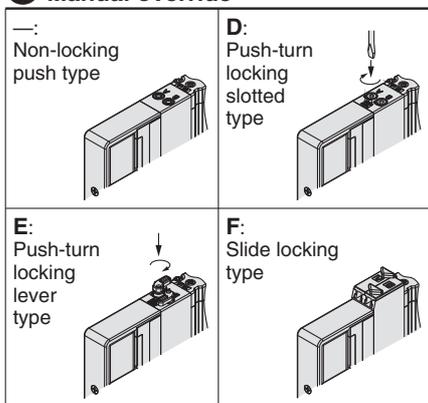
\*: Only 24 V DC is available for the serial transmission type.

**9 Light/surge voltage suppressor and common specification**

Symbol	With light	Surge voltage suppressor	Common specification
—	—	—	Non-polar
R	—	●	
U	●		
S	—		
Z	●	●	Positive common
NS	—		Negative common
NZ	●		

\*: "—" is not available for the SI Unit manifold.  
 \*: Only "Z" and "NZ" types are available for with the power saving circuit. Select a valve which is suited to the SI Unit output polarity or SI Unit specification when the SI Unit is selected.  
 Refer to the pages below for details.  
 EX500: P.158, 160 EX600: P.172  
 EX250: P.180 EX260: P.188  
 EX126: P.196 EX120: P.204

**10 Manual override**



\*: Refer to page 31 for with the safety slide locking manual override.

**11 A, B port size**

**Thread piping**

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY3000
O1	1/8	SY5000
O2	1/4	SY7000

**One-touch fitting (Metric)**

Symbol	A, B port	SY3000	SY5000	SY7000
C2	Ø 2	●	—	—
C3	Ø 3.2	●	—	—
C4	Ø 4	●	●	—
C6	Ø 6	●	●	●
C8	Ø 8	—	●	●
C10	Ø 10	—	—	●
C12	Ø 12	—	—	●

**One-touch fitting (Inch)**

Symbol	A, B port	SY3000	SY5000	SY7000
N1	Ø 1/8"	●	—	—
N3	Ø 5/32"	●	—	—
N7	Ø 1/4"	●	●	●
N9	Ø 5/16"	—	●	●
N11	Ø 3/8"	—	—	●

**12 Thread type**

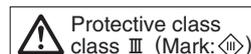
—	Rc
F	G
N	NPT
T	NPTF

\*: Only — is available for M5.

**13 Type of mounting screw**

—	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\*: For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.  
 \*: **When ordering a valve individually, the base gasket is not included.** Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.  
 Refer to page 244 for part numbers of the base gasket and mounting screw.  
 \*: "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or interface regulator.



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

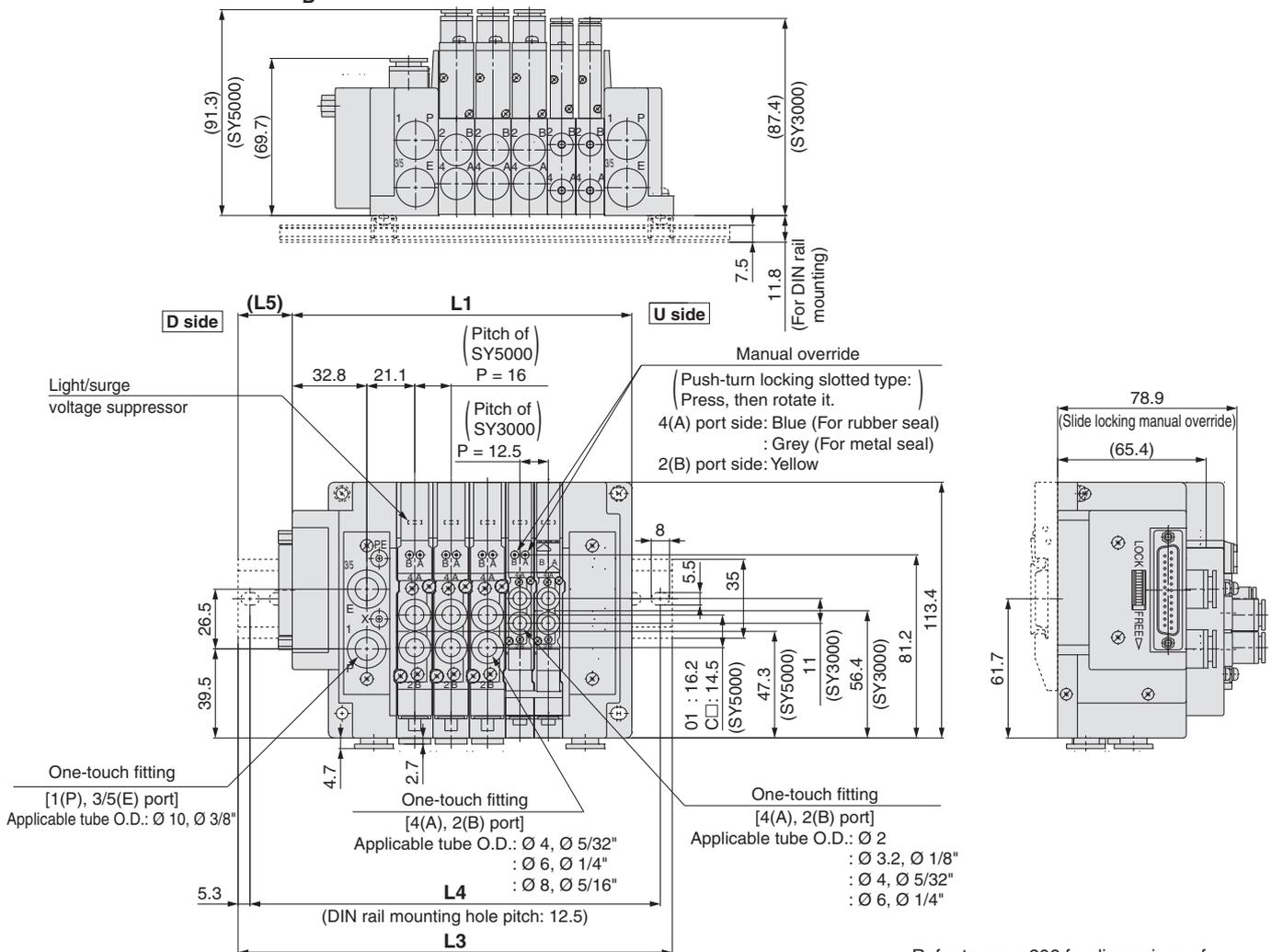
## Dimensions: Series SY5000

### Plug-in Connector Connecting Base

Type 12/Top Ported  
Mixed Mounting Type

SS5Y5-M12□ - Stations  $\frac{U}{D}$

(Station 1)----- (Station n)



\*: Refer to page 206 for dimensions of external pilot and elbow fittings.

#### Calculation formula for dimensions with D-sub connector <IP40>, Flat ribbon cable and PC wiring

$$L1 = 12.5 \times n1 + 16 \times n2 + 76.4$$

$$L2 = 12.5 \times n1 + 16 \times n2 + 48$$

$$M = (L1 + 6.1) / 12.5 + 1 \quad \text{Decimal fractions are truncated.}$$

$$L3 = 12.5 \times M + 23$$

$$L4 = L3 - 10.5$$

$$L5 = (L3 - L1 + 6.1) / 2$$

n1: Number of valve stations of the SY3000  
 n2: Number of valve stations of the SY5000

#### Calculation formula for dimensions with D-sub connector <IP67>, Terminal block box, Lead wire, Circular connector, EX500/600/250/260/126/120 serial transmission

$$L1 = 12.5 \times n1 + 16 \times n2 + a + b \times n3$$

$$L2 = 12.5 \times n1 + 16 \times n2 \times 48$$

$$M = L1 / 12.5 + 1 \quad \text{Decimal fractions are truncated.}$$

$$L3 = 12.5 \times M + 23$$

$$L4 = L3 - 10.5$$

$$L5 = (L3 - L1) / 2$$

$$L6 = b \times n3 + c$$

n1: Number of valve stations of the SY3000  
 n2: Number of valve stations of the SY5000  
 n3: Number of I/O Units or input block stations

\*: Refer to pages 166 and 167 for dimensions of the EX600 serial transmission with I/O Unit and page 177 for the EX250 serial transmission with input block when L6, b and c are used for the calculation formula.

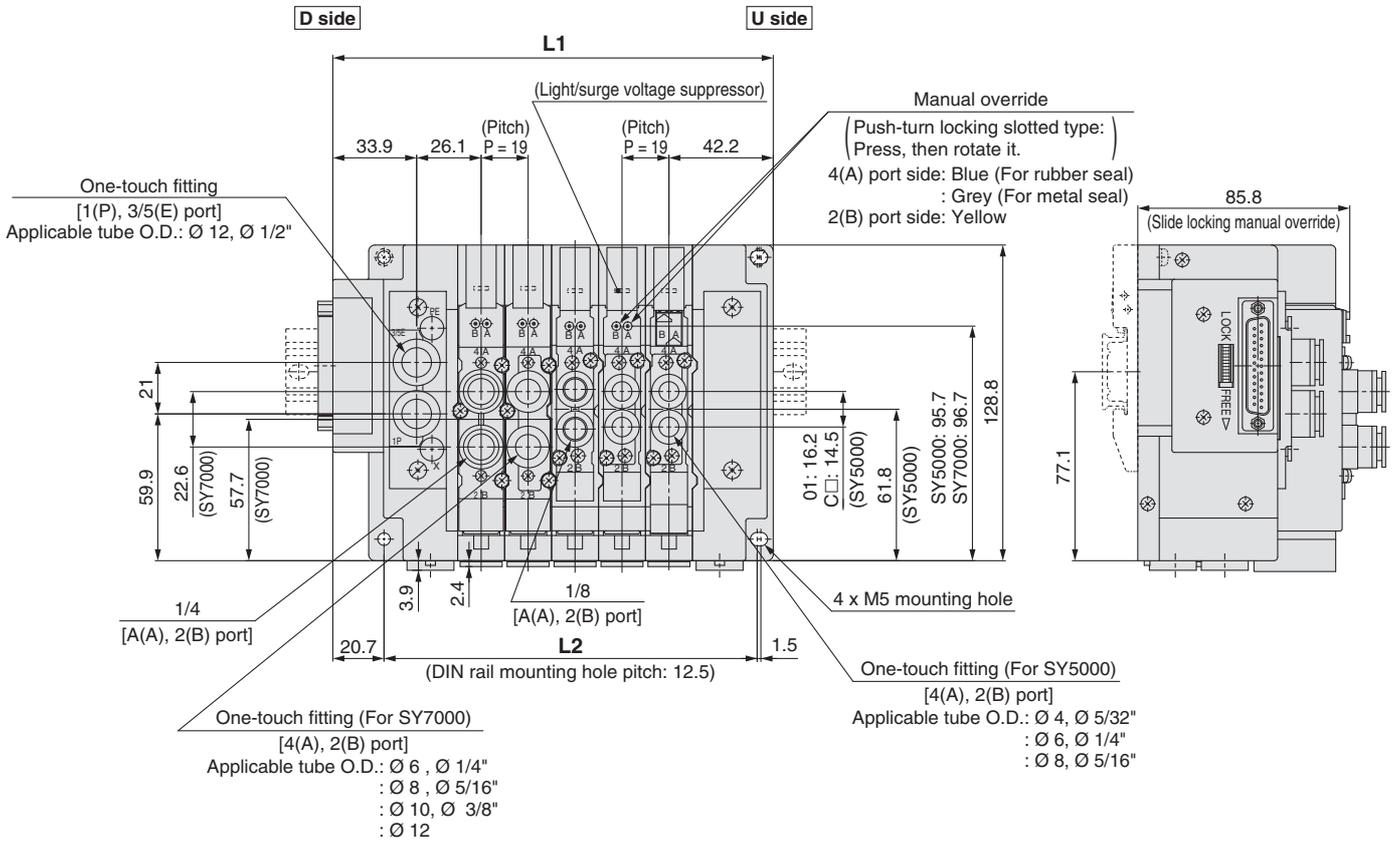
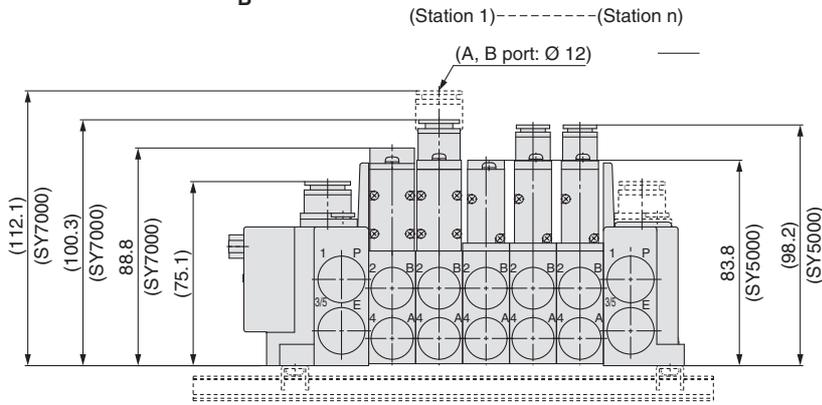
Coefficient	a	b	c
D-sub connector <IP67>	90.5	—	—
Terminal block box or Serial transmission: EX126	149.3	—	—
Lead wire or Circular connector	97	—	—
EX500 Gateway Decentralized System 2 (128 Points)	88.7	—	—
EX500 Gateway Decentralised System (64 Points)	88.5	—	—
Serial transmission: EX600 (M12 connector)	141.5	47	81.5
Serial transmission: EX600 (7/8 inch connector)	158	47	81.5
Serial transmission: EX250	141.5	21	81.5
Serial transmission: EX260	88.7	—	—
Serial transmission: EX120	84.7	—	—

Dimensions: Series **SY7000**

Plug-in  
Connector Connecting Base

Type 12/Top Ported  
Mixed Mounting Type

SS5Y7-M12□ - Stations  $\frac{U}{D}$   
 $\frac{B}{B}$



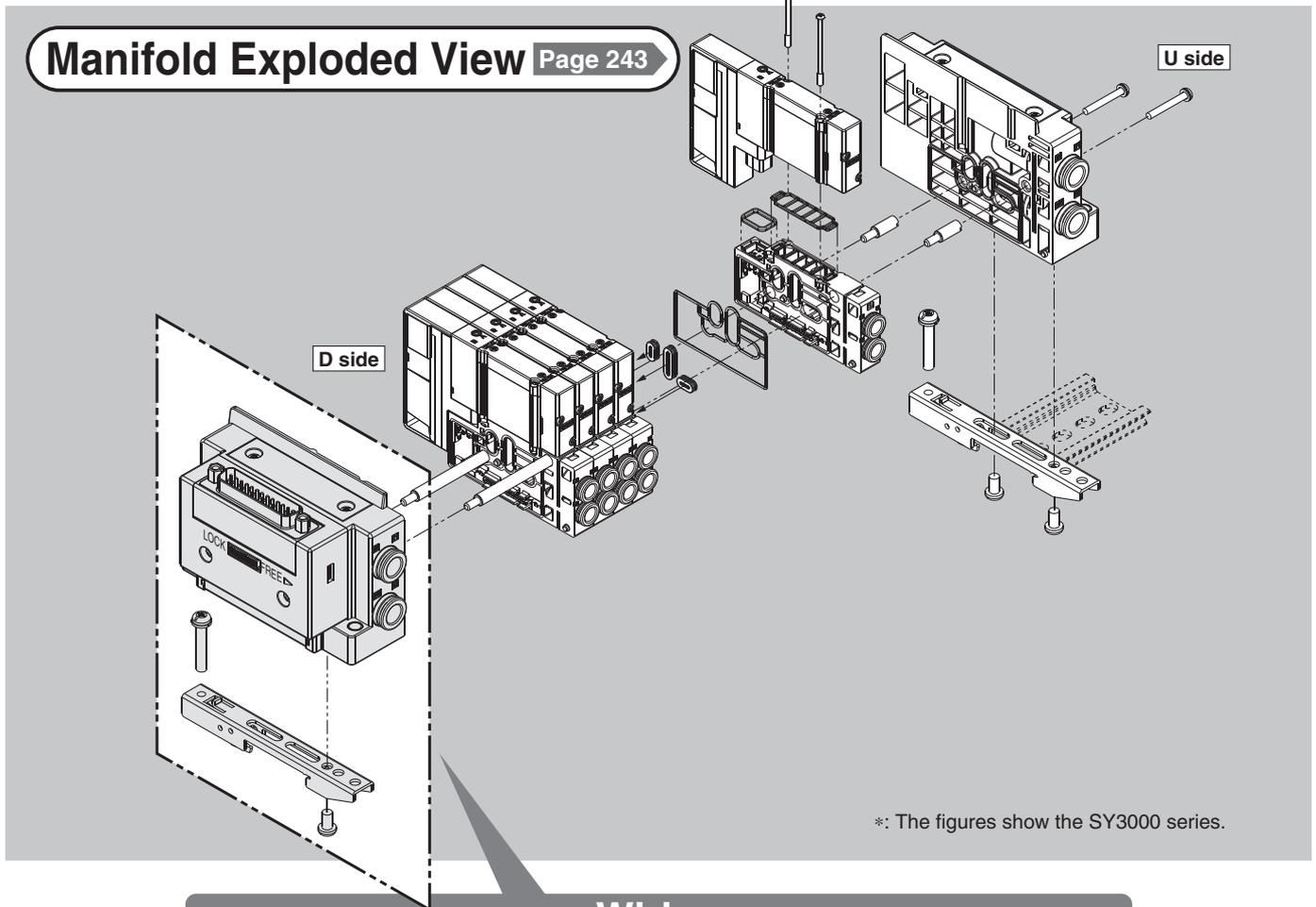
\*: Refer to page 207 for dimensions of external pilot and elbow fittings.

\*: Refer to the below pages for L1, L2, L3, L4 dimensions and other dimensions that are not specified in each wiring specification.

Dimensions of Type 12/Top ported: P. 212

D-sub connector <IP40>	: P. 102
D-sub connector <IP67>	: P. 105
Flat ribbon cable	: P. 108
Terminal block box	: P. 120
Lead wire	: P. 130
Circular connector	: P. 140
EX500 (128 points)	: P. 150
EX500 (64 points)	: P. 156
EX600	: P. 168, 169
EX250	: P. 178
EX260	: P. 186
EX126	: P. 194
EX120	: P. 202

# Series SY3000/5000/7000 Type 10, 11, 12 Connector Connecting Base Manifold Exploded View

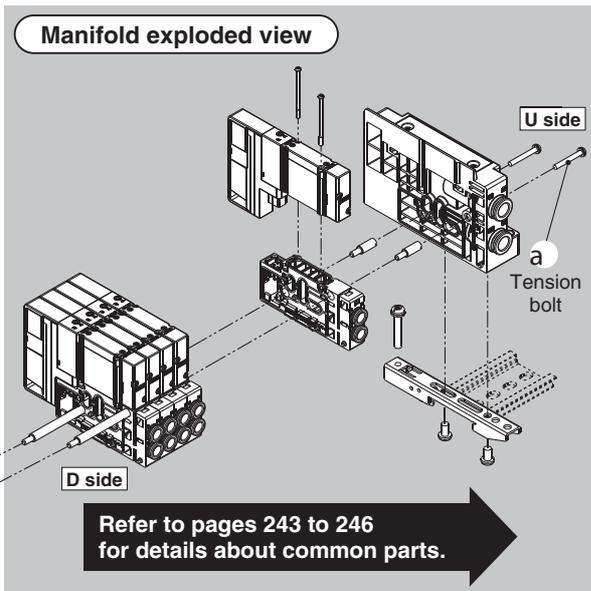
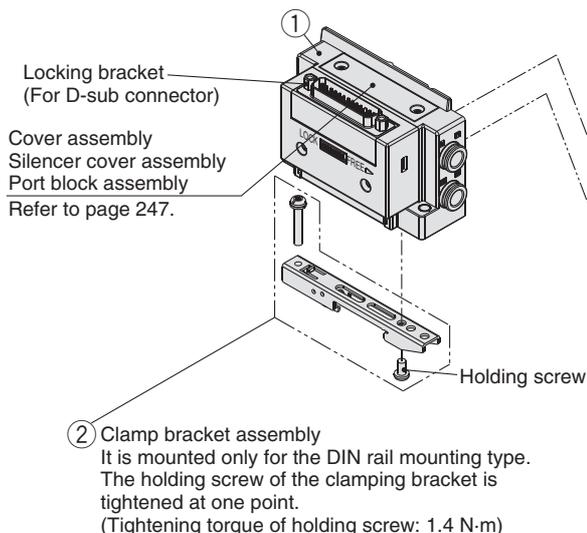


## Wiring

<p><b>D-sub Connector &lt;IP40&gt;/Flat Ribbon Cable</b> <a href="#">Page 230</a></p>	<p><b>D-sub Connector &lt;IP67&gt;</b> <a href="#">Page 231</a></p>	<p><b>Terminal Block Box</b> <a href="#">Page 232</a></p>	<p><b>Lead Wire</b> <a href="#">Page 233</a></p>
<p><b>Circular Connector</b> <a href="#">Page 234</a></p>	<p><b>EX500 Gateway Decentralised System 2 (128 Points)</b> <a href="#">Page 235</a></p>	<p><b>EX500 Gateway Decentralised System (64 Points)</b> <a href="#">Page 236</a></p>	<p><b>EX600</b> <a href="#">Page 237</a></p>
<p><b>EX250</b> <a href="#">Page 239</a></p>	<p><b>EX260</b> <a href="#">Page 240</a></p>	<p><b>EX126</b> <a href="#">Page 241</a></p>	<p><b>EX120</b> <a href="#">Page 242</a></p>

Wiring

**D-sub Connector <IP40>/Flat Ribbon Cable**



**Manifold Parts No.**

① SUP/EXH block assembly

**SY 3 0M-1-11 A 1-C8** • Mounting

• Series

3	SY3000
5	SY5000
7	SY7000

—	Direct mounting
D0	DIN rail mounting (Without DIN rail)

\*: For bottom ported, the symbol is —.

• Connector entry direction

1	Upward
2	Lateral

• Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
—	●	—	—	Side
S	●	—	●	
R	—	●	—	
V	●	—	—	Top
RV	—	●	—	
VP	●	—	●*1	
B	●	—	—	Bottom
BS	●	—	●	
BR	—	●	—	

\*1: For silencer (supply side). E port is plugged.

\*2: "B" for bottom ported can be selected for the SY5000/7000 series.

• P, E port size (One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000	Note	
C8	Ø 8	●	—	—	Side/Bottom/Top ported	
C10	Ø 10	—	●	—	Metric size	
C12	Ø 12	—	—	●	Metric size	
N9	Ø 5/16"	●	—	—	Side/Bottom/Top ported	
N11	Ø 3/8"	—	●	—	Inch size	
N13	Ø 1/2"	—	—	●	Inch size	
L8	Ø 8	●	—	—	Side ported	
L10	Ø 10	—	●	—		Metric size
L12	Ø 12	—	—	●		
LN9	Ø 5/16"	●	—	—	Side ported	
LN11	Ø 3/8"	—	●	—		Inch size
LN13	Ø 1/2"	—	—	●		
B8	Ø 8	●	—	—	Side ported	
B10	Ø 10	—	●	—		Metric size
B12	Ø 12	—	—	●		
BN9	Ø 5/16"	●	—	—	Side ported	
BN11	Ø 3/8"	—	●	—		Inch size
BN13	Ø 1/2"	—	—	●		
00*1	Plug	●	●	●	P/E port entry on one side or Top ported	
00U*2	Plug	●	●	●		

\*1: It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

\*2: "00U" is available only for the D-sub connector type and it has an inch size locking bracket.

• SUP/EXH block assembly

11	D-sub connector <IP40>
12	Flat ribbon cable (26 pins)
13	Flat ribbon cable (20 pins)
14	Flat ribbon cable (10 pins)
15	PC wiring (20 pins)
35	PC wiring (20 pins) with power supply terminal

SUP/EXH block assembly (D side)

accessories and the number of accessories

Accessories	SY3000	SY5000 SY7000
a Tension bolt	None*1	3 pcs.

\*1: Since the nuts are embedded in the SUP/EXH block.

② Clamp bracket assembly

Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

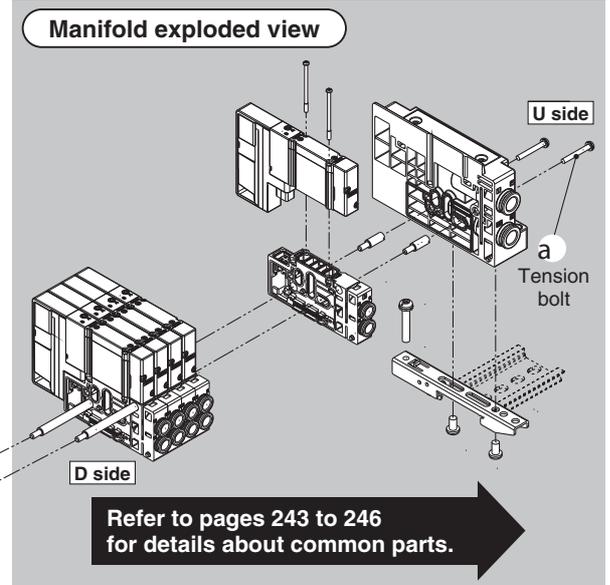
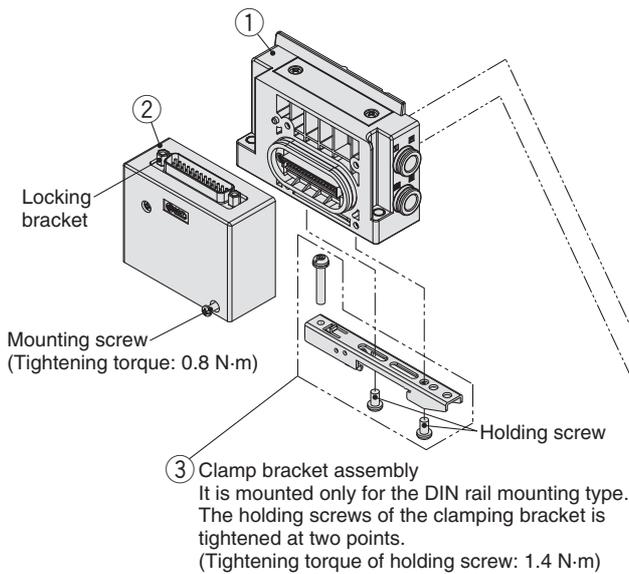
\*: Part number is for one assembly.

Valve  
Plug-in Sub-plate  
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 <IP67>



## Manifold Parts No.

### ① SUP/EXH block assembly

SY 3 0M-1-1A □ - C8 - □ • Mounting

#### • Series

3	SY3000
5	SY5000
7	SY7000

—	Direct mounting
D0	DIN rail mounting (Without DIN rail)

\*: For bottom ported, the symbol is —.

#### • P, E port size (One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000	Note
C8	Ø 8	●	—	—	Side/Bottom/Top ported Metric size
C10	Ø 10	—	●	—	Side/Bottom/Top ported Metric size
C12	Ø 12	—	—	●	Side/Bottom/Top ported Metric size
N9	Ø 5/16"	●	—	—	Side/Bottom/Top ported Inch size
N11	Ø 3/8"	—	●	—	Side/Bottom/Top ported Inch size
N13	Ø 1/2"	—	—	●	Side/Bottom/Top ported Inch size
L8	Ø 8	●	—	—	Side ported Metric size
L10	Ø 10	—	●	—	Side ported Metric size
L12	Ø 12	—	—	●	Side ported Metric size
LN9	Ø 5/16"	●	—	—	Side ported Inch size
LN11	Ø 3/8"	—	●	—	Side ported Inch size
LN13	Ø 1/2"	—	—	●	Side ported Inch size
B8	Ø 8	●	—	—	Side ported Metric size
B10	Ø 10	—	●	—	Side ported Metric size
B12	Ø 12	—	—	●	Side ported Metric size
BN9	Ø 5/16"	●	—	—	Side ported Inch size
BN11	Ø 3/8"	—	●	—	Side ported Inch size
BN13	Ø 1/2"	—	—	●	Side ported Inch size
00*1	Plug	●	●	●	P/E port entry on one side or Top ported
00U*2	Plug	●	●	●	P/E port entry on one side or Top ported

#### • Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
—	●	—	—	Side
S	●	—	●	
R	—	●	—	
V	●	—	—	
RV	—	●	—	Top
VP	●	—	●*1	
B	●	—	—	Bottom
BS	●	—	●	
BR	—	●	—	

\*1: For silencer (supply side). E port is plugged.

\*: "B" for bottom ported can be selected for the SY5000/7000 series.

#### SUP/EXH block assembly (D side)

#### accessories and the number of accessories

Accessories	SY3000	SY5000 SY7000
a Tension bolt	None*1	3 pcs.

\*1: Since the nuts are embedded in the SUP/EXH block.

### ② D-sub connector block assembly <IP67>

Part no.	Connector direction	Locking bracket
SY30M-14-9A1	Top	Metric size
SY30M-14-9A2	Side	
SY30M-14-9A1U	Top	Inch size
SY30M-14-9A2U	Side	

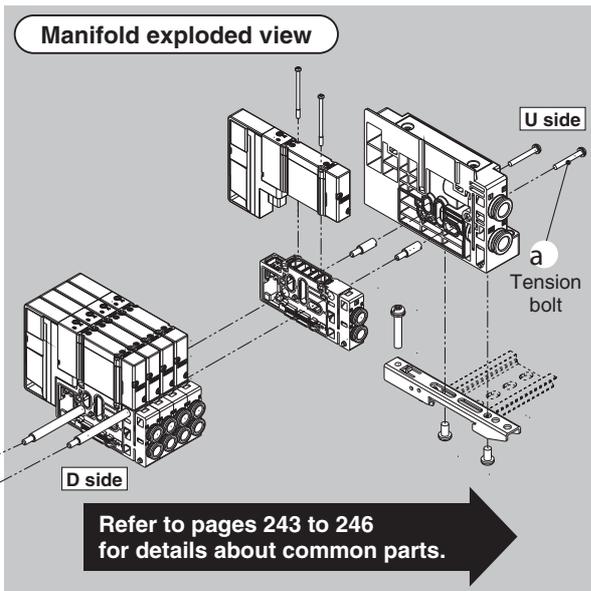
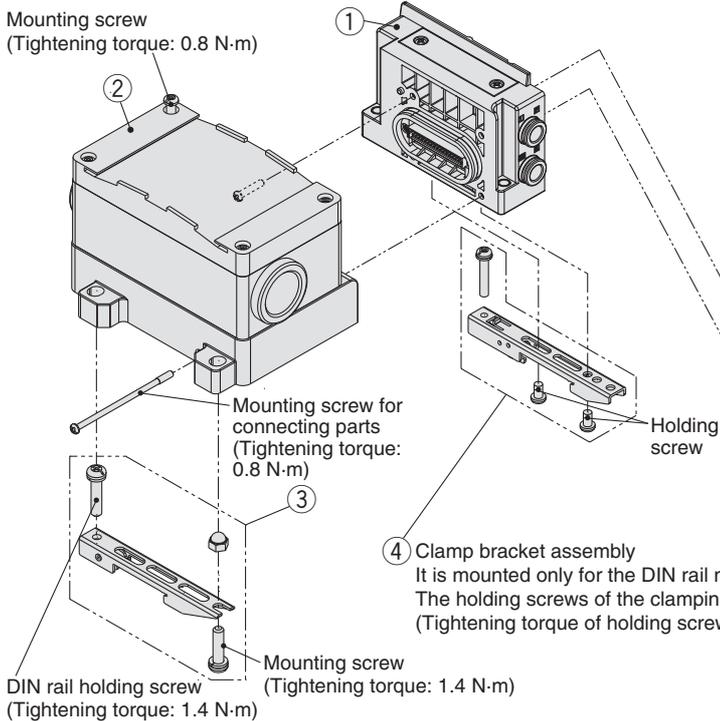
### ③ Clamp bracket assembly

Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

\*: Part number is for one assembly.

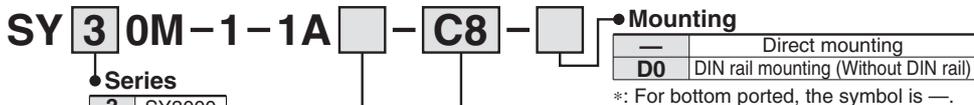
Wiring

**Terminal Block Box**



**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		
—	●	—	—	Side
S	●	—	—	
R	—	●	—	
V	●	—	—	Top
RV	—	●	—	
VP	●	—	●*1	
B	●	—	—	Bottom
BS	●	—	—	
BR	—	●	—	

\*1: For silencer (supply side). E port is plugged.  
\*: "B" for bottom ported can be selected for the SY5000/7000 series.

● P, E port size (One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000	Note
C8	Ø 8	●	—	—	Side/Bottom/Top ported Metric size
C10	Ø 10	—	●	—	
C12	Ø 12	—	—	●	
N9	Ø 5/16"	●	—	—	Side/Bottom/Top ported Inch size
N11	Ø 3/8"	—	●	—	
N13	Ø 1/2"	—	—	●	
L8	Upward elbow Ø 8	●	—	—	Side ported Metric size
L10		—	●	—	
L12		—	—	●	
LN9	Upward elbow Ø 5/16"	●	—	—	Side ported Inch size
LN11		—	●	—	
LN13		—	—	●	
B8	Downward elbow Ø 8	●	—	—	Side ported Metric size
B10		—	●	—	
B12		—	—	●	
BN9	Downward elbow Ø 5/16"	●	—	—	Side ported Inch size
BN11		—	●	—	
BN13		—	—	●	
00*1	Plug	●	●	●	P/E port entry on one side or Top ported

\*1: It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

SUP/EXH block assembly (D side) accessories and the number of accessories

Accessories	SY3000	SY5000 SY7000
a Tension bolt	None*1	3 pcs.

\*1: Since the nuts are embedded in the SUP/EXH block.

② Terminal block box housing assembly

**VVQC1000-T0-1**

③ Clamp bracket assembly for terminal block box

**SY30M-15-4A**

\*: Part number is for one assembly.

④ Clamp bracket assembly

Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

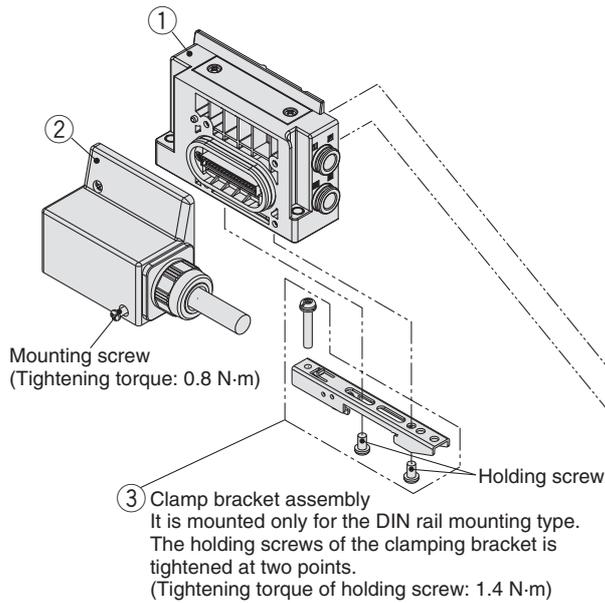
\*: Part number is for one assembly.

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

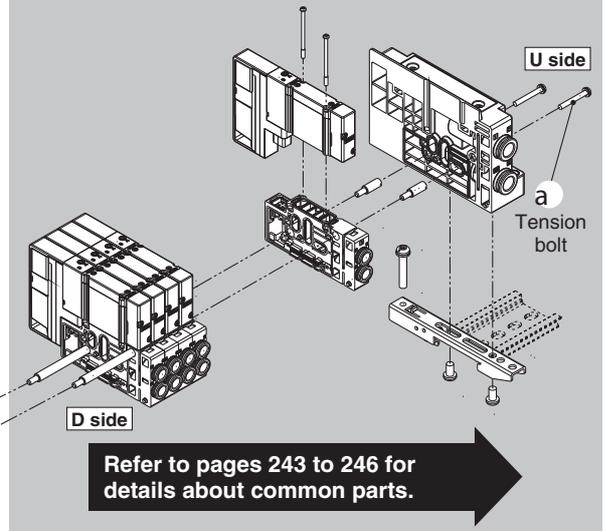
# Series SY3000/5000/7000

## Wiring

### Lead Wire



### Manifold exploded view



## Manifold Parts No.

### ① SUP/EXH block assembly

SY 3 0M-1-1A - C8 - Mounting

#### Series

3	SY3000
5	SY5000
7	SY7000

—	Direct mounting
D0	DIN rail mounting (Without DIN rail)

\*: For bottom ported, the symbol is —.

#### Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
—	●	—	—	Side
S	●	—	●	
R	—	●	—	
V	●	—	—	
RV	—	●	—	Top
VP	●	—	● <sup>*1</sup>	
B	●	—	—	Bottom
BS	●	—	●	
BR	—	●	—	

\*1: For silencer (supply side). E port is plugged.

\*: "B" for bottom ported can be selected for the SY5000/7000 series.

#### P, E port size (One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000	Note	
C8	∅ 8	●	—	—	Side/Bottom/ Top ported Metric size	
C10	∅ 10	—	●	—		
C12	∅ 12	—	—	●		
N9	∅ 5/16"	●	—	—	Side/Bottom/ Top ported Inch size	
N11	∅ 3/8"	—	●	—		
N13	∅ 1/2"	—	—	●		
L8	Upward elbow ∅ 8	●	—	—	Side ported Metric size	
		L10	∅ 10	—		●
		L12	∅ 12	—		●
LN9	Upward elbow ∅ 5/16"	●	—	—	Side ported Inch size	
		LN11	∅ 3/8"	—		●
		LN13	∅ 1/2"	—		●
B8	Downward elbow ∅ 8	●	—	—	Side ported Metric size	
		B10	∅ 10	—		●
		B12	∅ 12	—		●
BN9	Downward elbow ∅ 5/16"	●	—	—	Side ported Inch size	
		BN11	∅ 3/8"	—		●
		BN13	∅ 1/2"	—		●
00 <sup>*1</sup>	Plug	●	●	●	P/E port entry on one side or Top ported	

\*1: It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

### SUP/EXH block assembly (D side) accessories and the number of accessories

Accessories	SY3000	SY5000 SY7000
a Tension bolt	None <sup>*1</sup>	3 pcs.

\*1: Since the nuts are embedded in the SUP/EXH block.

### ② Lead wire connector block assembly

SY30M-14-4A - -

#### Number of cores

1	34
2	17
3	9

#### Lead wire length [m]

1	0.6
2	1.5
3	3

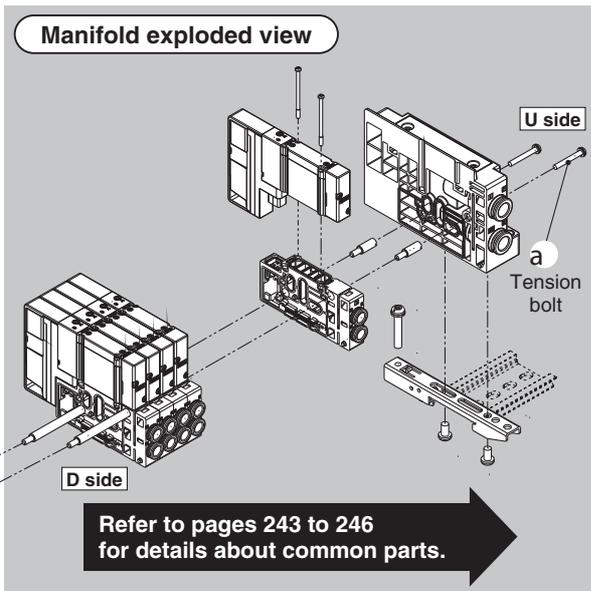
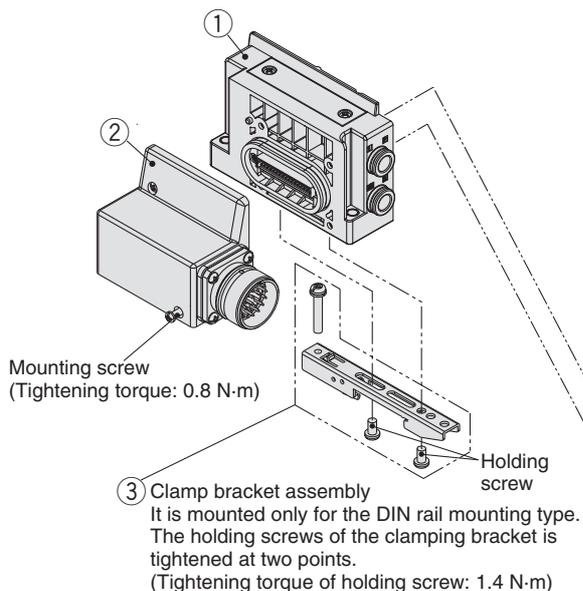
### ③ Clamp bracket assembly

Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

\*: Part number is for one assembly.

Wiring

**Circular Connector**



**Manifold Parts No.**

① SUP/EXH block assembly

**SY 3 0M-1-1A** — **C8** — **Mounting**

● Series

3	SY3000
5	SY5000
7	SY7000

● Mounting

—	Direct mounting
D0	DIN rail mounting (Without DIN rail)

\*: For bottom ported, the symbol is —.

● Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
—	●	—	—	Side
S	●	—	●	
R	—	●	—	
V	●	—	—	
RV	—	●	—	Top
VP	●	—	●*1	
B	●	—	—	
BS	●	—	●	Bottom
BR	—	●	—	

\*1: For silencer (supply side). E port is plugged.  
 \*: "B" for bottom ported can be selected for the SY5000/7000 series.

● P, E port size (One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000	Note
C8	Ø 8	●	—	—	Side/Bottom/Top ported Metric size
C10	Ø 10	—	●	—	
C12	Ø 12	—	—	●	
N9	Ø 5/16"	●	—	—	Side/Bottom/Top ported Inch size
N11	Ø 3/8"	—	●	—	
N13	Ø 1/2"	—	—	●	
L8	Upward elbow Ø 8	●	—	—	Side ported Metric size
L10		Ø 10	—	●	
L12		Ø 12	—	—	
LN9	Upward elbow Ø 5/16"	●	—	—	Side ported Inch size
LN11		Ø 3/8"	—	●	
LN13		Ø 1/2"	—	—	
B8	Downward elbow Ø 8	●	—	—	Side ported Metric size
B10		Ø 10	—	●	
B12		Ø 12	—	—	
BN9	Downward elbow Ø 5/16"	●	—	—	Side ported Inch size
BN11		Ø 3/8"	—	●	
BN13		Ø 1/2"	—	—	
00*1	Plug	●	●	●	P/E port entry on one side or Top ported

\*1: It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

SUP/EXH block assembly (D side) accessories and the number of accessories

Accessories	SY3000	SY5000 SY7000
a Tension bolt	None*1	3 pcs.

\*1: Since the nuts are embedded in the SUP/EXH block.

② Circular connector block assembly

**SY30M-14-5A**

\*: 26 pins

③ Clamp bracket assembly

Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

\*: Part number is for one assembly.

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

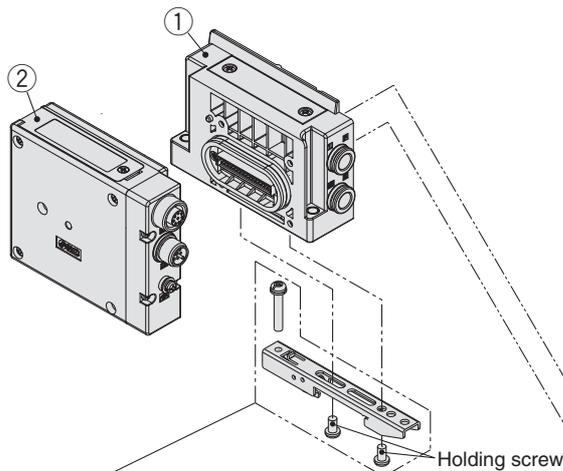
One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

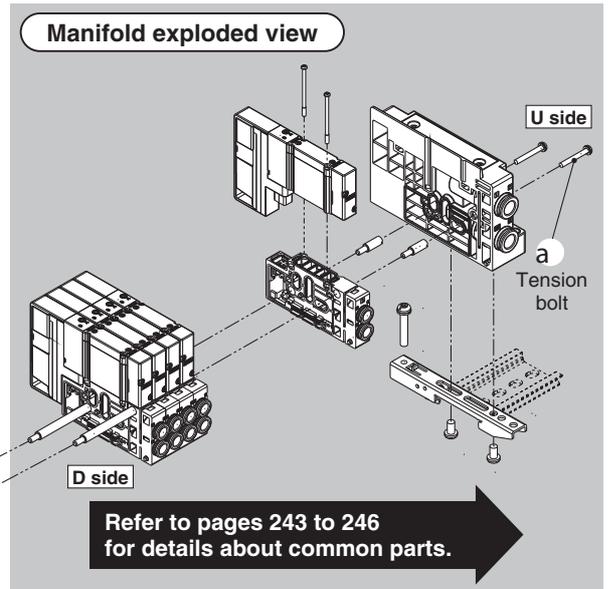
# Series SY3000/5000/7000

## Wiring

### EX500: Gateway Decentralised System 2 (128 Points)



③ Clamp bracket assembly  
It is mounted only for the DIN rail mounting type.  
The holding screws of the clamping bracket is tightened at two points.  
(Tightening torque of holding screw: 1.4 N·m)



## Manifold Parts No.

### ① SUP/EXH block assembly

SY **3** 0M-1-1A **C8** - **Mounting**

#### Series

3	SY3000
5	SY5000
7	SY7000

—	Direct mounting
D0	DIN rail mounting (Without DIN rail)

\*: For bottom ported, the symbol is —.

#### Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
—	●	—	—	Side
S	●	—	●	
R	—	●	—	
V	●	—	—	
RV	—	●	—	Top
VP	●	—	●*1	
B	●	—	—	Bottom
BS	●	—	●	
BR	—	●	—	

\*1: For silencer (supply side). E port is plugged.

\*: "B" for bottom ported can be selected for the SY5000/7000 series.

#### P, E port size (One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000	Note	
C8	Ø 8	●	—	—	Side/Bottom/ Top ported Metric size	
C10	Ø 10	—	●	—		
C12	Ø 12	—	—	●		
N9	Ø 5/16"	●	—	—	Side/Bottom/ Top ported Inch size	
N11	Ø 3/8"	—	●	—		
N13	Ø 1/2"	—	—	●		
L8	Upward elbow Ø 8	●	—	—	Side ported Metric size	
		L10	—	●		—
		L12	—	—		●
LN9	Upward elbow Ø 5/16"	●	—	—	Side ported Inch size	
		LN11	—	●		—
		LN13	—	—		●
B8	Downward elbow Ø 8	●	—	—	Side ported Metric size	
		B10	—	●		—
		B12	—	—		●
BN9	Downward elbow Ø 5/16"	●	—	—	Side ported Inch size	
		BN11	—	●		—
		BN13	—	—		●
00*1	Plug	●	●	●	P/E port entry on one side or Top ported	

\*1: It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

#### SUP/EXH block assembly (D side)

#### accessories and the number of accessories

Accessories	SY3000	SY5000 SY7000
a Tension bolt	None*1	3 pcs.

\*1: Since the nuts are embedded in the SUP/EXH block.

### ② EX500 SI Unit

**EX500-S103**

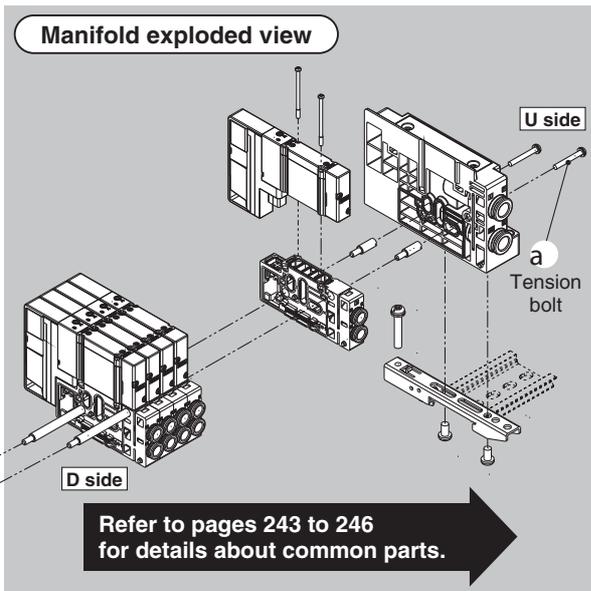
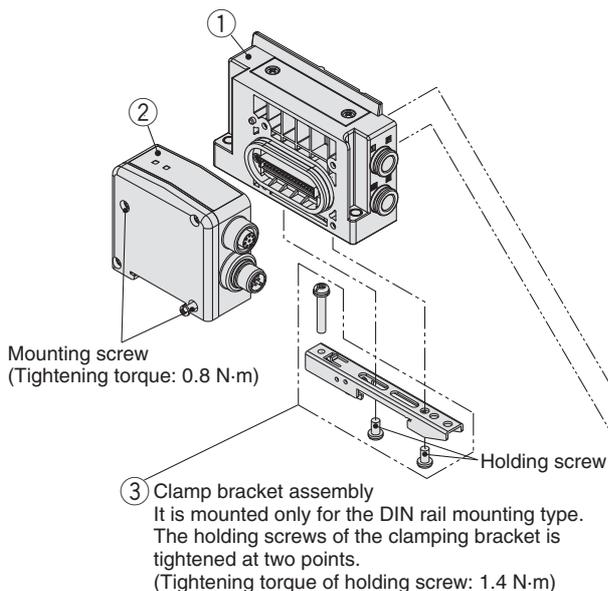
### ③ Clamp bracket assembly

Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

\*: Part number is for one assembly.

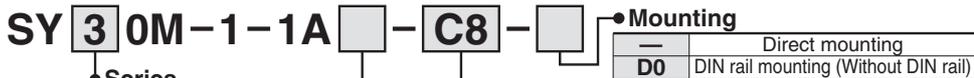
Wiring

**EX500: Gateway Decentralised System (64 Points)**



**Manifold Parts No.**

① SUP/EXH block assembly



• Series

3	SY3000
5	SY5000
7	SY7000

• Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
—	●	—	—	Side
<b>S</b>	●	—	●	
<b>R</b>	—	●	—	
<b>V</b>	●	—	—	
<b>RV</b>	—	●	—	Top
<b>VP</b>	●	—	●*1	
<b>B</b>	●	—	—	Bottom
<b>BS</b>	●	—	●	
<b>BR</b>	—	●	—	

\*1: For silencer (supply side). E port is plugged.  
\*: "B" for bottom ported can be selected for the SY5000/7000 series.

• P, E port size (One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000	Note
<b>C8</b>	∅ 8	●	—	—	Side/Bottom/Top ported Metric size
<b>C10</b>	∅ 10	—	●	—	
<b>C12</b>	∅ 12	—	—	●	
<b>N9</b>	∅ 5/16"	●	—	—	Side/Bottom/Top ported Inch size
<b>N11</b>	∅ 3/8"	—	●	—	
<b>N13</b>	∅ 1/2"	—	—	●	
<b>L8</b>	∅ 8	●	—	—	Side ported Metric size
<b>L10</b>	∅ 10	—	●	—	
<b>L12</b>	∅ 12	—	—	●	
<b>LN9</b>	∅ 5/16"	●	—	—	Side ported Inch size
<b>LN11</b>	∅ 3/8"	—	●	—	
<b>LN13</b>	∅ 1/2"	—	—	●	
<b>B8</b>	∅ 8	●	—	—	Side ported Metric size
<b>B10</b>	∅ 10	—	●	—	
<b>B12</b>	∅ 12	—	—	●	
<b>BN9</b>	∅ 5/16"	●	—	—	Side ported Inch size
<b>BN11</b>	∅ 3/8"	—	●	—	
<b>BN13</b>	∅ 1/2"	—	—	●	
<b>00</b> *1	Plug	●	●	●	P/E port entry on one side or Top ported

\*1: It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

SUP/EXH block assembly (D side) accessories and the number of accessories

Accessories	SY3000	SY5000 SY7000
a Tension bolt	None*1	3 pcs.

\*1: Since the nuts are embedded in the SUP/EXH block.

② EX500 SI Unit

**EX500-Q 0 01**

• Output specifications

0	NPN (Positive common)
1	PNP (Negative common)

③ Clamp bracket assembly

Series	Part no.
<b>SY3000</b>	SY30M-15-1A
<b>SY5000/7000</b>	SY50M-15-1A

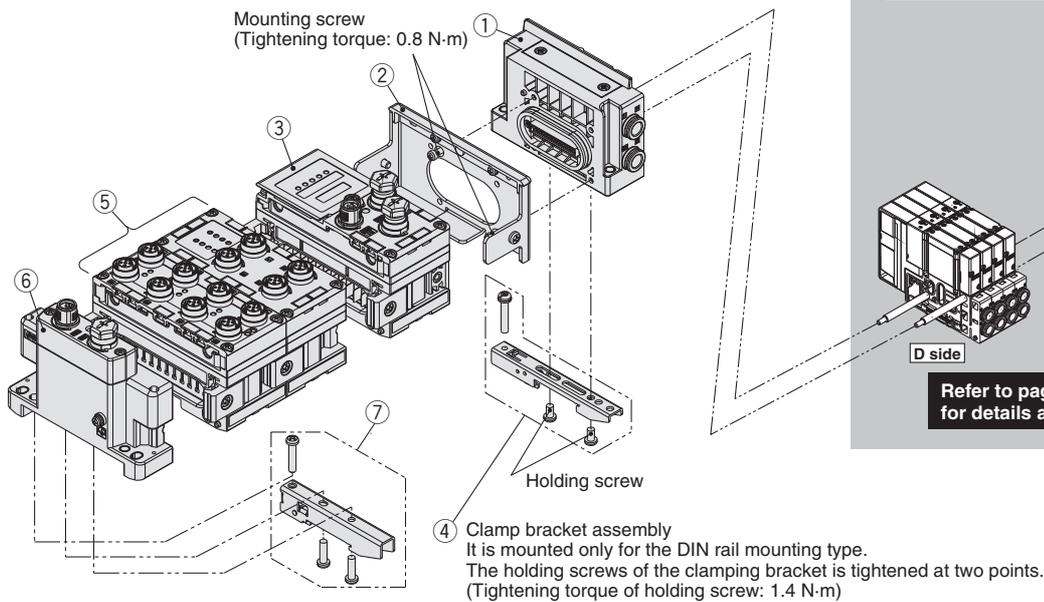
\*: Part number is for one assembly.

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

## Wiring

### EX600



## Manifold Parts No.

### ① SUP/EXH block assembly

SY 3 0M-1-1A

#### Series

3	SY3000
5	SY5000
7	SY7000

C8

#### Mounting

—	Direct mounting
D0	DIN rail mounting (Without DIN rail)

\*: For bottom ported, the symbol is —.

#### Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
—	●	—	—	Side
S	●	—	●	
R	—	●	—	
V	●	—	—	
RV	—	●	—	Top
VP	●	—	●*1	
B	●	—	—	
BS	●	—	●	Bottom
BR	—	●	—	

\*1: For silencer (supply side). E port is plugged.

\*: "B" for bottom ported can be selected for the SY5000/7000 series.

\*1: It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

#### P, E port size (One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000	Note	
C8	∅ 8	●	—	—	Side/Bottom/ Top ported Metric size	
C10	∅ 10	—	●	—		
C12	∅ 12	—	—	●		
N9	∅ 5/16"	●	—	—	Side/Bottom/ Top ported Inch size	
N11	∅ 3/8"	—	●	—		
N13	∅ 1/2"	—	—	●		
L8	Upward elbow ∅ 8	●	—	—	Side ported Metric size	
		L10	∅ 10	—		●
		L12	∅ 12	—		—
LN9	Upward elbow ∅ 5/16"	●	—	—	Side ported Inch size	
		LN11	∅ 3/8"	—		●
		LN13	∅ 1/2"	—		—
B8	Downward elbow ∅ 8	●	—	—	Side ported Metric size	
		B10	∅ 10	—		●
		B12	∅ 12	—		—
BN9	Downward elbow ∅ 5/16"	●	—	—	Side ported Inch size	
		BN11	∅ 3/8"	—		●
		BN13	∅ 1/2"	—		—
00*1	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
a Tension bolt	None*1	3 pcs.

\*1: 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™*1
EC	EtherCAT®*1
PN	PROFINET*1

\*1: Cannot be communicated with the EX600-HT1-□.

#### Version

Symbol	Description
—	When MJ, EN, EC or PN is selected
A	When PR or DN is selected

#### Output type

Symbol	Description	Condition
1	PNP (Negative common)	Can be selected by all protocols.
2	NPN (Positive common)	Can be selected by all protocols.
3	PNP (Negative common) EtherNet/IP (2 ports)	Can be selected in the case of EN.
4	NPN (Positive common) EtherNet/IP (2 ports)	Can be selected in the case of EN.

### ③ EX600 SI Unit (Wireless compatible)

EX600-W EN 1

#### Protocol

Symbol	SI Unit type	Description
EN	Wireless base unit	EtherNet/IP™*1
PN	Wireless base unit	PROFINET*1
SV	Wireless remote unit	—*1, *2

\*1: Cannot be communicated with the EX600-HT1-□.

\*2: The wireless system is suitable for use only in a country where it is in accordance with the Radio Act and regulations of that country.

**Manifold Parts No.**

⑤ EX600 Digital Input Unit

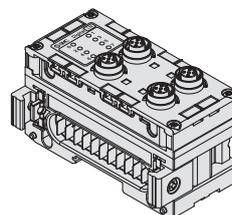
**EX600-DX** **P** **B**

**Input type**

Symbol	Description
<b>P</b>	PNP
<b>N</b>	NPN

**Number of inputs, open circuit detection, and connector**

Symbol	Number of inputs	Open circuit detection	Connector
<b>B</b>	8	No	M12 connector (5 pins) 4 pcs.
<b>C</b>	8	No	M8 connector (3 pins) 8 pcs.
<b>C1</b>	8	Yes	M8 connector (3 pins) 8 pcs.
<b>D</b>	16	No	M12 connector (5 pins) 8 pcs.
<b>E</b>	16	No	D-sub connector (25 pins) <sup>*1*2</sup>
<b>F</b>	16	No	Spring type terminal block (32 pins) <sup>*1*2</sup>



⑤ EX600 Digital Output Unit

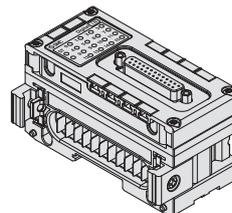
**EX600-DY** **P** **B**

**Output type**

Symbol	Description
<b>P</b>	PNP
<b>N</b>	NPN

**Number of outputs and connector**

Symbol	Number of outputs	Connector
<b>B</b>	8	M12 connector (5 pins) 4 pcs.
<b>E</b>	16	D-sub connector (25 pins) <sup>*1*2</sup>
<b>F</b>	16	Spring type terminal block (32 pins) <sup>*1*2</sup>



⑤ EX600 Digital Input/Output Unit

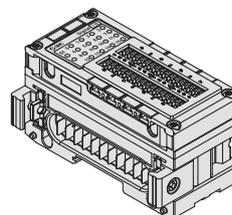
**EX600-DM** **P** **E**

**Input/Output type**

Symbol	Description
<b>P</b>	PNP
<b>N</b>	NPN

**Number of inputs/outputs and connector**

Symbol	Number of inputs	Number of outputs	Connector
<b>E</b>	8	8	D-sub connector (25 pins) <sup>*1*2</sup>
<b>F</b>	8	8	Spring type terminal block (32 pins) <sup>*1*2</sup>



⑤ EX600 Analog Input/Output Unit

**EX600-AX** **A**

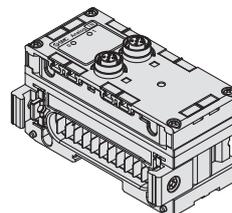
**Analog input/output**

Symbol	Description
<b>AX</b>	Analog input
<b>AY</b>	Analog output

**Number of input channels and connector**

Symbol	Number of input channels	Connector
<b>A</b>	2 channels	M12 connector (5 pins) 2 pcs. <sup>*3</sup>

\*3: Refer to \*1 and \*2 below for AY.



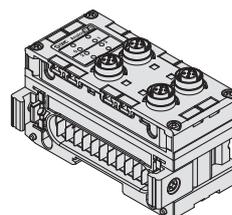
⑤ EX600 Analog Input/Output Unit

**EX600-AM** **B**

Analog input/output

**Number of input/output channels and connector**

Symbol	Number of input channels	Number of output channels	Connector
<b>B</b>	2 channels	2 channels	M12 connector (5 pins) 4 pcs. <sup>*1*2</sup>



⑥ EX600 end plate

**EX600-ED** **2** - **□**

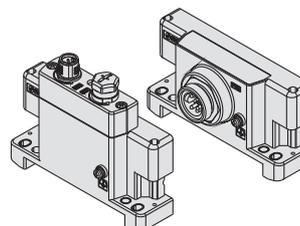
**Power connector**

Symbol	Connector
<b>2</b>	M12 (5 pins)
<b>3</b>	7/8 inch (5 pins)
<b>4</b>	M12 (4 pins/5 pins)
<b>5</b>	M12 (4 pins/5 pins)

**Mounting**

Symbol	Description
<b>—</b>	Without DIN rail mounting bracket
<b>3</b>	With DIN rail mounting bracket

\*: The pin layout for "4" and "5" pin connector is different.



⑦ Clamp bracket for EX600

**EX600-ZMA3**



**Enclosed parts**

Round head screw with washer (M4 x 20) 1 pc.  
P-tight screw (4 x 14) 2 pcs.

\*1: Cannot be communicated with the EX600-HT1-□ (Old version of the Handheld Terminal).

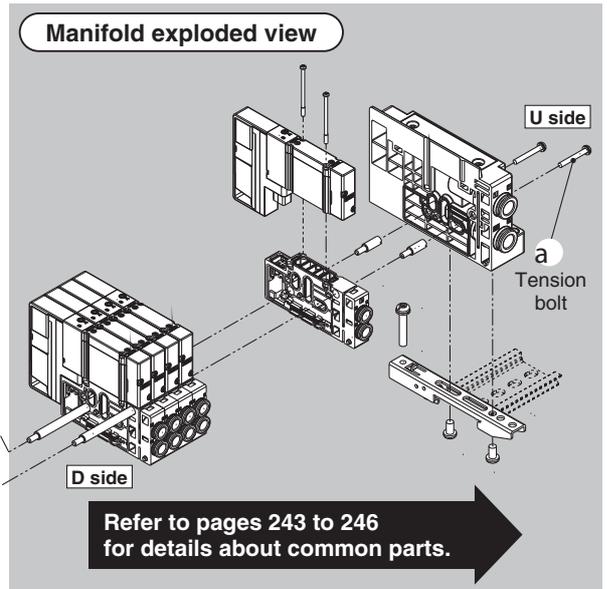
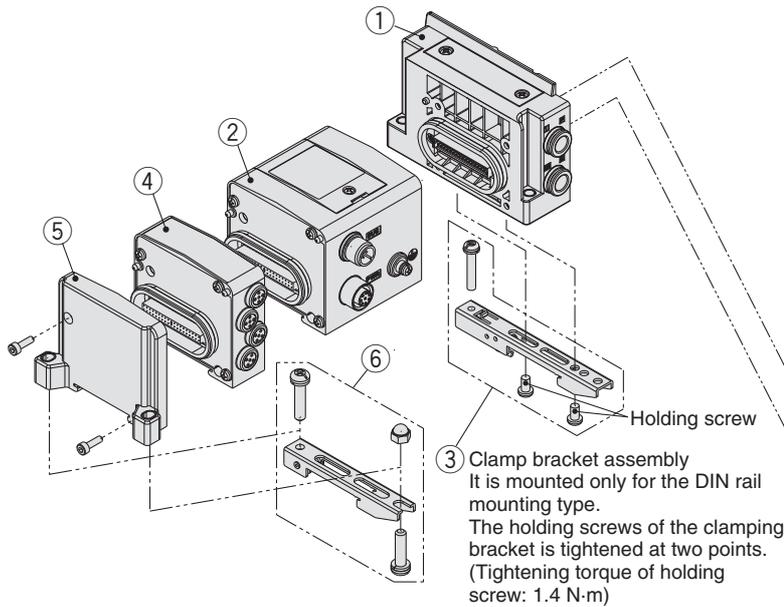
\*2: Cannot be connected with the EX600-SPR1, EX600-SPR2, EX600-SDN1, or EX600-SDN2.

Valve  
Plug-in Sub-plate  
Metal Base  
Plug-in  
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

### EX250



## Manifold Parts No.

### ① SUP/EXH block assembly

SY **3** 0M-1-1A **C8** - **Mounting**

#### ● Series

3	SY3000
5	SY5000
7	SY7000

—	Direct mounting
D0	DIN rail mounting (Without DIN rail)

\*: For bottom ported, the symbol is —.

#### ● Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
—	●	—	—	Side
S	●	—	●	
R	—	●	—	
V	●	—	—	Top
RV	—	●	—	
VP	●	—	●*1	
B	●	—	—	Bottom
BS	●	—	●	
BR	—	●	—	

\*1: For silencer (supply side). E port is plugged.

\*: "B" for bottom ported can be selected for the SY5000/7000 series.

#### ● P, E port size (One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000	Note
C8	∅ 8	●	—	—	Side/Bottom/Top ported
C10	∅ 10	—	●	—	Metric size
C12	∅ 12	—	—	●	Metric size
N9	∅ 5/16"	●	—	—	Side/Bottom/Top ported
N11	∅ 3/8"	—	●	—	Inch size
N13	∅ 1/2"	—	—	●	Inch size
L8	Upward elbow ∅ 8	●	—	—	Side ported
L10		—	●	—	
L12		—	—	●	
LN9	Downward elbow ∅ 5/16"	●	—	—	Side ported
LN11		—	●	—	
LN13		—	—	●	
B8	∅ 8	●	—	—	Side ported
B10		—	●	—	
B12		—	—	●	
BN9	∅ 5/16"	●	—	—	Side ported
BN11		—	●	—	
BN13		—	—	●	
00*1	Plug	●	●	●	P/E port entry on one side or Top ported

\*1: It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

### SUP/EXH block assembly (D side) accessories and the number of accessories

Accessories	SY3000	SY5000 SY7000
a Tension bolt	None*1	3 pcs.

\*1: Since the nuts are embedded in the SUP/EXH block.

### ② EX250 SI Unit

EX250-S **DN1**

#### ● Communication protocol

DN1	DeviceNet™ (Negative common)
PR1	PROFIBUS DP (Negative common)
MJ2	CC-Link (Positive common)
AS3	AS-Interface (8 in/8 out, 31 slave modes, 2 isolated common type) (Negative common)
AS5	AS-Interface (4 in/4 out, 31 slave modes, 2 isolated common type) (Negative common)
AS7	AS-Interface (8 in/8 out, 31 slave modes, 1 common type) (Negative common)
AS9	AS-Interface (4 in/4 out, 31 slave modes, 1 common type) (Negative common)
CA1A	CANopen (Negative common)
EN1	EtherNet/IP™ (Negative common)

### ③ Clamp bracket assembly

Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

\*: Part number is for one assembly.

### ④ Input block

EX250-IE **1**

#### ● Block type

1	M12 connector, 2 inputs
2	M12 connector, 4 inputs
3	M8 connector, 4 inputs

### ⑤ EX250 end plate assembly

EX250-EA1

\*: With mounting screws (2 pcs. of M3 x 10)

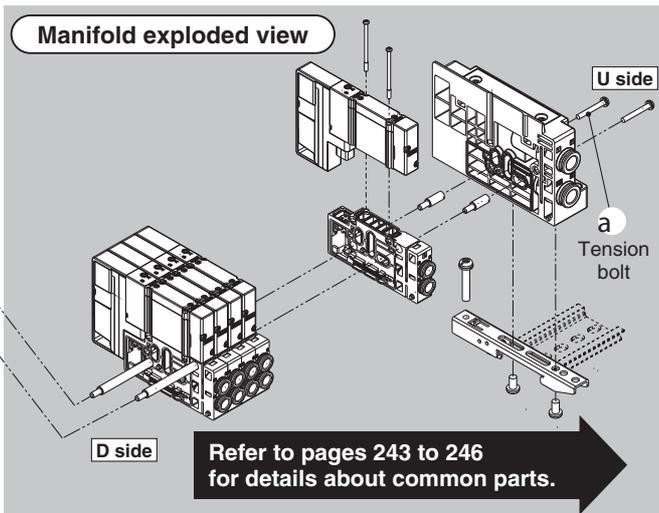
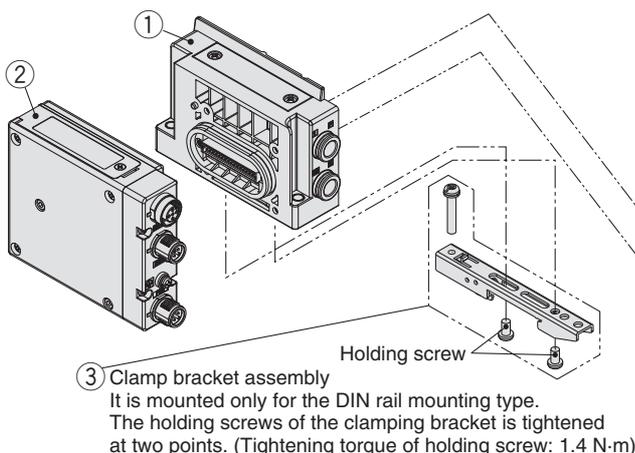
### ⑥ Clamp bracket assembly for EX250 SI Unit

SY30M-15-3A

\*: Part number is for one assembly.

Wiring

EX260



Manifold Parts No.

① SUP/EXH block assembly

SY 3 0M-1-1A - C8 -

Series

3	SY3000
5	SY5000
7	SY7000

Mounting

—	Direct mounting
D0	DIN rail mounting (Without DIN rail)

\*: For bottom ported, the symbol is —.

Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
—	●	—	—	Side
S	●	—	●	
R	—	●	—	
V	●	—	—	Top
RV	—	●	—	
VP	●	—	●*1	
B	●	—	—	Bottom
BS	●	—	●	
BR	—	●	—	

P, E port size (One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000	Note
C8	Ø 8	●	—	—	Side/Bottom/Top ported Metric size
C10	Ø 10	—	●	—	
C12	Ø 12	—	—	●	
N9	Ø 5/16"	●	—	—	Side/Bottom/Top ported Inch size
N11	Ø 3/8"	—	●	—	
N13	Ø 1/2"	—	—	●	
L8	Upward elbow Ø 8	●	—	—	Side ported Metric size
L10		Ø 10	—	●	
L12		Ø 12	—	—	
LN9	Downward elbow Ø 5/16"	●	—	—	Side ported Inch size
LN11		Ø 3/8"	—	●	
LN13		Ø 1/2"	—	—	
B8	Upward elbow Ø 8	●	—	—	Side ported Metric size
B10		Ø 10	—	●	
B12		Ø 12	—	—	
BN9	Downward elbow Ø 5/16"	●	—	—	Side ported Inch size
BN11		Ø 3/8"	—	●	
BN13		Ø 1/2"	—	—	
00*1	Plug	●	●	●	P/E port entry on one side or Top ported

SUP/EXH block assembly (D side) accessories and the number of accessories

Accessories	SY3000	SY5000/7000
a Tension bolt	None*1	3 pcs.

\*1: Since the nuts are embedded in the SUP/EXH block.

\*1: For silencer (supply side). E port is plugged.  
\*2: "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)		QA	EC2			Sink/NPN (Positive common)		DA	
DN3			Source/PNP (Negative common)		QBN	EC3			Source/PNP (Negative common)		DBN	
DN4			Sink/NPN (Positive common)		QB	EC4			Sink/NPN (Positive common)		DB	
PR1	PROFIBUS DP	32	Source/PNP (Negative common)	M12	NAN	PN1	PROFINET	32	Source/PNP (Negative common)	M12	FAN	
PR2			Sink/NPN (Positive common)		NA	PN2			Sink/NPN (Positive common)		FA	
PR3			Source/PNP (Negative common)		NBN	PN3			Source/PNP (Negative common)		FBN	
PR4			Sink/NPN (Positive common)		NB	PN4			Sink/NPN (Positive common)		FB	
PR5		Source/PNP (Negative common)	16	D-sub*1	NCN	EN1	EtherNet/IP™	32	Source/PNP (Negative common)	M12	EAN	
PR6		Sink/NPN (Positive common)			NC	EN2			Sink/NPN (Positive common)		EA	
PR7		Source/PNP (Negative common)			NDN	EN3			Source/PNP (Negative common)		EBN	
PR8		Sink/NPN (Positive common)			ND	EN4			Sink/NPN (Positive common)		EB	
MJ1	CC-Link	32	Source/PNP (Negative common)	M12	VAN	PL1	EtherNet POWERLINK	32	Source/PNP (Negative common)	M12	GAN	
MJ2			Sink/NPN (Positive common)		VA	PL3					16	GBN
MJ3			Source/PNP (Negative common)		VBN							
MJ4			Sink/NPN (Positive common)		VB							

\*1: Enclosure is IP40 when the communication connector is D-sub.

③ Clamp bracket assembly

Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

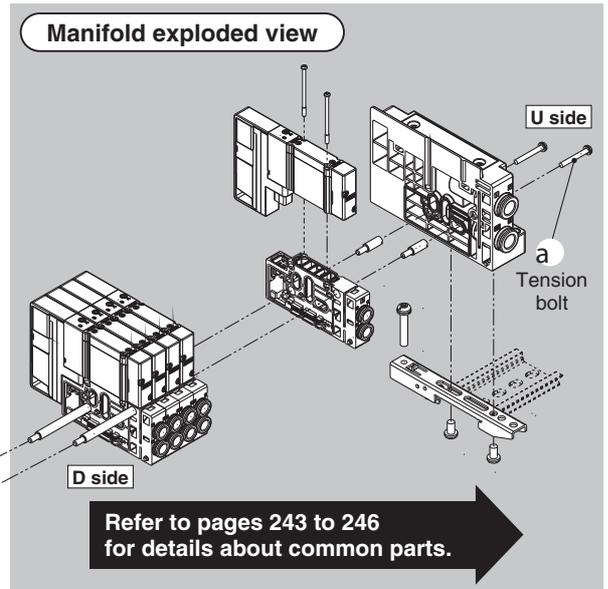
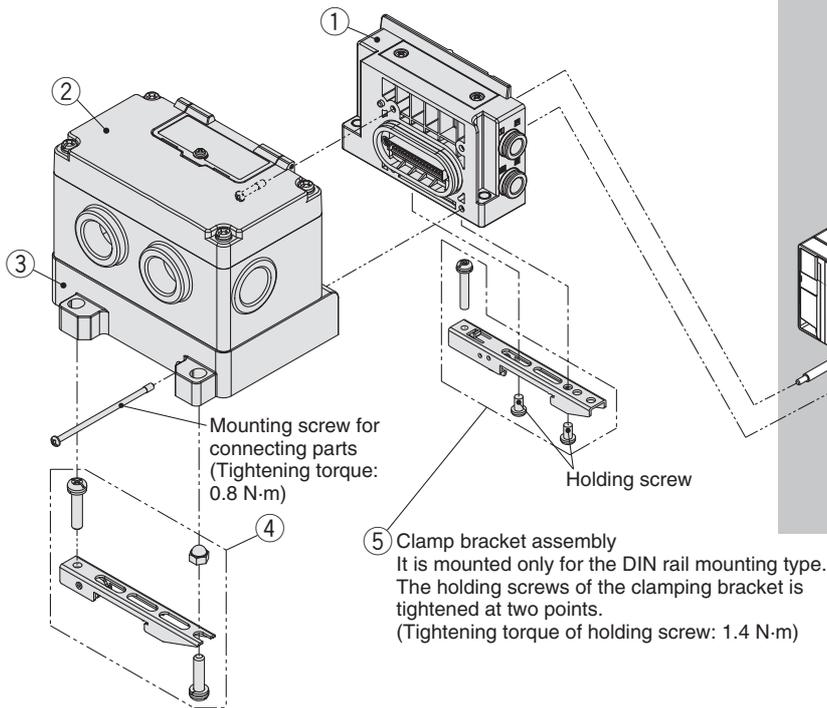
\*: Part number is for one assembly.

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

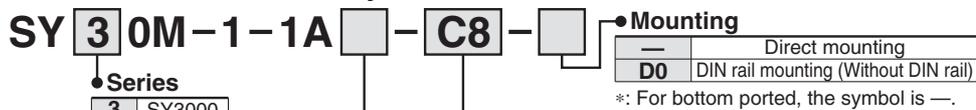
## Wiring

### EX126



## 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		
—	●	—	—	Side
S	●	—	●	
R	—	●	—	
V	●	—	—	Top
RV	—	—	—	
VP	●	—	●*1	
B	●	—	—	Bottom
BS	●	—	●	
BR	—	●	—	

\*1: For silencer (supply side). E port is plugged.

\*: "B" for bottom ported can be selected for the SY5000/7000 series.

#### P, E port size (One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000	Note
C8	∅ 8	●	—	—	Side/Bottom/Top ported
C10	∅ 10	—	●	—	Top ported
C12	∅ 12	—	—	●	Metric size
N9	∅ 5/16"	●	—	—	Side/Bottom/Top ported
N11	∅ 3/8"	—	●	—	Top ported
N13	∅ 1/2"	—	—	●	Inch size
L8	Upward elbow ∅ 8	●	—	—	Side ported
L10		∅ 10	—	●	
L12		∅ 12	—	—	
LN9	Upward elbow ∅ 5/16"	●	—	—	Side ported
LN11		∅ 3/8"	—	●	
LN13		∅ 1/2"	—	—	
B8	Downward elbow ∅ 8	●	—	—	Side ported
B10		∅ 10	—	●	
B12		∅ 12	—	—	
BN9	Downward elbow ∅ 5/16"	●	—	—	Side ported
BN11		∅ 3/8"	—	●	
BN13		∅ 1/2"	—	—	
00*1	Plug	●	●	●	P/E port entry on one side or Top ported

\*1: It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

#### SUP/EXH block assembly (D side) accessories and the number of accessories

Accessories	SY3000	SY5000 SY7000
a Tension bolt	None*1	3 pcs.

\*1: Since the nuts are embedded in the SUP/EXH block.

### ② EX126 SI Unit

#### EX126D-SMJ1

\*: CC-Link (Positive common)

### ③ Terminal block plate assembly

#### VVQC1000-74A-2

### ④ Clamp bracket assembly for EX126 SI Unit

#### SY30M-15-4A

\*: Part number is for one assembly.

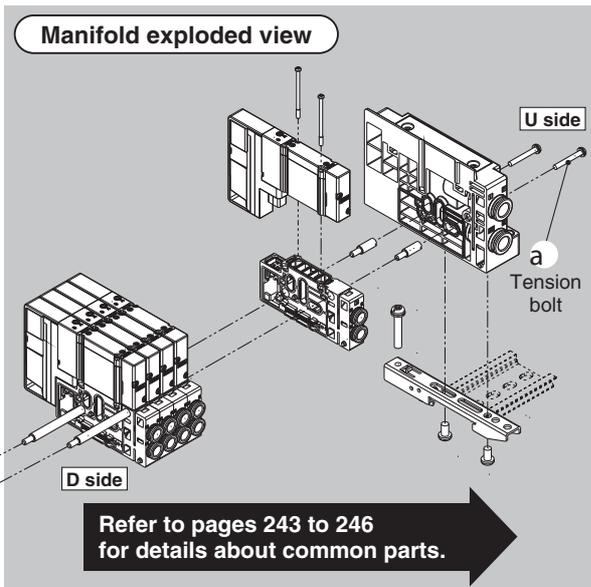
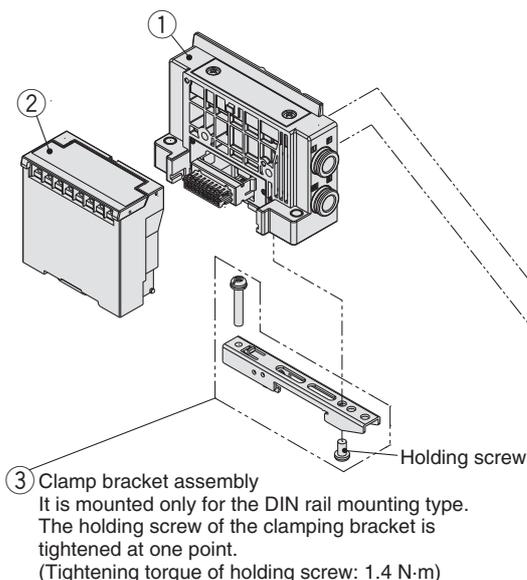
### ⑤ Clamp bracket assembly

Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

\*: Part number is for one assembly.

Wiring

**EX120**



**Manifold Parts No.**

① SUP/EXH block assembly

**SY 3 0M-1-16A** [ ] - **C8** - [ ] • Mounting

• Series

3	SY3000
5	SY5000
7	SY7000

—	Direct mounting
D0	DIN rail mounting (Without DIN rail)

\*: For bottom ported, the symbol is —.

• Pilot, Silencer/Piping type

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
—	●	—	—	Side
S	●	—	●	
R	—	●	—	
V	—	—	—	
RV	—	●	—	Top
VP	●	—	●*1	
B	●	—	—	
BS	●	—	●	Bottom
BR	—	●	—	

\*1: For silencer (supply side). E port is plugged.  
 \*: "B" for bottom ported can be selected for the SY5000/7000 series.

• P, E port size (One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000	Note
C8	Ø 8	●	—	—	Side/Bottom/Top ported Metric size
C10	Ø 10	—	●	—	Top ported Metric size
C12	Ø 12	—	—	●	Metric size
N9	Ø 5/16"	●	—	—	Side/Bottom/Top ported Inch size
N11	Ø 3/8"	—	●	—	Top ported Inch size
N13	Ø 1/2"	—	—	●	Inch size
L8	Ø 8	●	—	—	Side ported Metric size
L10	Ø 10	—	●	—	
L12	Ø 12	—	—	●	
LN9	Ø 5/16"	●	—	—	Side ported Inch size
LN11	Ø 3/8"	—	●	—	
LN13	Ø 1/2"	—	—	●	
B8	Ø 8	●	—	—	
B10	Ø 10	—	●	—	Side ported Metric size
B12	Ø 12	—	—	●	
BN9	Ø 5/16"	●	—	—	Side ported Inch size
BN11	Ø 3/8"	—	●	—	
BN13	Ø 1/2"	—	—	●	
00*1	Plug	●	●	●	

\*1: It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

SUP/EXH block assembly (D side) accessories and the number of accessories

Accessories	SY3000	SY5000 SY7000
a Tension bolt	None*1	3 pcs.

\*1: 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)

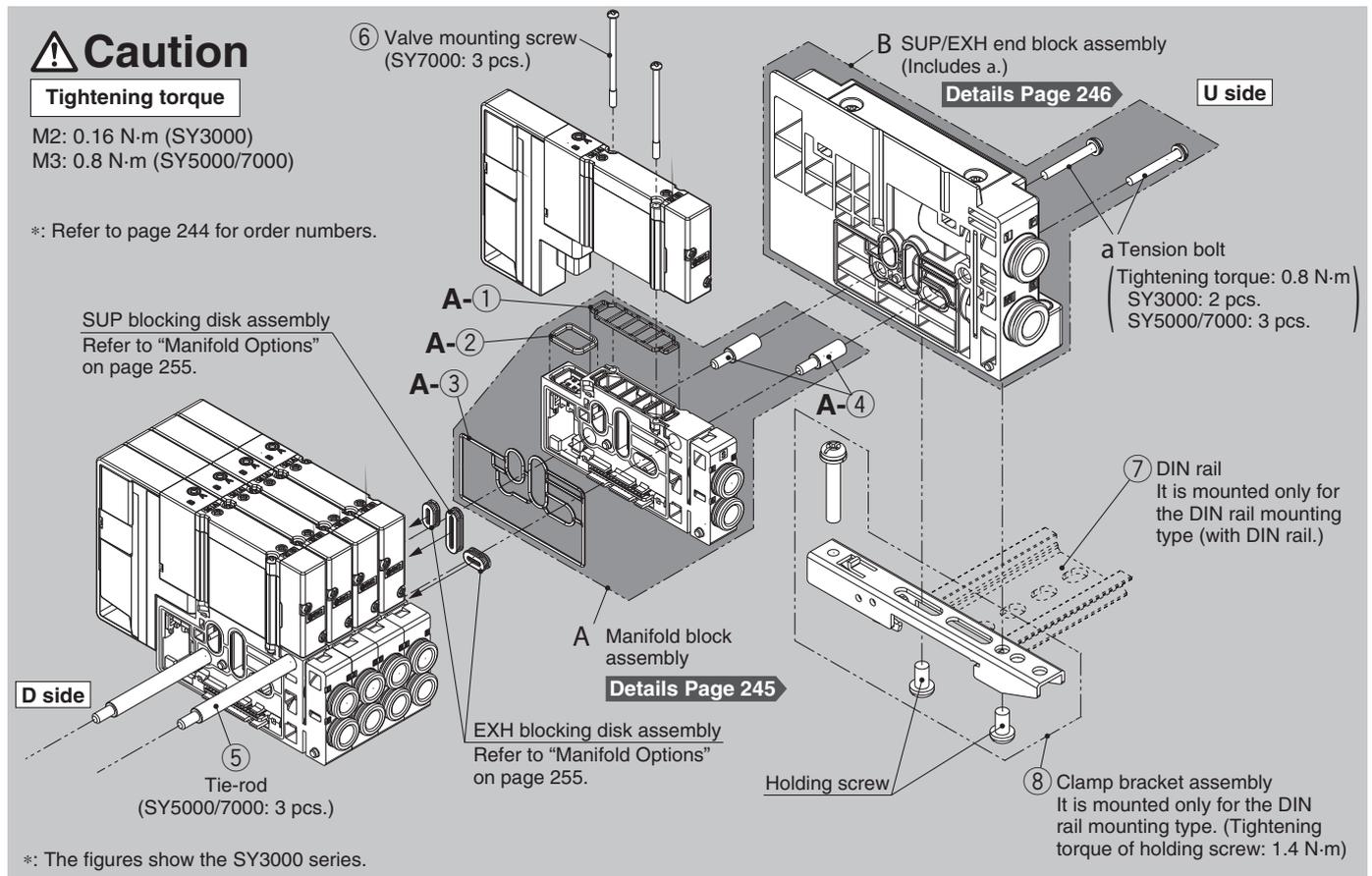
③ Clamp bracket assembly

Series	Part no.
SY3000	SY30M-15-1A
SY5000/7000	SY50M-15-1A

\*: Part number is for one assembly.

Valve  
 Plug-in Sub-plate  
 Metal Base  
 Plug-in  
 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

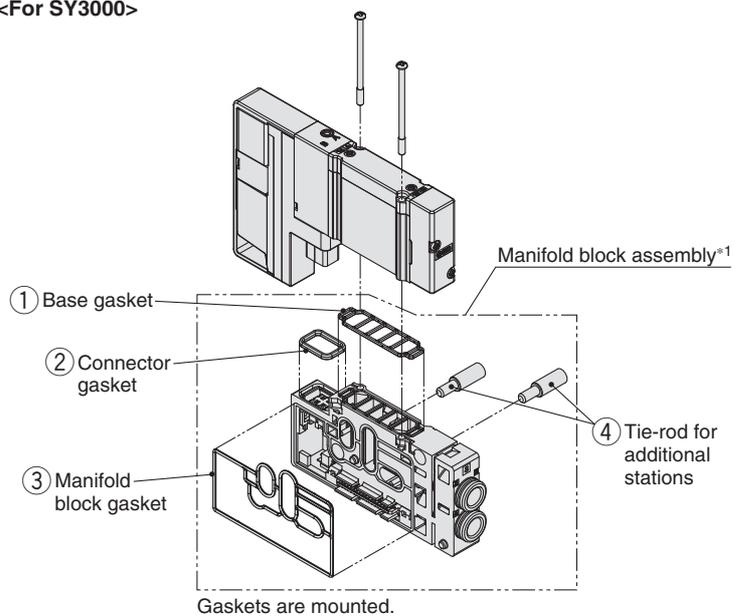
## Manifold Exploded View (Common Parts)



### Type 10, 11, 12: How to Increase Connector Type Manifold

- 1 Loosen the U-side tension bolt (a), and remove the B SUP/EXH end block assembly.
- 2 Screw in ④ tie-rods for additional stations to the ⑤ tie-rod of the manifold.  
(Screw them in until there is no gap between the tie-rods.)
- 3 Connect the A manifold block assembly and B SUP/EXH end block assembly to be added, and tighten the tension bolt (a).

<For SY3000>



**Tightening torque for tension bolt (a) (M3): 0.8 N·m**

### ⚠ Caution

1. Be sure to shut off the power and air supplies before disassembly.  
Furthermore, since air may remain inside the actuator, piping and manifold, confirm that the air is completely exhausted before performing any work.
2. When disassembly and assembly are performed, air leakage may result if the tightening of the tension bolt is inadequate.

\*1: **Manifold block assembly**

No.	Description	Quantity	Note
①②③	Gasket	3	For base, connector and manifold block
④	Tie-rod for additional stations	SY3000 2 pcs. SY5000 3 pcs. SY7000 3 pcs.	

Refer to page 244 for ordering single unit.

**For SS5Y3-10/11/12, SS5Y5-(M)10/11/12, SS5Y7-(M)10/11/12**

No.	Description		SY3000	SY5000	SY7000	Note	
A-①	Manifold block assembly	Base gasket (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	Manifold block assembly Tie-rod for additional stations*1	SY3000/5000/7000	SY30M-49-2-A (10.5 mm pitch)	SV2000-55-2A-A (16 mm pitch)	SY70M-49-2-A*2 (19 mm pitch)	2 pcs. supplied (SY3000), 3 pcs. supplied (SY5000/7000)	
		For mixed mounting of SY3000/5000: SY3000 A, B port size Ø 8, Ø 5/16"	SV2000-55-2A-A (16 mm pitch)		—	3 pcs. supplied.	
		For mixed mounting of SY3000/5000: SY3000 except A, B port size Ø 8, Ø 5/16"*4	SY50M-49-2-A (12.5 mm pitch)		—	3 pcs. supplied.	
⑤	Tie-rod	SY3000/5000/7000	VVQC1000-TR-□ (10.5 mm pitch)	SV2000-55-1-□-A (16 mm pitch)	SY70M-49-1-□-A*2 (19 mm pitch)	□: Manifold stations (2 stations to 24 stations) 2 pcs. supplied (SY3000), 3 pcs. supplied (SY5000/7000)	
		Mixed mounting type manifold	SS5Y5-M**	SY50M-49-1-□-A*3*4 (12.5 mm pitch)		—	□: Manifold stations (2 stations to 24 stations) 3 pcs. supplied.
				SV2000-55-1-□-A*5 (16 mm pitch)		—	
		SS5Y7-M**	—	SY70M-49-1-□-A*2 (19 mm pitch)			
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 249.	
⑧	Clamp bracket assembly (for connector connecting base)		SY30M-15-1A	SY50M-15-1A		Supplied individually.	

\*1: The manifold of the SY3000 (SS5Y3-10/11/12) can be assembled by connecting the tie-rods for additional stations for the number of manifold stations. However, the manifold of the SY5000 or SY7000 (SS5Y5/7-10/11/12 including mixed mounting) cannot be assembled by connecting the tie-rods for additional stations for the number of manifold stations.

\*2: When mounting with the SY5000.

\*3: When mounting only the SY3000 (12.5 mm pitch except A, B port size Ø 8, Ø 5/16").

\*4: The port sizes except A, B port size Ø 8, Ø 5/16" are the following: Ø 2, Ø 3.2, Ø 4, Ø 6, Ø 1/8", Ø 5/32", Ø 1/4".

\*5: When mounting only the SY3000 (16 mm pitch A, B port size Ø 8, Ø 5/16").

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded ViewOne-touch Fittings/  
Plug Assembly Part No.

Manifold Options

# Series SY3000/5000/7000

## Manifold Parts No.

### (A) Manifold block assembly

**SY 3 0M-2-1 D A-C6**

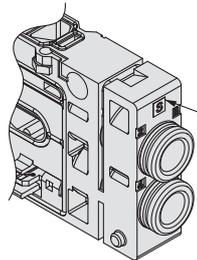
#### Series

3	SY3000
5	SY5000
7	SY7000

#### Piping direction

1	Side/Top ported
2	Bottom ported

\*: "2" for bottom ported can be selected for the SY5000/7000 series.



#### Wiring type

S	Single wiring
D	Double wiring

#### A, B port size (One-touch fittings)

Symbol	A, B port	SY3000	SY5000	SY7000	Note
C2	Ø 2	●	—	—	Side/Bottom ported Metric size
C3	Ø 3.2	●	—	—	
C4	Ø 4	●	●	—	
C6	Ø 6	●	●	●	
C8	Ø 8	—*1	●	●	Metric size
C10	Ø 10	—	—	●	
C12	Ø 12	—	—	●	Side/Bottom ported Inch size
N1	Ø 1/8"	●	—	—	
N3	Ø 5/32"	●	●	—	
N7	Ø 1/4"	●	●	●	
N9	Ø 5/16"	—*1	●	●	Inch size
N11	Ø 3/8"	—	—	●	

\*1: Refer to mixed mounting type for Ø 8, Ø 5/16".

Symbol	A, B port	SY3000	SY5000	SY7000	Note
L4	Ø 4	●	●	—	Side ported Metric size
L6	Ø 6	●	●	—	
L8	Ø 8	—*1	●	●	
L10	Ø 10	—	—	●	
L12	Ø 12	—	—	●	Side ported Inch size
LN3	Ø 5/32"	●	—	—	
LN7	Ø 1/4"	●	●	—	
LN9	Ø 5/16"	—*1	●	—	
LN11	Ø 3/8"	—	—	●	Side ported Metric size
B4	Ø 4	●	●	—	
B6	Ø 6	●	●	●	
B8	Ø 8	—*1	●	●	
B10	Ø 10	—	—	●	Side ported Inch size
B12	Ø 12	—	—	●	
BN3	Ø 5/32"	●	—	—	
BN7	Ø 1/4"	●	●	—	
BN9	Ø 5/16"	—*1	●	—	Top ported
BN11	Ø 3/8"	—	—	●	
00	Plug	●	●	●	

### A Mixed mounting of the SY3000/5000 Manifold block assembly for mounting the SY3000

**SY50M-2-3 D A-C6**

#### Piping direction

3	Side/Top ported
4	Bottom ported

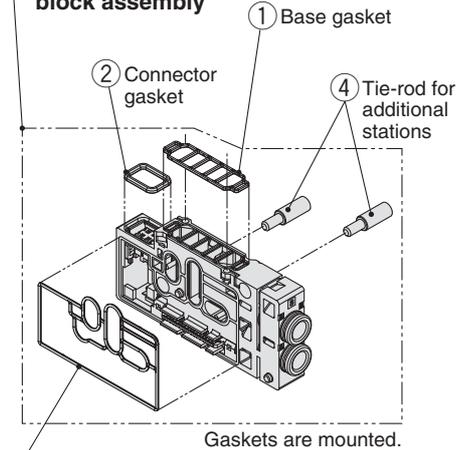
#### Wiring type

S	Single wiring
D	Double wiring

#### A, B port size (One-touch fittings)

Symbol	A, B port	Note	Symbol	A, B port	Note
C2	Ø 2	Side/Bottom ported Metric size	L4	Ø 4	Side ported Metric size
C3	Ø 3.2		L6	Ø 6	Metric size
C4	Ø 4		LN3	Ø 5/32"	Side ported
C6	Ø 6		LN7	Ø 1/4"	Inch size
N1	Ø 1/8"	Side/Bottom ported Inch size	B4	Ø 4	Side ported
N3	Ø 5/32"		B6	Ø 6	Metric size
N7	Ø 1/4"	BN3	Ø 5/32"	Side ported	
		BN7	Ø 1/4"	Inch size	
		00	Plug	Top ported	

### (A) Manifold (All parts inside ----- are included.) block assembly



### A Mixed mounting of the SY3000/5000 Manifold block assembly for mounting the SY3000 for Ø 8, Ø 5/16" (A manifold block assembly for mounting the SY3000 valves on the SY5000 manifolds at A, B port size: Ø 8, Ø 5/16")

**SY50M-2-5 D A-C8**

#### Piping direction

5	Side ported
6	Bottom ported

#### Wiring type

S	Single wiring
D	Double wiring

#### A, B port size (One-touch fittings)

Symbol	A, B port	Note
C8	Ø 8	Side/Bottom ported Metric size
N9	Ø 5/16"	Side/Bottom ported Inch size
L8	Upward elbow Ø 8	Side ported Metric size
LN9	Upward elbow Ø 5/16"	Side ported Inch size
B8	Downward elbow Ø 8	Side ported Metric size
BN9	Downward elbow Ø 5/16"	Side ported Inch size

### Manifold block assembly accessories and the number of accessories

Accessories	SY3000	SY5000 SY7000*1
① Base gasket	1 pc.	1 pc.
② Connector gasket	1 pc.	1 pc.
③ Manifold block gasket	1 pc.	1 pc.
④ Tie-rod assembly for additional stations	2 pcs.	3 pcs.

\*1: Including mixed mounting type

### A Mixed mounting of the SY5000/7000 Manifold block assembly for mounting the SY5000

**SY70M-2-3 D A-C10**

#### Piping direction

3	Side/Bottom ported
4	Bottom ported

#### Wiring type

S	Single wiring
D	Double wiring

#### A, B port size (One-touch fittings)

Symbol	A, B port	Note	Symbol	A, B port	Note	Symbol	A, B port	Note
C6	Ø 6	Side/Bottom ported Metric size	L6	Ø 6	Side ported	B6	Ø 6	Side ported
C8	Ø 8		L8	Ø 8		Metric size	B8	
C10	Ø 10		L10	Ø 10	Metric size	B10	Ø 10	Metric size
C12	Ø 12		L12	Ø 12	Side ported Inch size	B12	Ø 12	Side ported Inch size
N7	Ø 1/4"	LN11	Upward elbow Ø 3/8"	BN11		Downward elbow Ø 3/8"		
N9	Ø 5/16"			00	Plug	Top ported		
N11	Ø 3/8"							

**Manifold Parts No.**

**(B) SUP/EXH end block assembly**

**SY 3 0M-3-1A - C8 -**

● **Series**

3	SY3000
5	SY5000
7	SY7000

● **Mounting**

—	Direct mounting
D0	DIN rail mounting (Without DIN rail)

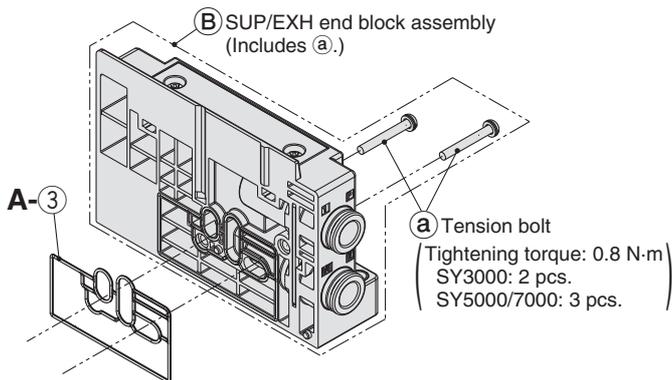
※: For bottom ported, the symbol is —.

● **Pilot, Silencer/Piping type**

Symbol	Pilot type		Built-in silencer	Piping direction
	Internal	External		
—	●	—	—	Side
S	●	—	●	
R	—	●	—	
V	●	—	—	Top
RV	—	●	—	
VP	●	—	●*1	
B	●	—	—	Bottom
BS	●	—	●	
BR	—	●	—	

\*1: For silencer (supply side). E port is plugged.

※: "B" for bottom ported can be selected for the SY5000/7000 series.



● **P, E port size (One-touch fittings)**

Symbol	P, E port	SY3000	SY5000	SY7000	Note
C8	∅ 8	●	—	—	Side/Bottom/Top ported Metric size
C10	∅ 10	—	●	—	
C12	∅ 12	—	—	●	
N9	∅ 5/16"	●	—	—	Side/Bottom/Top ported Inch size
N11	∅ 3/8"	—	●	—	
N13	∅ 1/2"	—	—	●	
L8	Upward elbow ∅ 8	●	—	—	Side ported Metric size
L10		∅ 10	—	●	
L12		∅ 12	—	—	
LN9	Upward elbow ∅ 5/16"	●	—	—	Side ported Inch size
LN11		∅ 3/8"	—	●	
LN13		∅ 1/2"	—	—	
B8	Downward elbow ∅ 8	●	—	—	Side ported Metric size
B10		∅ 10	—	●	
B12		∅ 12	—	—	
BN9	Downward elbow ∅ 5/16"	●	—	—	Side ported Inch size
BN11		∅ 3/8"	—	●	
BN13		∅ 1/2"	—	—	
00*1	Plug	●	●	●	P/E port entry on one side or Top ported

\*1: It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot and the piping.

**SUP/EXH 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.

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.

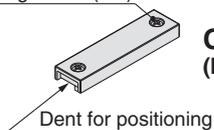
Manifold Options

# Series SY3000/5000/7000

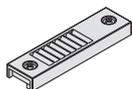
## Manifold Parts No.

### ■ Cover assembly/Silencer cover assembly/Port block assembly for SUP/EXH (end) block assembly

Mounting screw (M3)



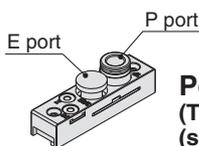
**Cover assembly**  
(Internal pilot)



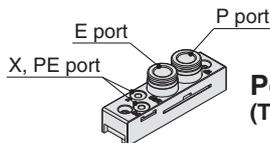
**Silencer cover assembly**  
(Internal pilot, Built-in silencer)



**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): 0.8 N·m  
SY7000 (M4): 1.4 N·m

### ⚠ Caution

1. Be sure to shut off the power and air supplies before disassembly.  
Furthermore, since air may remain inside the actuator, piping and manifold, confirm that the air is completely exhausted before performing any work.
2. When disassembly and assembly are performed, air leakage may result if the tightening of the cover and port block assemblies are inadequate.

SY **3** 0M-4- 1A

SY **3** 0M-5- 1A

SY **3** 0M-6- 1AR - 00  

X, PE port One-touch fitting type

Symbol	X, PE port	SY3000	SY5000	SY7000
—	Metric size	∅ 4	●	—
		∅ 6	—	●
U	Inch size	∅ 5/32"	●	—
		∅ 1/4"	—	●

SY **3** 0M-6- 3AV - C8

SY **3** 0M-6- 1A   V - C8

Series

<b>3</b>	SY3000
<b>5</b>	SY5000
<b>7</b>	SY7000

Pilot type

—	Internal pilot
<b>R</b>	External pilot

P, E port size (One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000
<b>C8</b>	∅ 8	●	—	—
<b>C10</b>	∅ 10	—	●	—
<b>C12</b>	∅ 12	—	—	●
<b>N9</b>	∅ 5/16"	●	—	—
<b>N11</b>	∅ 3/8"	—	●	—
<b>N13</b>	∅ 1/2"	—	—	●
<b>00</b> *1	Plug	●	●	●

\*1: Cannot be selected for the SY□0M-6-3AV-□ and SY□0M-6-1ARV-□.

# Series SY3000/5000/7000 One-touch Fittings and Plug Assembly/Part No.

Refer to "Changing One-touch Fittings" on page 272 for replacement method.

## One-touch fittings

		Port size		SY3000	SY5000	SY7000
A, B port <sup>*1</sup>	Metric size	Straight type	Ø 2	VVQ1000-50A-C2	—	—
			Ø 3.2	VVQ1000-50A-C3	—	—
			Ø 4	VVQ1000-50A-C4	VVQ1000-51A-C4	—
			Ø 6	VVQ1000-50A-C6	VVQ1000-51A-C6	VVQ2000-51A-C6
			Ø 8	—	VVQ1000-51A-C8	VVQ2000-51A-C8
			Ø 10	—	—	VVQ2000-51A-C10
		Ø 12	—	—	KQ2H12-17-X224	
		Elbow type	Ø 4	SZ3000-73-1A-L4	SZ3000-74-1A-L4	—
			Ø 6	SZ3000-73-1A-L6	SZ3000-74-1A-L6	SZ3000-83-1A-L6
			Ø 8	—	SZ3000-74-1A-L8	SZ3000-83-1A-L8
			Ø 10	—	—	SZ3000-83-1A-L10
			Ø 12	—	—	KQ2L12-17N-X224
	Ø 12		—	—	—	
	Long elbow type	Ø 4	SZ3000-73-2A-L4	SZ3000-74-2A-L4	—	
		Ø 6	SZ3000-73-2A-L6	SZ3000-74-2A-L6	SZ3000-83-2A-L6	
		Ø 8	—	SZ3000-74-2A-L8	SZ3000-83-2A-L8	
		Ø 10	—	—	SZ3000-83-2A-L10	
		Ø 12	—	—	KQ2W12-17N-X224	
		Ø 12	—	—	—	
	Inch size	Straight type	Ø 1/8"	VVQ1000-50A-N1	—	—
			Ø 5/32"	VVQ1000-50A-N3	VVQ1000-51A-N3	—
			Ø 1/4"	VVQ1000-50A-N7	VVQ1000-51A-N7	VVQ2000-51A-N7
			Ø 5/16"	—	VVQ1000-51A-N9	VVQ2000-51A-N9
			Ø 3/8"	—	—	VVQ2000-51A-N11
Ø 5/32"			KJL03-95-X224	—	—	
Elbow type		Ø 1/4"	KJL07-95-X224	KQ2L07-14-X224	—	
		Ø 5/16"	—	KQ2L09-14-X224	—	
		Ø 3/8"	—	—	KQ2L11-14-X224	
		Ø 5/32"	KJL03-95-X225	—	—	
		Ø 1/4"	KJL07-95-X225	KQ2L07-14-X225	—	
		Ø 5/16"	—	KQ2L09-14-X225	—	
Long elbow type	Ø 3/8"	—	—	KQ2L11-14-X225		
	Ø 8	VVQ1000-51A-C8	—	—		
	Straight type	Ø 10	—	VVQ2000-51A-C10	—	
		Ø 12	—	—	VVQ4000-50B-C12	
		Ø 12	SZ3000-74-1A-L8	—	—	
	Elbow type	Ø 10	—	SZ3000-83-1A-L10	—	
Ø 12		—	—	KQ2L12-19N-X224		
Ø 12		SZ3000-74-2A-L8	—	—		
Long elbow type	Ø 10	—	SZ3000-83-2A-L10	—		
	Ø 12	—	—	KQ2W12-19N-X224		
	Ø 5/16"	VVQ1000-51A-N9	—	—		
Inch size	Straight type	Ø 3/8"	—	VVQ2000-51A-N11	—	
		Ø 1/2"	—	—	VVQ4000-50B-N13	
		Ø 5/16"	KQ2L09-14-X224	—	—	
	Elbow type	Ø 3/8"	—	KQ2L11-14-X224	—	
		Ø 1/2"	—	—	KQ2L13-19N-X224	
		Ø 5/16"	KQ2L09-14-X225	—	—	
	Long elbow type	Ø 3/8"	—	KQ2L11-14-X225	—	
		Ø 1/2"	—	—	KQ2W13-19N-X224	
		Ø 1/2"	—	—	—	

\*1: A and B ports (Ø 8 and Ø 5/16") of the SY3000 and 5000 mixed mounting type are the same as those of the SY5000.

\*: Purchasing order is available in units of 10 pieces. Additionally, when performing the piping in the same orientation using the elbow type, please order "elbow type" or "long elbow type" appropriately.

## Plug assembly

	SY3000	SY5000	SY7000
A, B port	VVQ0000-58A	VVQ1000-58A	VVQ2000-58A
P, E port	VVQ1000-58A	VVQ2000-58A	SY9000-62-1A

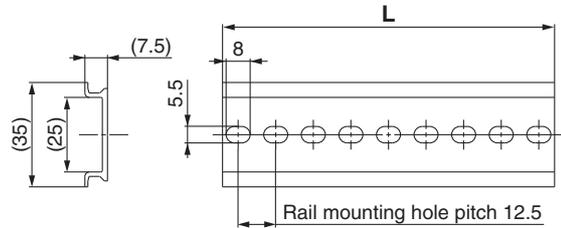
\*: Purchasing order is available in units of 10 pieces.

# Series SY3000/5000/7000 Manifold Options

## ■ DIN rail dimensions/weight for the SY3000 **Plug-in** metal base and the SY3000/5000 **Plug-in** connector connecting base

### VZ1000-11-1-□

\*: After confirming the L3 dimension in the dimensions table of each series, refer to the DIN rail dimensions table below and specify the number in the box □.

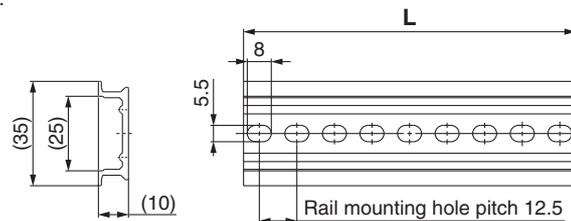


No.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
L dimension	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	235.5	248	260.5	273	285.5	298	310.5	323
Weight [g]	17.6	19.9	22.1	24.4	26.6	28.9	31.1	33.4	35.6	37.9	40.1	42.4	44.6	46.9	49.1	51.4	53.6	55.9	58.1
No.	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
L dimension	335.5	348	360.5	373	385.5	398	410.5	423	435.5	448	460.5	473	485.5	498	510.5	523	535.5	548	560.5
Weight [g]	60.4	62.5	64.9	67.1	69.4	71.6	73.9	76.1	78.4	80.6	82.9	85.1	87.4	89.6	91.9	94.1	96.4	98.6	100.9
No.	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
L dimension	573	585.5	598	610.5	623	635.5	648	660.5	673	685.5	698	710.5	723	735.5	748	760.5	773	785.5	798
Weight [g]	103.1	105.4	107.6	109.9	112.1	114.4	116.6	118.9	121.1	123.4	125.6	127.9	130.1	132.4	134.6	136.9	139.1	141.4	143.6
No.	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71				
L dimension	810.5	823	835.5	848	860.5	873	885.5	898	910.5	923	935.5	948	960.5	973	985.5				
Weight [g]	145.9	148.1	150.4	152.6	154.9	157.1	159.4	161.6	163.9	166.1	168.4	170.6	172.9	175.1	177.4				

## ■ DIN rail dimensions/weight for the SY5000/7000 **Plug-in** metal base and the SY7000 **Plug-in** connector connecting base

### VZ1000-11-4-□

\*: After confirming the L3 dimension in the dimensions table of each series, refer to the DIN rail dimensions table below and specify the number in the box □.



No.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
L dimension	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	235.5	248	260.5	273	285.5	298	310.5	323
Weight [g]	24.8	28	31.1	34.3	37.4	40.6	43.8	46.9	50.1	53.3	56.4	59.6	62.7	65.9	69.1	72.2	75.4	78.6	81.7
No.	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
L dimension	335.5	348	360.5	373	385.5	398	410.5	423	435.5	448	460.5	473	485.5	498	510.5	523	535.5	548	560.5
Weight [g]	84.9	88	91.2	94.4	97.5	100.7	103.9	107	110.2	113.3	116.5	119.7	122.8	126	129.2	132.3	135.5	138.6	141.8
No.	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
L dimension	573	585.5	598	610.5	623	635.5	648	660.5	673	685.5	698	710.5	723	735.5	748	760.5	773	785.5	798
Weight [g]	145	148.1	151.3	154.5	157.6	160.8	163.9	167.1	170.3	173.4	176.6	179.8	182.9	186.1	189.2	192.4	195.6	198.7	201.9
No.	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71				
L dimension	810.5	823	835.5	848	860.5	873	885.5	898	910.5	923	935.5	948	960.5	973	985.5				
Weight [g]	205.1	208.2	211.4	214.5	217.7	220.9	224	227.2	230.4	233.5	236.7	239.8	243	246.2	249.3				

## Caution

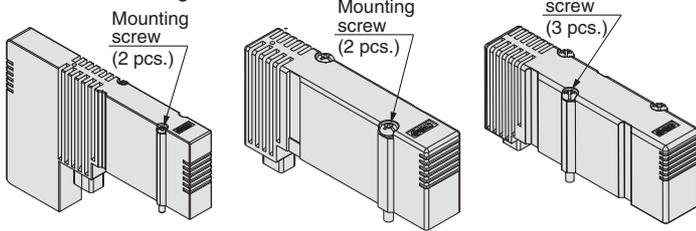
Tightening torque for mounting screw	
M2:	0.16 N·m (SY3000)
M3:	0.8 N·m (SY5000/7000)

## Manifold Options

\*: Refer to pages 260, 262, 264 for dimensions.

### Blanking plate assembly

[With two mounting screws (3 pcs. for the SY7000)]  
Used when valve additions are expected or for maintenance. A structure is in place on the blanking plate to prevent the mounting screws from sliding.



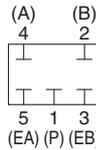
SY30M-26-□A (-B)    SY50M-26-□A (-B)    SY70M-26-□A (-B)

### How to Order Blanking Plate Assembly

SY 3 OM-26-1 A-□

#### Series

3	SY3000
5	SY5000
7	SY7000



Circuit diagram

#### Option for mounting

—	With mounting screw (Round head combination screw)
B	With mounting screw (Hexagon socket head cap screw)

#### Base type

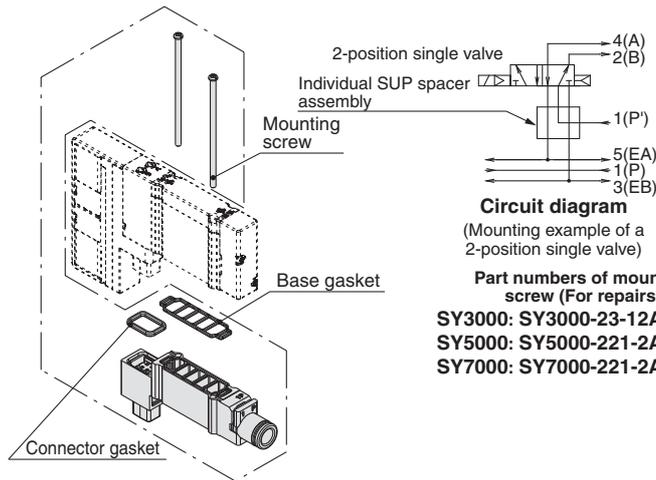
1	For plug-in connector connecting base
2	For plug-in metal base

### 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.

\*: When selecting a One-touch fitting elbow type for a spacer assembly, use it faced upward, since it interferes with A and B port piping in Type 50 and Type 10 manifolds.



Circuit diagram  
(Mounting example of a 2-position single valve)

#### Part numbers of mounting screw (For repairs)

- SY3000: SY3000-23-12A (2 pcs.)
- SY5000: SY5000-221-2A (2 pcs.)
- SY7000: SY7000-221-2A (3 pcs.)

### How to Order Individual SUP/EXH Spacer Assembly

One-touch fitting Straight type SY 3 OM-38-1 A-C6

One-touch fitting Elbow type SY 3 OM-38-2 A-L6

#### Series

3	SY3000
5	SY5000
7	SY7000

#### Spacer type

38	Individual SUP spacer
39	Individual EXH spacer

#### Individual SUP/EXH spacer assembly

2	Short elbow type
3	Long elbow type

\*: Select the long elbow type for a 3-position valve when using Type 11 and Type 12 downward. However, Type 11 of the SY3000 series for the mixed mounting of connector connecting bases cannot be used downward.

#### Port size (Metric/One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000
L4	∅ 4	●	●	—
L6	∅ 6	●	●	●
L8	∅ 8	—	●	●
L10	∅ 10	—	—	●
L12	∅ 12	—	—	●

#### Port size (Inch/One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000
LN3	∅ 5/32"	●	—	—
LN7	∅ 1/4"	●	●	—
LN9	∅ 5/16"	—	●	—
LN11	∅ 3/8"	—	—	●

#### Port size (Metric/One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000
C2	∅ 2	●	—	—
C3	∅ 3	●	—	—
C4	∅ 4	●	●	—
C6	∅ 6	●	●	●
C8	∅ 8	—	●	●
C10	∅ 10	—	—	●
C12	∅ 12	—	—	●

#### Port size (Inch/One-touch fittings)

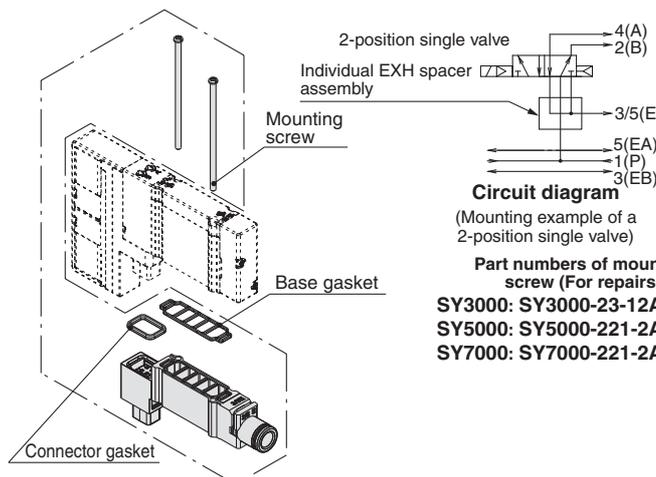
Symbol	P, E port	SY3000	SY5000	SY7000
N1	∅ 1/8"	●	—	—
N3	∅ 5/32"	●	●	—
N7	∅ 1/4"	●	●	●
N9	∅ 5/16"	—	●	●
N11	∅ 3/8"	—	—	●

### Individual EXH spacer assembly

[With a connector gasket, a base gasket, and two mounting screws (3 pcs. for the SY7000)]

When valve exhaust affects other stations due to the circuit configuration, this spacer assembly is used for individual valve exhaust.

\*: When selecting a One-touch fitting elbow type for a spacer assembly, use it faced upward, since it interferes with A and B port piping in Type 50 and Type 10 manifolds.



Circuit diagram  
(Mounting example of a 2-position single valve)

#### Part numbers of mounting screw (For repairs)

- SY3000: SY3000-23-12A (2 pcs.)
- SY5000: SY5000-221-2A (2 pcs.)
- SY7000: SY7000-221-2A (3 pcs.)

Valve

Plug-in Sub-plate

Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

## Caution

Tightening torque for mounting screw
M2: 0.16 N·m (SY3000)
M3: 0.8 N·m (SY5000/7000)

## Manifold Options

\*: Refer to pages 260 to 265 for dimensions.

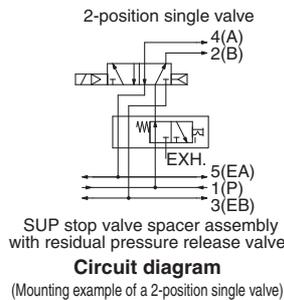
### ■ SUP stop valve spacer assembly with residual pressure release valve

[With a connector gasket, a base gasket, and two mounting screws (3 pcs. for the SY7000)]

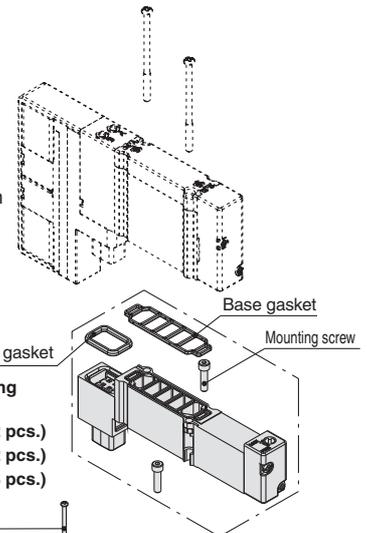
It is used to shut off the supply air to valves individually.

\*: Cannot be selected when the elbows are facing upward in A and B ports in Type 10 manifolds, since they will interfere with the piping for the spacer assembly.

<b>SY 3 0M - 50 - 1A E</b>	
<b>Series</b>	<b>Manual override</b>
3 SY3000	— Push-turn locking slotted type
5 SY5000	E Push-turn locking lever type
7 SY7000	



\*: For lever type  
When locking the lever type manual override, push the lever down in the PUSH position with your fingers until it stops, then turn the lever 90° clockwise. (PUSH → LOCK)  
Turning the lever without pushing it down until it stops can cause damage to the manual override and other problems such as air leakages.  
To unlock the manual override, turn the lever counterclockwise. (LOCK → PUSH)



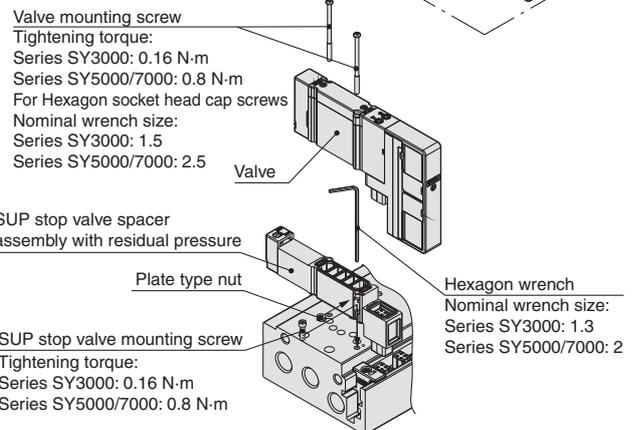
**Part numbers of mounting screw (For repairs)**  
**SY3000: SY30M-56-1A (2 pcs.)**  
**SY5000: SY50M-56-1A (2 pcs.)**  
**SY7000: SY70M-56-1A (3 pcs.)**

### [How to mount SUP stop valve spacer assembly with residual pressure release valve]

Insert the SUP stop valve mounting screw from the side of the spacer assembly, and mount it to the manifold.

Tighten the SUP stop valve mounting screw to the specified tightening torque. Mount the valve and tighten the valve mounting screws to the specified tightening torque after mounting the SUP stop valve spacer assembly with residual pressure exhaust valve.

- \*: Install the plate type nut to the spacer assembly as shown in the figure if it comes off. The SUP stop valve mounting screws can be tightened with a hexagon wrench without removing the plate type nut.
- \*: When the elbows are facing upward in A and B ports in Type 10 manifolds, they will interfere with the piping for the spacer assembly. Therefore, combine the A and B ports with straight types or elbows facing downward.
- \*: This product is only for internal pilot specifications, as the external pilot air cannot be shut off.



### ■ Double check spacer assembly with residual pressure release valve (Side/Bottom ported)

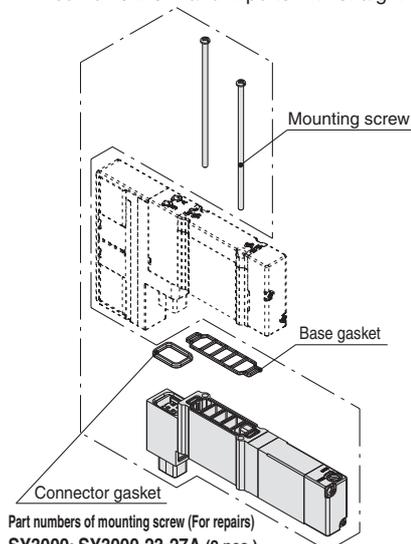
[With a connector gasket, a base gasket, and two mounting screws (3 pcs. for the SY7000)]

It is used to hold the intermediate position of the cylinder for a long period of time. Use a 3-position exhaust centre valve when the double check spacer assembly with residual exhaust valve is used.

It can also be used for drop prevention at the cylinder stroke end when supply residual pressure is released by using a 2-position single/double valve.

Operating pressure range: 0.1 to 1.0 MPa

\*: When the elbows are facing upward in A and B ports in Type 10 manifolds, they will interfere with the piping for the spacer assembly. Therefore, combine the A and B ports with straight types or elbows facing downward.



**Part numbers of mounting screw (For repairs)**  
**SY3000: SY3000-23-27A (2 pcs.)**  
**SY5000: SY5000-221-4A (2 pcs.)**  
**SY7000: SY7000-221-4A (3 pcs.)**

Series	Part no.
SY3000	SY30M-60-1A
SY5000	SY50M-60-1A
SY7000	SY70M-60-1A

	Intermediate stop	Drop prevention
Applicable valve	SY <sub>7</sub> <sup>3</sup> 40 <sub>1</sub>	SY <sub>7</sub> <sup>3</sup> 20 <sub>1</sub>

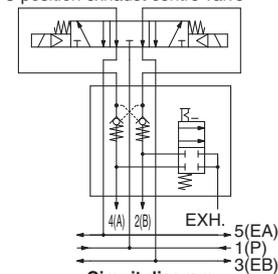
## Caution

- Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for a long period of time. Check the leakage using neutral household detergent, such as dish washing soap. Also, check the cylinder's tube gasket, piston packing and rod packing for air leakage.
- Combining with 3-position closed centre or pressure centre valve will not work.
- If the exhaust of the double check spacer is restricted too much, the cylinder may not operate properly and may not stop intermediately.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.

### <Example>

#### Double check spacer assembly with residual pressure release valve

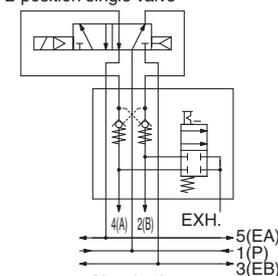
3-position exhaust centre valve



(Intermediate stop: When 3-position exhaust centre valve is mounted)

#### Double check spacer assembly with residual pressure release valve

2-position single valve



(Drop prevention: When 2-position single valve is mounted)

## ⚠ Caution

Tightening torque for mounting screw	
M2:	0.16 N·m (SY3000)
M3:	0.8 N·m (SY5000/7000)

## Manifold Options

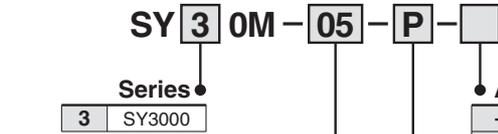
\*: Refer to pages 261, 263, 265 for dimensions.

### ■ Interface regulator

[With a connector gasket, a base gasket, and two mounting screws (3 pcs. for the SY7000)]

Used when the supply pressure for each valve on the same manifold must be individually set (reduced pressure).

### How to Order



Pressure gauge option <sup>*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>*2</sup>
N6	Pressure gauge with psi display (For even number station) <sup>*2</sup>

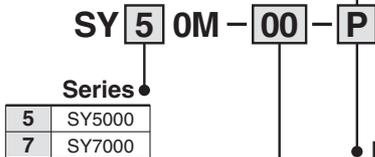
Applicable valve <sup>*3</sup>	
—	For single, double, and 4-position
3	For 3-position

\*1: In the case of the SY3000 series with a pressure gauge, when mounting on the manifold, use caution that the part numbers are different between the odd no. stations and the even no. stations to prevent the pressure gauges from interfering with each other.

If using a connector connecting base M10/11/12 (mixed mounting type) or laminating two or more types of spacer type manifold options for the neighboring stations, you can use only the model without a pressure gauge (M1).

\*2: As per the new Measurement Law, gauges with a psi display will only be sold to overseas customers.

\*3: In the case of the SY3000 series, use caution that the part numbers will differ depending on the one for single/double and 4- and 3-position due to the different length of solenoid valves. Also, if you have selected a model with a pressure gauge, and if at least the one for 3-position is included in the same manifold, use all the ones for 3-position to prevent the pressure gauges from interfering with each other.

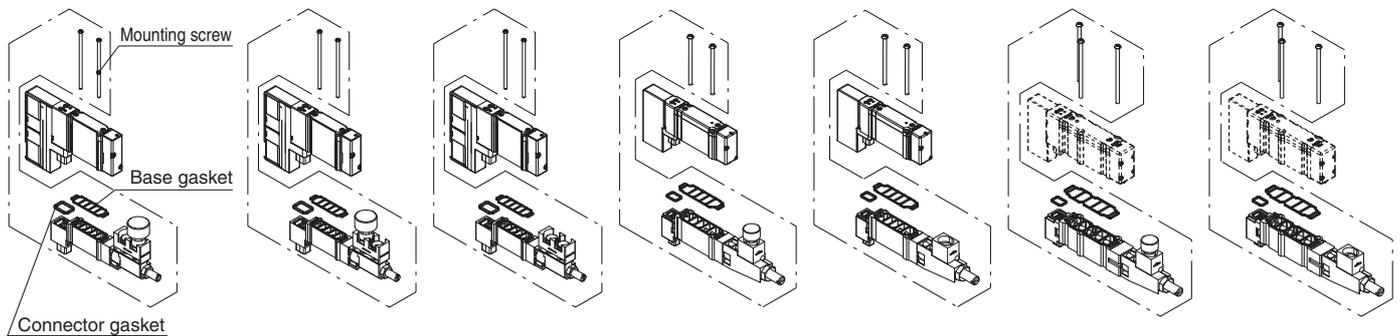


Pressure gauge option <sup>*</sup>	
M1	No pressure gauge
00	Pressure gauge with MPa display
N0	Pressure gauge with psi display <sup>*2</sup>

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>*1</sup>	SY3□ $\frac{3}{8}$ □(R)	SY5□ $\frac{3}{8}$ □(R)	SY7□ $\frac{3}{8}$ □(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>*2</sup>	With pressure gauge	33(35) <sup>*3</sup>	75
	Without pressure gauge	27(29) <sup>*3</sup>	69

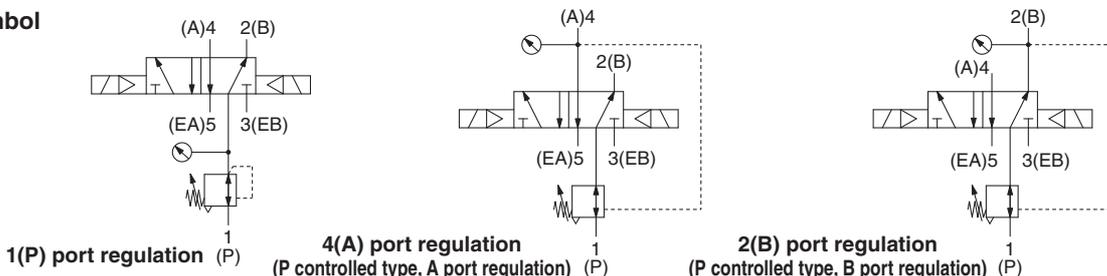
\*1: 3-position closed centre and pressure centre, and 4-position dual 3-port valves are only available for 1(P) port pressure regulation.

\*2: Gasket and mounting screws are included in the weight.

\*3: ( ): Denotes the values of SY30M-□-□-3.

\*: Always apply pressure from 1(P) port in the base for interface regulator.

### Symbol

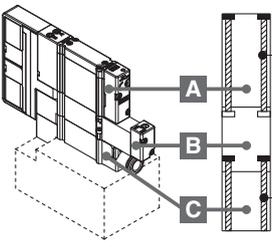
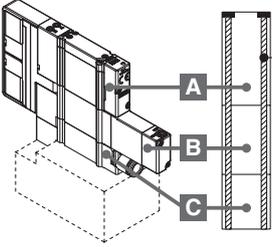
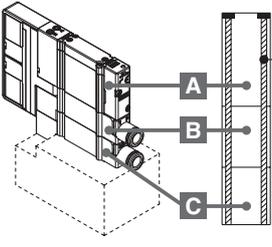
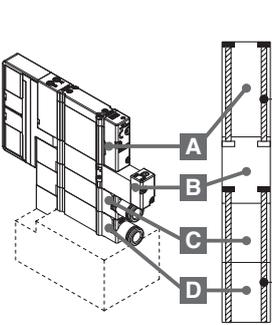


# Series SY3000/5000/7000

## ⚠ Caution

Tightening torque for mounting screw
M2: 0.16 N·m (SY3000)
M3: 0.8 N·m (SY5000/7000)

## Spacer Combinations and Screw List ①

Combination	① SY3000 (M2)		② SY5000 (M3)		③ SY7000 (M3)		
	Round head combination screw	Hexagon socket head cap screw	Round head combination screw	Hexagon socket head cap screw	Round head combination screw	Hexagon socket head cap screw	
 <p>&lt;Round head combination screw&gt; 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						

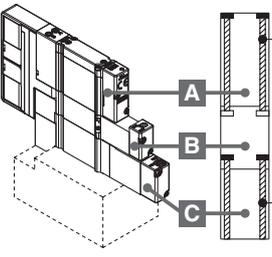
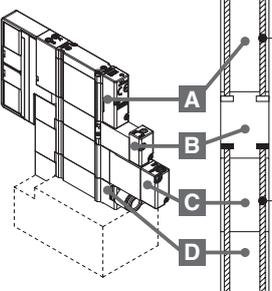
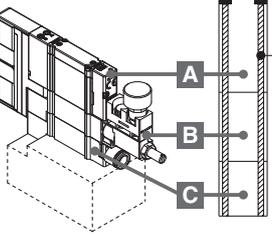
\*: Mounting onto a manifold follows the order explained above.

\*: The fitting for individual SUP/EXH spacers comes in a straight type only, since an elbow type would interfere with each spacer assembly when laminated.

## ⚠ Caution

Tightening torque for mounting screw
M2: 0.16 N·m (SY3000)
M3: 0.8 N·m (SY5000/7000)

## Spacer Combinations and Screw List ②

Combination	① SY3000 (M2)		② SY5000 (M3)		③ SY7000 (M3)		
	Round head combination screw	Hexagon socket head cap screw	Round head combination screw	Hexagon socket head cap screw	Round head combination screw	Hexagon socket head cap screw	
 <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.

\*: The fitting for individual SUP/EXH spacers comes in a straight type only, since an elbow type would interfere with each spacer assembly when laminated.

\*: When laminating an interface regulator with other options, only the combinations in the table above are possible.

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

## ⚠ Caution

Tightening torque for mounting screw
M2: 0.16 N·m (SY3000)
M3: 0.8 N·m (SY5000/7000)

## Manifold Options

\*: Refer to pages 261, 263, 265 for dimensions.

### ■ Individual SUP block assembly

On the circuit of the plug-in connector connection base, an individual SUP block assembly can be used to supply air to a series of valves if a separate air supply is required, or if additional air is required for additional air flow.

Individual SUP block assembly occupies 1 station.

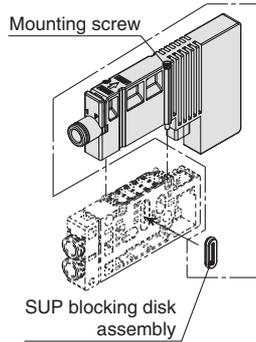
Blocking disks also supplied (2 pieces). Can be used to block both sides of the number of stations being isolated for individual air supply (as shown in example).

\*: Specify the mounting position of the block as well as the position where the SUP passage is to be blocked on the manifold specification sheet. Blocking is required for 1 or 2 positions for 1 set. (2 SUP blocking disks to block SUP is attached to individual SUP block.)

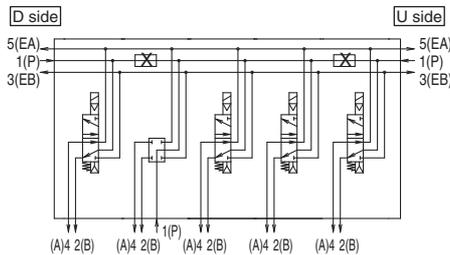
\*: Electrical wiring is connected to a number of stations in the individual SUP block manifold.

\*: When used in M10/11/12 (mixed mounting type), select the SY50M type for SS5Y5 and the SY70M type for SS5Y7.

\*: A structure to prevent screws falling out is in place on the individual SUP block, making it much harder for the mounting screws to fall out.



#### <Example>



### How to Order Individual SUP/EXH Block Assembly

One-touch fitting Straight type SY **3** OM - **78** - **1** A - **C6**

One-touch fitting Elbow type SY **3** OM - **78** - **2** A - **L6**

Series	
3	SY3000
5	SY5000
7	SY7000

#### Block type

78	Individual SUP block
79	Individual EXH block

#### Individual SUP/EXH block assembly

2	Short elbow type (Type 12)
3	Long elbow type (Type 11)

\*: Long elbow type is for the SY5000/7000 only.

#### Port size (Metric/One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000
L4	Ø 4	●	●	—
L6	Ø 6	●	●	●
L8	Ø 8	—	●	●
L10	Ø 10	—	—	●
L12	Ø 12	—	—	●

#### Port size (Inch/One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000
LN3	Ø 5/32"	●	—	—
LN7	Ø 1/4"	●	●	—
LN9	Ø 5/16"	—	●	—
LN11	Ø 3/8"	—	—	●

#### Port size (Metric/One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000
C2	Ø 2	●	—	—
C3	Ø 3	●	—	—
C4	Ø 4	●	●	—
C6	Ø 6	●	●	●
C8	Ø 8	—	●	●
C10	Ø 10	—	—	●
C12	Ø 12	—	—	●

#### Port size (Inch/One-touch fittings)

Symbol	P, E port	SY3000	SY5000	SY7000
N1	Ø 1/8"	●	—	—
N3	Ø 5/32"	●	●	—
N7	Ø 1/4"	●	●	●
N9	Ø 5/16"	—	●	●
N11	Ø 3/8"	—	—	●

### ■ Individual EXH block assembly

On the circuit of the plug-in connector connection base, individual EXH block assembly can be used to individually exhaust series of valves when the exhaust from the valves would affect a number of other stations.

Individual EXH block assembly occupies 1 station.

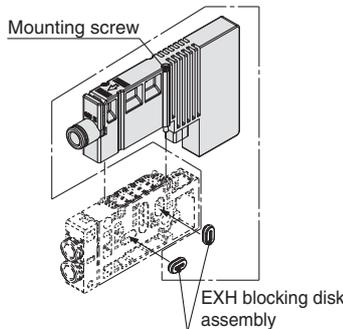
Blocking disks also supplied (4 pieces). Can be used to block both sides of the number of stations being isolated for individual exhaust. (as shown in example).

\*: Specify the mounting position of the block as well as the position where the EXH passage is to be blocked on the manifold specification sheet. Blocking is required for 1 or 2 positions for 1 set. (2 sets of EXH blocking disks (4 pcs.) to block EXH is attached to individual EXH block.)

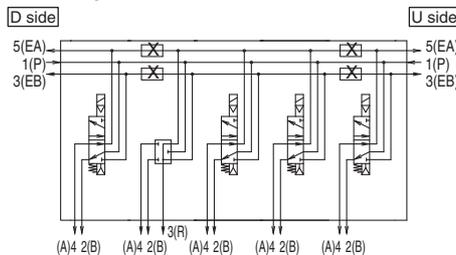
\*: Electrical wiring is connected to a number of stations in the individual EXH block manifold.

\*: When used in M10/11/12 (mixed mounting type), select the SY50M type for SS5Y5 and the SY70M type for SS5Y7.

\*: A structure to prevent screws falling out is in place on the individual EXH block, making it much harder for the mounting screws to fall out.



#### <Example>



## Manifold Options

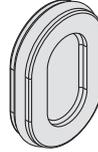
### ■ SUP/EXH blocking disk assembly (for connector type manifold, Type 10, 11, 12)

#### [SUP blocking disk]

By inserting the SUP blocking disk in the pressure supply passage of the manifold valve, can provide two different high and low pressure in one manifold.

#### [EXH blocking disk]

By inserting the EXH blocking disk in the exhaust passage of the manifold valve, can separate the exhaust from the valve so it does not affect the other valves. It can also be used for the manifold for the positive pressure and vacuum mixed manifold. (2 pcs. are required to block FA/EB both sides of the EXH.)



Series	SUP blocking disk assembly	EXH blocking disk assembly
<b>SY3000</b>	SY30M-40-1A	SY30M-40-2A
<b>SY5000</b>	SY50M-40-1A	SY50M-40-1A
<b>SY7000</b>	SY70M-40-1A	SY70M-40-1A

### ■ Label for blocking disk

Label to indicate and confirm on the manifold where the SUP/EXH blocking disk assemblies were inserted. (3 sheets each)

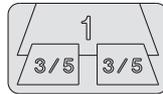
SUP/EXH blocking disk label



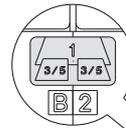
SUP blocking disk label



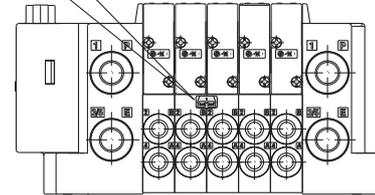
EXH blocking disk label



Series	Part no.
<b>SY3000</b>	SJ3000-155-1A
<b>SY5000</b>	
<b>SY7000</b>	



\*: If the blocking disk assembly is ordered using the manifold specification sheet and ordered at the same time as the manifold, the position where the blocking disk assembly is inserted will be labeled and shipped out.



### ■ Back pressure check valve assembly (Retrofit or pre-installed type)

It prevents cylinder malfunction caused by other valve exhaust entry. Insert it into EA/EB port (valve mounting side) on the manifold side of a valve which is affected. It is effective when a single-acting cylinder is used.

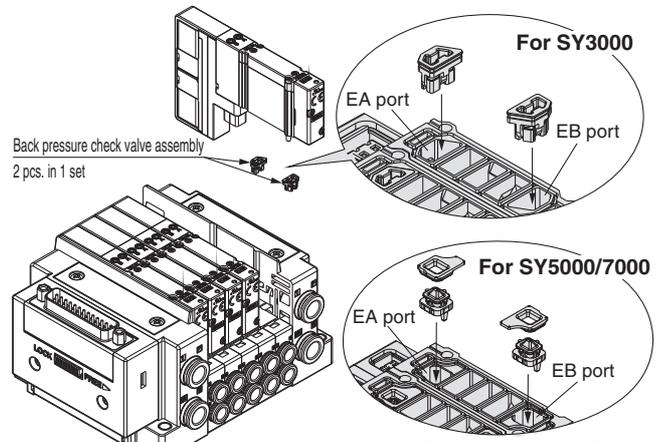
\*: When ordering assemblies incorporated with a manifold, refer to the Ordering Example below (when installed in all stations.)

\*: When a check valve for back pressure prevention is desired and is to be installed only in certain manifold stations, clearly indicate the part number and specify the mounting position on the manifold specification sheet.

#### <Precautions>

1. The manifold installed type back pressure check valve assembly is assembly parts with a check valve structure. However, since slight air leakage against the back pressure is allowed due to its structure, adverse effects of the back pressure due to increase in exhaust resistance cannot be prevented if the manifold exhaust port and other exhaust ports are put together for piping or if the piping diameter is narrowed. As a result, this may cause the actuator and air operated equipment to malfunction. So, be careful not to restrict the exhaust air. If the exhaust resistance becomes large, select a built-in valve type with rubber seal.

2. When the back pressure check valve assembly is mounted, please contact SMC for valve flow rate characteristics.



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

#### 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.

# Series SY3000/5000/7000

## Manifold Options

### ■ Dual flow fitting (for connector connecting base, Type 10, side ported)

This is a fitting for cylinder ports which enables simultaneous actuation and increase in flow rate of valves for 2 stations.

\*: When ordering assemblies incorporated into a manifold, refer to the Ordering Example below and specify on the manifold specification sheet.

### How to Order Dual Flow Fitting

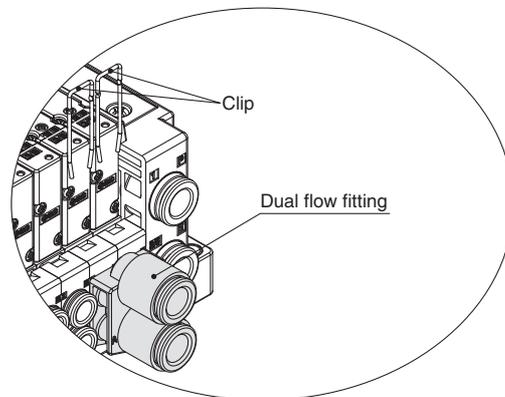
SY **3** 0M-120-1A-**C8**

Series ●

3	SY3000
5	SY5000

### ● A, B port size (One-touch fittings)

Symbol	A, B port	SY3000	SY5000
<b>C8</b>	Metric size	Ø 8	●
<b>C10</b>		Ø 10	—
<b>N9</b>	Inch size	Ø 5/16"	●
<b>N11</b>		Ø 3/8"	—



### Ordering Example

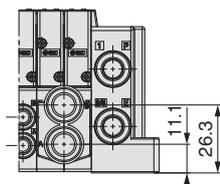
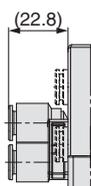
SS5Y3-10F1-08B-CM

\*SY3100-5U1

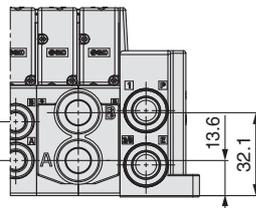
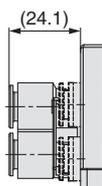
\*SY30M-120-1A-C8

The asterisk denotes the symbol for assembly.

### SY3000



### SY5000

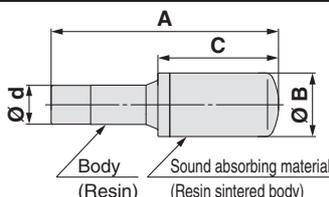


- \*: Specifically for side porting for a connector connecting base. Cannot be attached to bottom or top ported, or mixed mounting types that are metal or connector connecting bases.
- \*: When adding or changing clips, push them into the very end of the manifold for each station. Also, make sure to use the clip that was packed together, as the clip and the fitting for one station differ among products that can be used with the SY5000.
- \*: Not available for the SY7000 series.

### ■ Silencer (One-touch fitting connection type)

This silencer can be mounted to the 3/5 (E: EXH) port of the manifold in one step.

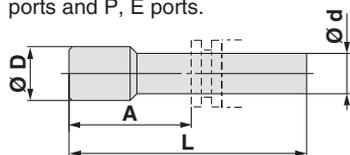
\*: Shipped together with the product.



Series	Model	Effective area	A	B	C
For SY3000 (Ø 8)	<b>AN15-C08</b>	20 mm <sup>2</sup>	45	13	20
For SY5000 (Ø 10)	<b>AN20-C10</b>	30 mm <sup>2</sup>	57.5	16.5	30.5
For SY7000 (Ø 12)	<b>AN30-C12</b>	41 mm <sup>2</sup>	71.5	20	43.5

### ■ Plug (White)

These are inserted in unused cylinder ports and P, E ports.



\*: Shipped together with the product.

### Dimensions

Applicable fitting size Ø d (Metric size)	Model	A	L	Ø D
2	<b>KJP-02</b>	8.2	17	3
3.2	<b>KQ2P-23</b>	16	31.5	5
4	<b>KQ2P-04</b>	16	32	6
6	<b>KQ2P-06</b>	18	35	8
8	<b>KQ2P-08</b>	20.5	39	10
10	<b>KQ2P-10</b>	22	43	12
12	<b>KQ2P-12</b>	24	45.5	14

Applicable fitting size Ø d (Inch size)	Model	A	L	Ø D
1/8"	<b>KQ2P-01</b>	16	31.5	5
5/32"	<b>KQ2P-03</b>	16	32	6
1/4"	<b>KQ2P-07</b>	18	35	8.5
5/16"	<b>KQ2P-09</b>	20.5	39	10
3/8"	<b>KQ2P-11</b>	22	43	11.5
1/2"	<b>KQ2P-13</b>	24	46	15

## Manifold Options

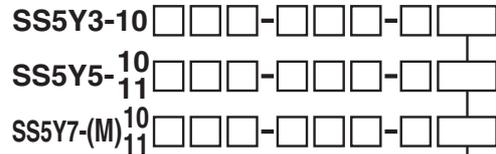
A transparent plastic plate to put a label with the name of the function of the solenoid valve.

### ■ Name plate (For connector connecting base)

**SY3000: For SS5Y3-10 (Side ported)**  
**SY5000: For SS5Y5-10/11 (Side/Bottom ported)**  
**SY7000: For SS5Y7-(M)10/11 (Side/Bottom ported)**

**Name plate bracket assembly and name plate mounting instructions**  
 Insert it into the groove on the name plate bracket onto which a SUP/EXH (end) block is mounted, as shown in Figure 2.

\*: When ordering assemblies incorporated with a manifold, refer to the Ordering Example below.



Mounting and Option

Symbol	Mounting option					
	Printing		DIN rail			Direct mounting
	Yes	No	With	Without	Specified length	
AA	●	—	—	—	—	●
A	●	—	●	—	—	—
A0	●	—	—	●	—	—
A3	●	—	—	—	For 3 stations	—
⋮	⋮	⋮	⋮	⋮	⋮	—
A24	●	—	—	—	For 24 stations	—
BA	—	●	—	—	—	●
B	—	●	●	—	—	—
B0	—	●	—	●	—	—
B3	—	●	—	—	For 3 stations	—
⋮	⋮	⋮	⋮	⋮	⋮	—
B24	—	●	—	—	For 24 stations	—

\*: Name plates cannot be mounted onto Type 12 (Top ported) and Type 10 (Side ported) mixed mounting types with top ported valves, nor onto manifolds with optional laminated spacers.

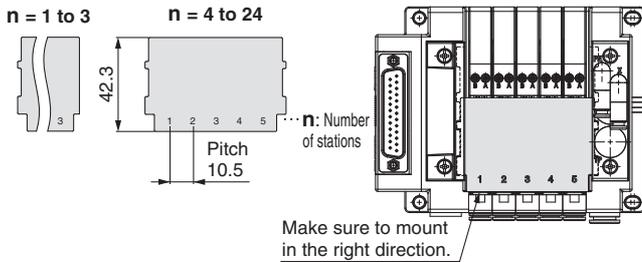
\*: No name plate settings are available for the SY3000/SY5000 mixed mounting types. However, they are available for the SY5000/SY7000 mixed mounting types.

### Ordering Example

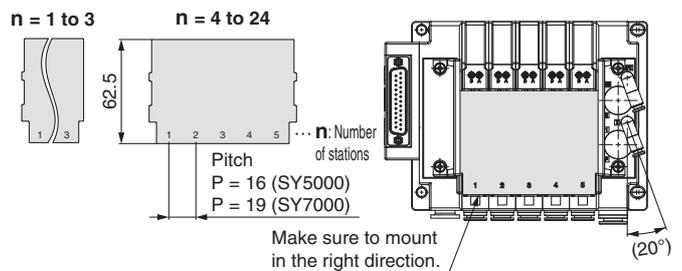
SS5Y3-10F1-05UR-C6AA ..... 1 set  
 \*SY3200R-5U1 ..... 5 sets

The asterisk denotes the symbol for assembly.

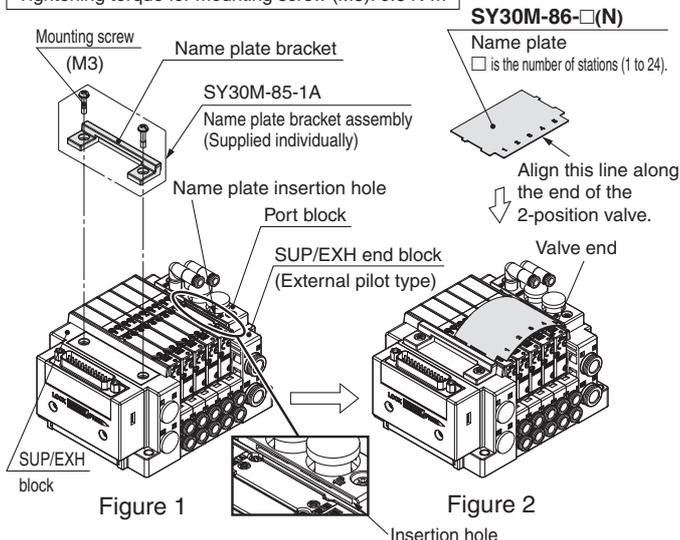
### <SY3000>



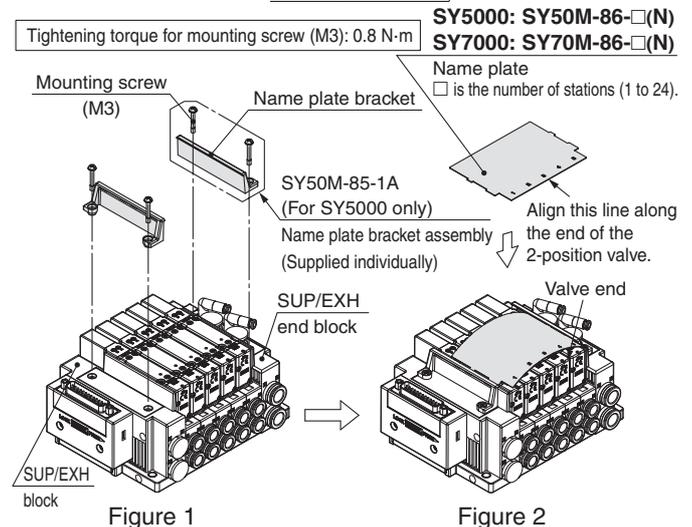
### <SY5000/7000>



Tightening torque for mounting screw (M3): 0.8 N·m



Tightening torque for mounting screw (M3): 0.8 N·m



Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

# Series SY3000/5000/7000

## Manifold Options

A transparent plastic plate to put a label with the name of the function of the solenoid valve.

### ■ If adding a name plate

If adding a name plate to a manifold in use, order a name plate bracket assembly, in addition to ordering a name plate. Refer to the table below for the part number and the amount.

### Name plate part number

Model		SS5Y3-10	SS5Y5-10/11	SS5Y7-(M)10/11	Note
Name plate	Printed	SY30M-86-□N	SY50M-86-□N	SY70M-86-□N	□:Number of stations (1 to 24)
	No printing	SY30M-86-□	SY50M-86-□	SY70M-86-□	

### Name plate bracket assembly part number and number of items ordered

Model		SS5Y3-10	SS5Y5-10/11
Name plate assembly part number		<b>SY30M-85-1A</b>	<b>SY50M-85-1A</b>
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.*1	
	External pilot double sided piping	Not required*1	

\*1: If the manifold is an external pilot, an insertion slot for name plates is on the port block of the SUP/EXH block assembly. Thus, a bracket assembly is no longer required on the port piping side.

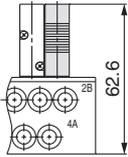
\*: Name plate bracket assembly is not required for the SY7000.

### Caution

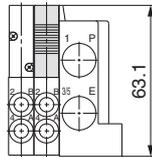
1. Be sure to shut off the power and air supplies before mounting the name plate bracket assembly. Furthermore, since air may remain inside the actuator, piping and manifold, confirm that the air is completely exhausted before performing any work.
2. When disassembly and assembly are performed, air leakage may result if the tightening of the bracket mounting screws is inadequate.

## Dimensions: Manifold Options/Series SY3000

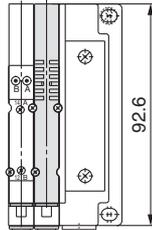
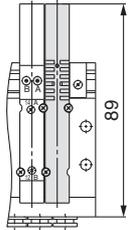
### ■ Blanking plate assembly



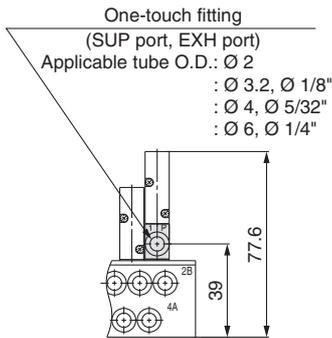
<Type 50, 51, 52>



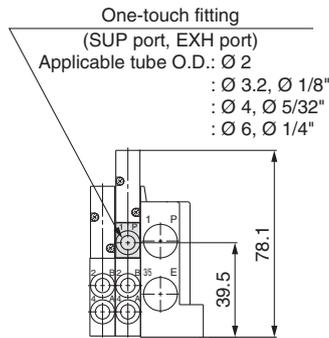
<Type 10, 12>



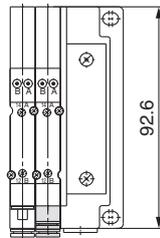
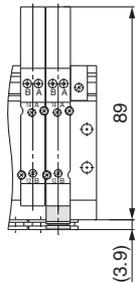
### ■ Individual SUP/EXH spacer assembly (Side ported)



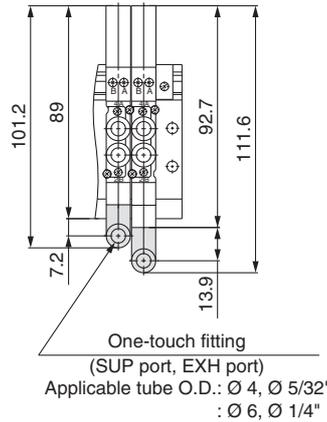
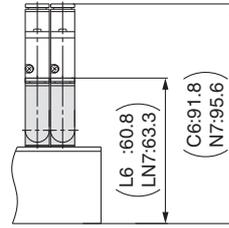
<Type 50>



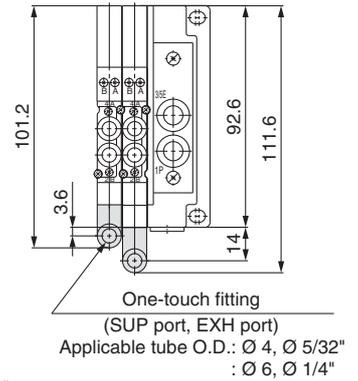
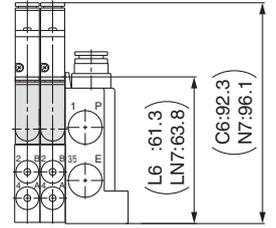
<Type 10>



### ■ Individual SUP/EXH spacer assembly (Top/Bottom ported)

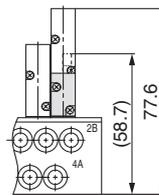


<Type 51, 52>

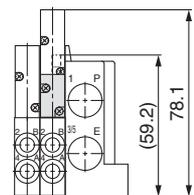


<Type 12>

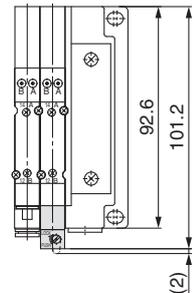
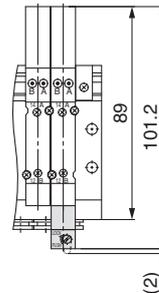
### ■ SUP stop valve spacer assembly with residual pressure release valve



<Type 50, 51, 52>



<Type 10, 12>



\*: The dimensions within ( ) applies to the SY30-50-1AE.

Valve

Plug-in Sub-plate

Plug-in Metal Base

Type 50, 51, 52  
Manifold Exploded View

Plug-in Connector Connecting Base

Type 10, 11, 12  
Manifold Exploded View

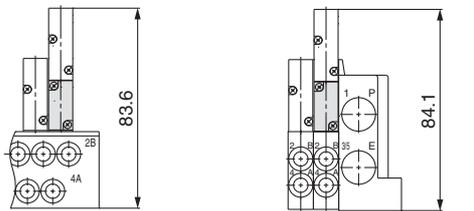
One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

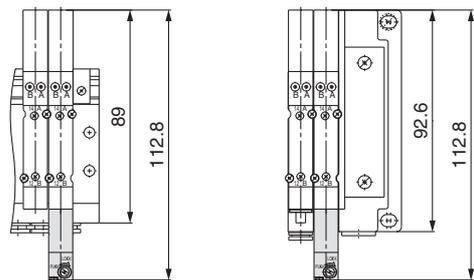
# Series SY3000/5000/7000

## Dimensions: Manifold Options/Series SY3000

### Double check spacer assembly with residual pressure release valve

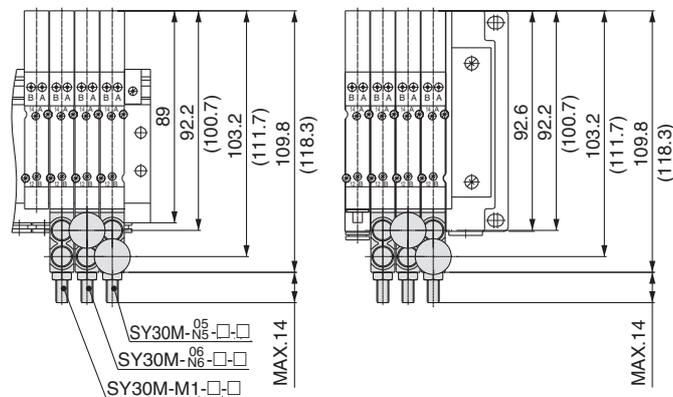
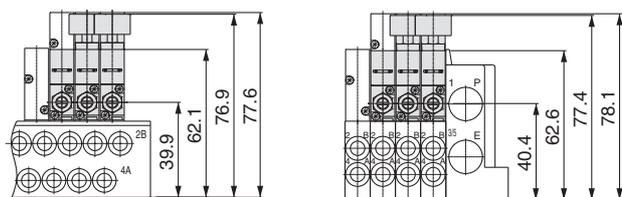


<Type 50, 51>



<Type 10>

### Interface regulator

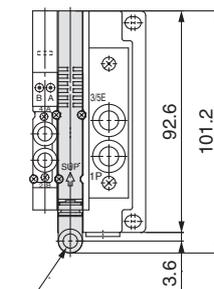
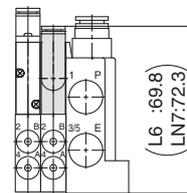


<Type 50, 51, 52>

<Type 10, 12>

\*The dimensions within ( ) applies to the SY30M-□-□-3.

### Individual SUP/EXH block assembly (Top ported)

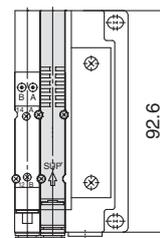
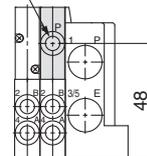


One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\varnothing 4$ ,  $\varnothing 5/32$ "  
:  $\varnothing 6$ ,  $\varnothing 1/4$ "

<Type 12>

### Individual SUP/EXH block assembly (Side ported)

One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\varnothing 2$   
:  $\varnothing 3.2$ ,  $\varnothing 1/8$ "  
:  $\varnothing 4$ ,  $\varnothing 5/32$ "  
:  $\varnothing 6$ ,  $\varnothing 1/4$ "



<Type 10>

**Dimensions: Manifold Options/Series SY5000**

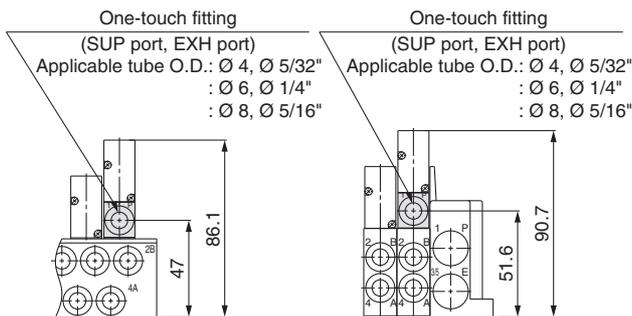
■ **Blanking plate assembly**



<Type 50, 51, 52>

<Type 10, 11, 12>

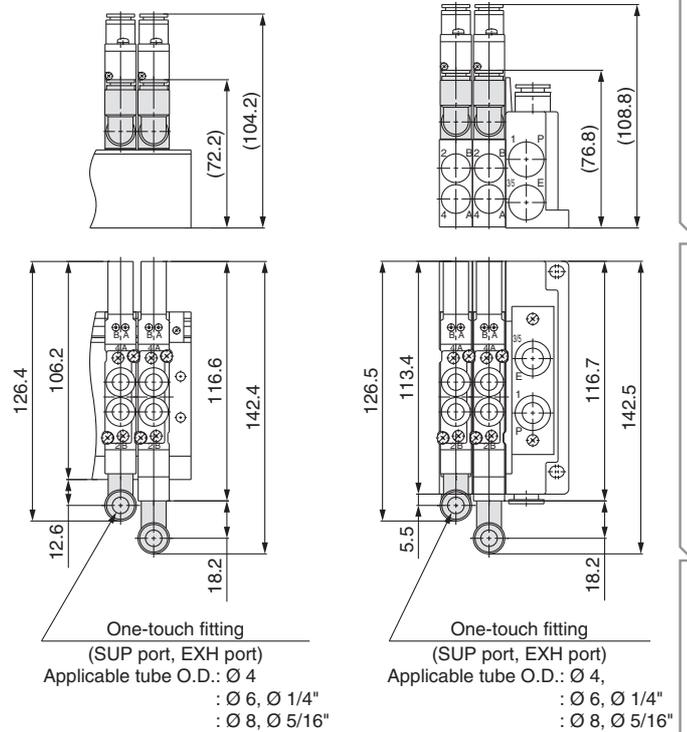
■ **Individual SUP/EXH spacer assembly (Side ported)**



<Type 50>

<Type 10>

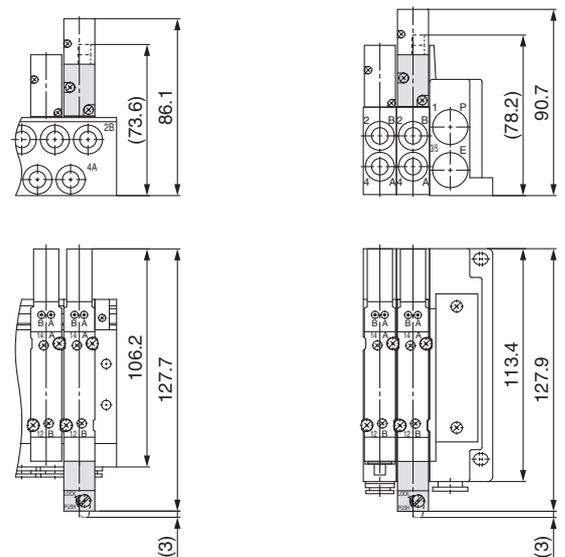
■ **Individual SUP/EXH spacer assembly (Top/Bottom ported)**



<Type 51, 52>

<Type 11, 12>

■ **SUP stop valve spacer assembly with residual pressure release valve**



<Type 50, 51, 52>

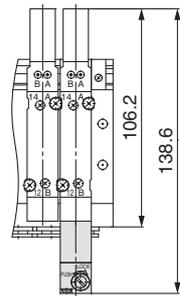
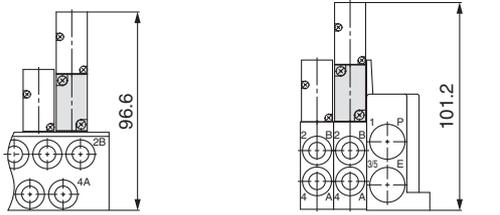
<Type 10, 11, 12>

※: The dimensions within ( ) applies to the SY50-50-1AE.

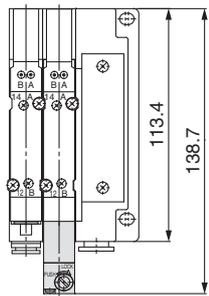
# Series SY3000/5000/7000

## Dimensions: Manifold Options/Series SY5000

### Double check spacer assembly with residual pressure release valve

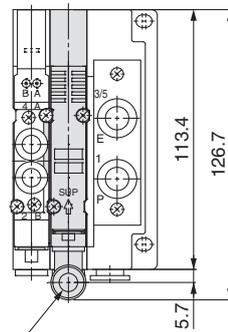
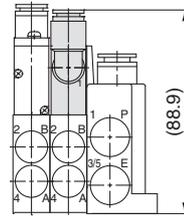


<Type 50, 51>



<Type 10, 11>

### Individual SUP/EXH block assembly (Top ported)

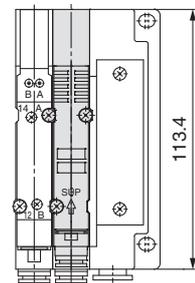
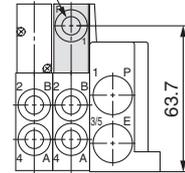


One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\varnothing 4$   
:  $\varnothing 6$ ,  $\varnothing 1/4$ "  
:  $\varnothing 8$ ,  $\varnothing 5/16$ "

<Type 12>

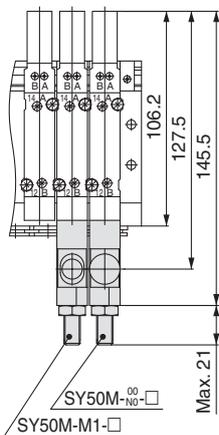
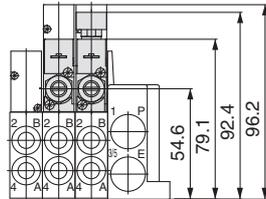
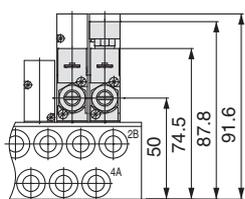
### Individual SUP/EXH block assembly (Side ported)

One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\varnothing 4$ ,  $\varnothing 5/32$ "  
:  $\varnothing 6$ ,  $\varnothing 1/4$ "  
:  $\varnothing 8$ ,  $\varnothing 5/16$ "

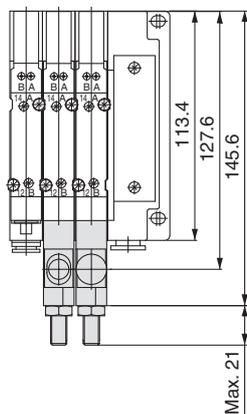


<Type 10>

### Interface regulator



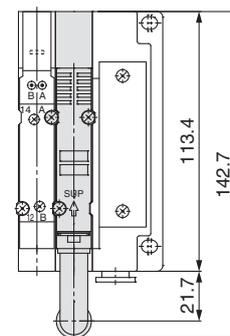
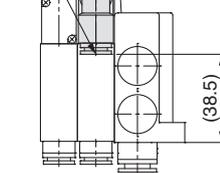
<Type 50, 51, 52>



<Type 10, 11, 12>

### Individual SUP/EXH block assembly (Bottom ported)

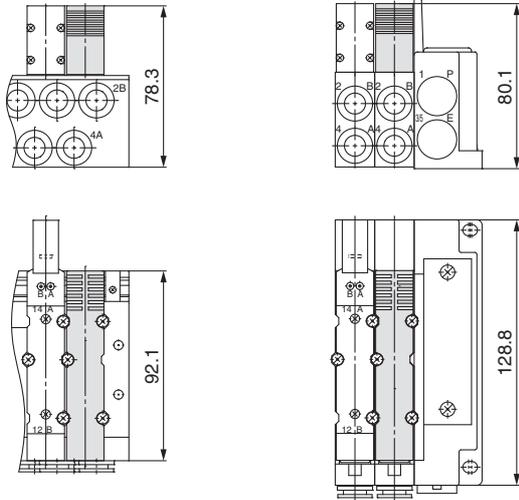
One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\varnothing 4$ ,  
:  $\varnothing 6$ ,  $\varnothing 1/4$ "  
:  $\varnothing 8$ ,  $\varnothing 5/16$ "



<Type 11>

**Dimensions: Manifold Options/Series SY7000**

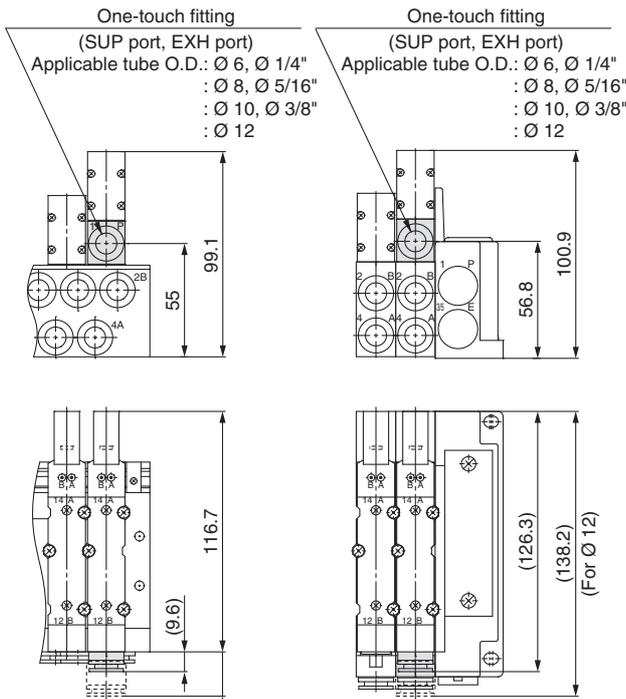
**Blanking plate assembly**



<Type 50, 51, 52>

<Type 10, 11, 12>

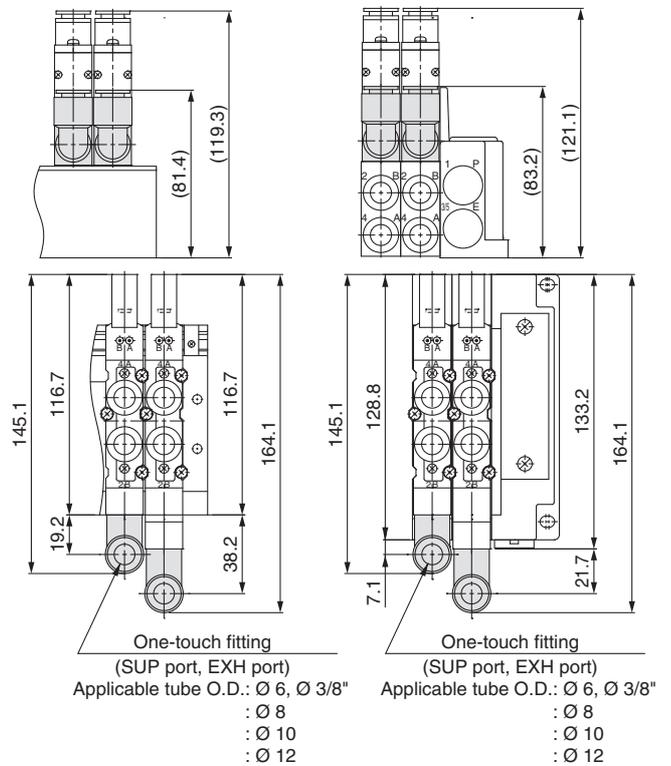
**Individual SUP/EXH spacer assembly (Side ported)**



<Type 50>

<Type 10>

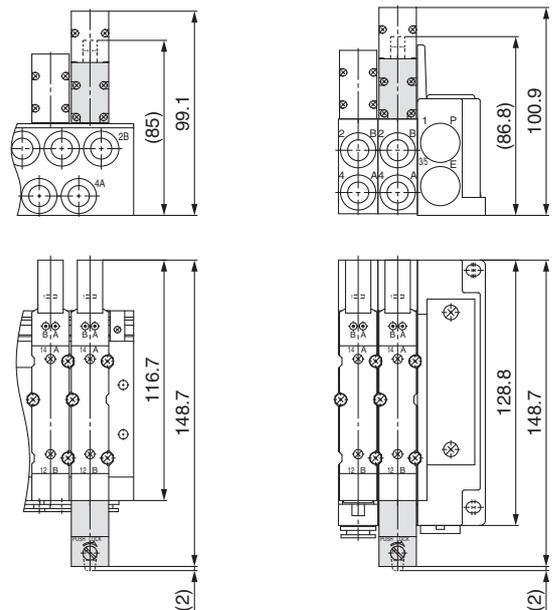
**Individual SUP/EXH spacer assembly (Top/Bottom ported)**



<Type 51, 52>

<Type 11, 12>

**SUP stop valve spacer assembly with residual pressure release valve**



<Type 50, 51, 52>

<Type 10, 11, 12>

※: The dimensions within ( ) applies to the SY70-50-1AE.

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

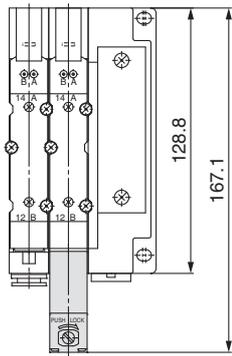
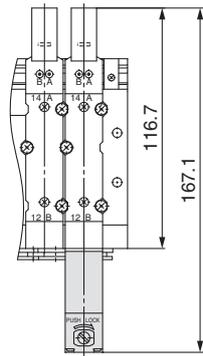
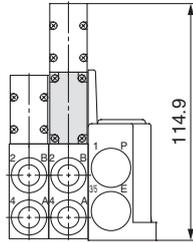
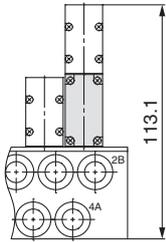
One-touch Fittings/  
Plug Assembly Part No.

Manifold Options

# Series SY3000/5000/7000

## Dimensions: Manifold Options/Series SY7000

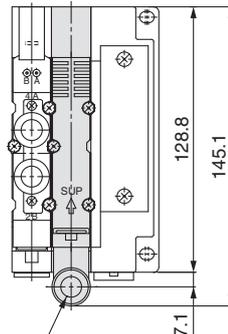
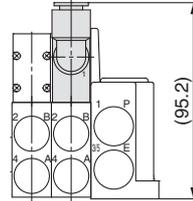
### Double check spacer assembly with residual pressure release valve



<Type 50, 51>

<Type 10, 11>

### Individual SUP/EXH block assembly (Top ported)



One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\varnothing 6$ ,  $\varnothing 3/8$ "

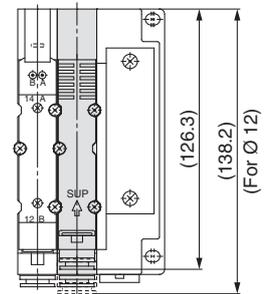
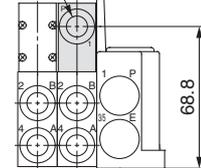
<Type 12>

:  $\varnothing 8$   
:  $\varnothing 10$   
:  $\varnothing 12$

### Individual SUP/EXH block assembly (Side ported)

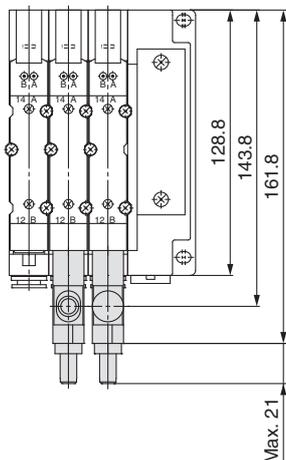
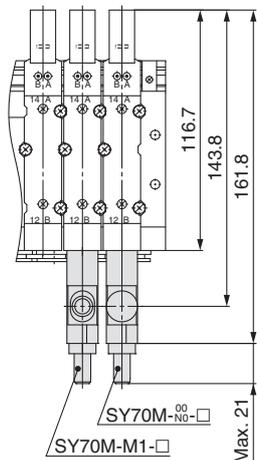
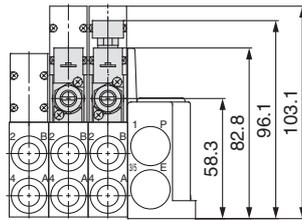
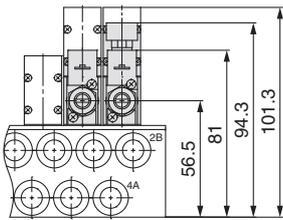
One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\varnothing 6$ ,  $\varnothing 3/8$ "

:  $\varnothing 8$   
:  $\varnothing 10$   
:  $\varnothing 12$



<Type 10>

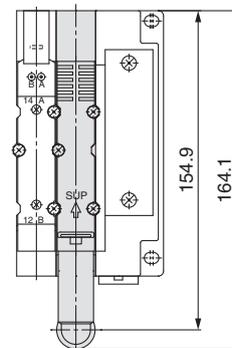
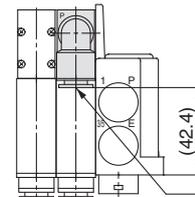
### Interface regulator



<Type 50, 51, 52>

<Type 10, 11, 12>

### Individual SUP/EXH block assembly (Bottom ported)



<Type 11>

One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\varnothing 8$ ,  $\varnothing 3/8$ "

:  $\varnothing 10$   
:  $\varnothing 12$



# Series SY3000/5000/7000

## Specific Product Precautions 1

Be sure to read this before handling. Refer to the back cover for Safety Instructions. For 3/4/5 Port Solenoid Valve Precautions, refer to "Handling Precautions for SMC Products" and the Operation Manual on the SMC website, <http://www.smc.eu>

### Environment

#### Warning

1. Do not use valves in atmospheres of corrosive gases, chemicals, sea water, water, water vapor, or where there is direct contact with any of these.
2. Products compliant with IP67 enclosures (based on IEC60529) are protected against dust and water, however, these products cannot be used in water. If using in an environment that is exposed to water and dust splashes, take measures such as using a protective cover.
3. When using built-in silencer type manifold with an IP67 enclosure, keep the exhaust port of the silencer from coming in direct contact with water or other liquids.
4. The metal seal valve is provided with a hole to discharge the pilot EXH. When using in atmospheres containing water and dust, mount it horizontally.

### Valve Mounting

#### Caution

Mount it so that there is no slippage or deformation in gaskets, and tighten with the tightening torque as shown below.

Series	Thread size	Tightening torque
SY3000	M2	0.16 N·m
SY5000/7000	M3	0.8 N·m

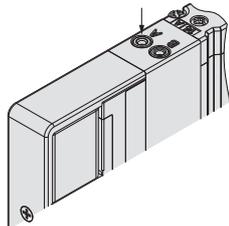
### Manual Override

#### Warning

Regardless of an electric signal for the valve, the manual override is used for switching the main valve. Connected actuator is started by manual operation. Use the manual override after confirming that there is no danger.

##### Non-locking push type

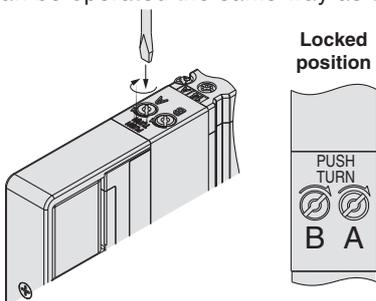
Push down on the manual override button until it stops.



##### Push-turn locking slotted type [Type D]

Push down on the manual override with a small flat head screwdriver until it stops, and then turn it 90° clockwise. The manual override is then locked. To release it, turn it counterclockwise.

If it is not turned, it can be operated the same way as the non-locking type.

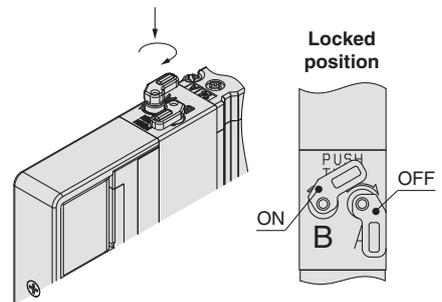


### Manual Override

#### Warning

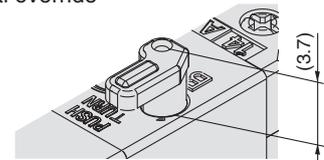
##### Push-turn locking lever type [Type E]

Push down on the manual override by finger until it stops, and then turn it 60° clockwise. The manual override is then locked. To release it, turn it counterclockwise. If it is not turned, it can be operated the same way as the non-locking type.



Carefully check the manual override projection amount.

Max. (at OFF): 3.7 mm



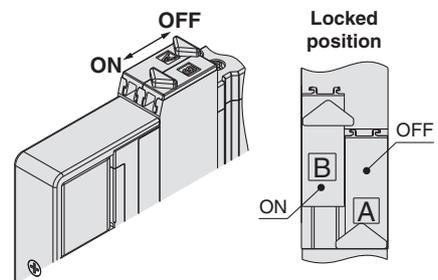
#### Caution

Do not apply excessive torque when turning the manual override. [0.1 N·m]

When locking the manual override, be sure to push it down before turning. Turning without first pushing it down can cause damage to the manual override and other trouble such as air leakage etc.

##### Slide locking type (Manual)

It is locked by sliding the manual override all the way in the direction indicated by the arrow (ON side) with a small flat head screwdriver or with your fingers. Slide it in the direction indicated by the arrow (OFF side) to release it.





# Series SY3000/5000/7000

## Specific Product Precautions 2

Be sure to read this before handling. Refer to the back cover for Safety Instructions. For 3/4/5 Port Solenoid Valve Precautions, refer to “Handling Precautions for SMC Products” and the Operation Manual on the SMC website, <http://www.smc.eu>

### Back Pressure Check Valve

#### ⚠ Caution

- There are two types of back pressure check valves; the one which is built into a valve (with rubber seal type only) and the one which is built in on the manifold side with connector connection. Both of them have a check valve built-in to prevent back pressure. For this reason, use caution that the valves with external pilot specification cannot be pressurised from exhaust port [3/5(E)]. As compared with the types which do not integrate the back pressure check valve, C value of the flow rate characteristics goes down. Please contact SMC for details.
- The manifold installed type back pressure check valve assembly is assembly parts with a check valve structure. However, since slight air leakage against the back pressure is allowed due to its structure, adverse effects of the back pressure due to increase in exhaust resistance cannot be prevented if the manifold exhaust port and other exhaust ports are put together for piping or if the piping diameter is narrowed. As a result, this may cause the actuator and air operated equipment to malfunction. So, be careful not to restrict the exhaust air. If the exhaust resistance becomes large, select a built-in valve type with rubber seal.
- Do not switch valves when A or B port is open to the atmosphere, or while the actuators and air operated equipment are in operation. For built-in valve type with rubber seal, the back pressure prevention seal may be peeled off, which may cause air leakage or malfunctions. Use caution especially when performing a trial operation or maintenance work.

### Valve and Manifold Combination

The SY series plug-in valve has the common configuration of the valve mounting surface between base mounted type (SY<sup>3/4</sup>□0□) and top ported type (SY<sup>3/4</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	<p>(A)4 2(B) (EA)5 1 3(EB) (P)</p>	<p>(A)4 2(B) (EA)5 1 3(EB) (P)</p>
	Double	<p>(A)4 2(B) (EA)5 1 3(EB) (P)</p>	<p>(A)4 2(B) (EA)5 1 3(EB) (P)</p>



# Series SY3000/5000/7000 Specific Product Precautions 3

Be sure to read this before handling. Refer to the back cover for Safety Instructions. For 3/4/5 Port Solenoid Valve Precautions, refer to "Handling Precautions for SMC Products" and the Operation Manual on the SMC website, <http://www.smc.eu>

## Light/Surge Voltage Suppressor

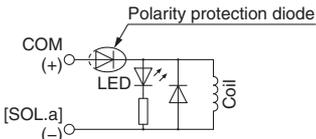
### Caution

#### ■ Polar type

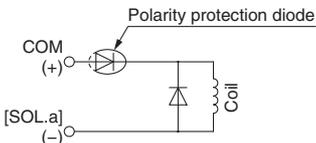
##### Positive common

##### Single solenoid

Light/surge voltage suppressor (□Z)



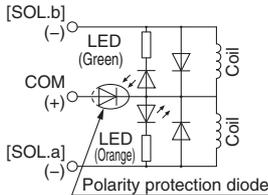
Surge voltage suppressor (□S)



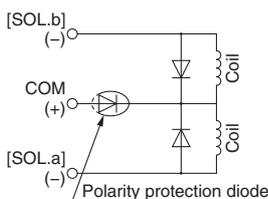
##### Positive common

##### Double solenoid, 3-position, 4-position

Light/surge voltage suppressor (□Z)



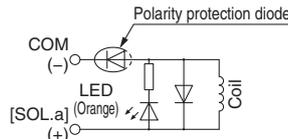
Surge voltage suppressor (□S)



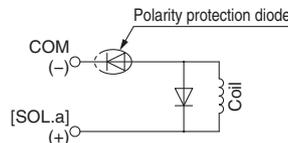
##### Negative common

##### Single solenoid

Light/surge voltage suppressor (□NZ)



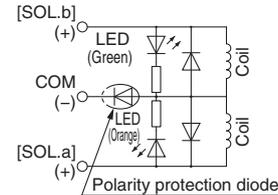
Surge voltage suppressor (□NS)



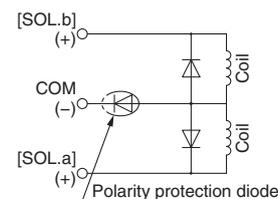
##### Negative common

##### Double solenoid, 3-position, 4-position

Light/surge voltage suppressor (□NZ)



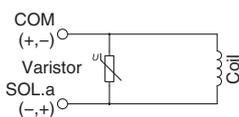
Surge voltage suppressor (□NS)



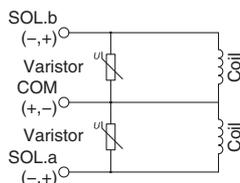
#### ■ Non-polar type

##### With surge voltage suppressor (□R)

##### Single solenoid

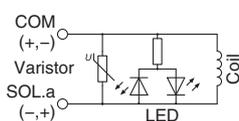


##### Double solenoid

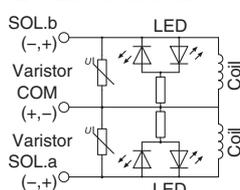


##### With light/surge voltage suppressor (□U)

##### Single solenoid



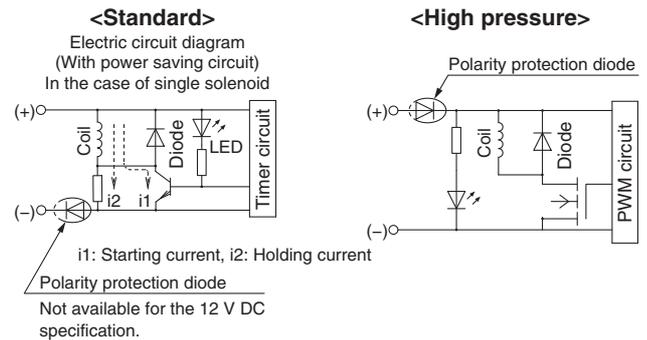
##### Double solenoid



#### ■ With power saving circuit

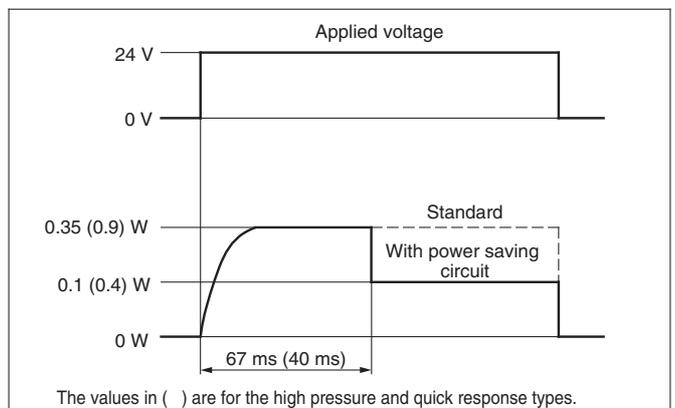
Power consumption is decreased by approx. 1/3 by reducing the wattage required to hold the valve in an energised state. (Effective energising time is over 67 ms at 24 V DC.)

\*: Be careful of the energising time, as quick response and high pressure types will become operational when the energising time is over 40 ms.



The above circuit reduces the power consumption for holding in order to save energy. Refer to the electrical power waveform as shown below.

#### <Electrical power waveform with power saving circuit>



- The 12 V DC specification with power saving circuit (standard specification) does not have the polarity protection diode. Do not make a mistake with the polarity.
- Since the voltage will drop by approx. 0.5 V due to the transistor, pay attention to the allowable voltage fluctuation. (For details, refer to the solenoid specifications of each type of valve.)

#### Residual voltage of the surge voltage suppressor

\*: If a varistor or diode surge voltage suppressor is used, there is some residual voltage to the protection element and rated voltage. Therefore, refer to the below table and pay attention to the surge voltage protection on the controller side. Also, since the response time does change, refer to the valve specifications on page 14.

#### Residual Voltage

Surge voltage suppressor	DC	
	24 V	12 V
S, Z	Approx. 1 V	
R, U	Approx. 47 V	Approx. 32 V



# Series SY3000/5000/7000

## Specific Product Precautions 4

Be sure to read this before handling. Refer to the back cover for Safety Instructions. For 3/4/5 Port Solenoid Valve Precautions, refer to "Handling Precautions for SMC Products" and the Operation Manual on the SMC website, <http://www.smc.eu>

### Continuous Duty

#### Caution

If a valve is energised continuously for a long period of time, the rise in temperature due to heat-up of the coil assembly may cause a decline in solenoid valve performance, reduce service life, or have adverse effects on peripheral equipment. If the valve is energised continuously for a long period of time, be sure to use a valve with power saving circuit. In particular, if three or more adjacent stations on the manifold are energised simultaneously for extended periods of time or if the valves on A side and B side are energised simultaneously for a long period of time, take special care as the temperature rise will be greater.

### Countermeasure for Surge Voltage Intrusion

#### ■ Sneak-in of surge voltage

With non-polar type valves, at times of sudden interruption of the loading power supply, such as emergency shutdown, surge voltage intrusion may be generated from loading equipment with a large capacity (power consumption), and the valve in a de-energised state may switch over (see Figure 1). When installing a breaker circuit for the loading power supply, consider using a valve with polarity (with polarity protection diode), or install a surge absorption diode between the loading equipment COM line and the output equipment COM line (see Figure 2).

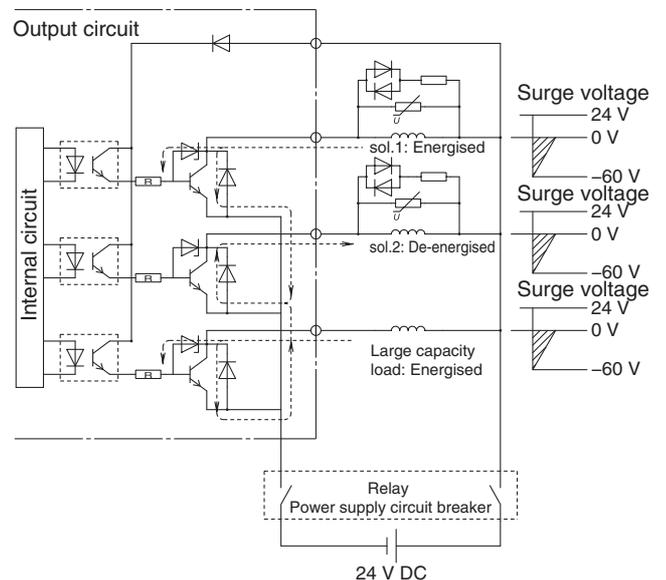


Figure 1. Surge intrusion circuit example (NPN outlet example) (24 V DC)

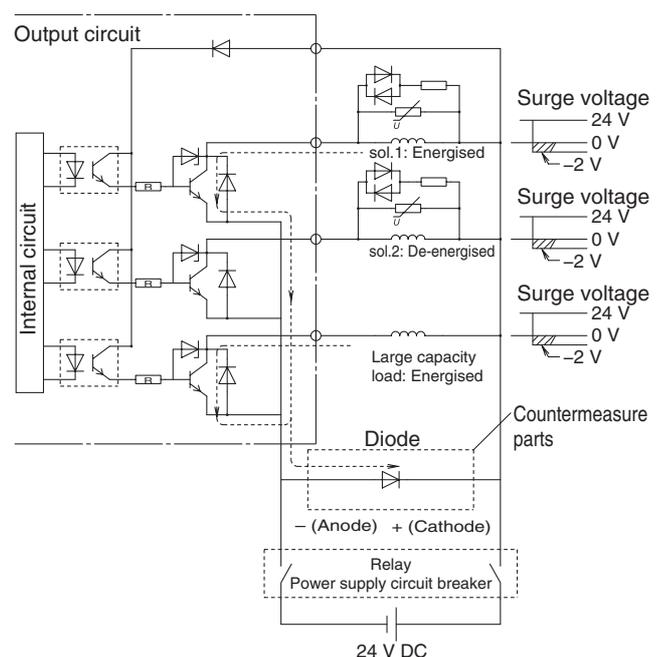


Figure 2. Surge intrusion circuit example (NPN outlet example) (24 V DC)



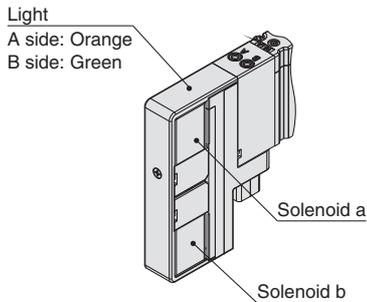
# Series SY3000/5000/7000

## Specific Product Precautions 5

Be sure to read this before handling. Refer to the back cover for Safety Instructions. For 3/4/5 Port Solenoid Valve Precautions, refer to “Handling Precautions for SMC Products” and the Operation Manual on the SMC website, <http://www.smc.eu>

### Light Indication

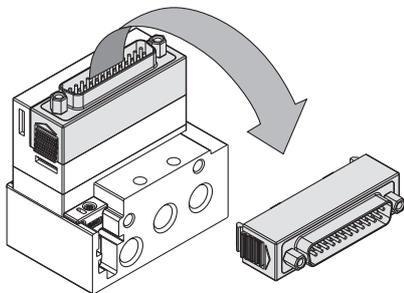
When equipped with indicator light and surge voltage suppressor, the light window turns orange when solenoid a is energised, and it turns green when solenoid b is energised.



### Type 5 (Metal Base) Changing Connector Entry Direction

#### Caution

Connector direction for electrical entry of D-sub connector, flat ribbon cable and PC wiring can be changed. If the directional change is required, push the lever on both sides to remove the connector and change the connector direction for electrical entry as shown in the figure. Since lead wire assemblies are attached to the connector, excessive pulling or twisting can cause broken wires or other trouble. Also, take precautions so that lead wires are not caught and pinched when installing the connector.

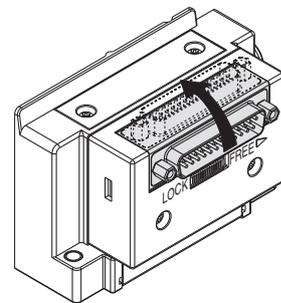


### Type 1 (Connector Connecting Base) Changing Connector Entry Direction

#### Caution

Connector direction for electrical entry of D-sub connector <IP40>, flat ribbon cable and PC wiring can be changed. If the directional change is required, slide the lever on the side of the connector block to the FREE position, and then change the direction as shown in the figure. Also, before connecting the connector, be sure to return the lever to the LOCK position. (If the lever is difficult to slide, move the connector a little bit to make it easier to slide the lever.)

If an excessive force is applied on the connector in the LOCK position, the connector block may be damaged. Also, using in such a way that the connector floats in the FREE position, it may cause the lead wire etc., to break. Thus, refrain from using in these ways.

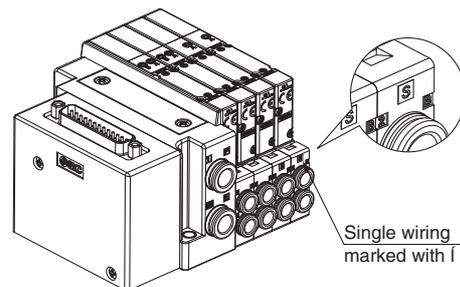


### How to Order Manifold

#### Caution

The letter “f” is indicated on manifold blocks for the SY series Type 1 (connector connecting base) as shown below. This indication refers to the type of substrate assembly (single wiring) inside the manifold blocks. When there is no symbol, double wiring is used.

When the manifold specification sheet does not include a wiring specification, all stations will be double wiring specification. In this case, single and double solenoid valves can be mounted in any position, but when a single valve is used, there will be an unused control signal. To avoid this, indicate positions of manifold blocks for single wiring specification and double wiring specification on a manifold specification sheet. (Note that double, 3-or 4-position valves cannot be used for manifolds blocks with single wiring specification.)





# Series SY3000/5000/7000 Specific Product Precautions 6

Be sure to read this before handling. Refer to the back cover for Safety Instructions. For 3/4/5 Port Solenoid Valve Precautions, refer to "Handling Precautions for SMC Products" and the Operation Manual on the SMC website, <http://www.smc.eu>

## Substrate Assemblies inside Manifolds

### ⚠ Caution

Substrate assemblies inside of manifolds cannot be taken apart. Attempting to do so may damage parts.

## Fixation of DIN Rail Mounting Type Manifold

### ⚠ Caution

1. When the manifold is fixed with bolts on a mounting surface etc., it can be operated just by fixing on both ends of the DIN rail if the bottom surface of the DIN rail is entirely in contact with the mounting surface when mounted horizontally. However, if it is used with other mounting or with side or reverse mounting, fix the DIN rail with bolts at regular intervals. As a guide, insert bolts in 2 locations for 2-5 stations, 3 locations for 6-10 stations, 4 locations for 11-15 stations, 5 locations for 16-20 stations and 6 locations for 21-24 stations.
2. When using the manifold with DIN rail in an environment where any vibration or impact is applied to it, the DIN rail itself may be broken. In particular, if the installation surface vibrates when mounting the manifold on the wall or if a load is directly applied to the manifold, the DIN rail may be broken, causing the manifold to drop. When any vibration, impact, or load is applied to the manifold, be sure to use the direct mounting manifold.

## Port Block Assembly and How to Change Piping Types between Top and Side

### ⚠ Caution

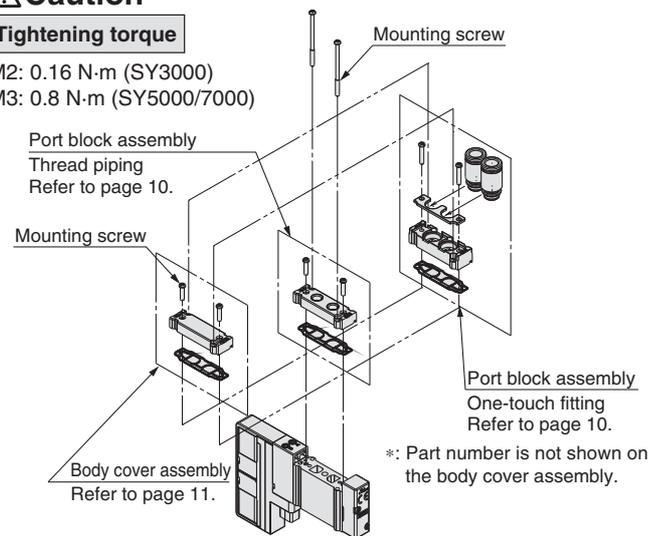
For top ported type, the port size of A and B ports can be changed by switching the port block assemblies which are mounted on the body. The piping method can also be changed by switching the top ported type port block assembly with the side ported type cover assembly. Also, it may cause air leakage if the mounting screws are not tightened securely enough when they are switched. Take care to tighten to the correct tightening torque. Refer to page 247 for part numbers of port block assembly and body cover assembly.

When switching them while valves are mounted on a manifold, remove the clip with a flat head screwdriver before switching the port plugs and the One-touch fittings. It may cause air leakage if the mounting screws are not tightened or the clip is not inserted securely enough when they are switched. Take care to tighten to the correct tightening torque.

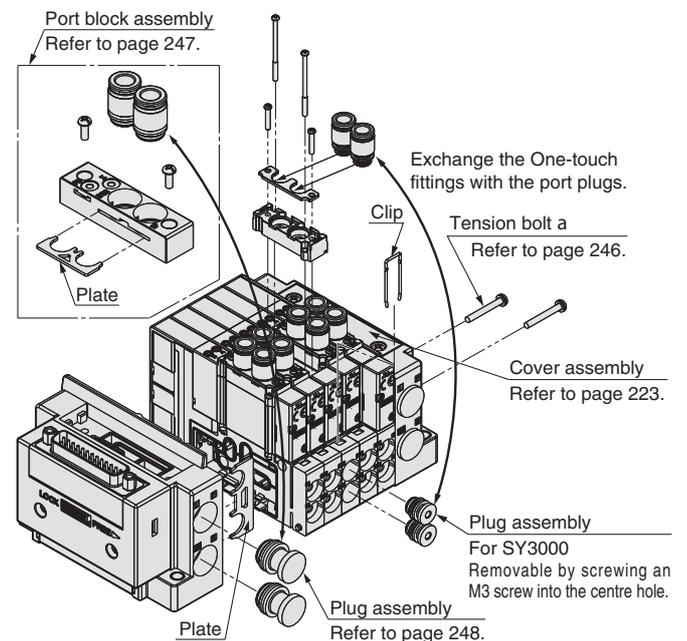
### ⚠ Caution

#### Tightening torque

- M2: 0.16 N·m (SY3000)
- M3: 0.8 N·m (SY5000/7000)



## ■ How to change while mounted on a manifold





# Series SY3000/5000/7000 Specific Product Precautions 7

Be sure to read this before handling. Refer to the back cover for Safety Instructions. For 3/4/5 Port Solenoid Valve Precautions, refer to "Handling Precautions for SMC Products" and the Operation Manual on the SMC website, <http://www.smc.eu>

## Changing One-touch Fittings

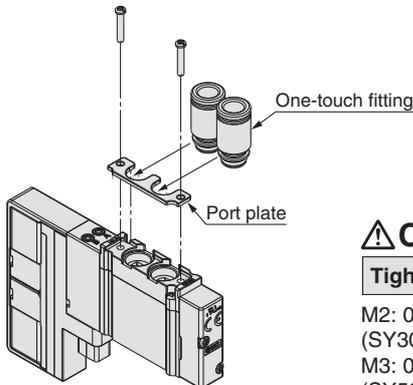
### ⚠ Caution

By replacing One-touch fittings of valve or manifold base, it is possible to change the connection diameter of the 4(A), 2(B), 1(P), 3/5(E) ports.

When replacing the One-touch fittings, remove the clip or the plate and the plate mounting screws with a screwdriver before pulling the One-touch fittings off. Mount the One-touch fittings by following the removal procedure in reverse.

It may cause air leakage if the mounting screws are not tightened or the clip and the clip plate are not inserted securely enough when they are switched. Take care to tighten to the correct tightening torque. Refer to page 248 for part numbers of One-touch fittings for valve or manifold.

#### ■ Valve



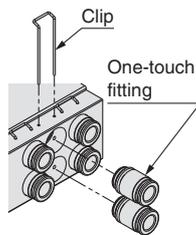
### ⚠ Caution

#### Tightening torque

M2: 0.16 N·m  
(SY3000)  
M3: 0.8 N·m  
(SY5000/7000)

#### ■ Plug-in metal base

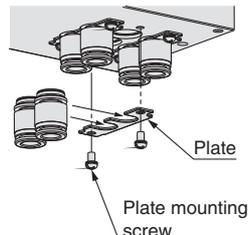
##### • Side ported (Type 50)



#### Clip part no. (10 pcs. included)

Series	Part no.
SY3000	SY30M-19-2A
SY5000	SY50M-19-2A
SY7000	SY70M-19-2A

##### • Bottom ported (Type 51)



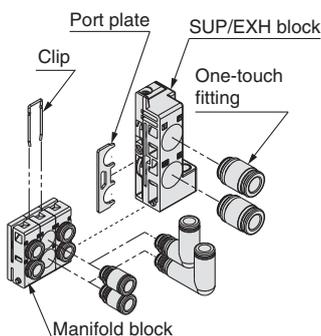
#### Plate assembly part no. (10 pcs. included)

Series	Part no.
SY3000	SY30M-10-3A
SY5000	SY50M-10-6A
SY7000	SY70M-10-7A

\*: Including mounting screw

#### ■ Plug-in connector connecting base

##### • Side ported (Type 10)



#### Clip part no. (10 pcs. included)

Series	Part no.
SY3000	SY30M-19-1A
SY5000*1	SY50M-19-6A
SY3000/5000 Mixed mounting type	SY50M-19-1A
SY7000	SV3000-70-1A

\*1: A and B ports (Ø 8 and Ø 5/16") of the SY3000/5000 mixed mounting type are those for the SY5000.

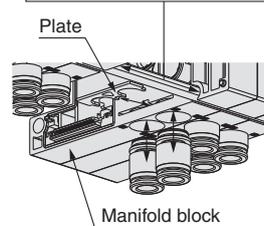
\*: If the port plate for the SUP/EXH block is required, please contact SMC.

## Changing One-touch Fittings

### ⚠ Caution

#### • Bottom ported (Type 11)

Secure enough space between the manifold blocks when the plate is detached and attached.



#### Plate part no. (10 pcs. included)

Series	Part no.
SY5000*1	SY50M-10-4A
SY3000/5000 Mixed mounting type	SY50M-10-5A
SY7000	SY70M-10-4A

\*1: A and B ports (Ø 8 and Ø 5/16") of the SY3000/5000 mixed mounting type are those for the SY5000.

## Other Tube Brands

### ⚠ Caution

1. When using other than SMC brand tube, confirm that the following specifications are satisfied with respect to the tube outside diameter tolerance.

- |                      |                            |
|----------------------|----------------------------|
| 1) Nylon tube        | within ±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 this before handling. Refer to the back cover for Safety Instructions. For 3/4/5 Port Solenoid Valve Precautions, refer to “Handling Precautions for SMC Products” and the Operation Manual on the SMC website, <http://www.smc.eu>

### One-touch Fittings

### Caution

When fittings are used, they may interfere with one another depending on their types and sizes. Therefore, the dimensions of the fittings to be used should first be confirmed in their respective catalogs.

Fittings whose compliance with the SY series is already confirmed are stated below. If the fitting within the applicable range is selected, there will not be any interference.

#### Applicable Fittings: Series KQ2H, KQ2S

Series	Model	Piping port	Port size	Fittings	Applicable tube O.D.							
					Ø 2	Ø 3.2	Ø 4	Ø 6	Ø 8	Ø 10	Ø 12	
SY3000	SY3□30-□□-M5	4A, 2B	M5	KQ2H	■							
				KQ2S		■						
	SS5Y3-50/51/52 (R) Manifold base	1P, 5EA, 3EB	1/8	KQ2H		■						
				KQ2S			■					
		X, PE	M5	KQ2H	■							
				KQ2S		■						
	4A, 2B	1/8	KQ2H		■							
			KQ2S			■						
		M5	KQ2H	■								
			KQ2S		■							

Series	Model	Piping port	Port size	Fittings	Applicable tube O.D.							
					Ø 2	Ø 3.2	Ø 4	Ø 6	Ø 8	Ø 10	Ø 12	
SY5000	SY5□30-□□-01	4A, 2B	1/8	KQ2H		■						
				KQ2S			■					
	SS5Y5-50/51/52 (R) Manifold base	1P, 5EA, 3EB	1/4	KQ2H		■						
				KQ2S			■					
		X, PE	M5	KQ2H	■							
				KQ2S		■						
	4A, 2B	1/4	KQ2H		■							
			KQ2S			■						
		1/8	KQ2H		■							
			KQ2S			■						

Series	Model	Piping port	Port size	Fittings	Applicable tube O.D.							
					Ø 2	Ø 3.2	Ø 4	Ø 6	Ø 8	Ø 10	Ø 12	
SY7000	SY7□30-□□-02	4A, 2B	1/4	KQ2H		■						
				KQ2S			■					
	SS5Y7-50/51/52 (R) Manifold base	1P, 5EA, 3EB	3/8	KQ2H			■					
				KQ2S				■				
		X, PE	M5	KQ2H	■							
				KQ2S		■						
	4A, 2B	1/4	KQ2H		■							
			KQ2S			■						

#### Trademark

DeviceNet™ is a trademark of ODVA.

EtherNet/IP™ is a trademark of ODVA.

CompoNet™ is a trademark of ODVA.

EtherCAT® is registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.



## Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of “Caution,” “Warning” or “Danger.” They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)\*1), and other safety regulations.

-  **Caution:** Caution indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
-  **Warning:** Warning indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
-  **Danger:** Danger indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

### Warning

#### 1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalogue information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

#### 2. Only personnel with appropriate training should operate machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

#### 3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.

- 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 catalogue.
- 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.

### Caution

#### SMC products are not intended for use as instruments for legal metrology.

Measurement instruments that SMC manufactures or sells have not been qualified by type approval tests relevant to the metrology (measurement) laws of each country. Therefore, SMC products cannot be used for business or certification ordained by the metrology (measurement) laws of each country.

## Safety Instructions

Be sure to read “Handling Precautions for SMC Products” (M-E03-3) before using.

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Specifications are subject to change without prior notice and any obligation on the part of the manufacturer.